

Report No. 1 of the Chief Administrative Officer was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on March 26, 2015.

Toronto-York Spadina Subway Extension - Schedule and Cost Status Update -

1. Recommendations

It is recommended that Council:

1. Receive the report of the TTC CEO (Attachment 1);
2. Acknowledge a delay of at least one year to the completion of the Spadina subway extension, with a new target date for completion of December 2017;
3. Support the TTC CEO being authorized to take the steps set out in his report (Attachment 1) to minimize the impact of the delay to the completion of the Spadina subway extension and to minimize the additional budget impact;
4. Authorize staff to seek additional funding contributions from Federal and Provincial partners;
5. Authorize a request to the federal Minister of Infrastructure, Communities and Intergovernmental Affairs to extend the Building Canada Fund Contribution Agreement for the Toronto-York Spadina Subway Extension, amending the "Project Completion Date" and "Agreement End Date", to June 30, 2018; and
6. Pending any additional commitment for funding from senior government, approve additional funding of up to \$60 million for the Toronto-York Spadina Subway Extension.

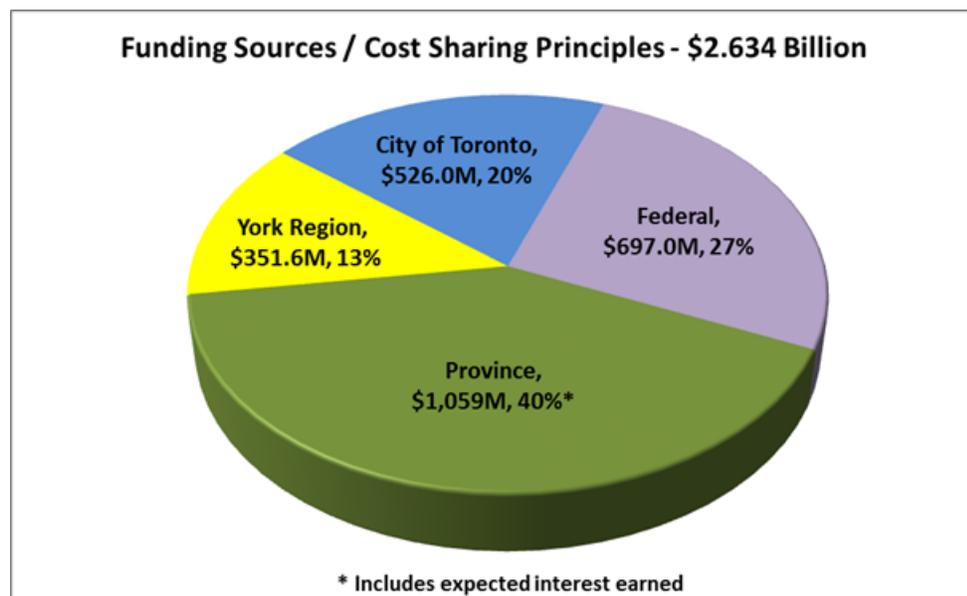
2. Purpose

The purpose of this report is to provide an update on current work by the TTC to review and update the project schedule to reflect on-going delays that have occurred and to provide a projection of the anticipated cost implications of those delays. A comprehensive report is being presented by TTC staff to the Commission at its meeting of March 26, 2015. A copy of the TTC report is attached (Attachment 1).

3. Background

The City of Toronto and the Regional Municipality of York Region entered into a Memorandum of Understanding with regards to the Toronto-York Spadina Subway Extension (TYSSE) project in 2008

- On December 15, 2008, the City of Toronto and the Regional Municipality of York Region entered into both a Capital Cost Allocation MOU and an Operations and Maintenance MOU.
- An Executive Task Force (ETF) was established to govern the YYSSE project and consists of 3 members from the City of Toronto and 3 members from York Region. The Toronto City Manager and the York Region CAO are both members of the ETF and alternate responsibility for chairing the meetings.
- The Terms of Reference for the ETF identified that the TTC would be responsible for the implementation of the YYSSE project.
- The Capital Cost Allocation MOU identified the cost sharing principles for the YYSSE project. The Federal and Provincial governments were to each contribute a portion of the funding. The remaining one-third was split between the City of Toronto (59.96%) and York Region (40.04%), based on geography and length of the project – Capital Cost Allocation, Article 3 of the Capital Cost Allocation MOU. The specific funding shares are set out in the following figure:



In addition to a contribution of \$351.6 million, York Region also agreed to a “Capacity Buy-In” of \$30.0 million to the TTC subway system to cover costs towards the infrastructure upgrade south of Downsview Station to

accommodate the increased number of riders – Subway Contribution Payment, Article 4 of the Capital Cost Allocation MOU.

- The MOU also identified that any cost overruns would be shared using the same formula between the City of Toronto and York Region.

Various issues have resulted in delays to the TYSSE project

- At the beginning of the TYSSE project, the completion date was established at December 2015.
- In 2012, it became apparent that a completion by 2015 would no longer be achievable and the completion date was delayed to December 2016. At that time, the main reasons for the delay were:
 - Funding approvals;
 - Station design;
 - Utility relocations;
 - Fatal accident at York University Station; and
 - Contractor performance.

At that time, the overall project budget was maintained at \$2.634 billion

- Since 2012, schedule challenges have continued, particularly with contractor performance, late design changes and conflicts between different contractors.
- In mid-2014, the TYSSE conducted a schedule review workshop and concluded that a December 2016 completion was no longer achievable. A review was conducted of the remaining schedule risks on the project and determined that the following completion dates were achievable with varying levels of certainty:
 - May 2018 – low probability;
 - October 2018 – medium probability; and
 - January 2019 – high probability.
- Contractor performance was implicated at the time for most of the delay and the ETF joined the TTC CEO in efforts to turn around contractor performance.
- The ETF and the TTC CEO determined that these dates needed additional independent review before a recommendation could be made on a new TYSSE completion date.

