Building Rapid Transit for Scarborough

www.CodeRedTO.com

Agenda

1. Introductions, Fairness & Goals
2. How did we get here?
3. Presentation from TTC
4. What is LRT?
5. What is being built?
6. Common Concerns
7. Questions & Answers

Introductions

- **TTC**
  - Toronto's transit agency, which uses 2760 vehicles to transport 1.3 million residents every day
  - David Nagler, TTC Community Relations Team Lead

- **CodeRedTO**
  - Toronto residents advocating for transit expansion that helps the most people and happens faster
  - Info at www.CodeRedTO.com, @CodeRedTO (Twitter)
  - Joe Drew, Cameron MacLeod, Laurence Lui
  - All volunteer, with no funds from any group or councillor

Fairness for Everyone

1. Everyone gets to speak in turn
2. No heckling or shouting
3. **TTC is here to share the facts about the plans, not to debate different options.**
   - CodeRedTO members have opinions we will share
   - You get to make up your own mind!
4. We are saving a full hour for questions, so please wait until the presentations are over to make sure everyone gets a chance to ask.
   - Help yourself to a question card if you like!

Welcome!

Tonight's Goals:

- Share facts about transit challenges
- Share facts about new rapid transit
- Answer your questions and concerns

We will not:

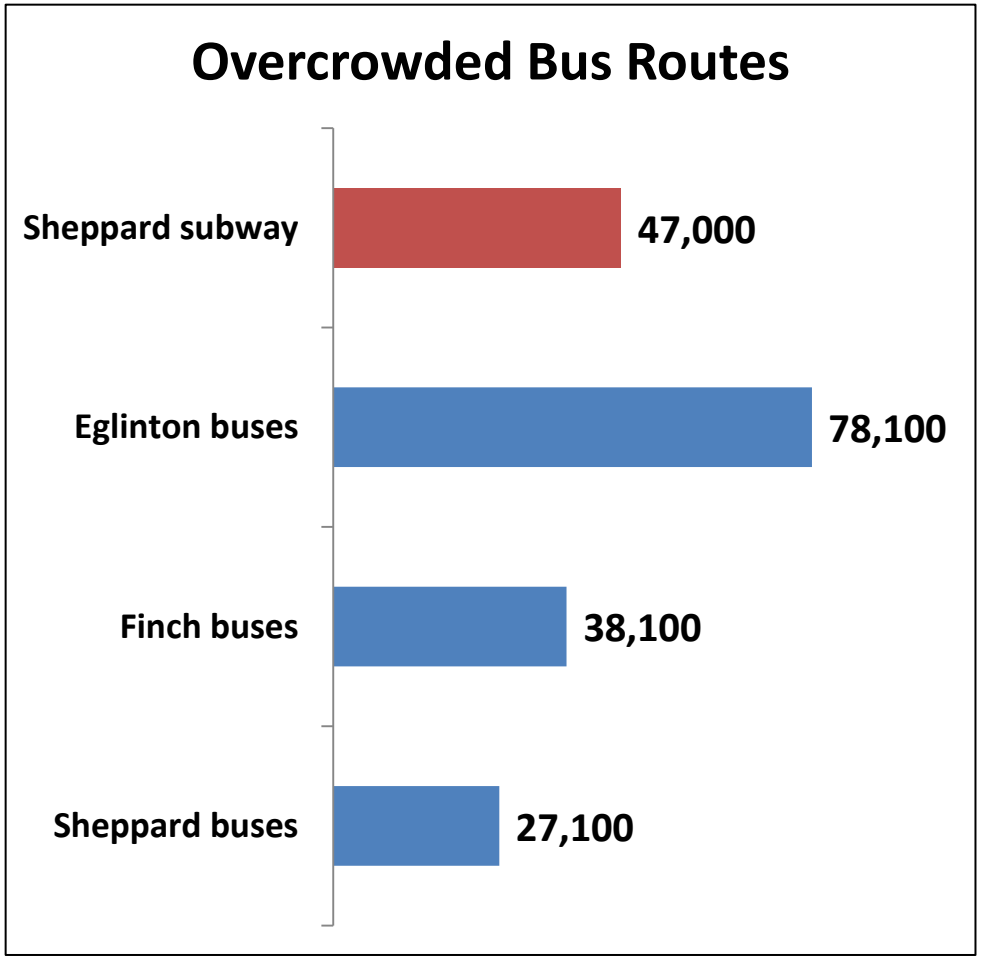
- Cover up negatives, ignore facts, or ignore $

HOW DID WE GET HERE? 4 Reasons.

