TORONTO

STAFF REPORT
ACTION REQUIRED

Scarborough Subway Extension – Project Delivery Options

Date:	April 8, 2015
To:	Executive Committee
From:	City Manager Deputy City Manager & Chief Financial Officer
Wards:	All Wards
Reference Number:	P:\2015\Internal Services\Ec15010Cf (AFS21106)

SUMMARY

This report responds to a direction from Council (EX4.17) to examine potential options for the delivery of the Scarborough Subway Extension project (the "SSE").

In particular, the report focuses on an assessment of potential project procurement options. This high-level assessment indicates that the most appropriate procurement approach will be either a traditional Design-Bid-Build ("DBB") approach or a Design-Build-Finance ("DBF") form of Alternative Finance and Procurement ("AFP"). The participation of a private partner in the operations of the project has been ruled out as it is impractical in an extension of an existing subway line.

The existing Collective Bargaining Agreement with TTC unions also explicitly precludes the contracting out of those maintenance activities that are normally undertaken by TTC employees. However, the consideration of some scenarios for the lifecycle maintenance by the private partner of major structural elements of the project may be incorporated within a P3 (Public Private Partnership) screen required as a condition of the federal funding commitment being provided through the New Build Canada Fund. This report recommends that Infrastructure Ontario be retained to advise on the preparation of a POA.

In addition to addressing procurement, the report sets out the process that will lead to decisions with respect to the appropriate form of project management and delivery for each stage of the SSE project.

Finally, this report also requests that the Board of the Toronto Transit Commission continue to structure any new contracts for design or other preparatory work for the project so as to preserve the ability to proceed with whichever procurement mode is recommended as a result of the POA. This will allow the project to proceed with no delays during the time the POA is being carried out.

RECOMMENDATIONS

The City Manager and the Deputy City Manager & Chief Financial Officer:

1. City Council direct the City Manager, in consultation with the CEO of the Toronto Transit Commission and the Deputy City Manager & Chief Financial Officer to report back to Council by the first quarter of 2016 with their recommendation on whether to proceed with a Design-Bid-Build or Design-Build-Finance option for project procurement and that such report also include recommendations with respect to project management, delivery and governance.

2. City Council authorize the Deputy City Manager & Chief Financial Officer to retain the services of Infrastructure Ontario, and such other advisors that are required to complete the Procurement Options Analysis, at a total cost not to exceed $500,000.

3. City Council request that the Board of the Toronto Transit Commission continue to structure any contracts for design or other preparatory work for the Scarborough Subway Extension so as to preserve the ability to proceed with whichever procurement and delivery model is recommended to Council following completion of the Procurement Options Analysis.

Financial Impact

Overall Budget and Funding for SSE

The total estimated cost for the SSE is $3.56 billion (expressed in inflated dollars). Current funding assumptions for the construction of the subway extension are as follows:

- Provincial government - $1.99 billion
- Federal government - $660 million
- City of Toronto - $910 million

The City's share of the costs is to be funded from a dedicated Council-approved 1.6% property tax increase and development charges.

The TTC's 2015 Capital Budget allocates a total gross amount of $50.26 million (including carryover from 2014) to this project. Most of the funds allocated to date have been applied to the following:

- The Environmental Assessment
- Early project planning
- The tender and award of contracts for consulting design services
- Additions to the project team

Funding for the Procurement Options Analysis ("POA")

This report recommends that Infrastructure Ontario, along with any other advisors required to complete the POA, be retained at a total cost not to exceed $500,000. The necessary funding for these services is available through the amounts already allocated to this project through the 2015 Capital Budget.

DECISION HISTORY

At its meeting held on July 16-19, 2013, Council considered the report CC37.17 Scarborough Rapid Transit Options and adopted a resolution supporting the extension of the Bloor-Danforth subway, along the McCowan corridor alignment north to Sheppard Avenue, in lieu of the Scarborough LRT project incorporated in the Master Agreement with Metrolinx.

Council confirmed its support for the subway extension project at its meeting on October 8-11, 2013 when it adopted the recommendations in the report CC39.5 Scarborough Rapid Transit Options: Reporting on Council Terms and Conditions. One of the recommendations adopted by Council was to pursue the P3 Screen process required as a condition of the $660 million contribution from the Federal government.

