

Executive Summary

Introduction

1. The Finch West LRT, scheduled for opening in 2021, will connect the new Finch West subway station on the Toronto-York Spadina subway extension at Keele Street to Humber College. Possible westward extensions to the LRT in support of proposed development and expansion at Woodbine Racetrack, with any route terminating at Pearson Airport, were studied in 2010. Option A from this study (a westerly alignment via American Drive) was tested as part of the Metrolinx Transportation Study of the Pearson Airport Area recently completed and forms the basis of the evaluation presented here. Option D, an easterly alignment via Highway 27 and providing opportunity for connection at a future GO Transit rail station, is the option favoured by the City of Toronto.

Project cost and ridership

2. The project cost is estimated at \$551m, including the 14 vehicles required to operate the route. Long term renewals, including fleet replacement, is estimated at \$268m. Annual operating costs are \$13m.
3. Ridership forecasting has used the forecasting model employed by Metrolinx and the Province with standard assumptions around transit and highway network development and land use changes. The resulting 2031 forecast shows some 3,600 riders on the extension in the morning peak period, or some 1,600 in the peak hour. Line flow peaks at around 900/hour, below the typical demand considered appropriate for LRT. Transfer from car is accounts for 22% of the LRT demand.

Business Case framework

4. The Business Case framework follows the emerging Metrolinx 4-case framework, comprising:
 - Strategic Case – alignment with planning policy and objectives
 - Economic Case – the costs and benefits of the project
 - Financial Case – how affordable is the project
 - Deliverability Case – how will it be delivered
5. The focus of the evaluation presented here is the Economic Case. This has employed methodologies and assumptions consistent with Metrolinx guidance and practice, using a mix of quantitative and qualitative measures, with monetised costs and benefits considered for a 60-year evaluation period from the assumed 2021 opening.

Business Case evaluation

6. The resulting evaluation is presented in the table below. Monetised transportation user benefits total \$546m, with additional transit user benefits expected through the improved reliability and quality of LRT compared to bus based options. Capital, renewal and operating costs, offset by additional transit revenue, total some \$751m. Combined with other benefits related to health, a Benefit:Cost ratio of 0.75:1 is achieved. As the additional transit revenue is modest compared to operating costs, the LRT revenue to operating cost ratio is 0.16:1.

7. Environmental benefits are modest, with some reduction in emissions through reduced auto use, and minor adverse impacts possible at implementation. Economic impacts will arise from project implementation and long term operation, due to the direct fiscal stimulus as well as the long term operation improving local and regional economic efficiency. There will be some positive influence on land use shaping as the LRT encourages and supports development, along with health benefits from reduced auto use.

Account/Criteria	Assessment	
Transportation User		
Transit User Benefit (\$2012 PV)	\$392m	
Auto User Benefit (\$2012 PV)	0	
Auto Operating Cost Savings (\$2012 PV)	\$141m	
Auto Safety Benefits (\$2012 PV)	\$13m	
Qualitative Transit User Benefits	✓✓	
Financial		
Capital Costs (\$2012 PV)	\$443m	
Renewal Costs (\$2012 PV)	\$76m	
Operating Cost (\$2012 PV)	\$277m	
Incremental Revenue (\$2012 PV)	-\$44m	
Benefit:Cost ratio	0.75 : 1	
Incremental Revenue:Operating Cost Ratio	0.16 : 1	
Environmental		
GHG Emissions	-18,100 tonnes \$0.4m	
CAC Emissions	CO: -370 tonnes, NOx -28 tonnes, SOx – 1.3 tonnes	
Qualitative Environmental Impacts	x	
Economic Development		
Economic Impacts	During Construction	Long Term p.a.
<i>Employment (person years)</i>	3,000	123
<i>Wages (\$2012m)</i>	110	5
<i>GDP (\$2012m)</i>	300	12
Social and Community		
Land Use Shaping	✓	
Health (\$2012 PV)	\$21m	

Sensitivity analysis

8. The forecasting work focuses on employment based trip generating land uses and does not properly capture those trips arising from leisure based land use, such as Woodbine Racetrack. On that basis, sensitivity analysis has been undertaken to understand how inclusion of Woodbine visitors would affect the case for the LRT extension. This analysis focuses on the Benefit:Cost ratio (BCR), using reasonable assumptions derived from visitor data analysis and ridership forecasting model outputs. The inclusion of Woodbine visitors increases the BCR to 0.88:1, with costs

dropping modestly given the additional revenue generated and benefits increasing. The proposed development and expansion at Woodbine would improve the BCR further to 1.00:1.

\$m in 2012 Present Values and Prices	Core Evaluation	With Current Woodbine visitors	With Proposed Woodbine visitors
TOTAL COSTS (PVC)	732	721	711
TOTAL BENEFITS (PVB)	548	636	714
Net Benefit (NPV)	-183	-85	3
BENEFIT:COST RATIO (BCR)	0.75:1	0.88:1	1.00:1

- Air travellers at Pearson Airport using transit to access the airport are also excluded from the ridership model (given they currently form a very low proportion). Given the modest number of air travellers originating from the Finch corridor and the low transit share, even with LRT, such travellers are not expected to have a material impact on the case for the LRT extension.

Next Steps

- The Business Case analysis does indicate a *reasonable* case for an extension. Further development work should focus on:
 - Clarification of current operations and proposed expansion at Woodbine, with detailed analysis of visitor travel characteristics
 - Review of the proposed LRT extension to confirm route alignment, stop locations and service levels
 - Review of the bus network to optimise bus network integration
 - Consideration of enhanced bus service in the corridor as a lower cost alternative
 - The case for an interchange with the Kitchener GO line with a new station between Malton and Etobicoke North and the interface with RER proposals
 - Consideration of fare integration across municipal (Toronto and Mississauga) boundaries
 - Consider the impact on the case for a Finch LRT extension to Pearson Airport given the long term option of extending Eglinton Crosstown and/or SmartTrack to Pearson Airport
 - Review of the ridership modelling and assumptions to ensure robust forecasting, including transit access to Pearson for air travellers