1. We have a congestion problem

<u>The problem is growing:</u>

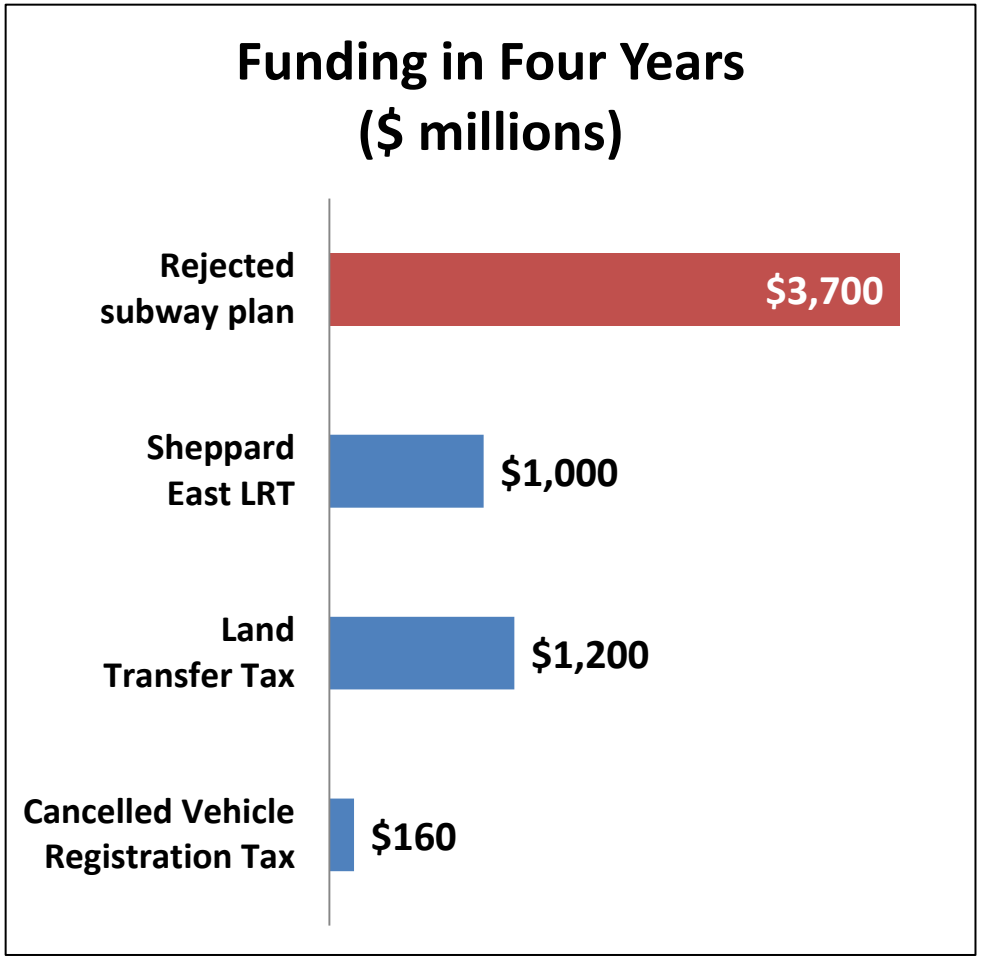
- Average daily Toronto commute is 80 minutes
- Our population is growing
- No room for new roads but we will have more commuters



2. We have a funding problem

Our funding is limited:

- Old Vehicle Registration Tax raised about $40+ million per year
- Land Transfer Tax raises about $300 million per year
- Subways cost $350+ million per kilometre



3. We have an approval problem

1910: Referendum passes on a Queen Street subway; Mayor refuses to approve it

1954: Yonge subway opens
1966: Bloor-Danforth subway opens

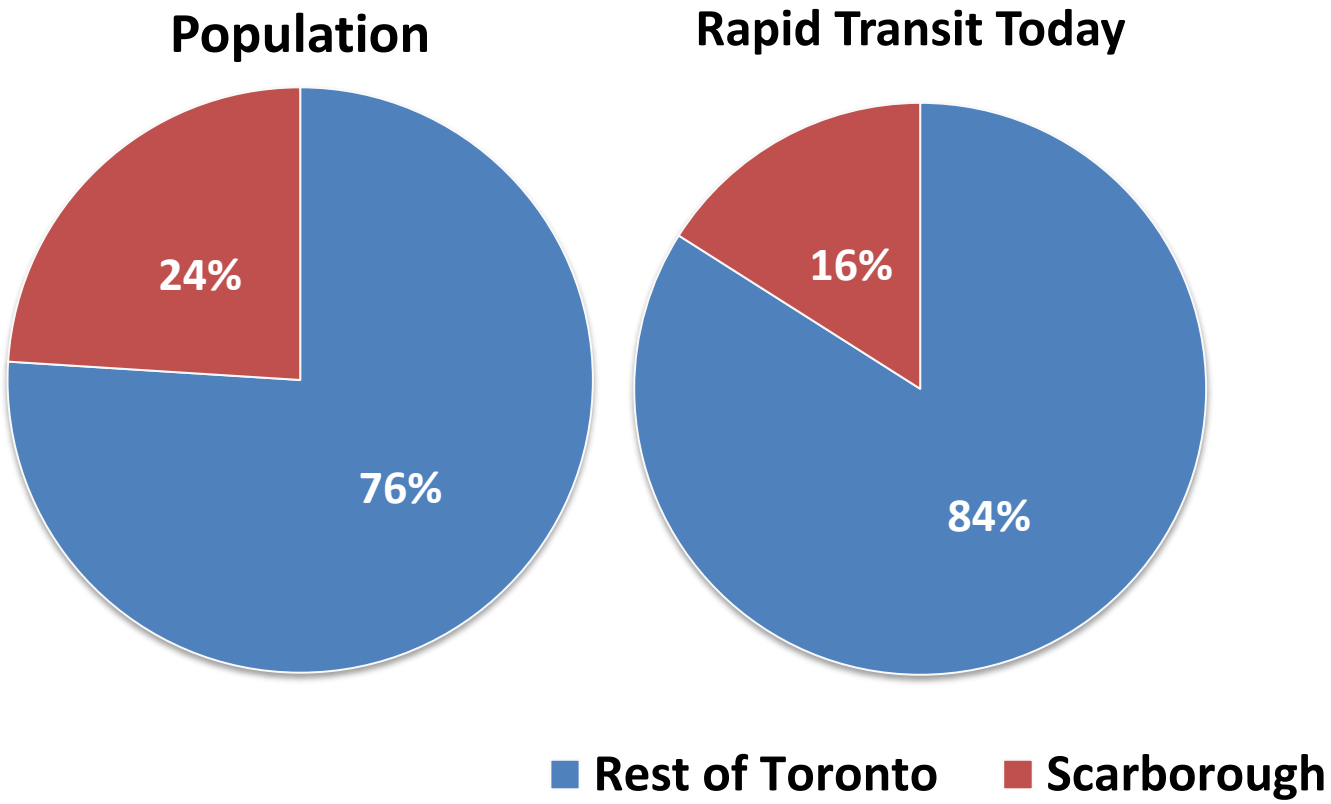
1992: Scarborough RT extension to Malvern proposed
1994: City Council refuses to approve SRT extension due to required tax increases

1994: Premier upgrades Eglinton busway ("BRT") plan to a subway
1995: New Premier cancels Eglinton subway

2002: Sheppard subway opens

2007: Mayor proposes 120 km (7 lines) Transit City plan, and Council approves
2009: Province approves 63 km (4 lines) with tentative funding
2010: Province provides confirmed funds for only 52 km (4 shorter lines)

4. We have a fairness problem



Scarborough has less rapid transit than it needs.