The TTC has engaged various external experts to review the schedule and cost implications of this delay

- Before announcing a new completion date, the TTC engaged external experts to review the status of the project and schedule to determine if a completion earlier than May 2018 to January 2019 could be achieved.
- The TTC requested the American Public Transit Association (APTA) to convene a panel of experts from various transit agencies to review the project and schedule.
- The TTC also engaged Bechtel Canada Co. (a large international construction management firm) to conduct an assessment of the schedule to determine how quickly the project could be completed and the potential cost implications. Bechtel has delivered a draft report with their findings to the TTC.

The results of these external reviews have been presented to the Executive Task Force

- Both the APTA panel review and the Bechtel review were presented to the ETF at their meetings in November 2014 and February 2015 respectively.
- The ETF requested the TTC CEO to report further on the schedule and budget implications for the TYSSE project.
- The TTC CEO is presenting findings to the Commission at its meeting of March 26, 2015 and the Toronto City Manager is presenting to City Council at its meeting on March 31 to April 2, 2015.

4. Analysis and Options

The external experts all agree that the current completion date of December 2016 is no longer achievable

- Both the APTA panel and Bechtel confirmed that a project completion in 2016 was no longer achievable.
- The APTA panel concluded that it was possible to achieve a completion date earlier than 2018, but it was dependent on implementing an overall project “reset” to improve the overall working relationship between the TYSSE and the project contractors.
- The Bechtel review agreed with the APTA panel that a project “reset” was necessary and concluded that it was possible to achieve a December 2017 completion.

The TTC is recommending that the TYSSE project completion date be extended to December 2017

- In a report to the TTC Commission (Attachment 1), the TTC CEO is recommending that the TYSSE project completion date be extended to December 2017.
- The additional project delay and measures needed to complete the project in as timely a manner as possible will have financial implications. These implications are discussed in the next section.

To achieve the December 2017 completion, the TYSSE project will need a complete "reset"

- Both the APTA panel and Bechtel concluded that a complete project reset was needed to repair the working relationships between TYSSE and their contractors and to incent the contractors to perform to expectations.
- Bechtel concluded that a number of recommendations needed to be implemented to achieve the December 2017 completion, including:
 1. Incentivize contractors and obtain agreements for an end of 2017 opening date
 2. Develop a process/timeline to resolve outstanding claims
 3. Establish a collaborative environment to develop a common goal and improve project relationships
- These recommendations will need to be implemented soon to achieve the December 2017 completion.

The TTC CEO is recommending a third party engineering firm be retained as an incentivized project manager to achieve the project "reset"

- The TTC evaluated 4 options to achieve the project "reset":
 1. Retain incentivized sole-source third-party project manager to deliver the project
 2. Retain incentivized third-party project manager via RFP to deliver the project
 3. TTC project management continues, retain third party consultant to act as a facilitator
 4. TTC project team continues – status quo
- The details of the evaluation are contained in Attachment 1 and recommend that the TTC CEO proceed with option 1 to retain a sole-source third-party manager to deliver the project. The contract with the

project management company would contain incentives conditional upon meeting schedule and budget milestones.

- The total cost of this option is \$150 million, with approximately \$80 million allocated to the third-party project manager and approximately \$70 million allocated the additional one year of existing project management cost
- The project delivery organization would be re-aligned with revised reporting relationships, including direct reporting to the TTC CEO.
- The new organization would work to improve all of the working relationships with the current contractors and to resolve outstanding claims and re-baseline the project schedule.

5. Financial Implications

There will be financial implications associated with the TYSSE project delay currently estimated at \$150 million

- The current approved TYSSE budget is \$2.634 billion. The total cost is split between the Federal government, the Province of Ontario, the City of Toronto and York Region. The one-third municipal share is split between Toronto (59.96%) and York Region (40.04%).
- Agreements with the Federal government and the Province of Ontario cap their contributions at current levels.
- The TTC CEO has advised that the additional project cost associated with the project “reset” and the additional one year of delay, is \$150 million. (not including any additional claim settlement funding).
- The TYSSE has received a number of claims from contractors currently working on the project. These claims need to be reviewed in detail to determine their merit and to quantify them. The TTC requires until the end of 2015 to provide an estimate of their expected value. The TTC CEO will report further on the claims by the end of the year.
- According to the cost sharing agreement between Toronto and York, the additional \$150 million that is currently requested, is split at \$90 million for Toronto and \$60 million for York Region.
- As outlined below, it is recommended that additional funding be pursued from senior governments. Pending any additional funding, it is recommended that Regional Council approve additional funding of up to \$60 million for the TYSSE project.

The current Federal Government funding falls short of one-third of the total TYSSE project cost

- Typically, large rapid transit infrastructure projects are shared between the Federal, Provincial and municipal governments at one-third each.
- The Federal government funding for the TYSSE has been capped at \$697 million, which represents only 26.5% of the \$2.634 billion TYSSE project cost.
- It is recommended that the Federal government be requested to increase their level of funding to one-third, which for the original budget would be \$878 million, an increase of \$181 million.
- Adjustment of Federal cost sharing is not without precedent and has occurred in the past, for example, on the Vancouver/TransLink Canada Line.
- It is recommended that staff be authorized to seek additional funding contributions from the Federal government.
- There is also a need to extend the current Building Canada Fund Contribution Agreement for the TYSSE. Therefore, it is recommended that Council authorize a request to the Federal Minister of Infrastructure, Communities and Intergovernmental Affairs to extend the agreement to June 30, 2018 to allow sufficient time for project cost reconciliations.