As part of the 2015 Capital Budget, Council approved $50.26 million in total 2015 funding (including carry-over from 2014) for the SSE and it also approved the SSE's 2015-2024 Capital Plan with a total of $3.372 billion in estimated expenditures. The total project budget spanning 2014 to 2024 is $3.56 billion.

At its meeting of March 31, 2015, Council adopted EX4.17 Request for Report on Options to Improve Toronto Transit Commission Project Delivery in response to a report submitted to the Board of the TTC regarding unforeseen additional costs and delays on the Toronto York Spadina Subway Extension project ("TYSSE"). EX4.17 directed the City Manager to:

> " report to the Executive Committee on April 22, 2015, on options for improved project delivery, including procurement and project management, for the Scarborough Subway Extension, such options to include the spectrum of procurement strategies known as Alternative Financing and Procurement and/or Public-Private-Partnerships and the role that Infrastructure Ontario can play in the delivery of such projects and on an option for improved in-house capital project management and delivery."

ISSUE BACKGROUND

Contract Management Challenges with the Toronto York Spadina Subway Extension Project ("TYSSE")

The TYSSE project was originally approved by Council in 2005 and has been undertaken using a traditional Design-Bid-Build ("DBB") approach in which the TTC, in collaboration with a team of private consultants, prepared a project design and then tendered various sections of the project for construction by private contractors. Under a traditional DBB procurement, the majority of project risks are retained by the owner (i.e. the City).

The construction work was initiated in 2009 and is being supervised by TTC staff and consultants retained by the TTC.

Potential alternative delivery options for this project, such as public-private partnerships, were considered as part of a 2009 P3 Project Screen exercise carried out in accordance with Transport Canada requirements. The following considerations resulted in a decision to proceed with building the project through the standard DBB approach:

- The need to maintain design, maintenance and operations standards consistent with the rest of the existing Spadina subway line
- The considerable investment that had already been made in design work done in preparation for procurement through the standard DBB approach
- The limited liquidity in the private infrastructure financing market (following the financial market crisis in late 2008)
- The inexperience of TTC staff with alternative procurement methods and the additional time required to prepare performance specifications suitable for an AFP procurement

The TYSSE was originally scheduled to be completed and in service by the end of 2015. However, in October, 2012, as a result of various construction delays, the TTC Board endorsed a report which recommended that the scheduled date of completion be changed to the end of 2016.

At its March 26, 2015 meeting, the Board established that the earliest achievable date of completion is now the end of 2017.

The TTC staff report that recommended this most recent amendment to the project schedule also outlined the principal factors that have contributed to increased costs and delays in the project's completion. These included:

- Changes in station design to address stakeholder concerns and requirements
- More extensive than expected utility relocation work
- Fatal accident leading to closure of portion of work site for extended period
- Contractor performance

The TTC has identified the following issues as having triggered contractor performance issues:

- Lack of incentives for on-time completion
- The large number of separate contracts leading to knock-on schedule impacts when delays by one contractor cause delays for other contractors – and result in delay claims from these impacted contractors

Review of TTC Capital Program Delivery

In order to address general concerns regarding TTC capital project delivery, Council , as part of the 2015 Capital Budget approval, directed staff to issue a Request For Proposal to expedite a review of Toronto Transit Commission capital program service delivery including:

a. a review of project management of TTC Major Capital Projects in the past five years to determine actual project costs and completion dates relative to original schedules and estimated costs;

b. a review of staff reporting mechanisms to the TTC and City Council related to capital project budget and completion date status; and

