

Subject:

FW: Metrolinx Board Meeting - June 27, 2019 - Fwd: Our upcoming Metrolinx Regional Reference Panel is Saturday June 22

From: ken.bousfield ken.bousfield [REDACTED]

Sent: June-26-19 10:46 AM

To: CEO (Metrolinx)

Cc: Chair of Metrolinx; Angela Gibson

Subject: Re: Metrolinx Board Meeting - June 27, 2019 - Fwd: Our upcoming Metrolinx Regional Reference Panel is Saturday June 22

Phil Verster,
CEO, Metrolinx
97 Front Street West,
Toronto, Ontario, M5J 1E6

Dear Mr. Verster:

Re: Metrolinx Board Meeting - June 27, 2019 - Public Session - 12:30 p.m. to 2:00 p.m.

Please see the correspondence below.

For more than a decade I have wondered why no use is being made of the former CP lines in the Don Valley. It seems to me that they could be used in many different ways that would substantially enhance transit service, fairly quickly and at relatively low cost. The PDF shows some options. There are undoubtedly many more. The PDF is very large. Therefore, I will send it by a following e-mail. If it does not arrive, it is only a very short walk to provide a paper copy. In any case, I understand that Angela Gibson, Manager of Regional Partnerships at Metrolinx, already a copy of the PDF.

The PDF should be self-explanatory. It takes about 20 minutes as a presentation. I am not sure that this merits the time of the entire Board. An explanation would be very welcome, nonetheless.

Please confirm safe receipt of this e-mail and of its enclosure by following e-mail.

Yours,

Ken Bousfield

Subject: FW: FW: Our upcoming Metrolinx Regional Reference Panel is Saturday June 22
Attachments: ATT00001.rtf; Metrolinx - 2019 June 22 - YRLNS.pdf

From: ken.bousfield ken.bousfield [REDACTED]
Sent: June-26-19 10:52 AM
To: CEO (Metrolinx)
Cc: Chair of Metrolinx; Angela Gibson
Subject: Fwd: FW: Our upcoming Metrolinx Regional Reference Panel is Saturday June 22

Phil Verster,

CEO, Metrolinx

97 Front Street West,

Toronto, Ontario, M5J 1E6

Dear Mr. Verster:

Re: Metrolinx Board Meeting – June 27, 2019 – Public Session – 12:30 p.m. to 2:00 p.m.

Enclosure for Previous e-mail.

Please confirm safe receipt of enclosure.

Yours,

Ken Bousfield

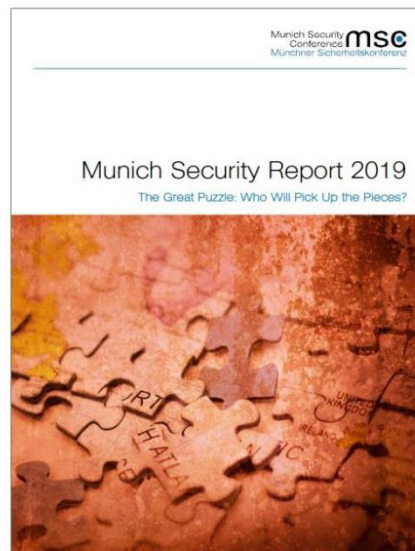
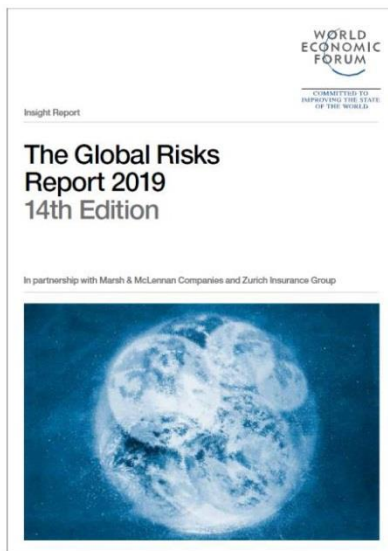
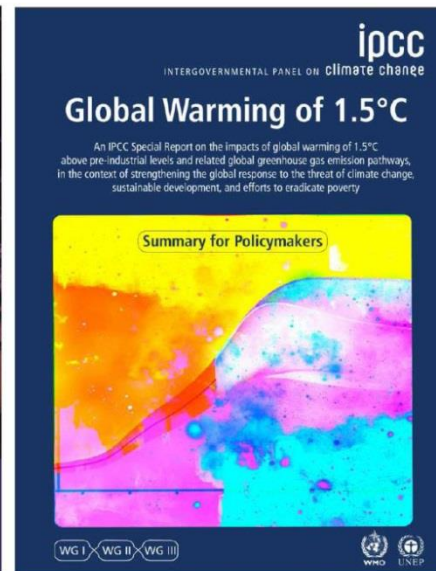
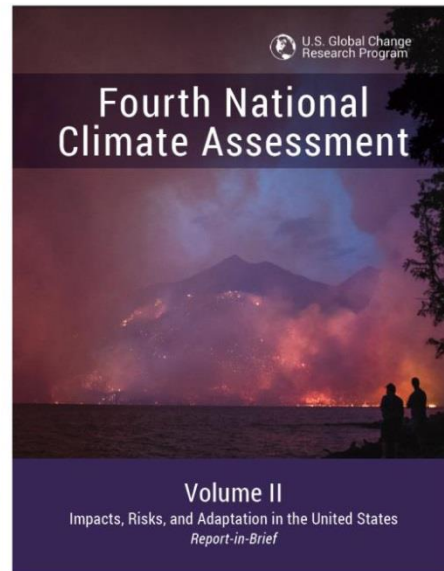
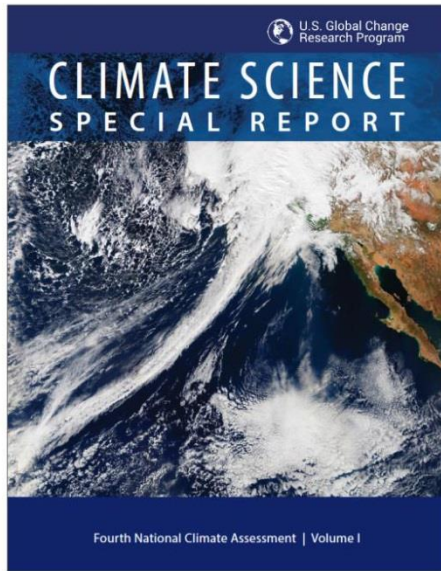
Notes on Transit
June 22, 2019

Revised June 30, 2019

Outline of the Problem

- (i) Yonge-University-Spadina is beyond capacity
 - Cannot cope with the current demand on the Yonge Line.
 - Overcrowded Finch to Union.
 - Particularly overcrowded from Bloor to Union.
- (ii) Bloor-Yonge station dwell time is capacity-limiting.
- (iii) Eglinton Station is over-crowded.
 - Eglinton Crosstown will make crowding worse.
- (iv) Union Station is too small.
 - Not all riders want to go to Union.
- (v) One-way transit times are too long.

Urgency: Seven Reports



Seven Reports

1. Fourth National Climate Assessment – Vol. I:
Climate Science Special Report – November 4, 2017
2. Fourth National Climate Assessment – Vol. II:
Impacts, Risks and Adaptation in the United States – November 23, 2018
3. IPCC - Special Report: Global Warming of 1.5 C. – October 7, 2018
4. Global Environmental Outlook Report - Sixth Edition – March 5, 2019
5. World Economic Forum Global Risks Report – January 16, 2019
6. Munich Security Report – February 12, 2019
7. Canada's Changing Climate Report – April 2, 2019

How Urgent Is The Problem?

There is no time left.

Climate Change is not waiting.

Climate Change is now.

How Big Is The Problem?

Transportation Mode Share

Rich Democracies - Transit + Cycling + Walking

3/4

Tokyo – 88%

Osaka – 82%

Budapest – 80 %

Paris – 79%

Helsinki – 77%

Copenhagen – 76%

Zurich – 74%

Vienna – 72%

Amsterdam – 73%

Berlin – 70%

Madrid – 70%

Prague – 67%

Singapore – 67%

Stockholm – 65%

Munich – 66%

Milano – 64%

London – 63%

1/2

Hamburg – 58%

Frankfurt – 56%

Cologne – 50%

Dusseldorf - 47%

Rotterdam – 44%

New York City – 40%

Naples – 39%

Seville – 38%

Dublin – 35%

Eindhoven – 33%

Sydney – 33%

1/4

Toronto – 30%

Montreal – 29%

Vancouver – 29%

Ottawa – 28%

San Francisco – 27%

Melbourne – 25%

Washington, D. C – 21%

Calgary 21%

Boston – 20%

Chicago – 17%

Seattle – 15%

Adelaide – 15%

Philadelphia – 15%

Portland – 13%

Atlanta – 4%

Detroit – 3%

Dallas – 3%

Houston – 3%

Indianapolis – 2%

What Drives Cost and Delay?

1. Tunnelling
2. Politics

1. Toronto Needs to More Than Double Transit Capacity.
2. There is No Time Left.
3. Tunnels Take Too Long.

What Determines Capacity?

1. Number of Rights of Way
2. Headway (Trains/Hour)
3. Unit Capacity (Passengers/Train)

Current Theoretical Maximum Capacity: 220,000 Riders/Hr.

- Minimum Headway: 100 Seconds = 36 Trains/Hr.
- Capacity Per Train (Maximum) = 1500 people
- Rights of Way – Current Total = 4
 - Yonge
 - University
 - Danforth
 - Bloor

Capacity Increment

Total DRL Capacity Increment:

36 Trains/ Hour

Approx. 300 Riders/Train

Approx. 10,000 Riders/Hour, One Way

= 20,000 Riders/Hour, Total

Limiting Factor: Rights of Way

Where Can Toronto Find More Rights of Way?