So how do we fix it? 4 Steps.

1. We learn from other cities:

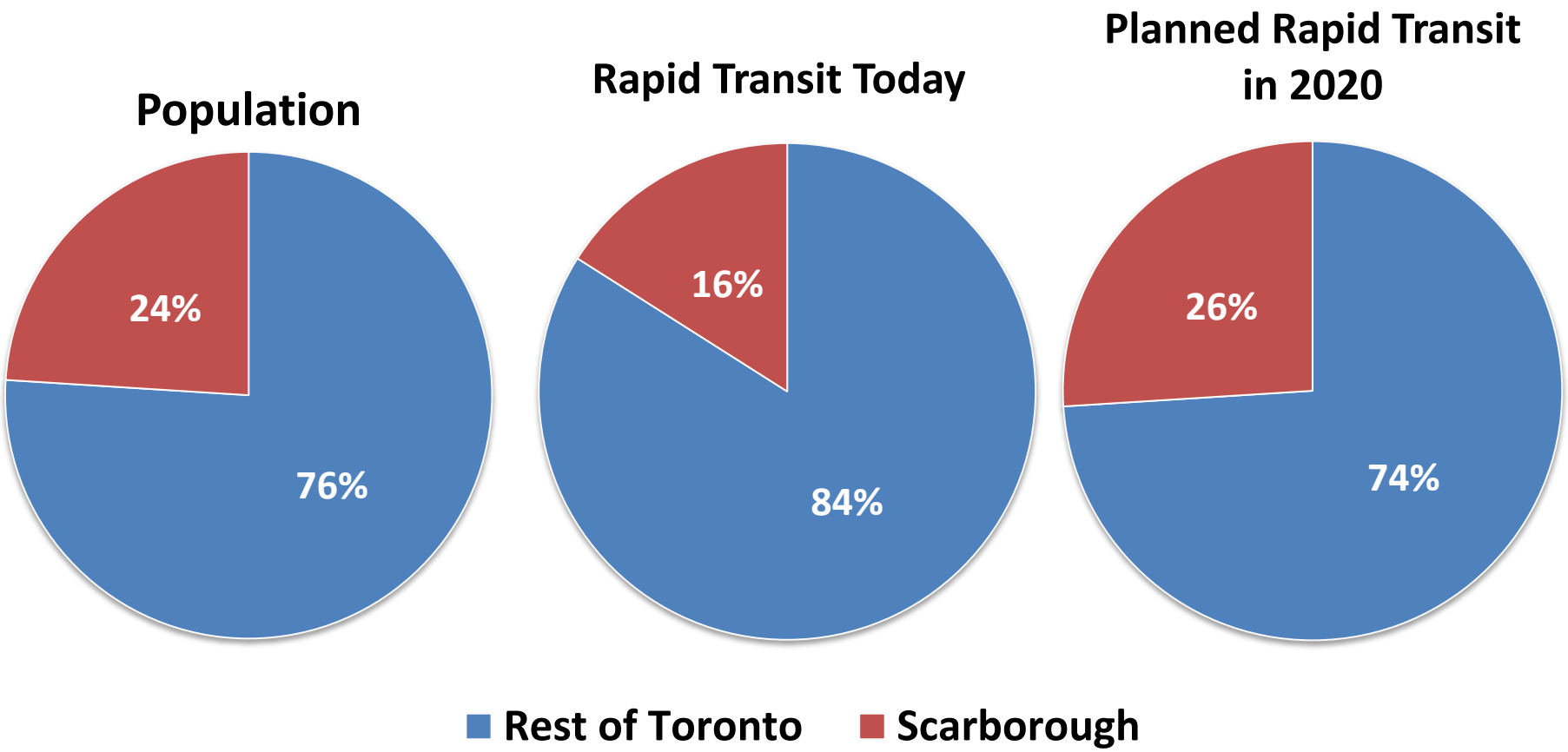
- Rail (both LRT & subway) attract more riders
- Rail (both LRT & subway) more enviro-friendly
- LRT costs only 25-60% as much as subway
- LRT brings retail development faster than subway

2. We build with confirmed funding:

- $8.4 billion from Government of Ontario
- $0.3 billion from Government of Canada

3. We advocate, council votes, then we build.

4. We fix the fairness problem:



The Timeline So Far

2007-2009

- Mayor Miller campaigned on plan for 8 LRT lines covering Toronto
- City Council voted to approve LRT plans and studies
- Construction began on Sheppard

2010

- Metrolinx confirmed full funding for four Toronto LRT lines
- City Council voted to approve LRT plans and construction
- Construction began on Eglinton, Agincourt GO Train Underpass

2011

- Mayor and Premier agreed to change plans, subject to City Council approval
- Most design and construction stopped on Sheppard

2012

- Mayor did not seek Council approval in 14 months, so a special meeting was called to decide the matter
- City Council voted 25-18 to confirm the previous LRT plan

PRESENTATION FROM TTC

David Nagler

Community Relations Team Lead

WHAT IS LRT?

What is LRT?

- Light Rail Transit uses electric vehicles in their own right-of-way to provide speed and capacity that are lower than subways, but much higher than buses and streetcars.

- Due to construction being mostly above-ground, LRT construction costs and timeframes are significantly lower than subways.

Construction Impact Comparison

Subway construction at Keele and Finch: Just one lane each way, for multiple years.