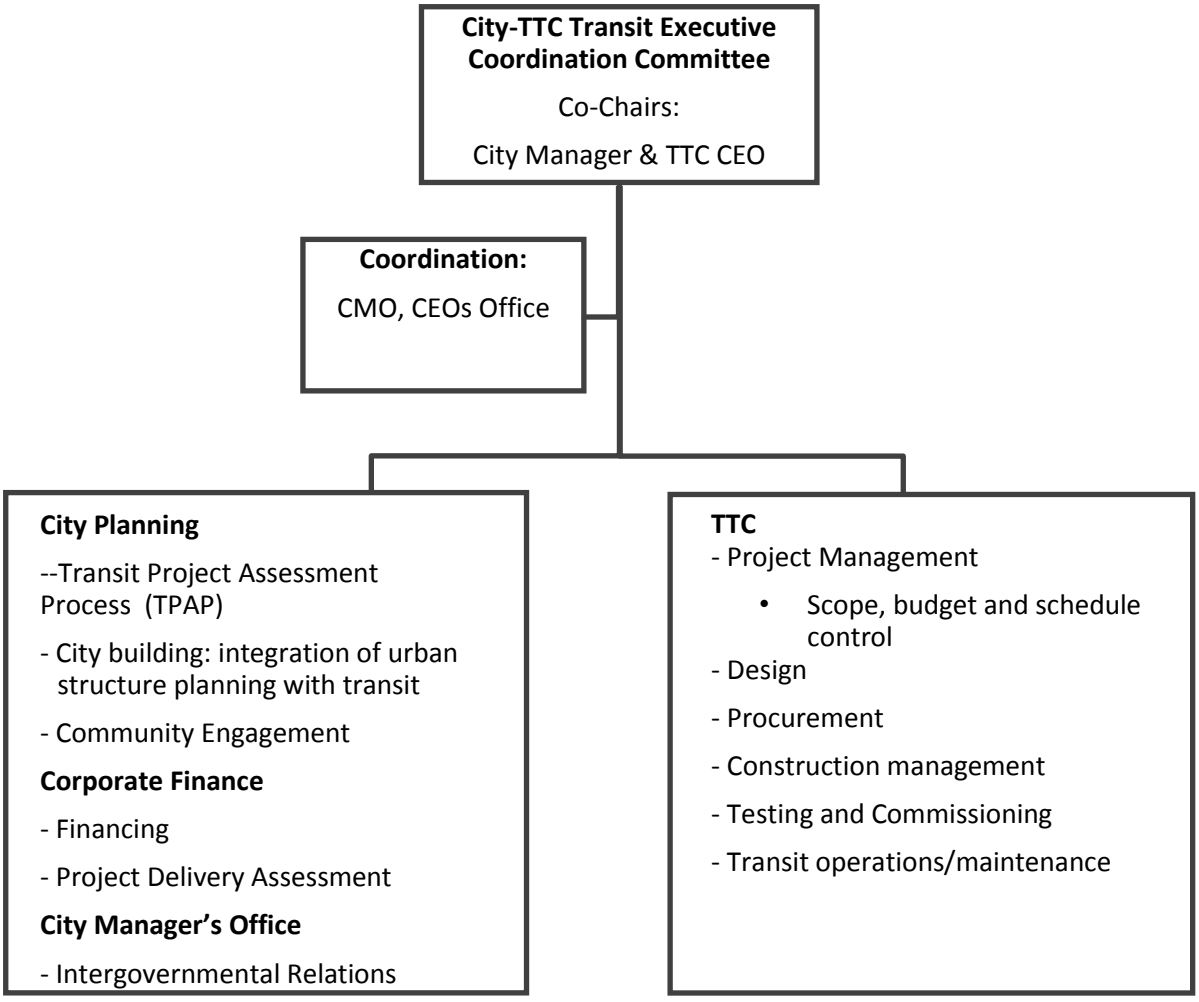
c. future organizational options for Transit project management and delivery of Major Capital projects related to Transit expansion and major State of Good Repair projects.

COMMENTS

SSE Project Governance

The SSE is a joint City/TTC undertaking, led by a City/TTC staff Executive Committee, which is co-chaired by the City Manager and the TTC CEO. The City is responsible for execution of the Transit Project Assessment Process (TPAP) and all associated planning activities, as well as finance and intergovernmental relations. The TTC is responsible for scope, budget, schedule, design and construction. This arrangement is set out in greater detail in the chart below:

Fig. 1 Scarborough Subway Extension Governance Structure



SSE Project Status

Transit Project Assessment Process (TPAP)

The Transit Project Assessment Process (TPAP) is an abbreviated environmental assessment process for assessing transit projects in Ontario. Significant preparatory analysis (also known as the Project Assessment) is required to develop the project concept, examine the potential environmental impacts of different options, and identify measures to mitigate any impacts. The TPAP also involves consultation with the public. Once the Project Assessment phase is complete and a recommended option is chosen, a Notice of Commencement is issued for the final project review.