1. Assemble Above-Ground Rights of Way

- Impossible in a Built-Up Urban Area

2. Make New Tunnels

- Extremely Expensive
- Extremely Slow Political Process

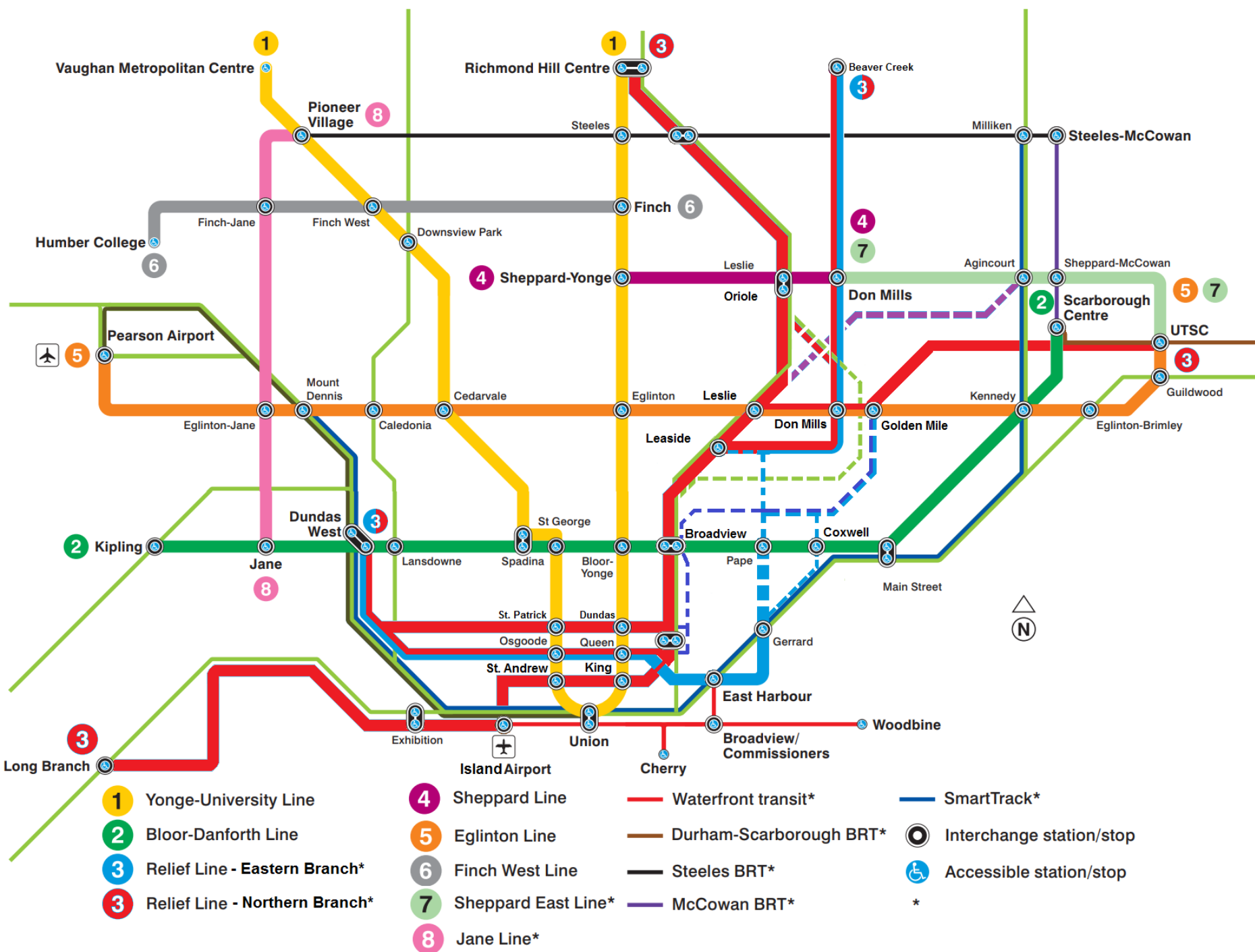
3. Add Capacity in Existing Corridors

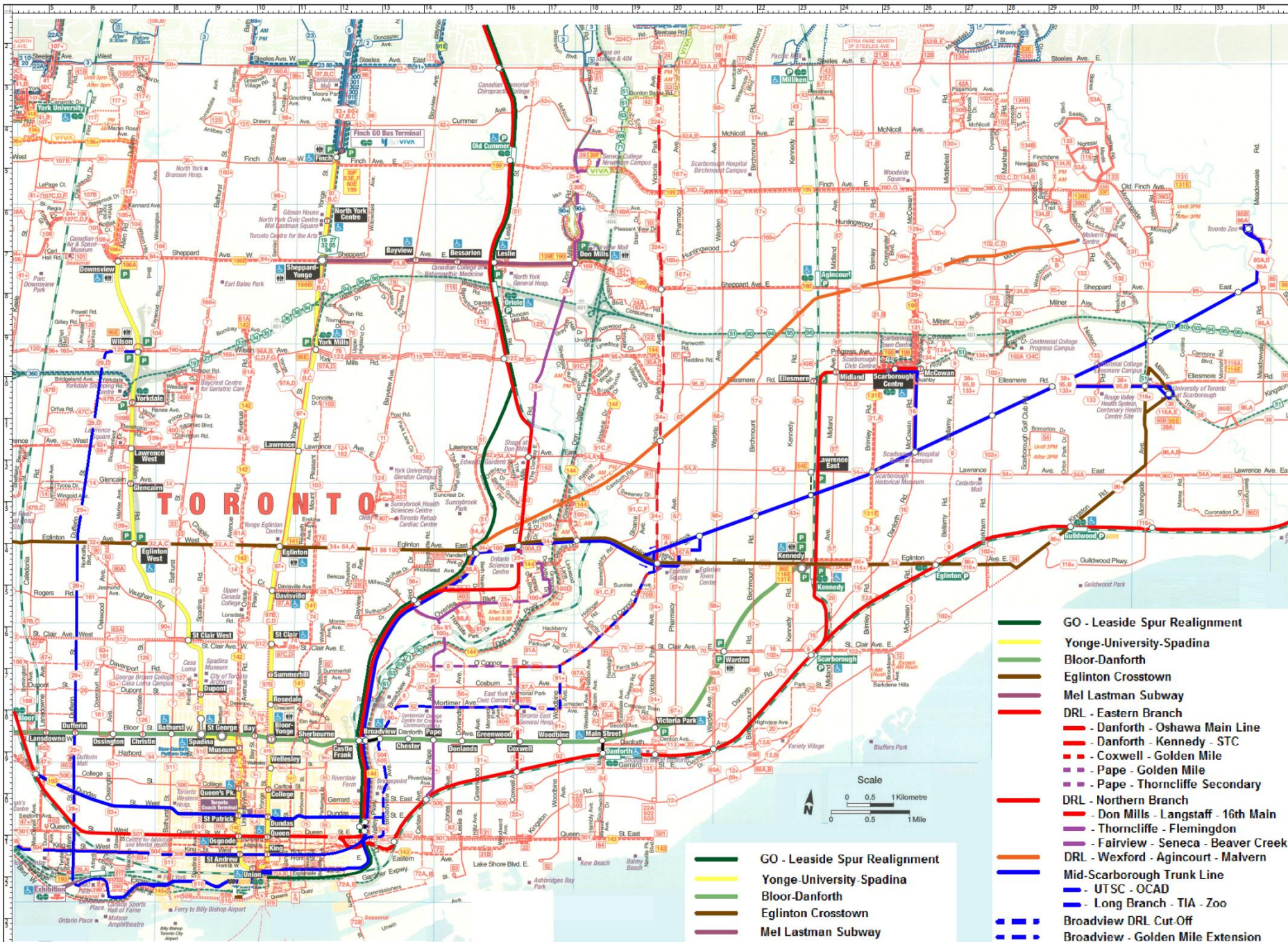
- Re-Lay Former Tracks in Lakeshore E and W
- Double Track Existing Lines
- Rejuvenate Previously Abandoned Lines
- Use Previously Unused Publicly Owned Rights of Way
- Run More than 36 Trains/Hr.

4. Run Transit On City Streets With Priority

- Expand King St. Pilot Project
- Use Many More Streets
- Lay More Tracks on Main Arteries

System Overview







Leaside Station Revitalisation Options

Branching

1. Branching At Large Scale: Split the DRL
 - DRL Eastern Branch
 - DRL Northern Branch

Branching

2. DRL Eastern Branch – Multiple Choices
 - Danforth Station/Lakeshore East Local
 - Pape/Coxwell – Golden Mile
 - Extension of Service From Broadview
 - Redundant Line to Leaside Station

Branching

3. DRL Northern Branch – Multiple Choices
 - Main Trunk to Leaside Station
 - Yonge North Relief to 16th Ave
 - Local Relief (Thornccliffe Park, Flemingdon Park, Don Mills, Fairview, Seneca College, West Beaver Creek)
 - Gattineau Corridor - UTSC
 - Wexford and Agincourt

Branching Capacity - Output

4. DRL Downtown Branching - Output

- | | |
|----------------------|-----------------|
| - Queen Subway | - 36 Trains/Hr. |
| - Queen Surface | - 20 Trains/Hr. |
| - King | - 20 Trains/Hr |
| - Dundas | - 20 Trains/Hr. |
| - College | - 10 Trains/Hr |
| - Queen's Quay - TIA | - 6 Trains/Hr |

Total Output: - 112 Trains/Hr = 34,000 Riders/Hr

+ 12 GO Trains/Hr = 24,000 Riders/Hr

Total = 58,000 Riders/Hr

Branching Capacity - Input

5. Total LRT Input Capacity

- DRL Northern Branch - 40 Trains/Hr
 - 16th Ave - 12 Trains/Hr
 - UTSC - 16 Trains/Hr
 - Seneca - 12 Trains/Hr
- DRL Eastern Branch - 40 Trains/Hr
 - Pape/Coxwell - 24 Trains/Hr
 - Danforth Stn - 16 Trains/Hr

Total Northern DRL Input - 80 Trains/Hr

+ 12 GO Trains

Total = 50,000 Riders/Hr.



Northern DRL and GO

GO Interchanges:

Old Cummer - DRL Northern Line

Oriole - Mel Lastman Subway

Eglinton – Crosstown

Leaside Stn – DRL Northern

Bloor – Bloor Danforth

Queen – DRL Northern and Eastern

Agincourt – DRL Northern (Wexford)

Langstaff – DRL Northern

Scarborough – DRL Northern (Wexford)

DRL Northern Branch and GO Demand

1. Multiple Interchange Means GO destinations other than Union Station.
2. Use of GO as an Express with DRL Northern as a local feeds ridership to GO service.

Redundant Lines

Currently vulnerable to single failures.

Failures affect entire rush-hour ridership.

