



**Eglinton-Scarborough
Crosstown LRT
February 2012**

Purpose

1. To provide information on the current plan for the Eglinton-Scarborough Crosstown LRT (Crosstown), as outlined in the Memorandum of Understanding (MoU) with the Mayor
2. Restate the principles that guided our earlier negotiations and continue to reflect the provincial interest and the Metrolinx mandate

Principles

1. Sound Regional Transit Planning:

Any projects to be paid for by the Province must achieve sound transportation objectives for the City and the region, and reflect the goals and principles of our regional transportation plan, The Big Move

2. Budget and Cost:

The maximum budget for the provincial contribution to the plan remains fixed at the original \$8.4B (2010\$). Any plan must be cost-effective and involve no cost increases to the Province over the original budget, in terms of the total provincial investment, the cash flow required in each year and the Province's ability to amortize its investment over the life of the assets. Any additional costs must be paid by the City or other partners

3. Penalties:

The Province is not prepared to pay any penalties related to contractual commitments or the loss of investments that result from changes sought by the City. These costs must be borne by the City just as the penalty costs and losses incurred by virtue of the MoU remain the City's responsibility

Principles

4. Cost of Delay:

Delays in the delivery of results to residents are not acceptable. In the event that further delays occur in the delivery of projects, any delay costs must be assumed by the City

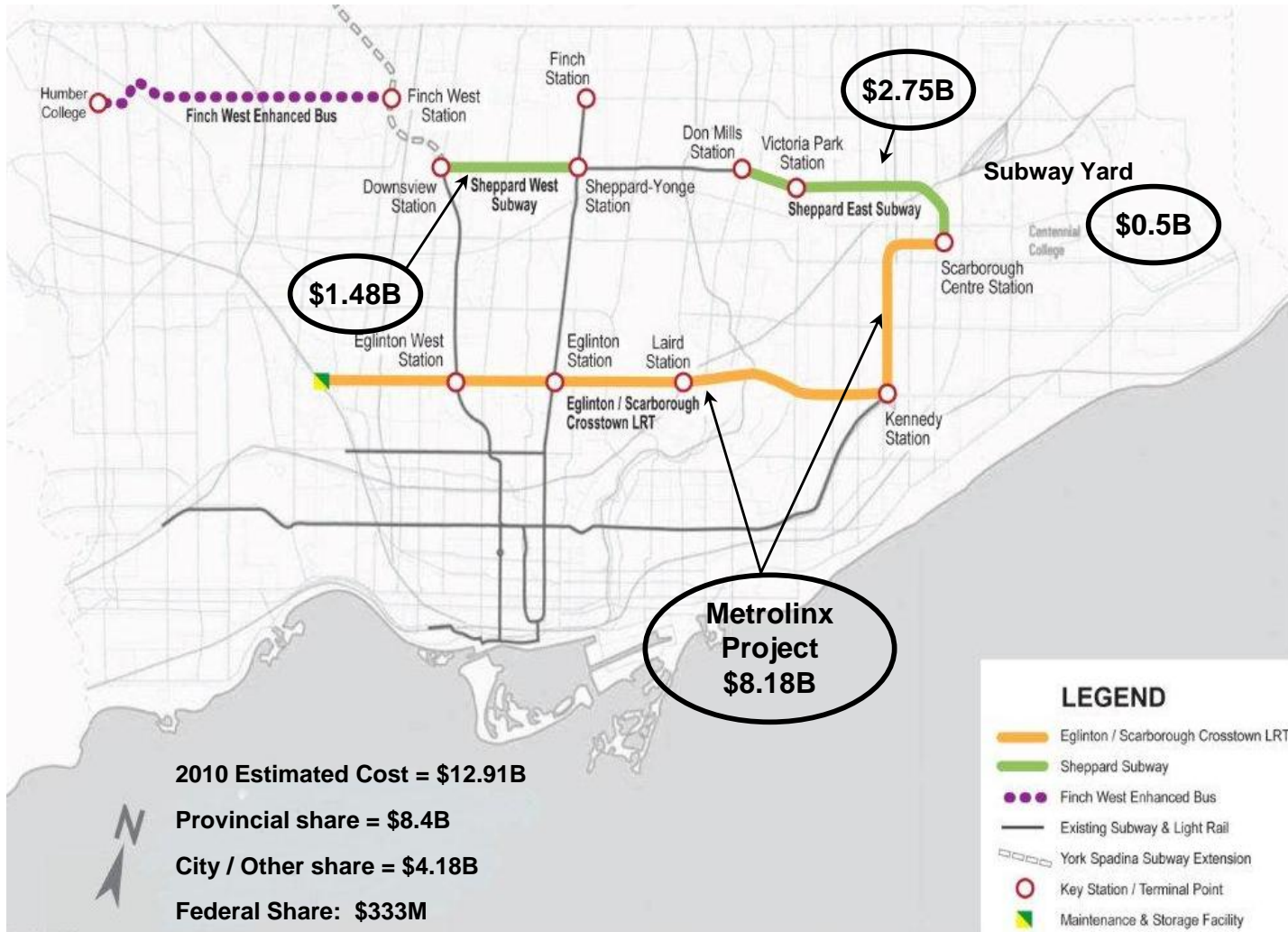
5. Traffic:

Any plan should minimize adverse impacts on traffic to the extent reasonably possible

Status

- Metrolinx/TTC, with TTC acting as our agent, making good progress on western/central section of the project – the section consistent with both versions of the plan:
 - Tunnel boring machines being manufactured
 - Land acquisition underway
 - Launch shaft under construction
 - Tunnel liners being manufactured
 - LRT vehicles nearing design completion
 - Detailed planning continuing
- Metrolinx/IO working with TTC to allow AFP procurement to begin, but we need certainty on the City's position on the eastern section
- Former MTO Minister Wynne and TTC Chair Stintz co-hosted series of public meetings on the current Crosstown plan:
 - April 26th – Eglinton/Yonge area
 - May 31st – Leaside
 - June 8th – Scarborough
 - June 21st – Allen Road area
 - June 30th – Mount Dennis area

Current Plan



Benefits of Current Crosstown Plan

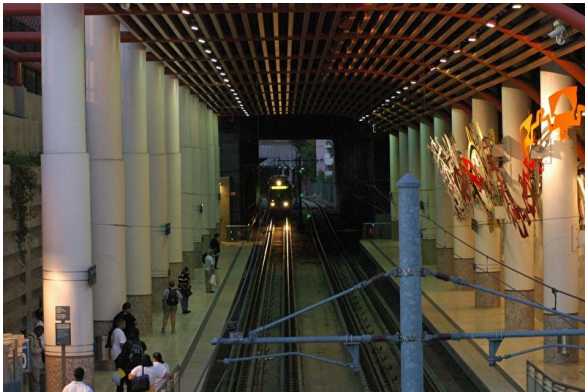
- Speed – average speeds of 30-32 kph reduce travel time between Kennedy and Black Creek by 25%
- Reliability – completely separated from traffic, including at intersections
- Convenience – no transfer at Kennedy between the Scarborough section and the Eglinton section
- Ridership – forecasted to increase by 30%, and peak hour travel to increase from 5,400 passengers to 12,000 passengers
- System – high speed east-west connection that complements the Bloor-Danforth line
- Traffic impacts – no left-turn restrictions and longer traffic signal cycles at intersections
- Capacity – Due to combination of factors, fully grade separated alignment doubles the capacity of the project

Light Rail Vehicles

- In May 2010, Metrolinx announced a \$770M purchase of 182 light rail vehicles from Bombardier
 - Vehicles are designed to operate in a variety of scenarios, at-grade, in a tunnel and on an elevated guideway
 - Vehicles are to be manufactured in Thunder Bay
 - About \$76M has been expended to date
- The current plan reduced the quantity of light rail vehicles required, from 182 to approximately 135, by eliminating the Sheppard LRT project and deferring the Finch West LRT
- Vehicle design is suitable for use in other LRT applications around the region and province
- Metrolinx remains confident that LRVs are a good choice given their flexibility to operate at surface, in tunnels and on elevated guideways, with a low floor and high capacity

LRVs in Tunnels

- 11 km of the original 19 km project was to operate in a tunnel, plus at least two intersections in the eastern section
- Revised plan calls for about 19 km of a 26 km project to operate in a tunnel
- Alignment across Don Valley and in Black Creek area is still under review
- Other examples of LRVs in tunnels in Los Angeles, Seattle and San Francisco:



LRV Low Floor Design

- LRV vehicle has low floor design to provide easy access, particularly for passengers with mobility concerns
- Having a low floor provides flexibility for the vehicle to be used in a surface application, when the line is extended west towards Pearson airport or north and east further into Scarborough
 - LRVs would also be used for other projects in Toronto or other cities
- Cost of low floor design is a small component of overall vehicle contract and of the project

Vehicle Capacity

- LRT vehicles in three-car train-sets in a fully grade separated line provide the following capacities:

Frequency (Minutes)	Customer Capacity
3.0	9,780
2.5	11,736
2.0	14,670
1.75	16,766
1.5	19,560

- Light rail vehicles can accommodate ridership projections beyond year 2051
- For fully grade separated project, forecasted 2031 requirements are 12,000; 2051 requirements are 16,000
- Surface LRT in a median carries a maximum of 8,000 to 9,000

Results

- A higher cost project – what was about a \$6.5B project is now a \$8.2B project
- Means that limited provincial funding is available to other projects
 - First \$650M of any residual funding is committed to City's Sheppard subway project
 - Any further residual funding is available for mutually agreed projects
- Fewer stations on the Crosstown, since underground stations are more expensive than surface stations
- While the revised Crosstown project is higher cost, it does deliver greater benefits

Going Forward

- Metrolinx and the Province is seeking a single position from the City
- We remain committed to delivering transit, in partnership with the City, but clarity is required
- Metrolinx will consider City position in context of principles outlined earlier:
 - Sound regional transit planning
 - Budget and cost
 - Penalties
 - Cost of delay
 - Traffic