- All underground station construction (LRT or subway) has a large impact on surface travel for multiple years
- Surface light rail has a smaller impact on surface travel by other vehicles during construction, and a small impact on other vehicles during operation.

Vehicle Comparison (2012 fleet)

Bus: 10 metres, 50 riders

Streetcar: 15 metres, 75 riders

Scarborough RT: 50 metres, 220 riders

(must be shut down in 2015)

Sheppard subway: 100 metres, 667 riders

YUS / BD subway: 150 m, 1000-1100 riders

Vehicle Comparison (2016 fleet)

Bus: 10 metres, 50 riders

Streetcar: 15 metres, 75 riders

New on-street LRV: 30 metres, 130-250 riders

(delivery 2013-2018)

Sheppard subway: 100 metres, 667 riders

YUS / BD subway: 150 m, 1000-1100 riders

Vehicle Comparison (2020 fleet)

Bus: 10 metres, 50 riders

Streetcar: 15 metres, 75 riders

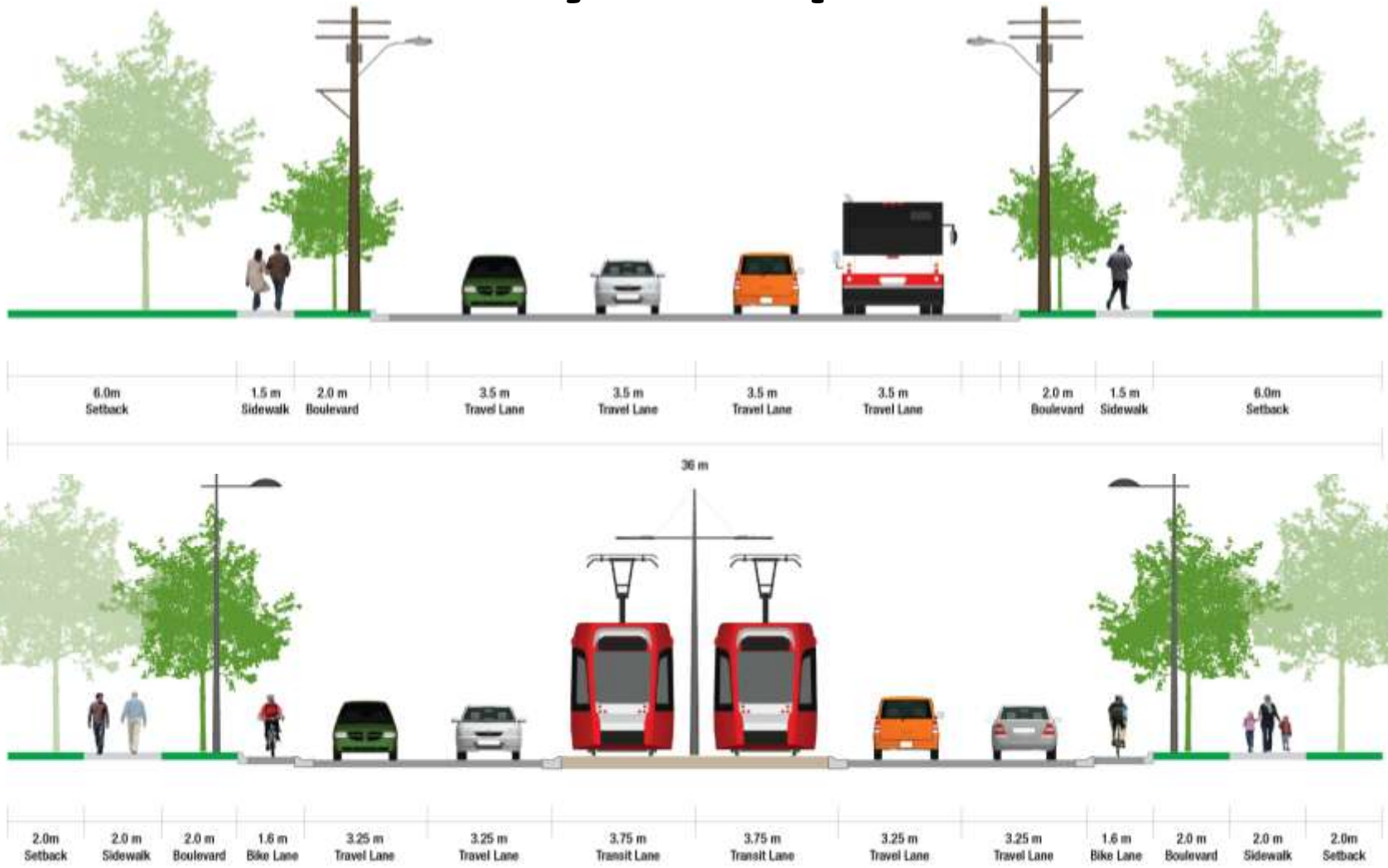
New on-street LRV: 30 metres, 130-250 riders