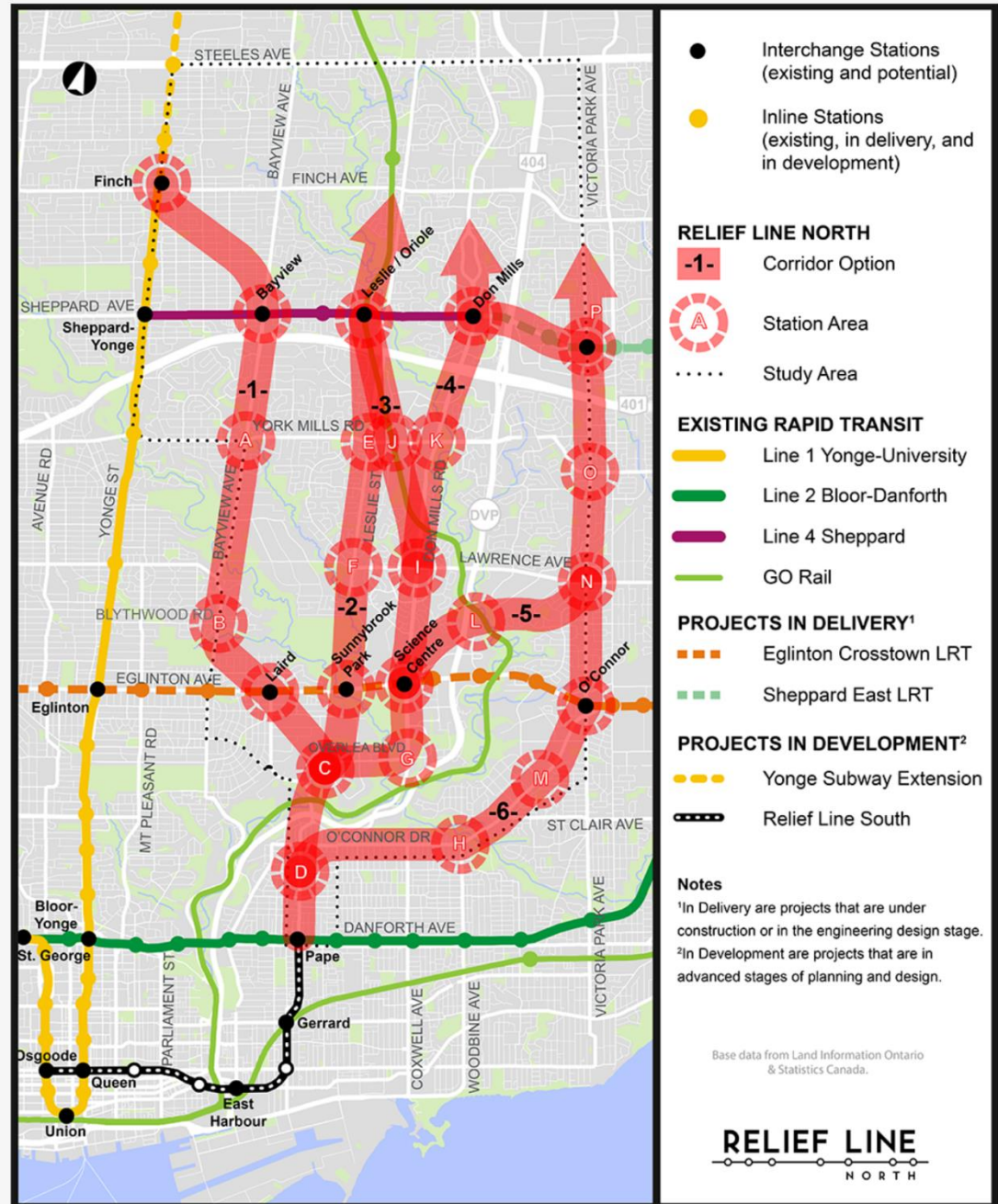
Redundant lines reduce vulnerability.

YNRS Choices

YNRS

Version No. 1:

YNRS Routes
Currently Under
Consideration

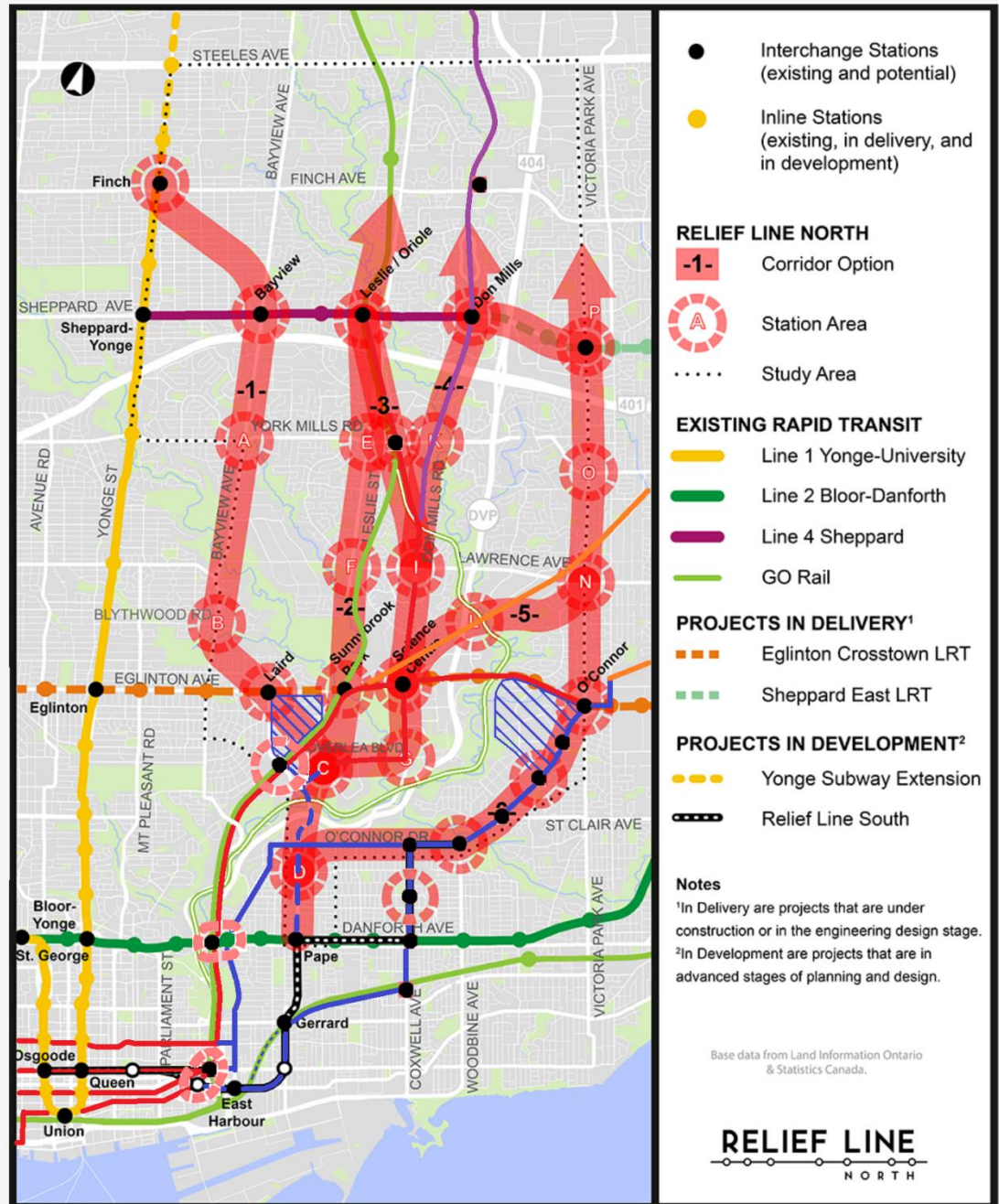


YNRS

Version 2:

1. Leaside Station
2. East York
3. O'Connor

(Markup of Metrolinx Document)