The Provincial Move Ontario Trust is currently expected to have a revenue shortfall of approximately \$80 to \$85 million

- The total Provincial commitment to the TYSSE project is \$1,059 million, which represents 40.2% of the total cost. This commitment was identified in the Build Canada Fund application jointly submitted to the Federal government by the Province of Ontario, the City of Toronto, York Region and the TTC.
- To meet this funding commitment, the Province placed \$870 million in the Move Ontario Trust to be used exclusively for the TYSSE project. At the time, the anticipated investment income was \$189 million, to meet the total commitment of \$1,059 million.
- The Move Ontario Trust has been unable to achieve the projected interest earnings. At the outset of the project, the interest earnings were forecasted based on a rate of 4%. However, due to the shift in capital market conditions since that time, the Trust has been unable to achieve the projected revenues.
- The projected revenue shortfall is currently estimated at \$80 to \$85 million
- It is recommended that staff be authorized to seek additional funding contributions from the Province.

Pending consideration of additional funding by senior levels of government, the Region's costs of \$60 million will be funded in the 2016 budget

- According to the TTC CEO's report, better information on the anticipated total cost to settle all outstanding claims on the TYSSE project will be available by the end of the year, in time for the 2016 budget cycle.
- At the same time, staff will have had an opportunity to seek additional funding contributions from the Provincial and Federal partners and to understand if such additional contributions will be forthcoming.
- The 2016 budget will identify funding sources for any costs to be allocated to York Region.
- Existing funding sources for York Region's contribution to the TYSSE are development charges, tax levy and reserves.

6. Local Municipal Impact

The delay to the TYSSE completion has an impact on development and travel within the Vaughan Metropolitan Centre. City of Vaughan Council and staff are being apprised of the delay implications as identified stakeholders in the TTC communication outreach program.

7. Conclusion

- The current TYSSE project completion date of December 2016 is no longer achievable.
- The project schedule will need to be extended by a minimum of one year to December 2017.
- The December 2017 completion date is contingent upon a number of project management recommendations and additional budget implications that must be implemented quickly, as outlined in the attached TTC CEO report (Attachment 1).
- The cost implication to achieve the recommended project "reset" and due to the one year delay is \$150 million (not including any additional claim settlement funding); this adjustment increases the overall project budget from \$2.634B to \$2.784B.
- TTC staff are presenting a detailed report to their Commission meeting of March 26, 2015 (Attachment 1).
- The TTC CEO has been requested to report further on the schedule and budget implications for the TYSSE project by December 31, 2015.
- The potential financial implication for York Region resulting from the additional \$150 million cost is \$60 million.

- It is recommended that staff be authorized to seek additional funding contributions from the Federal and Provincial partners.

The Senior Management Group has reviewed this report. March 20, 2015

Attachments (1)

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Accessible formats or communication supports are available upon request



**STAFF REPORT
ACTION REQUIRED
With Confidential Attachment**

Toronto-York Spadina Subway Extension – Schedule and Budget Change

Date:	March 26, 2015
To:	TTC Board
From:	Chief Executive Officer
Reason for Confidential Information:	This report contains advice that is subject to solicitor-client privilege, including communications necessary for that purpose

Summary

The Toronto-York Spadina Subway Extension (TYSSE) will be an important part of both the TTC network and regional transit, dramatically improving transit in Toronto and the GTA.

The purpose of this report is to provide the Board with a comprehensive summary of the TYSSE project from conception to present and the impact to both schedule and budget.

The TYSSE project is currently 70 per cent complete. However, it has been determined that the publicly stated opening date of the end of 2016 and the approved budget are not achievable. This report recommends that a comprehensive project “reset” involving a new third-party project manager be undertaken to deliver the project by December 31st, 2017 at an estimated budget increase of \$150M.

Recommendations

It is recommended that the Board approve the following recommendations and then forward to the City of Toronto and Regional Municipality of York:

1. Endorse the end of 2017 as the earliest achievable date for the opening of the TYSSE.
2. That the TTC CEO, Chair and Vice-Chair be delegated the authority to retain a third party project-management firm as an incentivized project manager as per the confidential recommendation attached to this report as Appendix A.

3. That, in accordance with the current funding commitments, the City of Toronto and Regional Municipality of York share funding of the increase in project costs of \$150 million (exclusive of HST). This equates to \$90 million to the City of Toronto and \$60 million to the Regional Municipality of York.
4. That the City considers funding its portion of costs through mechanisms such as: the TTC's 2014 operating budget surplus, net property sales and/or potential deferral of projects.
5. Direct the CEO of the Toronto Transit Commission to report back by December 31, 2015 on a determination of costs, including claims, to complete the Toronto-York Spadina Subway Extension project by December 31, 2017.
6. Receive the confidential information as set in the Confidential Attachment.
7. The information as set out in the Confidential Attachment be released to the public upon execution of an agreement outlined in recommendation no. 2.

Background

It has been determined that a project opening date of December 31, 2016 is not achievable. Three separate third-party consultants have been retained with the objective of providing the TTC CEO and the project's Executive Task Force (ETF) with advice on measures to ascertain possible mitigations to recoup project schedule. The project options as presented in this report are consistent with the recommendations of those third-party consultants.

Project Options

In order to fully understand the earliest achievable date for opening a variety of options were identified. From this the four most viable options are described in this report.

Each option has different costs and delivery dates although they share some characteristics. Under any option it is important to note the direct relationship between costs and delivery dates. Specifically the longer the project takes to deliver the greater the cost of maintaining the project team at a cost of \$70M per year (Appendix B). Furthermore the longer the project takes to deliver the greater the risk of claim costs from the project contractors. A phased opening of the TYSSE was examined and is explained later in this report.

Three of the options (other than maintaining the status quo) involve a "commercial reset" (the "reset"). This process involves extensive negotiation with the project contractors with an objective to incentivize them to meet a revised project schedule date.