This work is being led by City Planning, with support from the TTC. The planned schedule for the Transit Project Assessment Process is provided in Table 1 below:

Table 1 – SSE TPAP Schedule	
September 2014	EA Technical Consultant began
December 18, 2014	Briefing with local Councillors
January 31/ February 2, 2015	Project Assessment - Phase 1 Public Consultation on: Terms of Reference for EA Study Area and Evaluation Criteria Draft Public Consultation Plan Long List of Subway Corridors
Spring 2015	Project Assessment - Phase 2 Public Consultation on: Evaluation of Long List of Corridor Options Short List of Corridors Alignment Options in Short Listed Corridors
September 2015	Project Assessment - Phase 3 Public Consultation on: Evaluation of Corridor and Alignment Options from Phase 2 Recommended Alignment and Station Concepts
Fall 2015	Seek approval of Recommended Alignment from TTC Board, Planning and Growth Management Committee, and City Council
January 2016	Issue Notice of Commencement for Final Project Review
June 2016	Seek Project Approval from the Minister of Environment

TTC Activities

While the Project Assessment phases of TPAP are being undertaken, the TTC has also begun making preparations to allow design to begin immediately once the TPAP confirms the final subway alignment.

These preparations include:

- Issuing Requests for Proposals
- Awarding consulting contracts for design and project team support
- Hiring TTC staff
- Developing project plans/procedures

Table 2 provides project expenditures approved to date by the TTC Board, and those planned for 2015.

Table 2 – Summary of Approved/Scheduled SSE Consultant Assignments		
Consultant Assignment	**Upset Limit**	**Board Approval Date**
Tunnel Design	$30 million	December 2014 (approved)
Project Management	$80 million	February 2015 (approved)
Station Design	$95 million	April 2015 (pending)
Systems Design/Management	$50 million	May 2015 (pending)
Geotechnical	$11 million	May 2015 (pending)
Project Controls	To be determined	Fall 2015 (pending)

The TTC is incorporating clauses in each of the above consulting contracts which allow the TTC to amend the scope of work to suit the form of project delivery that is ultimately chosen for the project.

New Building Canada Fund ("NBCF") – P3 Screen

A condition of the NBCF is that projects with an estimated cost of over $100 million go through a P3 screen process. This process has two stages. The first stage is the Suitability Assessment ("SA"). The second stage is a more robust assessment of P3 potential, called a Procurement Options Analysis ("POA").

P3 Screen – Suitability Assessment

In accordance with Council's direction to staff in CC39.5, and the requirements of the NBCF, City staff submitted a P3 Suitability Assessment for the SSE to Infrastructure Canada in December, 2014. The SA for the SSE was undertaken in consultation with TTC staff. This assessment consisted of responses to twelve questions regarding project specifics such as:

- Private sector capacity
- Potential for contract integration
- Potential for competition
- Market precedents
- Asset complexity

Based on the scoring criteria applied by PPP Canada, it is anticipated that the project will be considered by PPP Canada to have sufficient P3 implementation potential to trigger the requirement to proceed with a more detailed Procurement Options Analysis ("POA"). This POA will be reviewed on behalf of the NBCF by PPP Canada.

Procurement Options Analysis

A POA describes, examines and compares the traditional procurement delivery model, a P3 delivery model, and other alternatives for the delivery of infrastructure, to determine which option offers best Value for Money ("VFM").
A POA includes the following sections:

- A shortlisting of procurement options;
- A qualitative analysis;
- A quantitative analysis; and
- An integrated recommendation.

An optimal delivery option is selected by subjecting the shortlisted procurement options to qualitative and quantitative examinations and determining which option best meets the identified criteria.

PPP Canada has indicated that it will accept POA's based on the VFM methodology used by Infrastructure Ontario ("IO"). Infrastructure Ontario is a Provincial Crown agency that partners with public sector entities, including municipalities, to create and renew infrastructure in Ontario; principally through the use of Alternative Financing and Procurement ("AFP") contracts.

It is anticipated that the participation of IO will also be a standard condition attached to the Province's contribution to the project.

Staff have met with IO to discuss their potential participation in the completion of a POA. IO has proposed that parts of the POA can begin immediately, while others will occur parallel to the environmental assessment process. This report recommends that the services of IO, and any other advisors required to complete the assessment of procurement options, be retained at a total cost not to exceed $500,000.