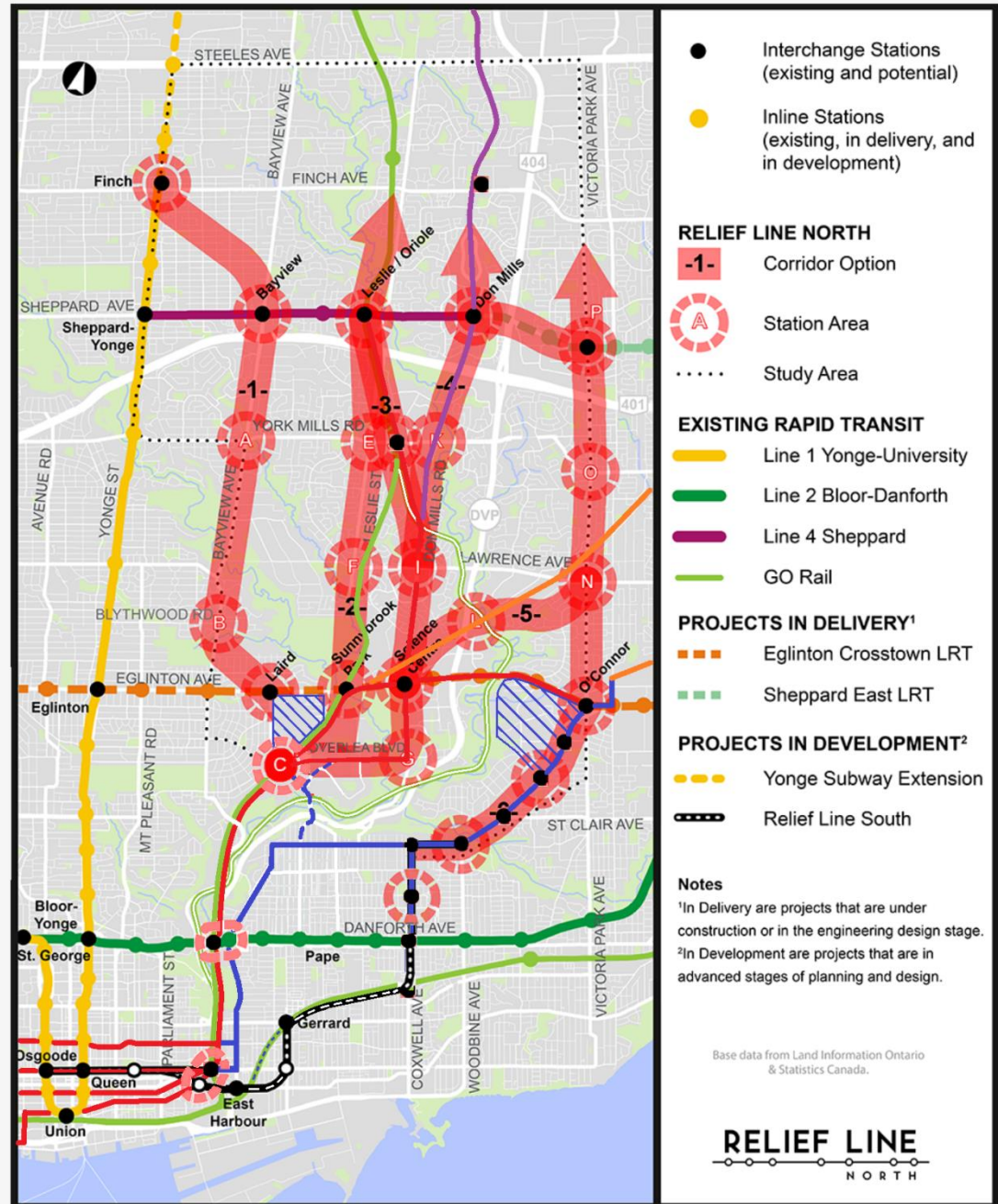


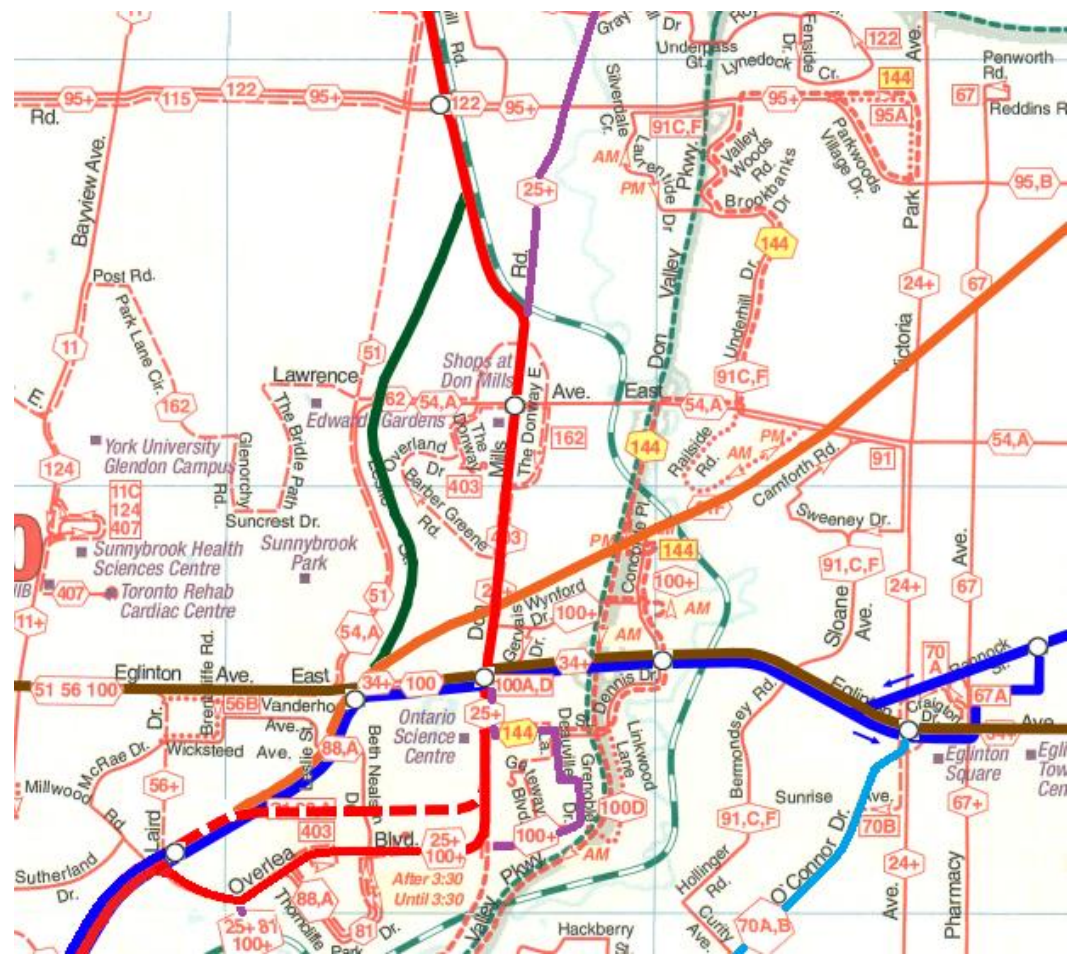
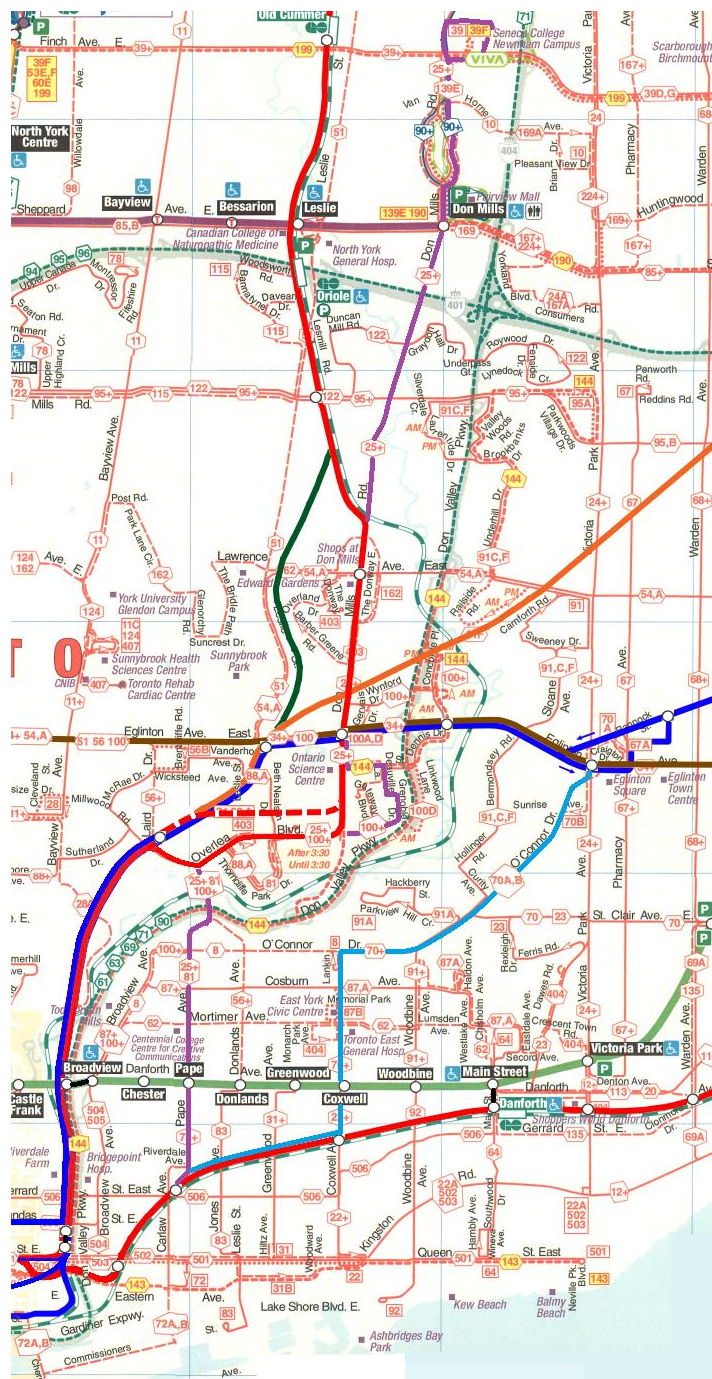
YNRS

Version 3:

1. Leaside Station
2. East York
3. O'Connor
4. Coxwell

(Markup of Metrolinx Document)





(Markup of TTC Map)

Main Components

- CP Don Branch – Completed 1892 between Union and Leaside Station
- Canadian Northern Railway Leaside Spur – Built 1918
- Ontario Hydro Gatineau Right of Way – Originally intended to host radial car service





Leaside Spur Before GO



Leaside Spur After GO



Advantages of Don Branch

- Uses Existing Right-of-Way for purpose for which it was originally constructed.
- Requires no additional tunnelling.
- Can be put into service approx. immediately.
- No engineering risk.
- Lowest cost option.
- Service can be expanded incrementally.
- Allows rejuvenation in East York.
- Uses Standard Gauge on streets.

Enhances Cycling and Walking

1. Don Valley portion has walking and cycling path on roof, links to other paths in valley.
2. Right of Way buried at Nesbitt and between Wrigley Plant and Bond Park
3. Can be sunken or covered in Gatineau Corridor
4. Walking/Cycling paths parallel Rights of Way.
5. Almost all of Scarborough and East York will be within 1 km of rail-based transit.

Queen Street Interchange

Station Extends From Dundas to Queen.

Eastern DRL Runs under Eastern Avenue.

