



TRANSPORT ACTION ONTARIO

Advocating for Rail-Based Public Transportation
Box 6418, Station "A" Toronto, ON M5W 1X3
<http://ontario.transportaction.ca>

Second Update on Funding Gaps for GTHA Rapid and Conventional Transit **Backgrounder Report**

December 15, 2017

In August, 2016, the Move the Greater Toronto and Hamilton Area (MTGTHA) collaborative of non-government organizations released a major report and backgrounder entitled "*Are We There Yet? The state of transit investment in the Greater Toronto & Hamilton Area*". Transport Action Ontario (TAO) is a core member of MTGTHA and was a major contributor to the report. The report is summarized below.

On September 8, 2017, TAO released a report and Backgrounder entitled "*Update on Funding Gaps for GTHA Rapid and Conventional Transit*". It summarized key events of the past year, and calculated an updated funding gap based on the assumed rapid transit network presented by Metrolinx in their discussion paper of Fall, 2016.

However, on September 14, 2017, Metrolinx released its Draft 2041 Regional Transportation Plan (RTP). It proposed a Frequent Rapid Transit Network (FRTN) that was substantially larger than assumed in the discussion paper. Therefore, on December 15, 2017, TAO released a second update report under the title, namely "*Second Update on Funding Gaps for GTHA Rapid and Conventional Transit*". Again, it summarizes key events of the past 16 months, and calculates a revised updated funding gap. This report is the backgrounder to that report and provides the details on the events and calculations.

1. Summary of MTGTHA Report and Funding Gap as of August, 2016:

The 2016 report and backgrounder found that the capital construction cost for the entire rapid transit plan as laid out in the 2008 Regional Transportation Plan (RTP), plus subsequent announcements, was about \$69B (2014\$). Assuming the entire plan was constructed, and funding promises made by government at all levels at the time were lived up to, additional capital construction funding of \$28.8B would be needed.

Operating, maintenance (O&M) and rehabilitation costs for these new rapid transit (RT) lines, currently small, were estimated to rise to \$1.6B/yr by 2022 and \$4.6B/yr by 2042, reaching a cumulative of \$78B by 2042. A significant fraction of O&M costs would be recovered from transit fares although it is difficult to allocate a split between rapid and conventional transit in an integrated network. The report assumed that 70% of new RT O&M costs were recovered from fares, and this recovery would accumulate to \$29B by 2042. Total necessary funding in the period 2014 to 2042 for new RT would

therefore be \$29B (capital gap) + \$78B (O&M, rehab) - \$29B (fares) = \$78B or \$2.8B/yr. At steady state in the distant future, net O&M and rehab were estimated at \$3.2B/yr. Therefore a new funding stream of \$2.8B to \$3.2B/yr would be needed in perpetuity to build and operate the new RT network. This covers construction costs in early years and O&M and rehab costs in later years. It is net of fare recovery.

2. Events since August, 2016

2.1 Updates to RT Network- Scope and Costs

- On September 14, 2017, following over one year of consultation, Metrolinx issued its Draft 2041 Regional Transportation Plan. In Appendices 3A to 3D, it listed a total of 100 projects in a Frequent Rapid Transit Network (FRTN) that were either completed, in delivery, in development or “other proposed”. Page 109 of the draft RTP indicated that “the preliminary estimate of the capital costs for these projects is \$45 billion over 25 years (order of magnitude estimates). This \$45 billion represents the next generation of investment and is in addition to the more than \$30 billion that has already been committed. It is needed to fund (a) projects in Development that are currently in the planning and design stage, estimated at \$20 billion (b) investments in other rapid transit infrastructure, estimated at \$23 billion (c) other infrastructure e.g. walking and cycling infrastructure including station access infrastructure, estimated at \$2 billion”.
- It follows that the capital cost of the proposed FRTN is over \$75 billion according to Metrolinx figures.
- The draft RTP also states that “the preliminary net operating funding requirement for the Draft 2041 RTP (over and above what is needed to operate existing services and the In Delivery projects) is estimated to be approximately \$1 billion annually. This represents the necessary subsidy, above and beyond fares paid by transit users, to fund routine infrastructure maintenance, but not the replacement of vehicles or major rail rehabilitation”.
- The City of Toronto has clarified the costs (staff report 10/31/16) associated with Smart Track (6 new stations on Kitchener and Stouffville GO RER lines) and Eglinton West LRT, with total capital construction costs of \$3.7B.
- Metrolinx (staff report June 28, 2017) has provided capital costs and indicated the Province has approved funds for three extensions to the GO system: Bowmanville Extension \$550M, Kitchener Extension (presumably the Missing Link project) \$2.25B, Niagara Extension \$160M, all in 2014-2016\$.