Two of the options involve a new third-party engineering firm taking over as a project manager through to project completion.

The remaining two options involve TTC remaining as project manager with one of those options including the addition of a third-party engineering firm to act as a “facilitator”.

None of the options detailed below address current claims. These will be addressed with a further report to the Board by the end of 2015.

Table 1 – Project Options

	New Third Party Project Manager		TTC remains Project Manager	
	OPTION (1)	OPTION (2)	OPTION (3)	OPTION (4)
	Sole source management	RFP for management	Small project change	1. No change – TTC Project Team
Earliest Opening Date	Q4 2017	Q2 2018	Q4 2018	Q2 2019
TTC ongoing project costs	\$70M	\$105M	\$140M	\$175M
External consultant	\$80M	\$75M	\$15M	\$10M
TOTAL KNOWN COSTS	\$150M	\$180M	\$155M	\$185M

1. Retain incentivized sole-source third-party project manager to deliver

This approach puts a third party Project Management consultant company directly in charge of leading the Project delivery to achieve the end of 2017 opening date. Significant addition of consultant staff will be deployed along with the existing project team. This approach assumes a sole source contract pending negotiations to minimize the procurement time.

The estimated cost of this option would include one additional year of existing Project Management cost of \$70M and the cost of the third-party project manager of approximately \$80M to project completion. It is anticipated that the cost of \$80M would include significant incentives conditional upon meeting schedule and budget milestones and ultimately the opening by the end of 2017.

Pros

- Allows full reset of TTC / contractor relationship
- Incentivizes third party to deliver to time and budget
- Understanding of cost claims by end of 2015
- Begin operations by end of 2017
- Sole source saves 6 months (\$35m)
- Lowest internal management cost due to earliest delivery date

- Lowest overall cost

Cons

- Requires sole source contract

2. Retain incentivized third-party project manager via RFP to deliver

Similar to Option one (1), but the process of retaining the third-party project manager will be done through an RFP. It is anticipated that a competitive bidding process would perhaps generate some savings out of the \$80M contract. However, it is also anticipated that the process would take approximately six (6) months and this increases the Project team cost by \$35M. This option would have an earliest opening date of mid 2018 (end 2017 plus additional 6 months delay). This delay would more than offset any potential RFP savings.

Pros

- Allows full reset of TTC / contractor relationship
- Incentivizes third party to deliver to time and budget
- Understanding of cost claims by mid-2016
- Potential cost savings through RFP process

Cons

- Adds 6 months to undertake RFP at a minimum additional cost of \$35M
- Begin operations by mid-2018 at earliest

3. TTC Project Management Continues. Retain Third Party Consultant / Facilitator

Similar to Option four (4), but this option retains a third party facilitator to develop the Project “reset” with various contractors. The facilitator would act as arbitrator in maintaining the adherence of each party to its obligations under the reset agreement. Further resources would be added to the TTCs project and claims management capability and would attempt to improve the relationship with contractors.

This option would see the opening date of the TYSSE be the end of 2018 (at the earliest). Given that the project currently has funds through the end of 2016 this would result in approximately \$140M total cost overrun plus \$15M in additional project and claims management support and a third party facilitator.

This option would allow the TTC an understanding of potential end settlement for costs and facilitate a reset in TTC / contractor relationship by the end of 2015.

Pros

- Some potential improvement to TTC / contractor relationships
- Understanding of cost claims by end of 2015

Cons

- Not enough change to fundamentally reset relationships
- Begin operations by end of 2018 at earliest
- Increased claim risk

4. TTC Project Team Continues – Status Quo

This approach maintains the TTC Project Team as the project delivery agent. The TTC project management team and its integrated consultants costs approximately \$70M/year.

The opening date of the TYSSE under this option would be Q2 2019 at the earliest. Given that the project currently has funds through the end of 2016 this would result in at least \$175M total cost overrun plus an additional allowance of \$10M to provide enhanced contract administration and claims activities.

Pros

- None

Cons

- Change not enough to deliver results
- Latest opening of all options
- Increased claim risk

Financial Impact

The approved TYSSE budget is \$2.634 billion. Table 2 below sets out the funding provided by each partner. The total cost is split between the Federal government, the Province of Ontario, the City of Toronto and York Region. The one-third municipal share is split between Toronto (59.96%) and York Region (40.04%). Under the current funding agreements, the municipalities are responsible for making up any cost overruns.

In 2006, the Province provided funding of \$670 million for TYSSE project costs, creating the “Move Ontario Trust” to hold and invest project funds. In 2007, the Province added funding of \$200 million to the Trust, for total principal of \$870 million. Including interest income, total Provincial and Trust funding was estimated at \$1.059 billion.

In 2007, the federal government pledged up to \$697-million towards eligible project costs, subsequently providing \$75 million up-front, and \$622 million by way of Building Canada Fund Contribution Agreement.

Table 2 - Project Funding

Funding Partner:	\$ Millions	% of funding
Federal	697	26.5%
Provincial/Move Ontario	1,059*	40.2%
Toronto	526	20.0%
York Region	352	13.3.0%
Total	2,634	100.0%

*includes anticipated investment income (of \$189M in the Move Ontario Trust)

Table 3 outlines the extent of funding and budget remaining for the project. Table 4 outlines total existing commitments and known future commitments through to December 31, 2016 only.