Northern DRL Splits into upper and lower pairs of tracks

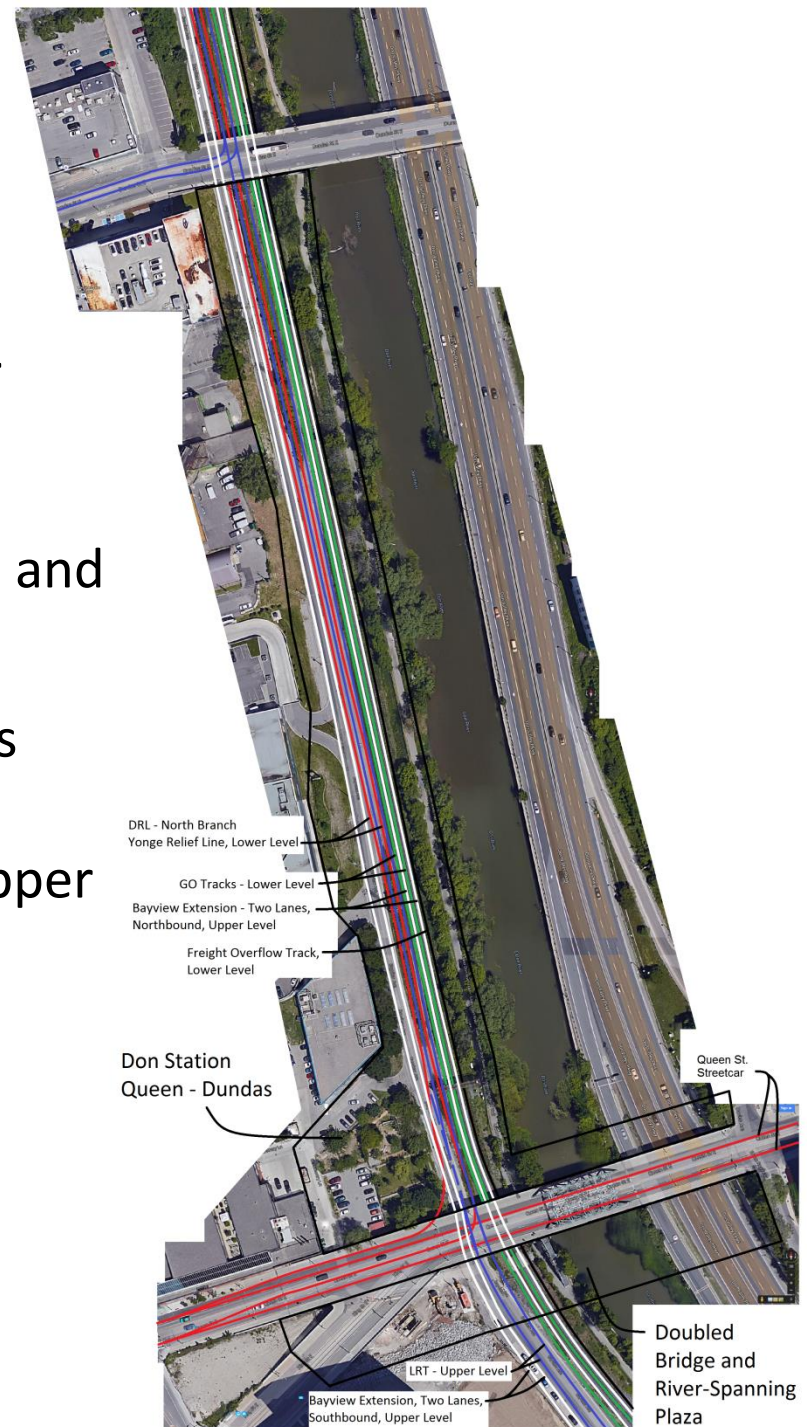
Lower DRL tracks enter Queen tunnels

Upper tracks to Dundas, Queen and King, and Queens Quay for surface running

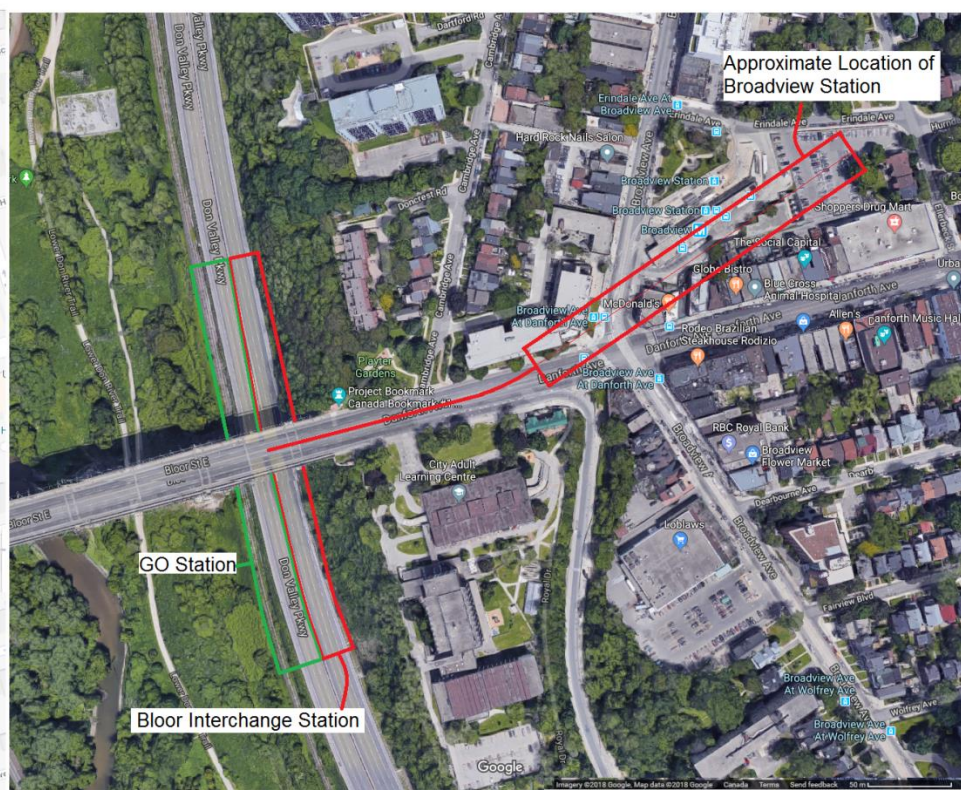
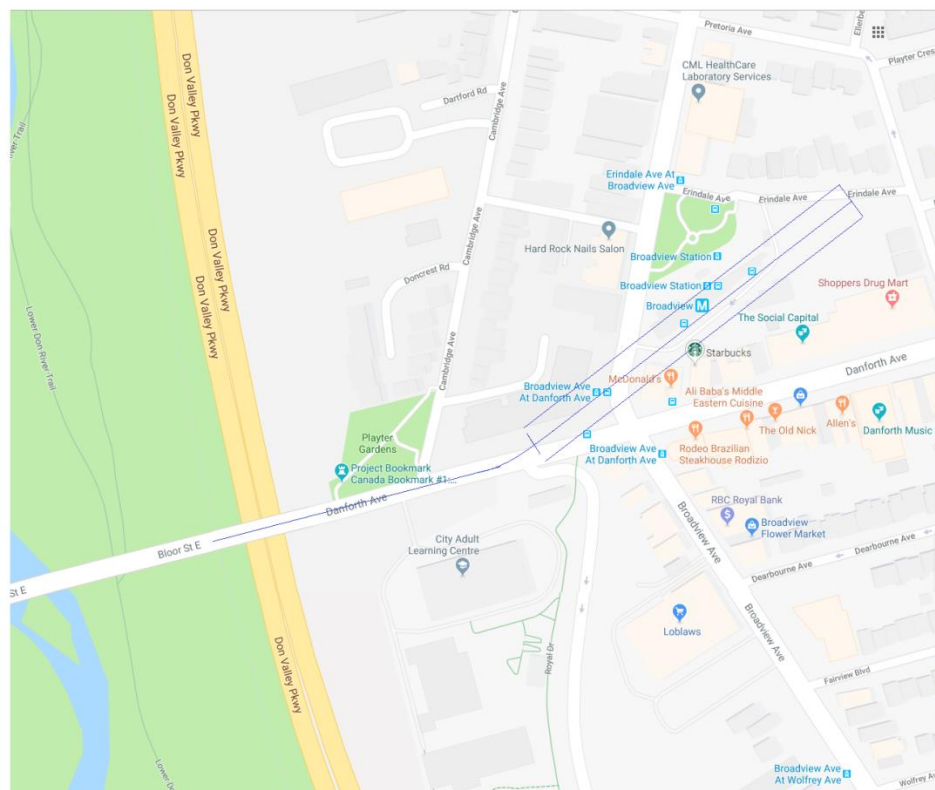
GO Occupies another pair of Lower Tracks

Walking Promenades Follow River and Upper Levels of Blvd.

Surface running ads:
better consumer choice
higher total transit capacity,
greater redundancy.

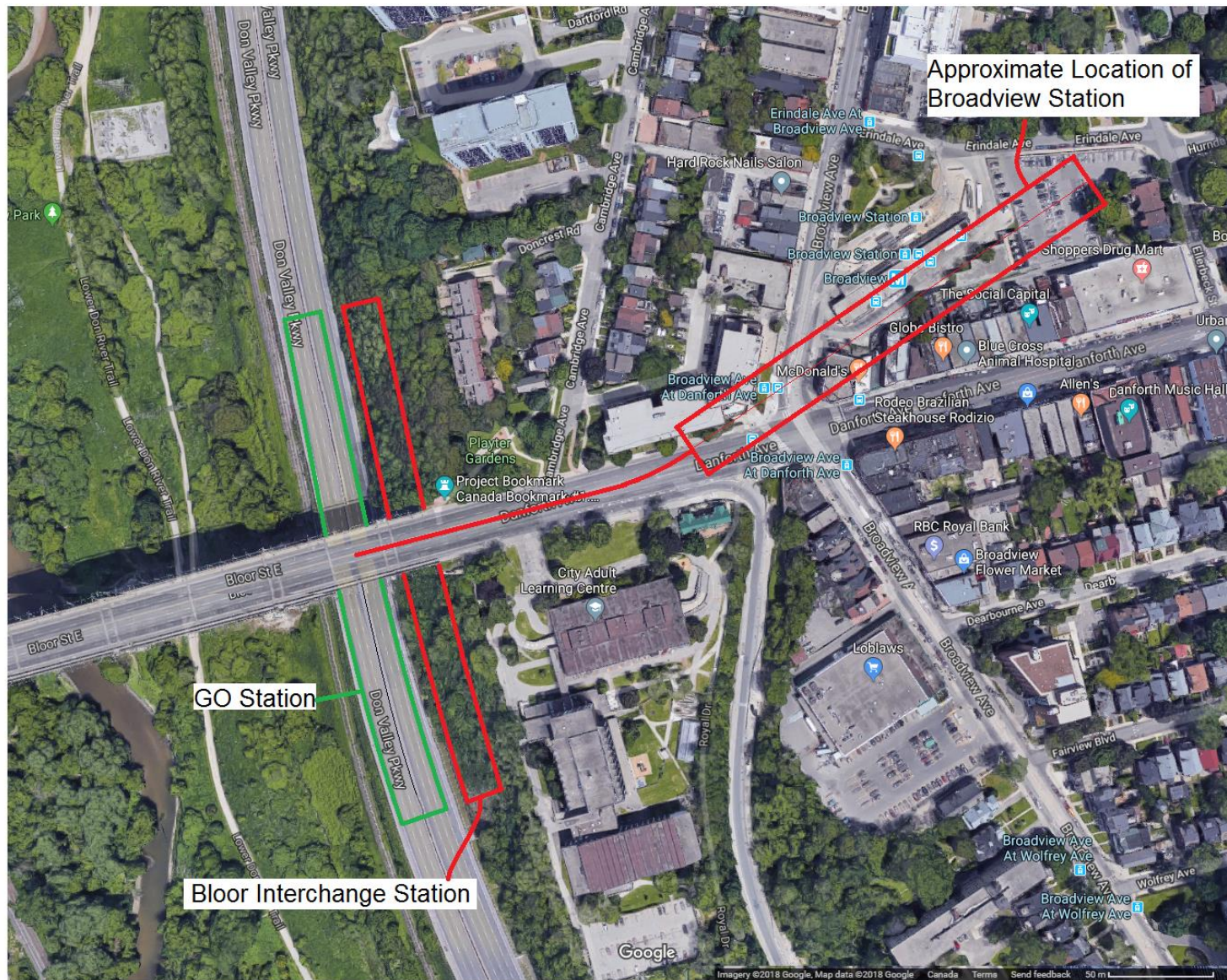


Interchange With Bloor Danforth



Option 1 - Location of Danforth Interchange

(Mark-up of Google Maps Excerpts)