3-vehicle LRT trains: 90 metres, 390-750 riders

Sheppard subway: 100 metres, 667 riders

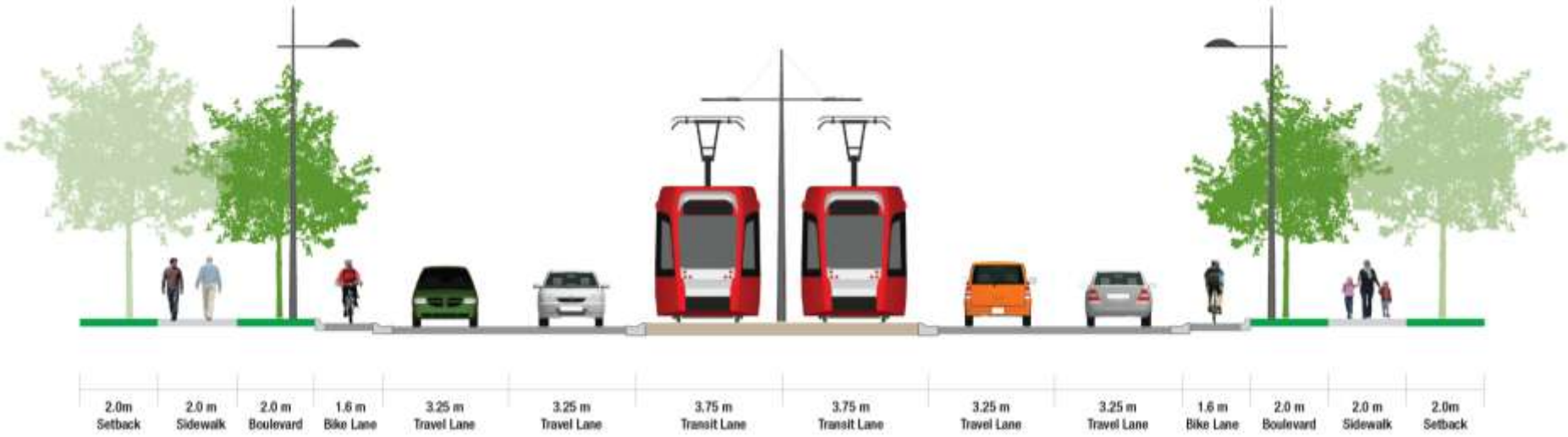
YUS / BD subway: 150 m, 1000-1100 riders

Roadway Comparison



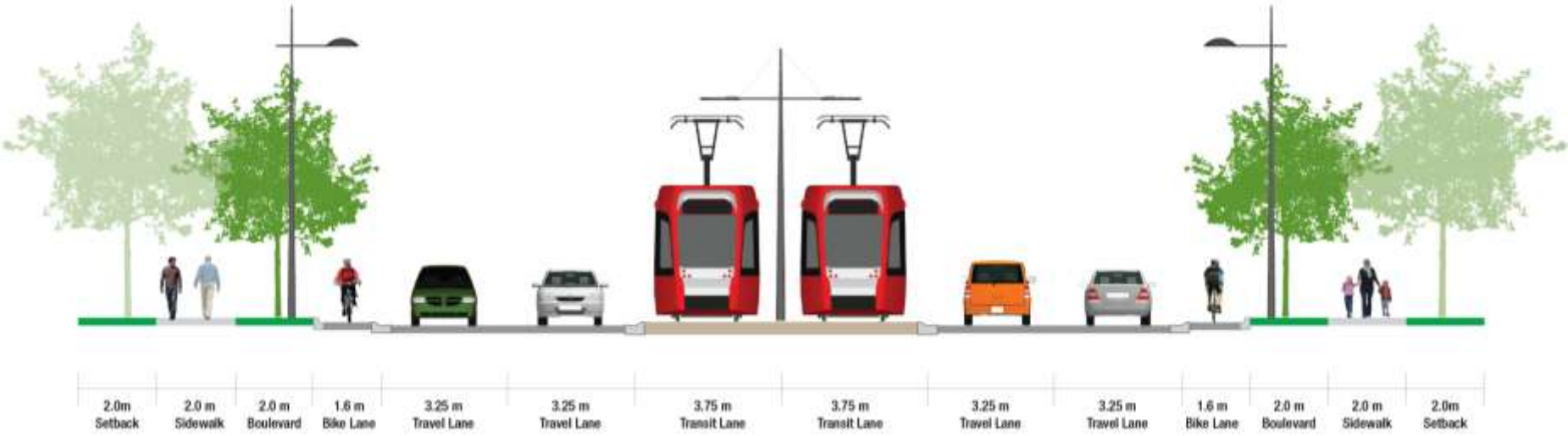
Roadway Notes 1

- LRT travels in its own lane, not in front of or behind cars
- LRT crosses traffic at signalized intersections, but has traffic light priority (i.e. rarely stops at a red)
- Sheppard 85 buses removed entirely from mixed-traffic lanes