It is important to note that TTC and City staff will participate directly in the preparation of the POA and will oversee the preparation of the VFM analysis.

This report also recommends that City Council request that the Board of the Toronto Transit Commission continue to structure any new contracts for design or other preparatory work for the SSE so as to preserve the ability to proceed with whichever procurement mode is recommended through the POA. This recommendation is intended to allow work to proceed expeditiously on the design and other preparatory work regardless of whichever procurement approach is ultimately selected.

Table 3 below sets out the steps that will lead up to the completion of the POA at the end of the first quarter of 2016.

Table 3 – Steps Leading to Completion of POA	
	Estimated Completion Date
Environmental Assessment Approval	Q4 2015
Advisor Retention	Q4 2015
Market Sounding	Q4 2015
Reference Concept 30% Design	Q1 2016
Costing Based on 30% Design	Q1 2016
Procurement Options Assessment	Q1 2016

Advantages to Retaining IO's Advice for the POA

This report recommends that IO be retained for the preparation of the POA because:

- IO is the most experienced P3 procurement advisor in Ontario
- IO has a particularly high level of experience with transit projects similar to SSE through their work on various LRT projects in GTA and elsewhere in the Province (see Appendix 1 for a summary of some of these projects)
- As discussed above, PPP Canada and the Province have indicated their confidence in IO's methodology

IO recently revised its VFM methodology to address many of the recommendations made by the Provincial Auditor General (see Appendix 2 for a discussion of the Auditor General's report).

High-Level Discussion of Procurement Options to be Considered in POA

City/TTC Objectives for the SSE

At a high level, the principal objectives for the SSE, which should be addressed through the POA, are as follows:

- Provide the passengers with a safe, reliable and pleasurable travel experience
- Ensure delivery of a high capacity, rapid transit service to Scarborough, with seamless connection at Kennedy
- Maximize certainty with respect to scheduled completion
- Maximize certainty with respect to long-term maintenance and operating costs
- Lever maximum contributions from other levels of government
- Ensure full integration with the operations and maintenance of the rest of Bloor/Danforth line
- Minimize overall expected costs
- Maximize potential retail and development revenues from stations

Available Options

In addition to the conventional Design-Bid-Build ("DBB") approach, IO typically considers the following potential procurement options:

- Design-Build-Finance (DBF)
- Design-Build-Finance-Maintain (DBFM)
- Design-Build-Finance-Operate-Maintain (DBFOM)

However, the need to maintain integrated operations along the whole Bloor/Danforth line rules out further consideration of the DBFOM option. This need for integration will also have some impact on the extent to which maintenance can be carried out by a private partner because the vehicles and overall vehicle control system must still be maintained by the TTC.

Comparison of Potential Procurement Options

Table 4 provides a high-level summary of the pros and cons of the remaining options. These options are discussed in greater detail below.

Design-Bid-Build/Traditional Procurement

As discussed above, the TTC has traditionally used the DBB approach for all of its major capital projects. Under this approach, the infrastructure is designed by the TTC in collaboration with a team of private consultants. The TTC then initiates a competitive bidding process to select construction contractors to build the facility to the design specifications.

Debentures are issued by the City to raise the required funding and the TTC provides progress payments to the contractors throughout the project.

Although VFM documentation often describes this as the public sector comparator approach, it is important to note that the vast majority of the project delivery under this approach is still provided through the private sector.

One of the principal benefits of the DBB approach is that the TTC can maintain a high level of input and control over the design, maintenance and operation of the infrastructure. As discussed above, this may be a particularly important benefit in a project that involves the extension or expansion of an existing facility.

As referenced in EX4.17, there is potential for improved in-house capital project management and delivery as a result of the assessment and recommendations that will result from the current review of TTC capital program delivery.

However, under a DBB approach, the contractors will not have a long-term stake in the project following construction completion. As a result, the contractors' desire to minimize their costs during construction may supersede quality and maintenance considerations. Also, the contractors may not have a sufficiently high incentive to collaborate to achieve on-time completion because progress payments limit their exposure to financing costs, and delays by other contractors may entitle them to extra fees.

Finally, because the design is developed without input from the contractors, the contractors have an incentive to submit change orders for any lack of coordination, lack of due diligence, any miscalculations and any deviations that add to the cost of construction. Also, the bidding process is not conducive to design innovation.