Option 2 - Location of Danforth Interchange

(Mark-up of Google Maps Excerpts)

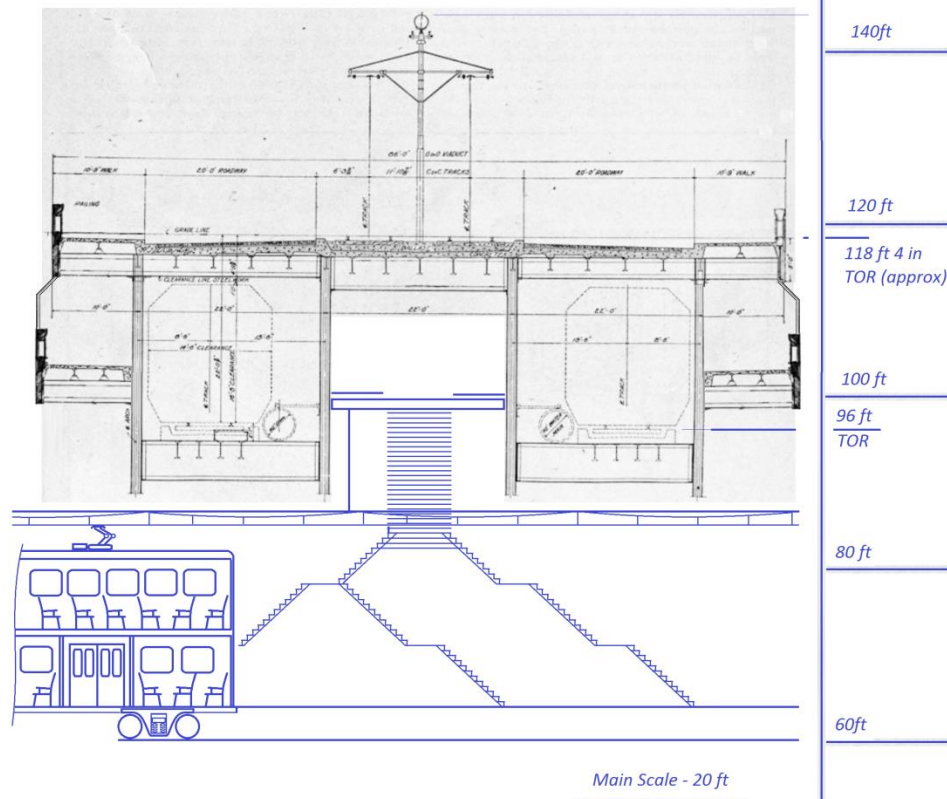
Bloor- Danforth Interchange

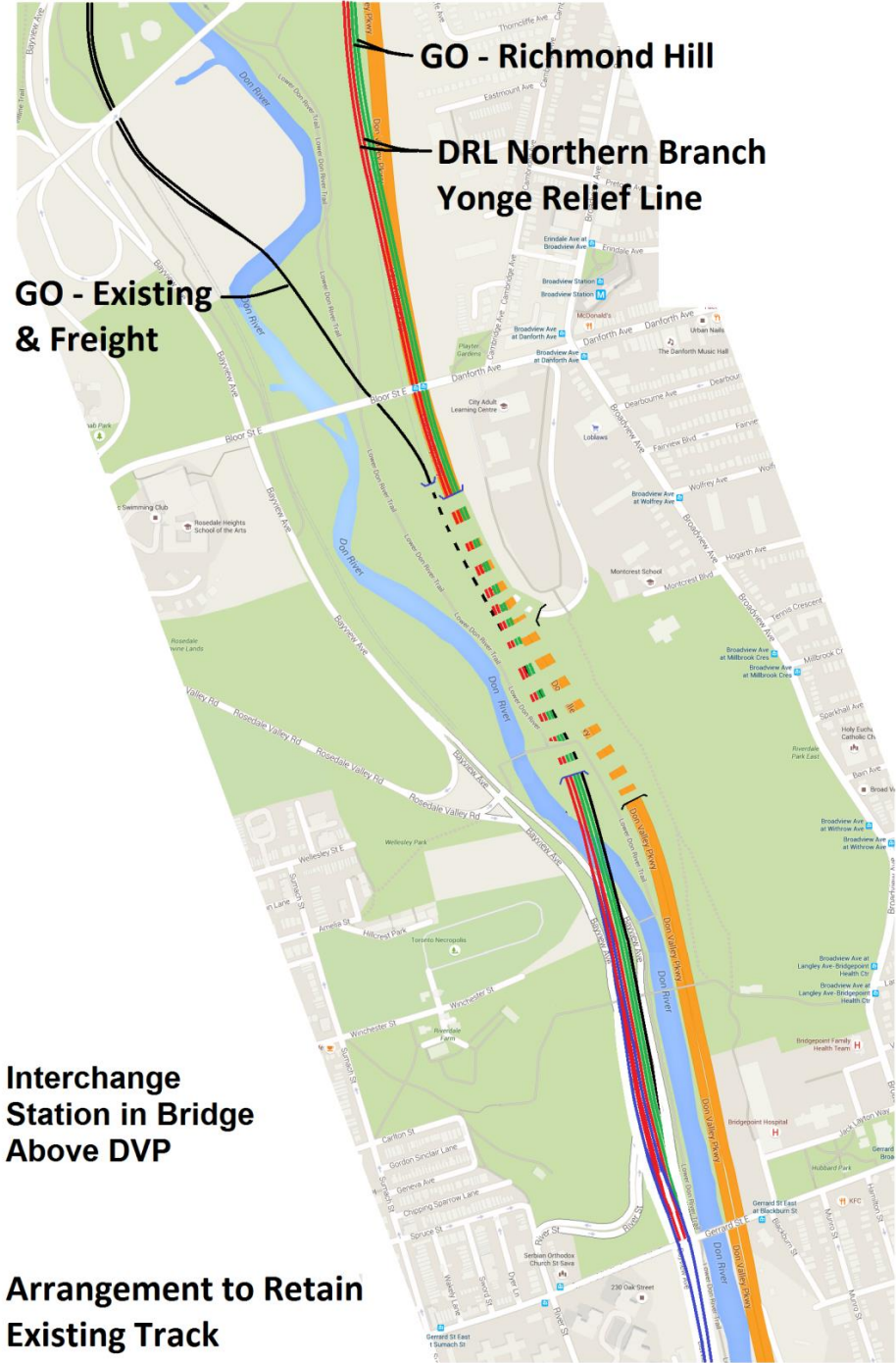
Ample vertical room in eastern arch

About 50m walk to Broadview platform

Room for covered, all-weather walking/cycling paths across bridge.

Fig. 10.—Cross section drawing of steel superstructure of Bloor Street Viaduct, Toronto—Width, 86 feet overall.



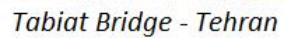


Bloor- Danforth Interchange

- Station in eastern arch of bridge covers DVP
- Silences DVP
- Allows Riverdale Park to run uninterrupted into the Don Valley

(Mark-up of Google Maps Excerpts)

The Don Branch Bridge



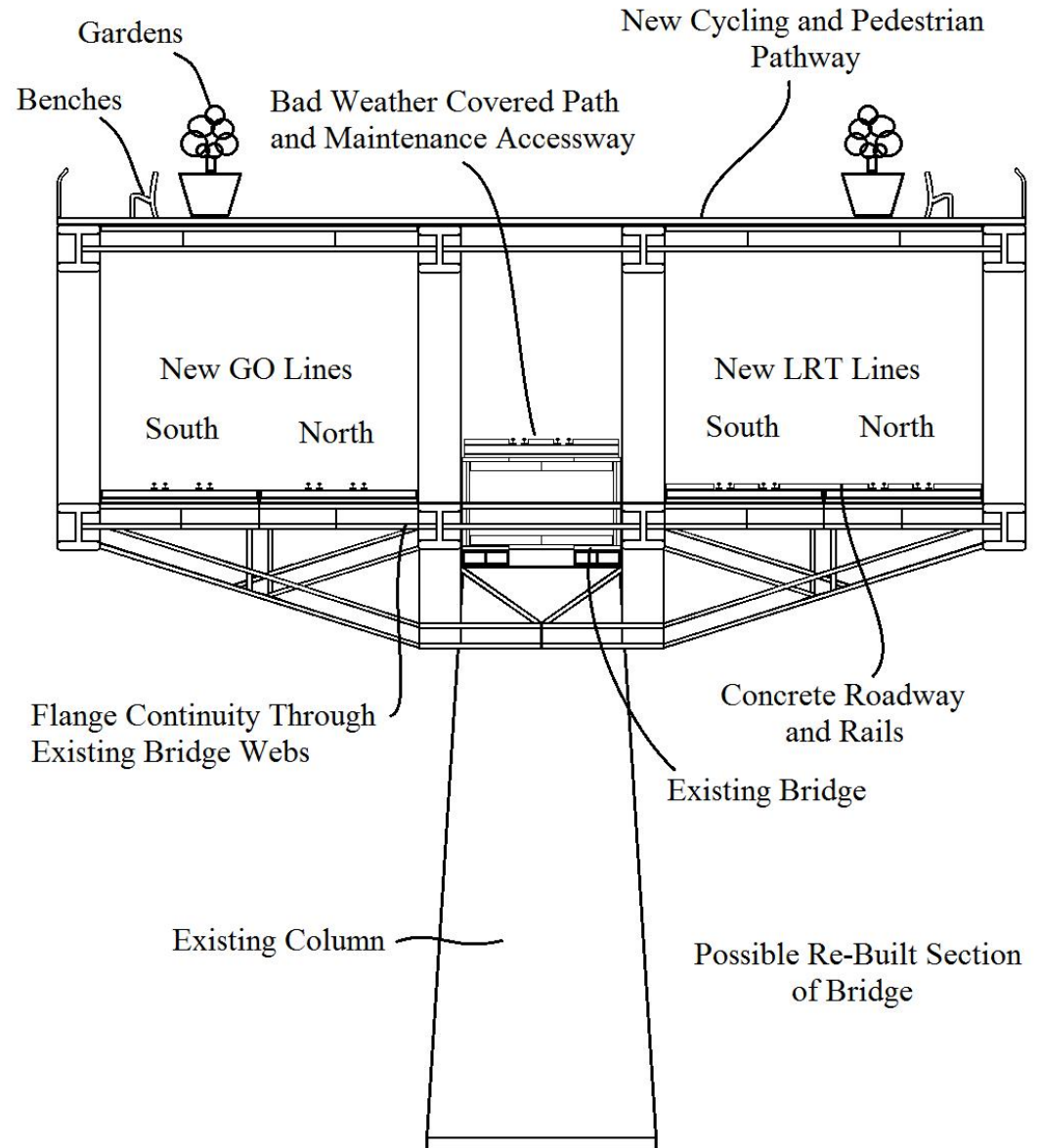
Don Branch Bridge

- Multi Level
- GO: 2 Tracks on one side
- Existing span – unused – in center
- LRT: 2 Tracks on other side
- Tracks are covered
- Bridge roof has sheltered pathway
- Roof has gardens and viewing areas