Table 3 – Total Project Funding

	\$ Millions
Total Budget	2,634
Total Spent	1,639
Remaining Budget	995

Table 4 – Project Remaining

Project Commitments	\$ Millions
Stations	377
Tunnels, communications, signals and project management	138
Wilson Yard	48
External Project Management	60
Vehicles	73
Other	9
Total Existing Commitments	705
Future Contracts	98
External Project Management	52
Property	45
Contract Change Allowance	95
Total known future Commitments	290
Total required to end of December 2016	995

The total current budget approved for this project is \$2.634 billion. A total of \$1.639 billion has been spent to date the end of 2014, leaving \$995 million to be spent. Of that unspent amount, contractual commitments on existing contracts of \$705 million are already in place and a further \$98 million in new contracts will be let. Internal project management costs and other costs such as insurance, project office leases, etc. amount to \$52 million to the end of 2016. Property costs of \$45 million will also be incurred. That would leave a \$95 million allowance for contract changes. Those changes will continue to be very carefully scrutinized and the possibility exists that not all of this will be required and may help defray other costs on this project. It should be noted that there is no project contingency left in the existing budget to get this project beyond 2016.

Depending on the option selected to complete this project, between \$150-\$185 million will be needed for the commercial reset and to complete the remaining work. The recommended option requires the City of Toronto to fund its \$90M share and that can be met through a number of mechanisms such as: the TTC's 2014 operating budget surplus, net property sales and/or potential deferral of projects. As noted elsewhere in this report, staff will report out by the end of the year on expected claims payout costs.

Accessibility Matters

All stations on the TYSSE have extensive facilities (such as elevators, escalators, tactile markings, etc.) that comply with AODA. Furthermore the service the TYSSE provides will improve access to jobs and opportunities for a large number of Torontonians and any delay to the start of service delays access to these opportunities.

Decision History

Since 2001, Toronto City Council and the TTC board have been kept apprised, and approvals sought and granted, on various matters related to this project as outlined in Appendix C. Furthermore the TTC Board has received updates from TTC staff as the project managers. In May 2007 Toronto City Council and York Region established an Executive Task Force (ETF), which meets monthly, whose responsibilities are described under governance.

Issue Background

(a) Project Scope Evolution

Planning for the Toronto-York Spadina Subway Extension began in the 1990s. In 2000, the Toronto Transit Commission completed and tabled its Rapid Transit Expansion Plan, which planned an extension of the Yonge-University-Spadina subway from its current terminus at Downsview Station to a new terminal station to be located at one of the following locations:

- York University
- Steeles Avenue West
- Continuing to Steeles Avenue and routing eastward to a Yonge line station
- A Vaughan Station north of Steeles

The exact routing, station locations, schedule, scope and budget were roughly defined.

In 2003, the City of Toronto and the TTC began preliminary work on a subway extension to Steeles West, although no funding was committed.

In 2004-2005, funding was made available for the TTC and City to begin work on an Environmental Assessment.

In 2007 and 2008 the final Provincial and Federal Environmental assessments were completed defining a subway to run to Vaughn Metropolitan Centre.

(b) Governance

In May 2007, Toronto City Council approved the TYSSE Project Delivery Structure, including:

- TTC acting as TYSSE Project Manager with the following responsibilities:

- Report to the TTC Board on procurement awards, change approvals and status updates;
 - Report to the ETF as below;
 - Provide general project management;
 - Define the Project scope;
 - Recommend delivery options/strategy;
 - Implement the Project;
 - Award contracts and provide contract administration;
 - Prepare and provide updates on Project budgets;
 - Provide updates on status of the Project.
- The establishment of a joint City/York Region "Executive Task Force" (ETF) comprised of three senior staff members (co-chaired by the Toronto City Manager and York Region CAO) from each municipality, to perform oversight to ensure project delivery in accordance with Council directions. The ETF is responsible for:
 - General oversight of the Project;
 - Budget recommendations, management and financial controls;
 - Progress reporting;
 - Approval of the Project delivery strategy.
 - In order to assist the ETF, the ETF retained an Independent Auditor. The Independent Auditor was jointly appointed by the City of Toronto's Auditor General, York Region's Manager of Audit Services and the TTC's Chief Auditor. The parties agreed that for this Project, the Independent Auditor would be the TTC Audit Department.
 - ETF also retained the services of an Independent Engineer in order to assist the ETF in carrying out its responsibilities.

In June 2008, as part of a report to the TTC Board, the TYSSE governance model (as detailed above)

[http://www.ttc.ca/About the TTC/Commission reports and information/Commission meetings/2008/Jun 18 2008/Other/Toronto York Spadina.jsp](http://www.ttc.ca/About%20the%20TTC/Commission%20reports%20and%20information/Commission%20meetings/2008/Jun%2018%202008/Other/Toronto%20York%20Spadina.jsp) was adopted and is attached as Appendix D.

As part of the overall governance model, the TTC's procurement and contract administration policies and procedures continue to govern. The Project delivery model, Project Schedule and adjustments, major contract awards and contract changes have been, and continue to be, approved by the TTC and the Board in accordance with TTC policies.

(c) Project Challenges

In October, 2012 the TTC Board endorsed a report relating to a change in the date of completion of the TYSSE from the end of 2015 to the end of 2016. This report is critical

to the understanding of the continuing issues on the TYSSE project and is appended as Appendix E but a section is provided below. Furthermore, contractor performance, as outlined in this report, has continued to have an effect upon the completion date.

Funding Approvals

The time to obtain funding approvals and start-up for the project took longer than expected (approximately one year from funding announcement). This resulted in an implementation schedule that did not include sufficient float to compensate for unforeseen conditions or contractor delays.

Station Design

The time and effort taken to reach agreement with the stakeholders on the various station designs took significantly longer than originally foreseen. There were a number of concept and design changes that were made to address the requirements of various regulatory stakeholders, which depending on the station, included the TTC, Parc Downsview Park, City of Toronto, York University, GO Transit, Ministry of Transportation Ontario, Region of York and City of Vaughan. This extended the design period. Some workarounds and reductions in contract tendering and award periods mitigated some of these impacts. The impacts to the design schedules varied from three to seven months.