2.2 Update on Provincial Funding Commitments and Revenue Sources

In addition to the funding for the 3 GO extensions above, in June, 2017, Ontario announced \$155M for Relief Line project development (planning, business case, environment assessment, design/engineering) and \$55M for Yonge Subway extension (advancing design and engineering).

Progress on revenue sources has been modest and controversial (re asset sales and road tolls):

- Asset sales (GM shares, LCBO head office lands, Hydro One shares) started in 2015 and continue, with proceeds going into the Trillium Trust which is dedicated to fund infrastructure

projects under the Move Ontario Forward plan. The 2017 Provincial Budget (pg 160) indicates that \$5.3B have been credited to the Trillium Trust, on track to reach a target of \$5.7B. Other real estate assets are anticipated for sale, including OPG HQ (\$200M) and Seaton and Lakeview lands. It is not known how much of this will go to transit.

- Ontario started its HOT lanes pilot on the QEW in August, 2016 and it continues with good driver acceptance.
- In December, 2016 Toronto City Council approved road tolls on the DVP/GE expressways as a new revenue source, but in January, 2017 the Province indicated they would not approve the required regulatory amendment. Instead, the Province committed increasing the transit share of the existing gas tax over the next four years from 2 ¢/L to 4 ¢/L. Provincial gas tax grants are provided to municipalities to fund transit improvements, such as major infrastructure upgrades, buying additional transit vehicles or improving service. In 2016-2017, about \$235M will be provided to GTHA agencies. This will double over the next few years.
- Ontario’s Climate Change Action Plan was released in 2016 and kicked in on January 1, 2017, with total anticipated revenue of \$5 – 8B over 5 years in total/all sectors, with \$350 - 675M planned to be directed at improvements to GO Transit.
- In February, 2017 Ontario instituted tolling on Highways 407 (East extension) and 412, with revenues to go to transit.
- 905 Chairs/Mayors have requested the Province to give their municipalities the same revenue tool opportunities that Toronto has, under City of Toronto Act, 2006, eg land transfer tax.
- In August, 2017, the Association of Municipalities of Ontario (AMO) issued a request to boost the HST from 13% to 14%, raising \$2.5B/yr dedicated for municipal infrastructure. Of 7 tax options, AMO’s research found that a retail sales tax increase was the fairest way to go, spreading the cost more widely. A Nanos poll suggested a majority of Ontarians supported such an increase. A majority opposed cutting municipal services to freeze property taxes, but was also very concerned about future property tax increases (“fixation”). All three major Ontario party leaders immediately said “no” to the AMO request.

MTGTHA has long stated that the Province needs to earmark more funding for transit, particularly from new revenue sources. Here is the summary of amounts cited above.

Table 1 –Provincial Revenue Sources for Transit

Revenue Source	Amount	Comment
Asset Sales	\$5.3 B to date (province wide)	One-time source. Not certain how much will go to GTHA transit
HOT lanes pilot on QEW	Small	New source, but likely little net revenue. Will grow as HOT network expands
Provincial Gas Tax -increased transit share to 4 ¢/L	\$235M/yr growing to \$470M/yr to GTHA	Reallocation of existing revenue stream
Climate Change Action Plan (CCAP)	\$100 – 150M/yr for first 4 years to GO Transit	New source.
407 East and 412 Tolls	?	New source

Assuming the current commitments from CCAP and Provincial Gas Tax continue unchanged, these will provide about \$600M/yr for GTHA transit, of which \$400M is new money.