Design-Build-Finance

Under the DBF approach, the TTC would work with various advisors to prepare high-level specifications that describe the desired outputs for the project rather than to define the specific design of the infrastructure.

The objective of this approach is to transfer design-related risks (additional costs resulting from design errors & omissions, unforeseen site conditions etc.) to the private partner and also to provide the private partner with the latitude to consider innovative design and construction approaches that could reduce the cost of the project.

This benefit arising from design latitude is potentially greatest in a project in which the private partner has a long-term stake in the project, such as a DBFM or DBFOM. Under these project structures, the private partner will bear the responsibility if there are unforeseen maintenance or operation consequences arising from alternative approaches to the project design. However, under a DBF, the private partner will only have responsibility for the project until the end of a project warranty period (typically two or three years). Therefore, under a DBF, the output specifications may need to be more prescriptive to ensure that a quality project is delivered that meets the TTC's lifecycle requirements.

Under the DBF approach, the private partner will typically provide financing for all of the construction costs incurred until substantial completion of the project. This should result in a strong incentive for the private partner to achieve substantial completion at the earliest possible date. A failure to achieve the scheduled substantial completion date will result in substantial pressure on the contractor from its lenders.

It should be noted that, although the private partner will be providing financing during the construction period, the funding for the project will still be provided through the TTC/City. Also, the TTC/City will be the owner of the project.

All of these issues will be evaluated in much greater detail as part of the POA and the recommended procurement approach will be brought forward for Council and TTC Board approval.

Potential Maintenance Elements

The existing Collective Bargaining Agreement with TTC unions explicitly precludes the contracting out of those maintenance or operations activities that are normally undertaken by TTC employees.

The funding agreement with the federal government will require a P3 analysis, which includes consideration of the merits of different major, lifecycle maintenance scenarios. As stated earlier, the participation of a private partner in the operations of the project has been ruled out as it is impractical in an extension of an existing subway line.

Table 4 – High-Level Comparison of Options to be Considered in POA

	Pros	Cons
Design-Bid-Build	• High level of control over design • High level of maintenance coordination/integration for entire Bloor/Danforth line	• Risk of over-runs and schedule slippage due to lack of design coordination, specification errors, unforeseen conditions, conflicts etc. • Contractor not incentivised to meet schedule
Design-Build-Finance	• An established scope of deliverables through output specifications • Potential for design innovation that will reduce construction costs and shorten construction schedule • High level of certainty with respect to construction cost and schedule once locked in during bid process • High level of maintenance coordination/integration for entire Bloor/Danforth line	• Higher financing costs than DBB • Some potential for design innovations to have unforeseen long-term maintenance & operations impacts (proponent not responsible after end of warranty period)

Steps Following a Council Decision on Procurement Approach

As discussed above, this report recommends that the City Manager, in consultation with the CEO of the Toronto Transit Commission and the Deputy City Manager & Chief Financial Officer, report back to Council by the first quarter of 2016 with their recommendation on whether to proceed with a Design-Bid-Build or Design-Build-Finance process for project procurement.

If the POA results in a recommendation to proceed with a DBB approach, and Council adopts this recommendation, the TTC will continue to manage the delivery of the SSE using its traditional approach with modifications in response to lessons learned from the TYSSE experience.

If the POA results in a recommendation to proceed with a DBF, and Council adopts this recommendation, it will be necessary to retain a procurement lead, such as IO, that has extensive experience with the DBF form of project procurement.

Once a procurement lead has been retained, it is anticipated that the steps set out in Table 5 will lead to a forecast closing of the transaction with the successful proponent within approximately two years. During this period, the City/TTC would still retain the right to make final decisions and would likely direct the project through a Joint Project Committee with the procurement lead.

Table 5 – Steps Following Potential Decision to Pursue DBF Procurement	
	Estimated Completion Date
Complete Due Diligence	Q4 2016
Prepare Request for Qualifications ("RFQ") and Request for Proposals ("RFP") Documents	Q1 2017
Responses to RFQ	Q1 2017
Responses to RFP	Q1 2018
Evaluation of Proposals	Q2 2018
Financial Close/Construction Start	Q2 2018

Following the closing of the transaction, the procurement lead's involvement may be reduced to providing ad hoc advice and services during the construction contract.