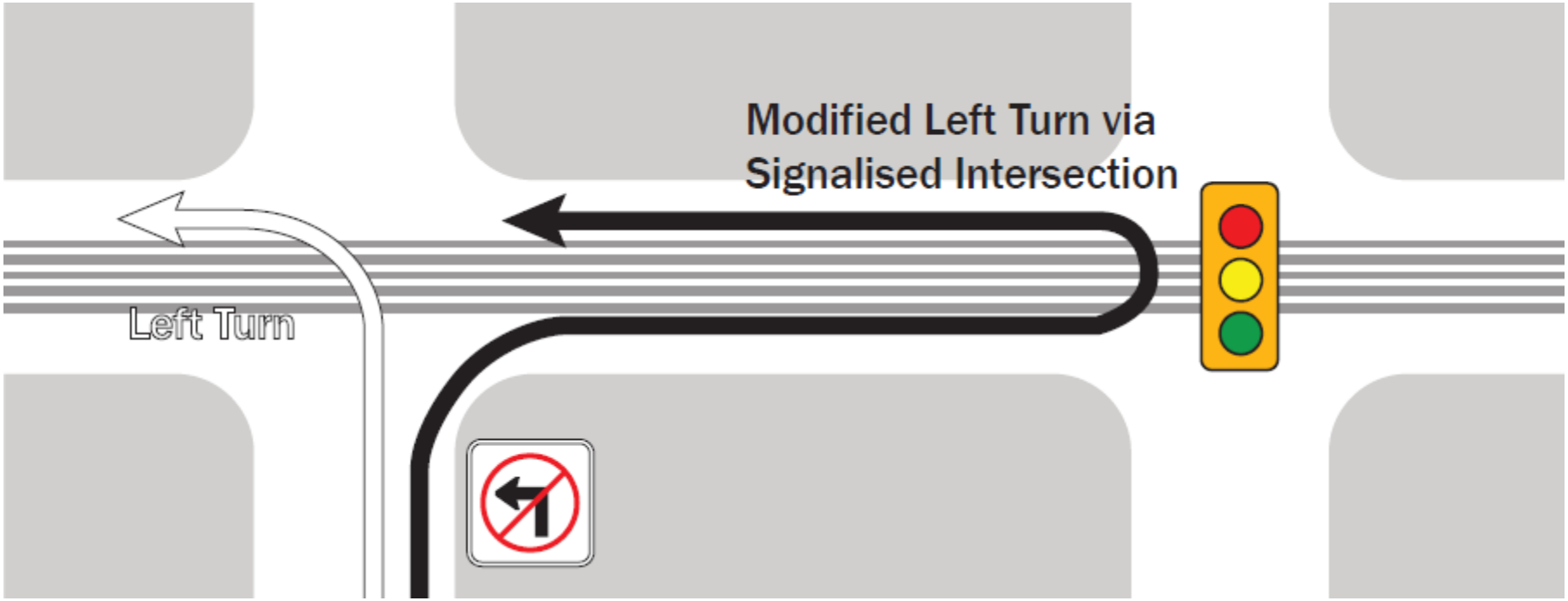
Roadway Notes 2

- On Sheppard, 4 mixed-traffic lanes will be maintained at all times. Roadway will shrink from 6 lanes to 4 + LRT from Consumers Road to Pharmacy Avenue (about 1.1 km out of 12 km).
- Curb cuts are being evaluated, so emergency vehicles can access LRT lanes to skip traffic.



How will I turn left?

- If no traffic light, you must turn right, then U-turn.
- Only about 15 of 55 streets on Sheppard, plus business driveways, require this U-turn.



Vehicle Speed Comparison

Transit Mode:		Speed:
Sheppard East bus		17 km/h
St. Clair streetcar		14 km/h
LRT	(surface)	22-25 km/h
	(underground)	30 km/h
Sheppard Subway (Yonge-Don Mills 5.5km)		35+ km/h

- Note: vehicle speed does not take into account stop spacing and “out of vehicle travel time” (walking, escalators, navigation off of street), and varies depending on stop spacing.

Overall Travel Time Comparison

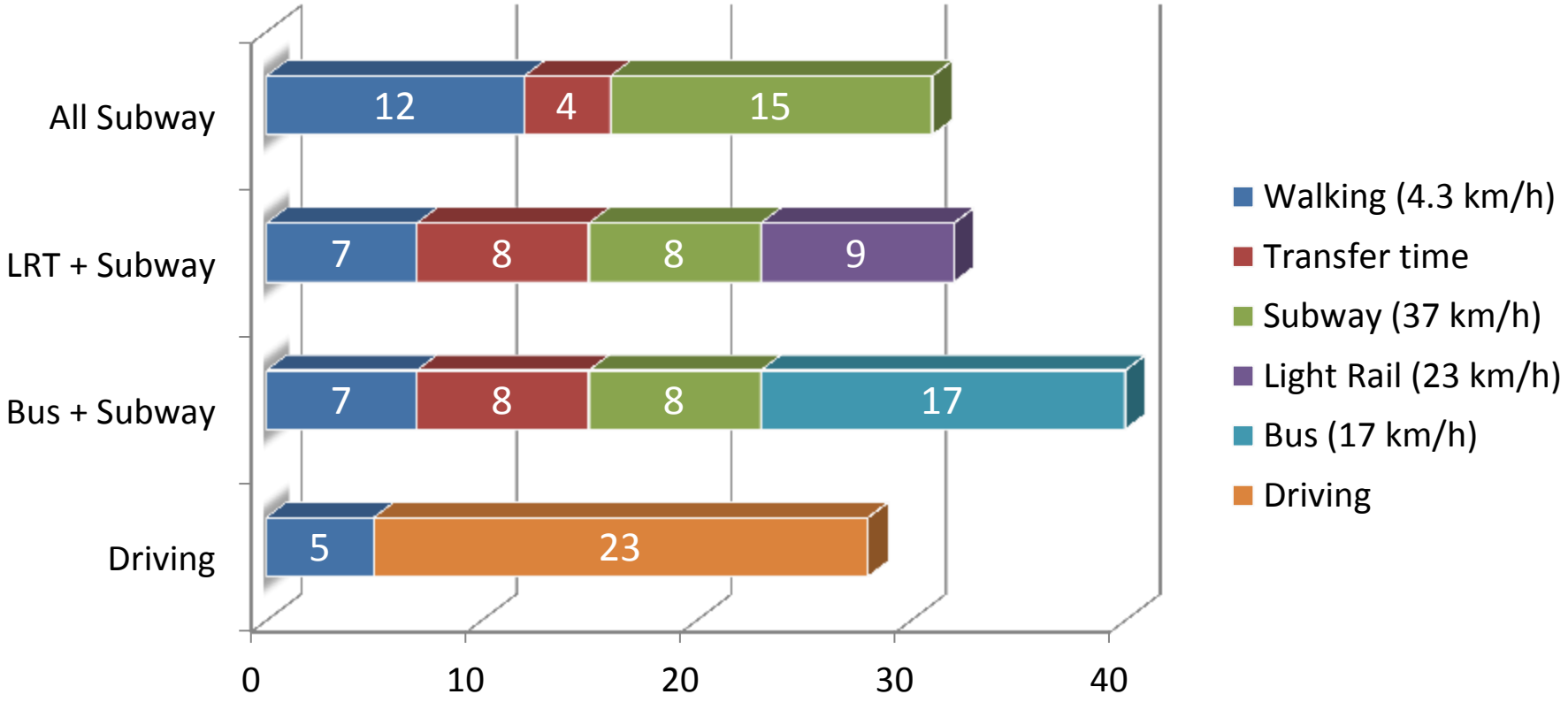
Transit Mode:		Speed:	Stop spacing:	Walking time:
Sheppard East bus		17 km/h	325 m	2:15
St. Clair streetcar		14 km/h	300 m	2:05
LRT	(surface)	22-25 km/h	458 m	3:10
	(underground)	30 km/h	833 m	5:45
Sheppard Subway (Yonge-Don Mills 5.5km)		35+ km/h	1.36 km	9:30