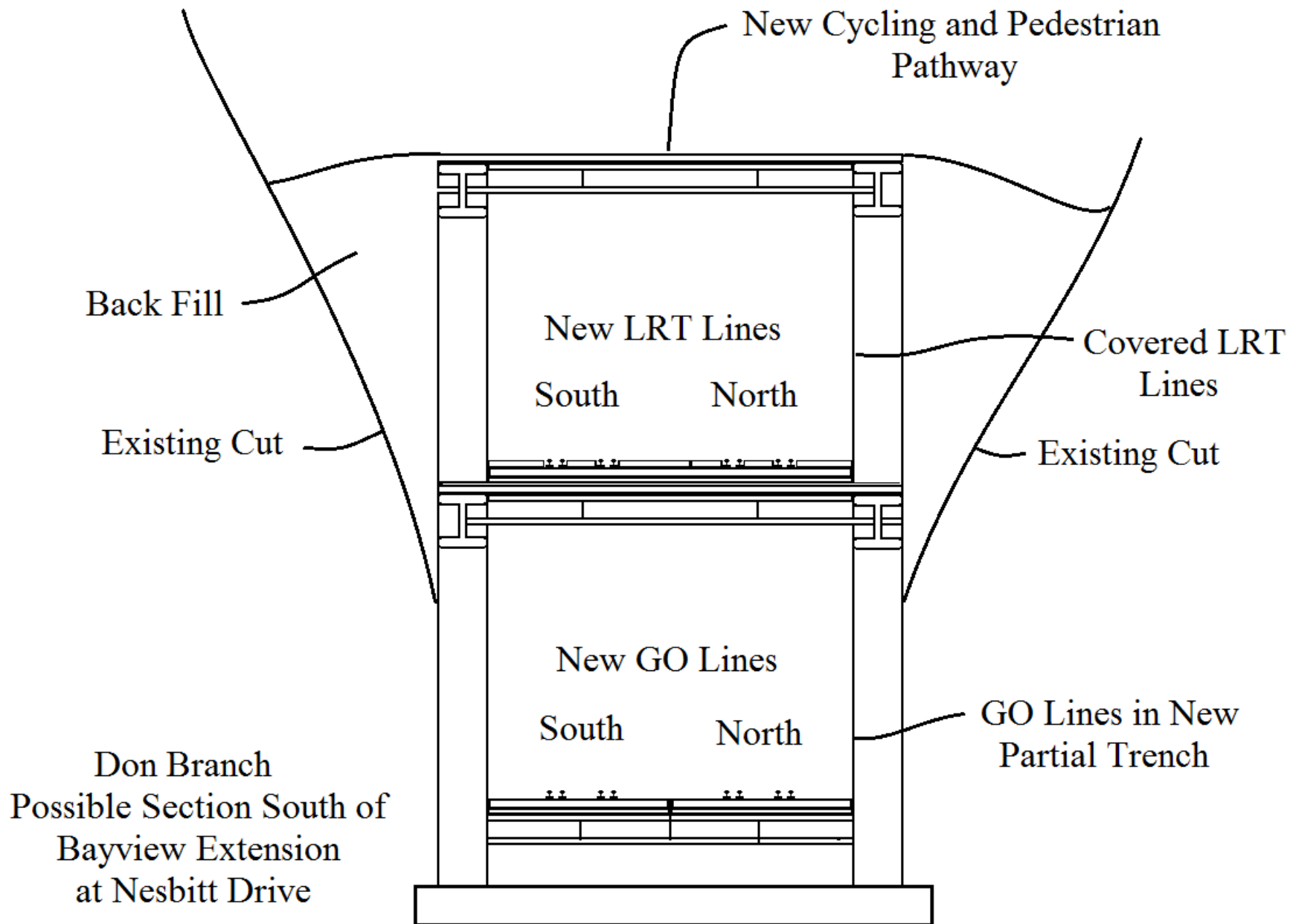


Existing Bridge Over Bayview Extension

(Mark-up of Google Maps Excerpts)



Approach to Leaside Station



Scarborough Choices
Gatineau Corridor



Scale

0.5 1 Kilometre

Gatineau Hydro Corridor to UTSC

- Cuts Scarborough travel times in half.
- Provides multiple-destination single-seat synchronised service to Downtown and Crosstown.
- 80+% of Scarborough in walking distance of rails.
- Serves demand nodes at hospitals and schools.
- Interchanges with all Scarborough bus lines.
- Inexpensive to build, easy to modify.
- Can be put in interim operation, and expanded later.
- Terminal at Zoo permits use for other purposes.
- Many growth opportunities.

SDG 2015 Report

Yonge Relief Network Study:
Technical Summary
Steer Davies Gleave Report
July 2015