Additional Information

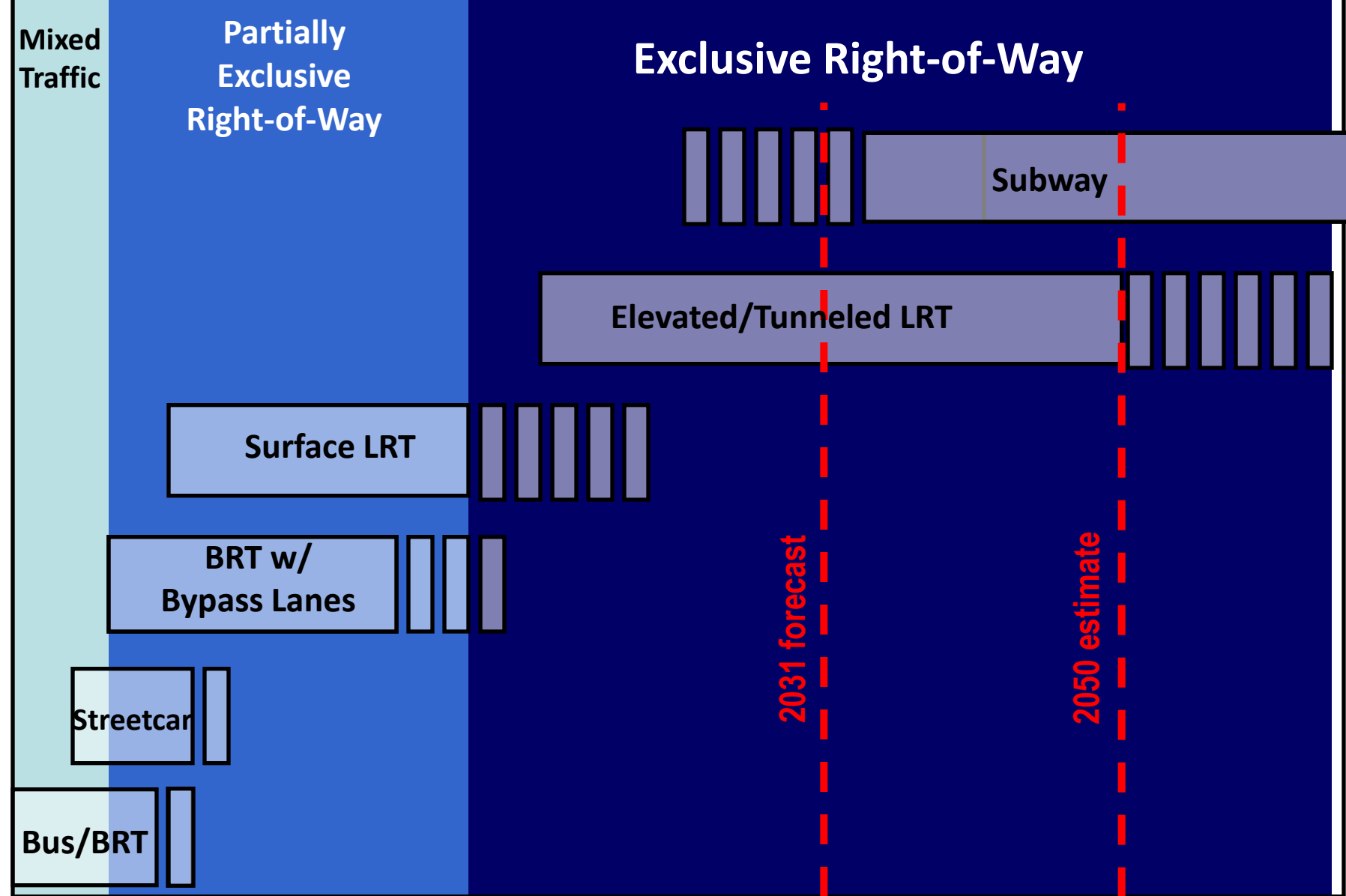
Current Plan

- \$8.4B (2010\$) provincial commitment to transit in Toronto
- Metrolinx responsible for Eglinton-Scarborough Crosstown, from Black Creek area to Scarborough Centre (McCowan)
 - Metrolinx owns and controls new regional transit spine
 - Crosstown cost estimated at \$8.2B (2010\$)
- City responsible for Sheppard subway easterly to Scarborough Civic Centre and westerly to Downsview
 - Sheppard subway delivered as City of Toronto project
 - Province contributes up to a maximum of \$650M once costs for Crosstown are finalized
 - Federal \$333M is assumed to transfer to City subway project
 - City to secure remainder of funding through its own sources
- City/TTC to deliver enhanced bus service along Finch West

Mixed Traffic

Partially Exclusive Right-of-Way

Exclusive Right-of-Way



2031 forecast

2050 estimate

0 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000

Differences: LRV & Streetcar



Length	30.8 m	30.2 m
Width	2.65 m	2.54 m
Wheelchair Accessibility	Yes, level with platform using automated load-levelling technology	Yes, ramp to street (1 step high)
Wheelchair Positions	4	2
Doors	8 (4 on each side)	4 on one side
Operator Positions	2	1
Operational Mode	Bidirectional, no loops	Unidirectional, needs loops
Power Supply	Overhead pantograph 750V	Overhead trolley pole 600V
Capable of Multicar Train Operation	Yes up to 3	No
Capable of Automated Running	Yes	No
Passenger Capacity	280	250
Commercial Speed	22 km/hr (30 km/hr in tunnel or segregated track)	15 km/hr

Differences: Streetcars and LRT Corridors

Existing Streetcars

LRT

Shares lane with cars
ex. St. Clair, Spadina-Harbourfront

Never shares lane
Sometimes fully segregated
(tunnel or elevated)

Slow boarding
Front door only (one door)
Payment after entry, in queue
High floor with steps

Faster boarding
All-door boarding (four per car)
Payment before entry
Level boarding, no steps

No trains - max. length 24m

Trains of 1-3 cars - up to 90m

Unidirectional, needs loops

Bidirectional, no loops

Close stop spacing
Queen downtown: 180m
St. Clair: 250m

Longer stop spacing
Sheppard LRT: 450m
Eglinton tunnel: 850m
Typical North America: 1,000 - 2,000m

Lower line capacity

Medium-high line capacity

Average Speeds

- Factors include traffic, number of stops, dwell time at stops, signal priority, level of dedication of the right-of-way
 - Eglinton bus services: 14-18 kph
 - Queen streetcar: 15.4 kph
 - St. Clair: 15 kph
 - Surface LRT: 22 kph
 - Fully separated LRT: 30-32 kph
 - Subway: 32 kph