Alternatively, IO has, for example, indicated that it is prepared to provide active oversight in a project manager role throughout the construction period. This report recommends that the City Manager, the CEO of the Toronto Transit Commission and the Deputy City Manager & Chief Financial Officer provide recommendations with respect to project management when they report back in 2016 on the recommended procurement approach.

CONTACT

Joe Farag, Executive Director, Corporate Finance
Tel: 416-392-8108, Email: jfarag@toronto.ca

Eric Arm, Sr. Financial Analyst, Corporate Finance
Tel: 416-397-4479, Email: earm@toronto.ca

SIGNATURE

Joseph P. Pennachetti
City Manager

Roberto Rossini
Deputy City Manager & Chief Financial Officer

ATTACHMENTS:

Appendix 1 – Recent Transit Projects Procured through Public-Private-Partnerships

Appendix 2 – The Provincial Auditor General's Review of Infrastructure Ontario's Value for Money Methodology

Appendix 1
Recent transit projects procured through Public-Private-Partnerships

Metrolinx "Big Move" Projects Procured through Alternative Finance and Procurement ("AFP")

Currently there are a number of Metrolinx LRT projects under way both within Toronto and also in the broader Toronto area that form part of the "Big Move" initiative originally adopted by the Metrolinx in 2008.

In contrast to the Design-Bid-Build approach being used for TYSSE, Metrolinx is considering the potential for having each of the Big Move projects delivered through an Alternative Financing and Procurement ("AFP") approach. In order to assess this potential IO is having Value for Money ("VFM") analyses done for these projects by Infrastructure Ontario. Infrastructure Ontario ("IO") is a Provincial Crown agency that partners with public sector entities, including municipalities, to create and renew infrastructure in Ontario; principally through the use of AFP contracts.

The VFM analyses managed by IO have forecasted that the overall cost for these projects will be lower under an AFP approach primarily because the value and quantity of the various risks retained by Metrolinx would much lower under an AFP approach than they would be under a traditional procurement approach.

The largest such project currently under construction in Toronto is the 19km Eglinton Crosstown LRT. The tunnelling work was done as an early enabling project to the Eglinton Crosstown LRT. However, the remainder of the project will be awarded to a proponent that will be responsible for design, construction, financing, and long-term maintenance. Metrolinx will retain ownership of the project and the TTC will operate the completed LRT service.

Metrolinx will procure the Finch West and Sheppard East LRT projects using a similar AFP approach.

Other Ontario Transit Project Projects Being Delivered Using AFP

In 2012, the Region of Waterloo chose to structure their $818 million Waterloo "ION" LRT project as a Design-Build-Finance-Operate-Maintain ("DBFOM") AFP project. The Region's private partner, Grandlinq, will operate the service for 30 years in addition to designing, constructing, maintaining and financing the system. Waterloo chose to have their private partner operate the system because of their own lack of experience in LRT operation. Deloitte provided advice to the Region in assessing procurement alternatives and IO assisted the Region in managing the procurement process. IO is also currently involved in advising the Region of Waterloo during the Construction Stage of the project.

IO also helped (as Commercial Procurement Advisor) the City of Ottawa structure their $2.1 billion Light Rail Transit (the "Confederation Line") project as a Design-Build-

Finance-Maintain ("DBFM") project and is currently providing advice to the City of Ottawa during the Construction Stage. The Rideau Transit Group, made up of SNC-Lavallin and Ellis Don, along with other partners, will maintain the project for 30 years but OC Transpo will operate the LRT service.

Canada Line in Vancouver, BC

The Canada Line IO is a $2 billion 19.5 km rapid transit line connecting downtown Vancouver and Vancouver International Airport.

The Canada Line project is being delivered through a 35-year Design-Build-Finance-Operate-Maintain (DBFOM) public-private partnership. The InTransitBC consortium (SNC-Lavalin Inc., B.C. Investment Management Corporation & Caisse de depot et placement de Quebec) designed, constructed and partially financed the system, owns the train vehicles, and will operate and maintain the Line under an operating license from the Greater Vancouver Transportation Authority through to the end of the agreement.

The Greater Vancouver Transportation Authority owns the line, collects all fare revenues and will continue to set system-wide transportation policies and fare levels. During the construction period, InTransitBC was paid after achieving identified milestones.