- "Stop spacing" is the average spacing in the approved Environmental Assessment design maps
- (Underground from Eglinton EA, surface from Sheppard EA, both still subject to change)
- "Walking time" = ½ average stop spacing x 1.2 metres per second walking speed

Real Travel Time Example

(estimated using Google Maps and proposed travel times)

From apartment building 1 block from Agincourt Library to Yonge Street by car, by bus + subway, by subway only, and by the planned LRT + subway, in rush hour.

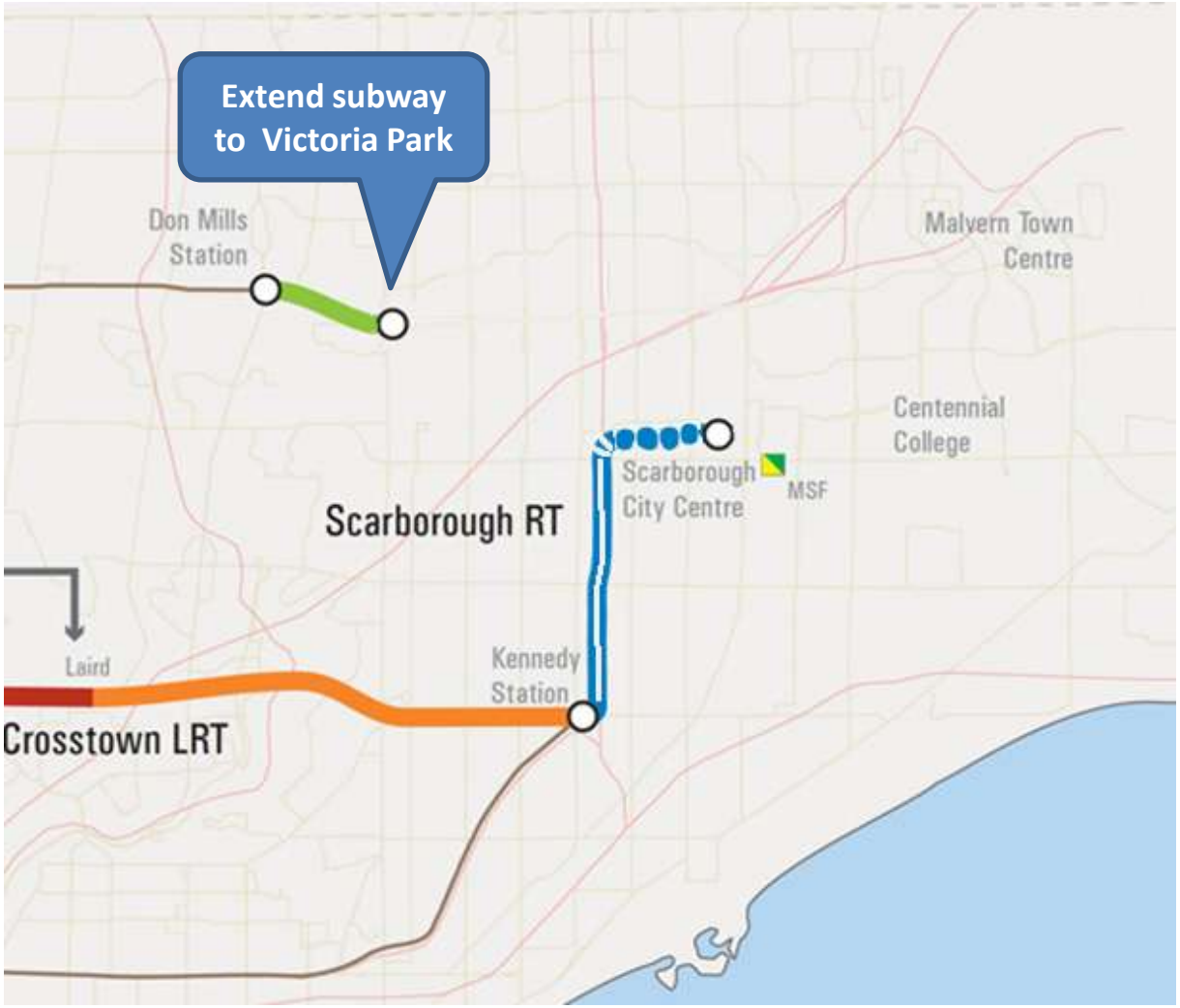


Costs Comparison

Transit Mode	Construction Cost	Vehicle Cost	Road Space Required	Time Cost (from Council approval to opening)
Mixed-traffic bus	-	**$500K**	Varies (mixed traffic)	-
BRT (bus RT)	**$40 M/km**	**$500K**	3-4 dedicated lanes (to allow buses to pass)	Roughly same as regular road reconstruction
LRT (surface)	**$85 M/km**	Included	2 dedicated lanes (roads usually widened)	Sheppard East original schedule: 7 years for 12 km
LRT (under-ground)	**$130-225 M/km**	Included	None (post- construction)	Eglinton Crosstown original schedule: 13 years for 25 km
Subway	**$250-350 M/km**	**$18.2M**	None (post- construction)	Spadina-York subway extension: 11 years for 8.6 km

WHAT IS BEING BUILT?

