

Submitted by Councillor Pasternak

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## TORONTO TRANSIT COMMISSION



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February 5, 2016

Councillor James Pasternak  
City of Toronto  
Toronto City Hall  
100 Queen Street West, Suite A22  
Toronto, Ontario  
M5H 2N2

Dear Councillor Pasternak:

This letter is in response to the enquiry which you originally submitted to the TTC Board at its meeting of July 23, 2014. I apologize for the delay in responding. In your enquiry, you asked five questions pertaining to a possible westerly extension of Line 4 (Sheppard Subway) between Sheppard-Yonge Station and Downsview Station. I will recap those questions here, and follow each with the corresponding answer.

1. Has an environmental assessment ever been conducted for this initiative, and could it be used in today's legislative environment?

No environmental assessment has been undertaken pertaining to a westerly extension of Line 4 (Sheppard Subway) as far west as Downsview Station.

2. To what extent has digging/boring been completed westbound along Sheppard Avenue and eastbound from Downsview Station, and does such tunneling also house tracks?

Like all subways, Line 4 has "tail" tracks at either end. At the westerly end, in addition to the tail track, there is also additional track for the storage of subway trains overnight and for operational contingency purposes. Together, these tail and storage tracks extend west from the current westerly terminal of the line -- Sheppard-Yonge Station -- in a tunnel which extends 756 metres west of the west end of Sheppard-Yonge Station. This tail and storage track is required for operational reasons including storing disabled trains, providing a safety buffer for when a subway train overshoots the station platform, storing standby or spare trains used to respond to service disruptions, and turning back trains when they reach the end of the line. Tail tracks are a necessary part of subway infrastructure, and the storage tracks are an integral part of the system's planned train accommodations. Therefore, if Line 4 were extended westward to Downsview Station, the existing 756 metres of tail and storage track would have to be replaced with an equivalent length of tunnel and track west of the new terminal station or a connection to, and an offsetting increase in storage capacity



1900 Yonge Street, Toronto, Canada M4S 1Z2 Telephone: 416-393-4000 Web Site: [www.ttc.ca](http://www.ttc.ca)



at Wilson Yard. Therefore, the existence of the current tail and storage track would not constitute a significant net saving if the subway were to be extended.

3. What would be the estimated costs and timeline for an environmental assessment for a subway system to be constructed between these two points?

It is estimated that undertaking an environmental assessment for a westerly extension of Line 4, between Sheppard-Yonge and Downsview Stations, would cost approximately \$7 to 10 million. Such an undertaking would take two-to-three years to complete given the existing commitments at both the City and the TTC, and taking into account the time required to confirm funding, assemble a project team, select a consultant, and complete the required technical work and consultation.

4. What is the estimated cost of such a subway construction project?

It is estimated that the construction of a westerly extension of Line 4 would cost in the range of \$2.0 billion (\$2015), including the required four trains, the corresponding storage and maintenance requirements, and automated train operation capability. This estimate does not include modifications, strengthening, or building a new Sheppard West bridge over the West Don River. The design, engineering, and construction of such a bridge would be a significant undertaking and could result in an additional substantial cost (see item #5, below).

5. What would be the best approach to handle the challenge of the bridge that currently runs above the Don River West Branch and Earl Bales Park, and could a subway be built across it?

The Sheppard Avenue West bridge over the West Don River and Earl Bales Park currently accommodates four traffic lanes, two bicycle lanes, and sidewalks on either side. Constructing a subway on this bridge would require displacement of two traffic lanes, both bicycle lanes, and one of the two sidewalks, thus leaving only two lanes of traffic on the bridge. Given that Sheppard Avenue West is a major east-west arterial road, it is unlikely that a narrowing of the bridge to two traffic lanes would be acceptable. A preliminary investigation regarding the bridge's structural capacity has concluded that, in order to safely support the weight and loading of a subway facility, the bridge would have to undergo major strengthening and, possibly, widening. It is also possible that a consolidated bridge design, to accommodate both a subway and the existing roadway and public realm, might require a raising-up of the elevation of the roadway itself, both at the bridge and for a distance on either side of it. A more-practical option may be to construct a new separate bridge for the subway beside the existing roadway bridge.

You may also be interested to know that the City of Toronto is in the process of reviewing the Official Plan's transportation policies under its "Feeling Congested?" initiative. A preliminary comparative analysis of the performance of 25 candidate rapid transit projects has been undertaken, based on eight evaluation criteria and over 20 associated measures. The preliminary analysis places the westerly extension of the Sheppard Subway to Downsview Station among the bottom 25 per cent of the projects included in the analysis. The City is in the process of refining the evaluation framework, and is also incorporating the Province's Regional



Express Rail (RER) initiative and SmartTrack. You can get additional information on this work from the City of Toronto Planning Department.

I trust that this is the information you were seeking. Thank you again for your enquiry, and for your ongoing support of public transit.

Sincerely,



Andy Byford  
Chief Executive Officer

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Copy to: TTC Board Members  
Jennifer Keesmaat, Chief Planner and Executive Director, City of Toronto Planning

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