Figure 6.5: Option 4 - Long Subway

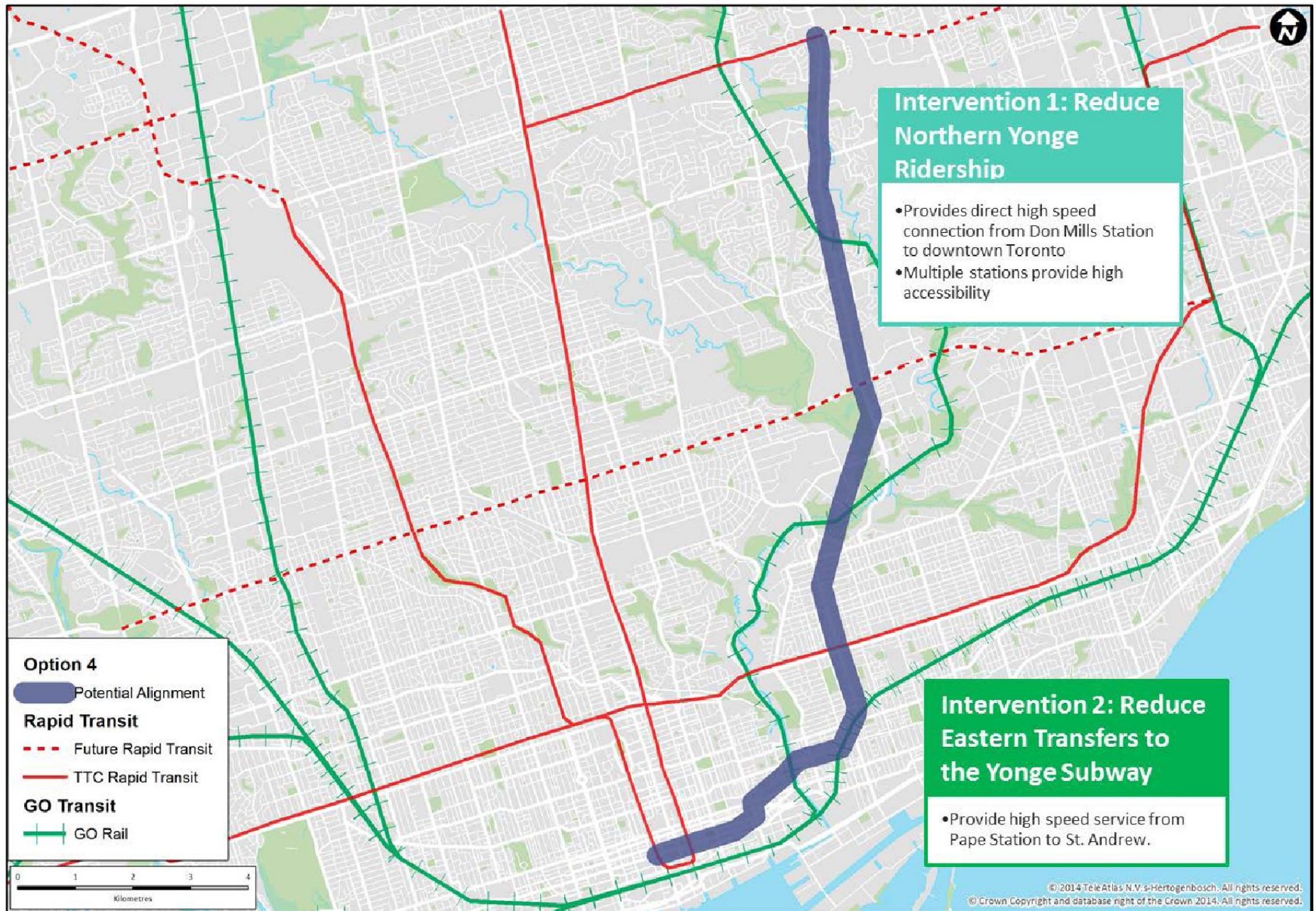


Figure 6.6: Option 5 - Surface Subway

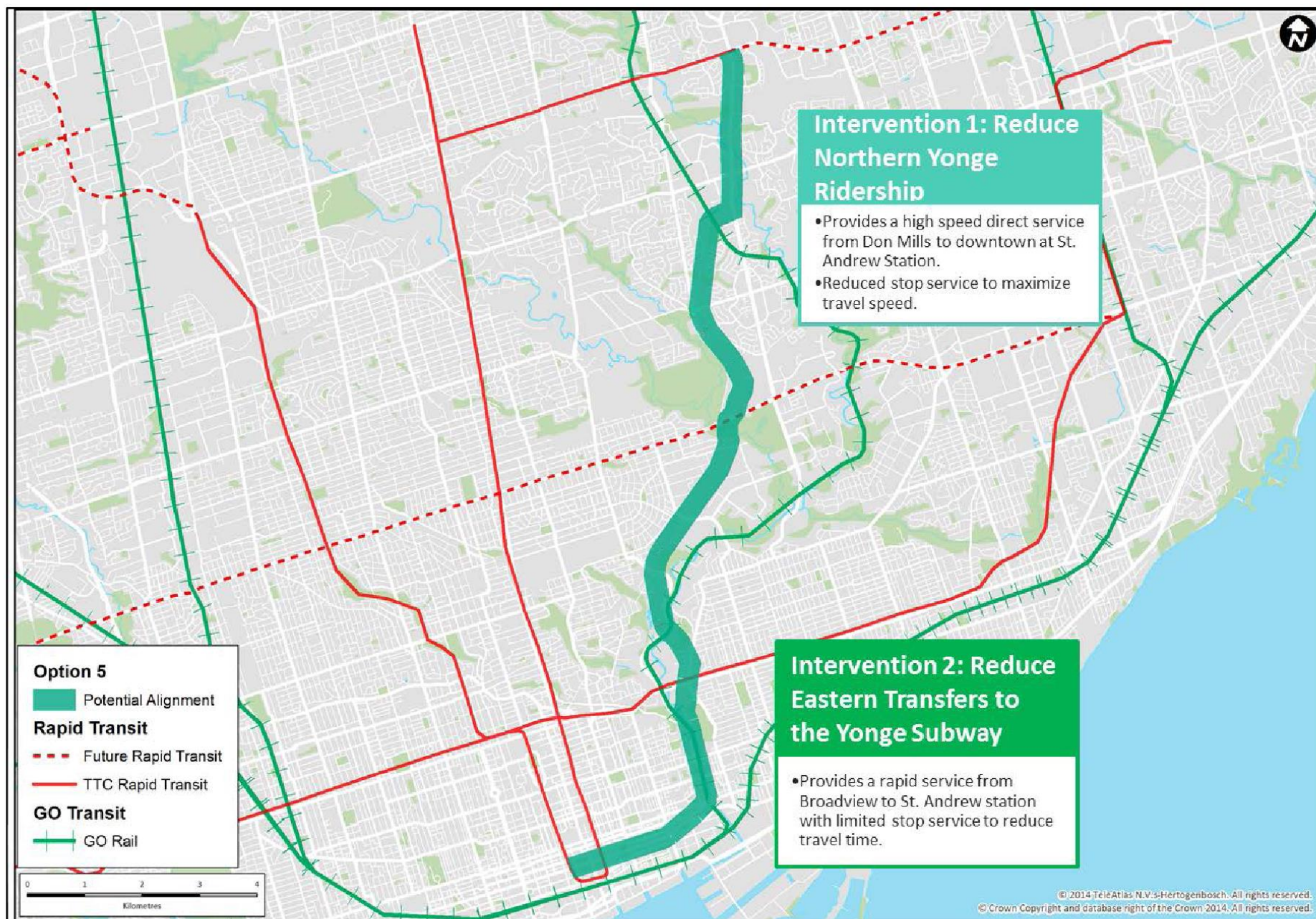
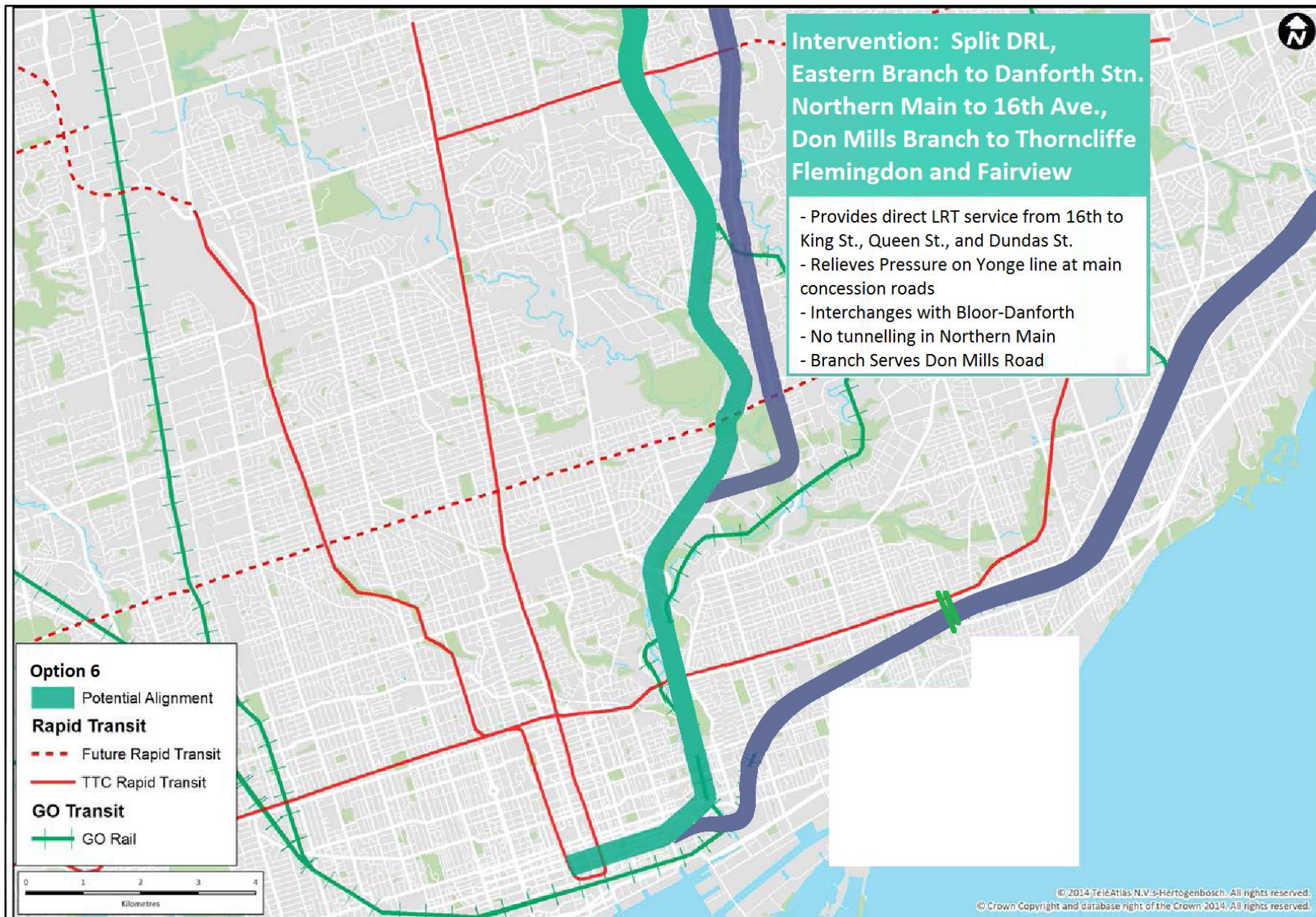


Figure 6.7: Option 6 - Bifurcated DRL and Branch to Seneca (Mark-up of SDG Illustration to explain difference)



SGD Report

Differences From the Steer Davies Gleave 2015 study:

1. Did not consider splitting the DRL. Minimal cost compared to tunnels.
2. Did not consider DRL to Yonge & 16th Ave. Terminal at Fairview Mall discards majority of Yonge North Relief Line, and impairs Yonge Subway Northern Extension.
3. Assumed a difficult, expensive, tunnel to Broadview station.
4. Leaves Leaside Spur at Bond Park to run to Don Mills Road, discarding ability to divert demand from Finch, Steeles, and northern locations.
5. Did not Branch either input or output. Proposed DRL has output at any of Gerrard, Dundas, Queen, King, Union, Lakeshore, Queen's Quay. Input (a) at Thorncliffe, Flemingdon, Don Mills Road; (b) Eglinton Cross-Town; (c) Wexford to Agincourt (d) Gatineau Corridor.

Steer Davies Gleave study did not evaluate this proposal.

Table 7.9: Acceptability Assessment

xxx (high negative impact)

✓✓✓ (high positive impact)

Issue	Surface LRT	Short Subway	Long Subway	Surface Subway	U Subway
Requires changes to existing surface network to ensure adequate feeder service	x The reduced number of stations requires fewer adjustments to surface network	x Stations are focused in downtown core with only minor changes required	xxx Multiple changes will be required to ensure adequate service to all stations	x The reduced number of stations requires fewer adjustments to surface network	xxx Multiple changes will be required to ensure adequate service to all stations
Abstracts ridership from the streetcar and surface network, reducing operational requirements for the surface transit network	✓✓ Surface stations provide direct access for street car riders.	✓ North-south stations in eastern downtown provide alternative route	✓✓ North-south stations in eastern downtown provide alternative route	✓ Fewer stations along north-south alignment reduces streetcar abstraction.	✓✓✓ Provide alternative to streetcar routes.
Impacts existing trail network in Leaside	x			xx Subway alignment expected to more heavily impact trails	
Revenue Loss to GO Rail ⁵	xx	x	xxx	xxx	xx
Reduced stations impacts community acceptance (desire for stations in more communities)	xx			xx	
Station location may impact community acceptance (desire to not have stations located in community)	x	x	xx	x	xx
Impact to Line 4 ridership	x		x	x	
Development Potential	✓ Slow speed service with minimal development potential	✓✓ High speed service through eastern downtown with multiple stations across a smaller geographic area	✓✓✓ High speed connection from northeast Toronto to downtown core with multiple stations	✓✓ High speed connection between mobility hubs and downtown core allows for focussed development	✓✓✓ High speed service through southern Toronto with multiple stations
On street mixed operations impacts public acceptance	xx				

⁵ Current GO revenue analysis assumes current fare structure

Climate Change isn't waiting for the DRL.
Toronto needs the DRL, but also needs something
else, sooner.
The DRL, alone, will not double transit capacity.



July 26, 2019

Ken Bousfield

Via email: [REDACTED]

Dear Ken,

Thank you for your thoughtful submission proposing different ways to enhance transit service in Toronto. We appreciate the thought and effort that went into your presentation and for your ongoing contributions to Metrolinx's Regional Reference Panel.

To respond to your question about how the former CP lines in the Don Valley fit into rapid transit planning and how they may be used to provide relief and capacity to TTC Line 1, there are a number of factors that need to be considered. Planning for the Ontario Line is based on the following principles:

- the line needs to offer attractive transfers with TTC Line 2 and surface routes to provide relief to Line 1, and intercept westbound travelers from the east and north;
- the line needs to be close to commercial and residential properties and future development to maximize utilization of the line and support city-building objectives.

The Don Subdivision, running through the Don Valley, does not sufficiently meet the above noted principles. We do, however, recognize the potential of the Don Subdivision and it is being explored as part of other transit projects, such as the Richmond Hill GO line.

We would like to invite you to the Metrolinx offices to discuss the background and context around the rail lines and rapid transit planning in greater detail with our Corridor Planning team and Rapid Transit Planning team. Our Regional Partnerships team, who manages the Reference Panel, will be in touch with you shortly to organize a meeting.

We look forward to meeting with you to discuss the details further.

Warm regards,

A handwritten signature in black ink, appearing to read 'Mathieu Goetzke'.

Mathieu Goetzke
Chief Planning Officer, Metrolinx