The rejected plan for Scarborough:



- 1.9 km: Subway extension on **Sheppard East from Don Mills to Victoria Park** (1 or 2 stations only)
- No extension from Scarborough Town Centre to Sheppard and Progress
- **Less new rapid transit in Scarborough**

The approved plan for Scarborough:

- 12 km: New LRT on **Sheppard East from Don Mills to Morningside**
- 6.2 km: **Replace aging Scarborough RT**
- 3.4 km: New LRT from **McCowan Station to Sheppard**, partly elevated & partly underground
- 3.2 km: New LRT on **Eglinton to Kennedy** (full line is 19.5km)
- **24.8 km in Scarborough**

What is being built in Toronto?

When will it be built?

- Delay from December 2010 to April 2012 due to Mayor's preference and lack of council vote caused schedule delays.
- Metrolinx has recommended new accelerated schedule to complete all lines by 2020, which Ontario government must confirm. (likely in Spring/Summer 2012)

Line:	Cost:	Planned Construction Dates:
Sheppard East LRT	$1.0b	2014-2018
Etobicoke Finch West LRT	$0.94b	2015-2019
Scarborough old RT □LRT replacement and extension	$1.8b	2015-2019
Eglinton-Crosstown LRT	$5.0b	2010-2020

COMMON CONCERNS

Common Concerns

- **LRT is slower than subways**
  - **True**: subway averages 20-40 km/h, and the Sheppard above-ground LRT will average 22-25 km/h. However, LRT at surface requires less walking time (elevators/escalators/stairs, hallways).

- **LRT is slow like buses**
  - **False**: buses average 12-20 km/h depending on traffic congestion. Sheppard East LRT will be 30-50% faster than the 85A Sheppard East bus, but also more reliable & consistent during rush hours.

- **LRT is the same as a streetcar / trolley**
  - **False**: while the technology basics are the same, many elements are different. Exclusive right-of-way, larger stop spacing, all-door boarding, multi-vehicle trains, and traffic-skipping tunnels all increase their speed and capacity.

Common Concerns

- **Will create more road congestion**
  - **False**: all roadways will maintain two or more traffic lanes in each direction, unimpeded by any transit vehicles, and all intersections will have signalized left turn signals.

- **LRTs have low capacity**
  - **False**: light rail vehicles carry the equivalent of 3-5 buses, and can be linked into trains carrying 390-750 riders.

- **LRT can't handle our winter weather**
  - **False**: the current downtown streetcar fleet can safely handle extreme winter weather, and rail transit modes also have greater stability than buses due to weight and rail connection.
  - Many cities much farther north than Toronto use surface LRT, such as Calgary, Edmonton, Minneapolis, Stockholm, and Zurich.

Common Concerns

- **Same "disaster" as St. Clair streetcar**
  - Construction on St. Clair did suffer delays, legal disputes, project scope changes, and poor coordination between different city departments (hydro burial, water mains, and streetscaping)
  - The TTC was approximately on time & on budget according to its Chief General Manager in February 2012. Almost all the delays and added costs were caused by the other departments' requirements and project scope changes.
  - The City has created a new coordination office to ensure construction coordination problems do not occur in future.

- **Which costs more to maintain?**
  - Subways require considerably more station infrastructure and staffing (attendants, cleaners, security, etc) compared to surface LRT. This means construction and ongoing labour costs are much higher.
  - 20 years ago, one study found subways cheaper to maintain, but more recent investigations have contradicted this.

Common Concerns

- **Subways will be good for population growth**
  - Subways can lead to higher density development, but in Toronto development has not matched projections. Both Sheppard and Bloor-Danforth subways have developed less than projected.
  - Just like subways, LRT encourages densification, and actually encourages retail development more than subways.

- **LRT already exists in many major cities worldwide**
  - New York has light rail on the Hudson shoreline in New Jersey (33 km, 24 stations)
  - Paris has light rail around its core (48.1 km, 87 stops)
  - Phoenix (32 km, 28 stops)
  - Los Angeles (31.7 km, 21 stops)
  - Seattle (25 km, 13 stops) …plus over 100 more!

Future Rapid Transit Costs

Other potential rapid transit expansion projects, with most recent cost estimates:

- Pearson extension of Eglinton line ($1b)
- Finch West extension to Yonge ($0.5b)
- Downtown Relief Line East ($3b) & West ($2.9b)
- Yonge subway to Richmond Hill ($3.1b)
- Don Mills LRT ($1.8b)
- Jane LRT ($1.5b)
- Scarborough-Malvern LRT (1.4b)
- Waterfront LRT (west) ($0.5b)

Note: no committed funding exists yet for these projects.

QUESTIONS & ANSWERS

Thank you!

More questions?

www.ttc.ca

www.metrolinx.ca

www.coderedTO.com

Resources

St. Clair project review: http://stevemunro.ca/?p=3191

www.ttc.ca, http://lrv.ttc.ca, http://spadina.ttc.ca, www.metrolinx.ca, www.thecrosstown.ca

http://www.urbanrail.net, http://lrt.daxack.ca, http://transit.toronto.on.ca

Sheppard Expert Advisory Panel Report (March 2012):
http://www.toronto.ca/legdocs/mmis/2012/cc/bgrd/backgroundfile-45908.pdf

Eglinton-Crosstown LRT EA and documentation:
http://www.toronto.ca/involved/projects/eglinton_crosstown_lrt
Sheppard East LRT EA and documentation: http://www.toronto.ca/involved/projects/sheppard_east_lrt
Finch West LRT EA and documentation: http://www.toronto.ca/involved/projects/etobicoke_finch_w_lrt/
Scarborough LRT EA and documentation:
http://www.toronto.ca/involved/projects/scarborough_rapid_transit/index.htm

Metrolinx Board Presentation (April 2012);
http://www.metrolinx.com/en/docs/pdf/board_agenda/20120425/TorontoTransitPlan_BoardPresentation_25April2012.pdf

LRT Videos to see it in action: http://www.youtube.com/watch?v=9k86lBV5824 and
http://www.streetfilms.org/phoenixs-metro-light-rail-takes-flight/