Utilities

The work required to relocate utilities was more complex and more extensive in scope than had been scheduled. This was further compounded by slow response from non-municipal controlled utilities

TYSSE was able to largely work around some of the extended utility work but nevertheless the project suffered a number of delays in relocating utilities such as Toronto Hydro, PowerStream, and various water mains and sewers.

Overall the impacts were in the range of two to 11 months, although workarounds were found for most of those of longer duration.

Fatal Accident at York University Station Site

The sub-contractor to the general contractor of the Highway 407 Station and the Northern Tunnels, including York University, suffered a tragic fatality at the York University Station site on October 11, 2011.

The Ministry of Labour initially closed all of the sites where this contractor was working, reopening all except the York University Station site within a week. The York University Station site in the immediate locale of the accident was kept closed until the Ministry completed their investigation in February 2012. This was a schedule critical item that impacted the schedule by approximately four months.

Current Status

The project, to date, is approximately 70 per cent complete, with detailed tunnel, station and trackwork completion as set out below in Table 4. Systems installation will begin upon completion of construction.

Table 5 – Station and Trackwork completion

Stations	% Complete
Sheppard West & Southern Twin Tunnels	89
Finch West	78
York University	35
Pioneer Village	72
Hwy 407 & Northern Twin Tunnels	82
Vaughan Metropolitan Centre	73
Trackwork	70

Since October 2012 when the TTC board approved the change to the completion schedule date to the end 2016, concerns continued to be raised, and attempts made to address further schedule impacts.

Issues Reporting

The TTC Board has been briefed by staff on numerous occasions about the status of the TYSSE and concerns around contractor(s) performance. In addition, the CEO Report is updated monthly that reflect project status for the board and public. The Executive Task Force have met monthly. The “Move Ontario Trust” has also met monthly to consider project funding requests and other issues. A Federal “Management Committee” established under the Federal contribution agreement for the project has met 4 times a year to receive project updates.

A special meeting of the TTC Board was held on December 6, 2013 to advise on issues arising from the performance of contractor(s). Staff were directed to report back on progress and possible resolutions. At its meeting of March 26, 2014, the TTC Board considered a confidential report on this matter, adopting the staff recommendations.

The Executive Task Force were also apprised of issues relating to contractor(s). As stewards of funding and costs, the ETF requested that project staff continue work to resolve the issues raised and requested the project manager develop concrete strategies for maintaining budget and schedule.

Skilled Trades and Overtime Premiums

Some contractors have cited a lack of skilled trade resources in the GTA as one reason for the difficulty they are having in not maintaining schedule.

While there is a shortage of some skilled trade resources in the GTA affecting progress on many large construction projects in the region, there is also an unwillingness by some contractors and their subs to work premium (overtime) hours on the TYSSE project.

The project team has attempted to negotiate some incentives to work overtime and weekends, but contractors are demanding immediate resolution to larger issues before committing to any schedule acceleration.

Contractor(s) Relationships and Performance

As concerns about schedule slippage and the relationships and performance of some contractors became more pressing, the TTC CEO became involved in direct discussions with some contractors in an attempt to mitigate schedule and cost impacts. These discussions intensified by the middle of 2013 and continue to date.

The CEO of the TTC has met on 27 separate occasions with his contractor counterparts to try and resolve issues around premiums, incentives, and schedule adherence.

Relationships between some contractors' project managers and some TTC project managers have been, admittedly, strained. All parties continue work to resolve these issues, re-assigning staff or moving staff as appropriate, to ensure ongoing, positive working relationships.

Independent Schedule Reviews

In 2014 ongoing concerns that an end of 2016 completion date was not possible continued to grow. The TTC conducted three separate reviews relating to project schedule completion to ascertain possible mitigations to recoup schedule.

Parsons Brinkerhoff

In the summer of 2014, project staff undertook a comprehensive schedule review with the assistance of an independent consultant firm Parsons Brinkerhoff. The review evaluated current schedule progress and related project risks. It recommended a re-baseline of the Project schedule, development of detailed construction schedules for each station in collaboration with each contractor, monthly contractor productivity monitoring and review of systems integration. It concluded that based on the current progress, i.e. no changes to project delivery, project management or contractor incentives, the line would open in early 2019 with a high degree of confidence, and by mid-2018 with a low degree of confidence.

This analysis and conclusions were presented firstly to the TTC CEO and then to the ETF in July, 2014. These conclusions gave rise to the pursuit of additional work in order to assess viable delivery options.

APTA Peer Review

Subsequently the TTC CEO requested that the American Public Transit Association (APTA) provide a team of experts from various North American transit agencies to conduct a Peer Review of the project schedule to fully understand options that would allow delivery by the end of 2017. The findings outlined a variety of concerns including anomalies in the correlation of the contractor's and project schedules, delays in resolution of contract changes and needs to increase scheduling staff. Its analysis was presented to the ETF on November 20, 2014 and concluded that a project opening date of the end of 2017 could be achieved if a project "reset" was implemented. The "reset" involved contractor partnering, resolution of outstanding contract changes / claims, 'incentivizing' contractor schedule acceleration and increased project scheduling / controls.

APTA was also asked to look at a phased opening of the line. They concluded that, at best, the TTC could achieve an early opening to York University Station by only two to three months, while delaying the opening of the rest of the line by a minimum of six months, with additional costs in excess of \$12 million.

Bechtel Review

The TTC CEO then retained Bechtel, a large multi-national construction company with significant experience in large project management and delivery, to review the present project status. This included APTA's findings and to provide their view on how the TTC could deliver TYSSE at the earliest schedule completion date with minimum additional costs. Their report was presented to the TTC and ETF in early February 2015. That report concurred with APTA's findings of a "reset", and further added that a change in project management would be required, to deliver an end of 2017 completion date. The report outlined implementation of a new project schedule and contractor incentives, resolve of adversarial contractor relationships, and improvement of processes for cost / contract / claims resolution.