During the operating period, payments will be made to InTransitBC for the achievement of performance targets that measure, for example, train frequency, safety, cleanliness and ridership.

Partnerships BC acted as the business advisor to the Province of British Columbia on this project.

Appendix 2
The Provincial Auditor General's Review of Infrastructure Ontario's Value For Money ("VFM") Methodology

Summary of Report

In late 2013 and the first half of 2014, the Auditor General of Ontario ("AG") carried out an audit to "assess whether IO has effective systems and processes in place to ensure that:

- the decision to use the alternative financing and procurement model is suitably supported by a competent analysis of the alternatives
- all significant risks and issues are considered and appropriately addressed in the final agreement
- public expenditures are incurred with due regard for economy"

The principal issues raised by the AG's audit were with respect to the VFM methodology used by IO to compare the forecast financial outcomes and arrive at a recommended procurement approach. The AG's report pointed out that IO's VFM calculations for 74 projects (projects completed or under way) show that the total "tangible costs" were $8 billion higher under the AFP option than they would have been under standard public sector procurement option.

However, this $8 billion difference was more than offset by IO's estimate of the cost of the risks associated with the public sector directly contracting out and managing the construction and, in some cases, the maintenance of these 74 facilities. IO valued the cost of the risk under public sector delivery to be $18.6 billion and the risks under AFP delivery to be $4 billion.

The cost of the retained risk is determined by multiplying the estimated probability of each type of risk materializing by its associated potential cost. A risk workshop is held with each IO client where the apportionment of the risk is determined between the public and private sector.

The AG's principal concern was that these probabilities and associated costs were not based on a statistical analysis of actual historical data. The values are instead determined through the judgement and experience of external advisors. These assumed values are difficult to verify.

The AG also found that some risks had been double-counted. The AG concluded that making adjustments to correct for this double-counting would have made the VFM outcome negative for 18 of the 74 projects under an AFP option.

Finally, the AG proposed that a properly structured contract under public-sector procurement may also be able to manage risks considered to have been mitigated or transferred under AFP's. The AG suggested that public-sector contracts can be structured

so that many of the risks are with the contractor and that projects can be planned and managed so that their sponsors do not make late changes that add to costs.

Responses to the Auditor General's Report on Infrastructure Ontario VFM

Infrastructure Ontario

IO acknowledges that the risk values used in its VFM analyses are not based on empirical data but they point out that no suitable database of empirical evidence is available. They view the judgements of their expert advisors as the best available inputs for this type of analysis. They have, however, committed to working with the Province in gathering data on the results of traditionally delivered projects.

IO has also been carrying out a "refresh" of its VFM methodology to incorporate:

- better definitions and supporting rationale
- a reduced and consolidated number of risk categories
- new risk probabilities and impacts which better reflect IO's experience

Although this refresh was already underway prior to the AG's audit, IO has indicated that the refresh will address the issues raised by the AG.

TD Economics Special Report – "Ontario P3s – Cost Does Not Equal Value"

Recently, TD Economics released a public report in response to the AG's audit of Infrastructure Ontario. This report argues that the AG's use of the term "tangible costs" has led to a misleading public interpretation of the AG's conclusions with respect to the value of the AFP approach.

The report points out that there are certain truly tangible costs, such as transaction costs, (e.g. higher legal costs because of more complex contract terms) that are indeed higher under an AFP model. These incremental costs, along with the costs associated with the longer planning period required under an AFP approach, have to be weighed against the cost & schedule risk mitigation (essentially insurance) provided by the AFP approach.

TD argues that most of the other additional "tangible costs" under an AFP approach, as described by the AG, are only higher because they incorporate a more complete pricing of the project risks (i.e. this pricing is built into the project "premium" and project financing) that is not incorporated within these "tangible costs" under the public sector comparator.

The TD report also questioned the potential ability to achieve an AFP level of risk mitigation under a public sector approach because:

- Potential bonuses and penalties are not easy to enforce under a traditional procurement arrangement

- It is simpler to incent prompt completion by withholding completion payments under an AFP approach (in an AFP project, the private partner provides financing during construction and most of the public sector's payment is typically withheld until substantial completion of the project)
- A better alignment of objectives can be achieved if the private partner has a long-term interest in the project (thru maintenance and/or operations responsibilities)