Both APTA and Bechtel agree that the TTC should:

1. Incentivize contractors and obtain agreements for an end of 2017 opening date.
2. Develop a process / timeline to resolve outstanding claims.
3. Establish a collaborative environment to develop a common goal and improve project relationships

(a) Claims Impact

Contractor claims on large projects are not unique to the TTC. They are common in the industry and all big projects must continually work to resolve and settle claims through the life of a project, and beyond.

To date, the TTC has received a significant number of claims from contractors, the values of which will change throughout the life of a contract. The TTC contract allows contractors to submit and adjust claims – up or down – until 60 days after the date of "Contract Substantial Completion" and, therefore, the value of various claims fluctuates throughout the life of the contract before it is set.

Contractors are required to provide a detailed claims analysis to the TTC describing:

- Event, action, inaction by the TTC that caused a claim to arise
- Entitlement under the contract for additional time or cost, or both
- Analysis of the cost or time resulting from TTC action or inaction

The TTC believes it will require until the end of 2015 to review the claims to a reasonable degree and provide an estimate of their expected value. Staff will provide the Board with an updated report at that time, indicating the project's expected final costs based on this analysis.

The project will undertake this task with the assistance of an external claims consultant.

Justification

The funding partners and the TTC continue to agree: the TYSSE will benefit the region, carrying 30 million riders in its first year and, therefore, have a positive impact on congestion, greenhouse gas emissions and development.

There is also agreement on the need to deliver this project as quickly as possible, for the least amount of additional costs, and with the highest degree of confidence. It is therefore recommended that the TTC board and Toronto City Council approve Option One in this report.

Contact

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- Attachments - Appendix A - Confidential Attachment 1
- Appendix B - Estimated Project Management Costs – 2017
- Appendix C - Decision History
- Appendix D - TYSSE Executive Task Force
- Appendix E – October 24, 2012 TTC Board Report

APPENDIX B

Estimated Project Management Costs - 2017

Activity	Millions	Resources
Project Management	\$19.80	106 Staff - Consultant, Spadina Link, TTC
Controls	\$6.60	27 Staff - Consultant, Stantec
Construction Management	\$14.80	39 Staff - Consultant, Morrison Hershfield
Other Consultants	\$0.80	Independent Engineer, Community Outreach, Statutory Photographer
Design	\$7.10	Design Consultant support during construction - Aecom, TSGA, Arup, HMM
Property	\$2.40	Extended leases etc.
Municipalities	\$1.80	CoT and York Region Costs
Permits and Approvals	\$0.45	Extended permits and approvals
Insurance	\$5.80	
Systems - External	\$0.45	Corrosion Engineering, and Fire Ventilation Consultant
Geotechnical	\$1.35	Geotechnical support during construction - Consultant, Golder
Offices	\$4.00	5160 Yonge and 1120 Finch
Close-out	\$5.20	124 Staff - Various Consultants and TTC
Total	\$70.55	

APPENDIX C

Decision History

At its meeting of August 29, 2001, the TTC Board received the RTEP report which planned for an extension of the TTC Spadina Subway.

https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2001/Aug_29_2001/Other/Rapid_Transit_Expans.pdf

At its meeting of April 16, 17 and 18, 2002, City Council endorsed an extension of the Spadina Subway.

<http://www.toronto.ca/legdocs/2002/agendas/council/cc020416/plt4rpt/cl003.pdf>

At its meeting of June 16, 2004, the TTC Board approved the terms of reference for the Spadina Subway Extension Environmental Assessment.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2004/Jun_16_2004/Other/Spadina_Subway_Exten.jsp

At its meeting of February 1, 2 and 3, 2005, City Council re-affirmed its position that the Spadina Subway Extension was its top priority for subway expansion.

<http://www.toronto.ca/legdocs/2005/minutes/council/cc050201.pdf>

At its meeting of September 25, 26, 27, 2006, Council adopted the recommendations of Policy and Finance Committee Report No 7, Clause 35.

<http://www.toronto.ca/legdocs/2006/agendas/council/cc060925/pof7rpt/cl035.pdf>

At its meeting of May 23, 24, 25, 2007 (EX 8.5),

<http://www.toronto.ca/legdocs/mmis/2007/ex/reports/2007-04-30-ex08-cr.pdf>

Council directed that "the capital contribution from the City not exceed its share (59.96%) of the one-third funding that would be attributable to the municipal sector and that a request be made to the Provincial and Federal Governments to provide a full two-thirds funding of actual Project capital costs.

At this meeting, Council also approved a project delivery structure that included TTC as Project Manager, and the principles of an Operating Memorandum of Understanding (MOU) between Toronto, TTC, and York Region.

In this report, Council approved a municipal cost sharing of 59.96 % City of Toronto/ 40.04 % Regional Municipality of York ("York Region"), based on a recognition of municipal boundaries and responsibilities, and of shared system infrastructure, to the benefit of both parties.

This cost sharing arrangement is set out in a Capital Cost Allocation Memorandum of Understanding between the City and York Region.

At its meeting of September 12, 2007 (Report3), the Board received a report outlining the impact of delaying the implementation of the Project.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2007/Sept_12_2007/Other/Toronto-York_Spadina.pdf

At its meeting of March 26, 2008 (Report 8(c)), the Board approved the Project Delivery Strategy.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2008/March_26_2008/Other/Toronto_York_Spadina.jsp

At its meeting of June 18, 2008 (Report 8(a)), the Board approved the principles as between the City, York Region and TTC relating to operations and operational costs of the TYSSE Project

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2008/Jun_18_2008/Other/Toronto_York_Spadina.jsp

Finally, on June 23, 2008 (EX21.8), Council authorized senior City and TTC staff <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2008.EX21.8> to "negotiate on behalf of the City, a Building Canada Fund Contribution Agreement relating to the Toronto-York Spadina Subway Extension with the Federal Government of Canada and the Regional Municipality of York ("York Region")".

This agreement was signed in September 2008, by the then Mayor of the City of Toronto, and Chair of York Region, and included a project completion date of March 31, 2016,

At its meeting of January 21, 2009 (Supplementary Agenda, Report #13) the Board received a report outlining the use of a design-bid-build as the approved Project Delivery Strategy for TYSSE.

At its meeting of October 24, 2012 (Supplementary Agenda, Report #13), the Board approved the extension of the TYSSE Project Completion date from December 2015 to the fall of 2016.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2012/October_24/Supplementary_Reports/TYSSE_Schedule_Statu.pdf

At its special meeting of December 6, 2013, the Board received a confidential update on the TYSSE Project.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2013/December_6/Reports/TYSSE-Contract_A31-1.pdf

At its meeting of March 26, 2014 (Report 1(a) with Confidential Attachment), the Board received confidential information relating to the TYSSE Project

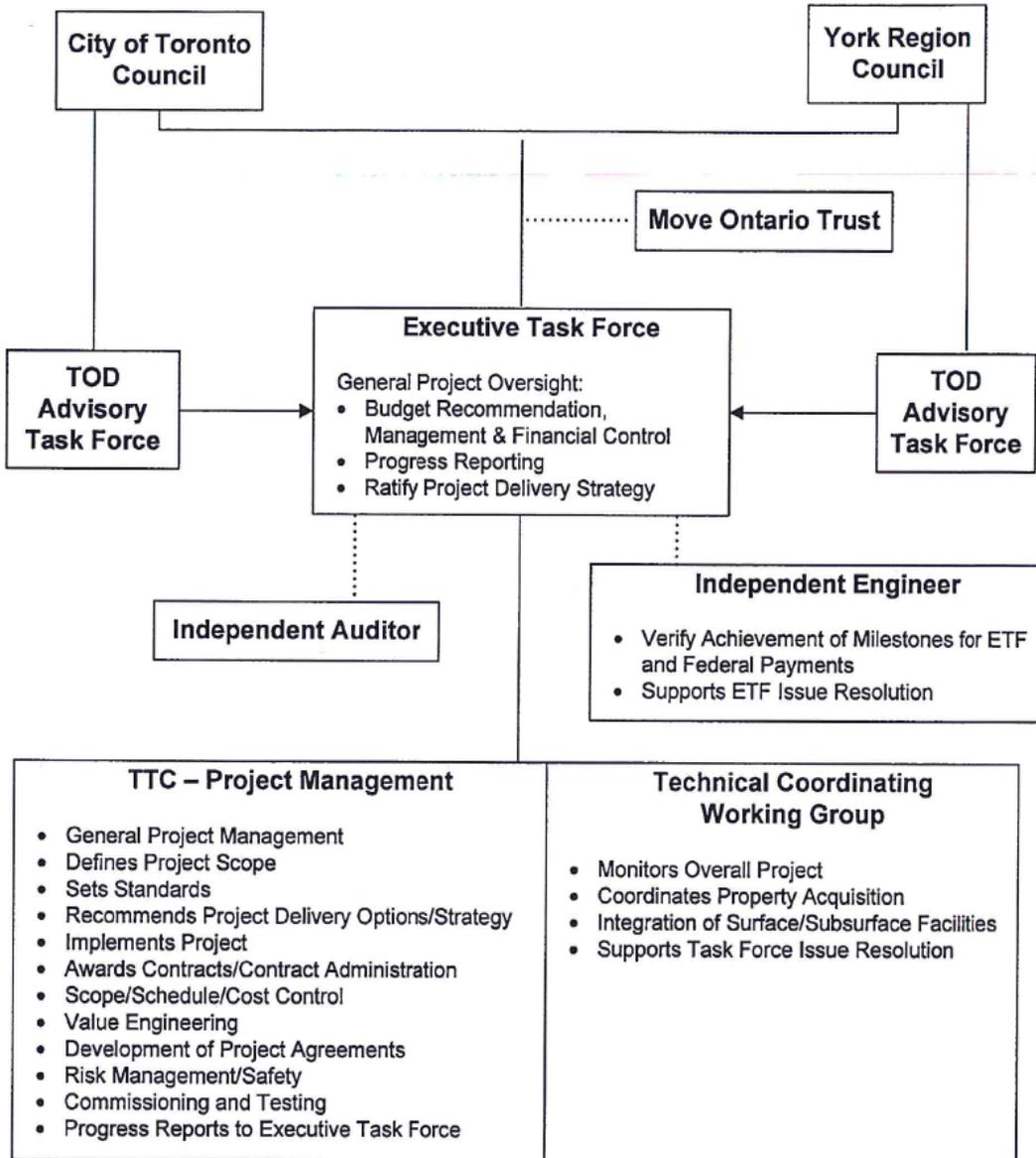
http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2014/March_26/Reports/TYSSE_Pioneer_Village_Steeles_West_Station_Contract_A31_1.pdf

At its meeting of January 21, 2015, the Board received a report outlining large litigation files relating to the TTC.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/January_21/Reports/Large_Litigation_Matters.pdf

APPENDIX D

**TORONTO-YORK SPADINA SUBWAY EXTENSION
EXECUTIVE TASK FORCE**



Note: As part of the overall governance model, the TTC’s procurement and contract administration policies and procedures continue to govern. The Project delivery model, Project Schedule and adjustments, major contract awards and contract changes have been approved by the TTC and the Board in accordance with TTC policies.