2.3 Update on Federal Funding

- Based on the City of Toronto staff report 10/31/2016, it is now possible to quantify Prime Minister Harper's commitment of funding 33% of Smart Track costs up to a maximum of \$2.6B. The expected federal contribution for 6 new ST stations and towards the Eglinton LRT West is \$1.2B in total.
- In Budget 2016, and the Fall, 2016 Economic Statement, \$3.4B was allocated nationally over 3 years to Phase I of the Investing in Canada Plan, called the Public Transit Investment Fund (PTIF). The Ontario portion is \$1.5B, and has largely gone to small state of good repair projects. For example, Hamilton has received \$32M for new buses, garage and bus stops, and Burlington has received \$3M. However, York (\$36M) and Toronto (\$27M) used portions for studies of Yonge Subway extension and Relief Line respectively.
- On March 31, 2017, Prime Minister Trudeau and Infrastructure Canada announced \$1.9B under the Harper-era \$14B New Building Canada Fund (NBCF) for funding up to 50% of project costs for extra track and grade separations on 4 GO RER corridors. This \$1.9B is a generous fraction of the entire fund, so it is likely that no more funds from the NBCF will flow to GTHA transit. As GO RER was already fully funded by the Province, the Metrolinx CEO stated that this \$1.9B grant means that more Metrolinx funds are freed up to work on other Next Wave projects.
- Canada issued Budget 2017, providing more details on Phase II public transit investments of \$20.1B over 11 years. On July 7, 2017 Ottawa confirmed that it will provide \$8.3B to Ontario of which \$4.8B would be for GTHA transit. The federal cost share will vary between 40% (when costs shared with a municipality and province) and 50% (when costs shared only with a province). Based on federal behaviour in the past, this new funding will likely be earmarked for large RT projects rather than small projects as in PTIF Phase I. It is presumed that this money is over and above that committed for SSE (\$660M), Smart Track (\$1.2B) and GO RER (\$1.9B).
- The Government also announced plans to establish the Canada Infrastructure Bank, with \$35B to be invested in large transformational projects such as regional transit, transportation networks and electricity grid interconnects. Of this, \$5B is earmarked for public transit over the next 11 years. No specific project funding has been announced.
- On June 23, 2017, Ottawa formally announced they were reallocating \$330M in support of Sheppard LRT to the Finch LRT, as the funding from the Harper-era Building Canada Fund was set to expire unless used soon. This does not change their total commitment. As Finch was already fully funded by the province, presumably this frees up provincial money to be used elsewhere.

Although not in the "update" category, it is worth summarizing the Federal Gas Tax fund. It is currently about \$800M/yr for Ontario or 5 cents/liter, of which about 50% would be for GTHA, It is directed to municipalities and can be used for many types of infrastructure. It is allocated on a per capita basis and administered by AMO. The City of Toronto normally directs about \$160M/yr to the TTC. Brampton,

Mississauga, and York also direct some federal gas tax money to transit. Assume that in total, about \$200M/yr goes to GTHA transit.

2.4. Updates on Municipal Commitments

In February 2016, Toronto and York agreed to pick up \$400M and \$160M respectively for the cost overrun for the Spadina Subway Extension (TYSSE). This was not reflected in our August 2016 report.

Toronto is kicking in \$55M for relief line studies, (50% from PTIF).

3. Revised Capital and Operating Costs and Funding Gap for new FRTN plan

The capital costs of the new FRTN network can be estimated from two sources:

- The transit agencies, notably Metrolinx and the TTC, have published the capital costs for some projects, notably First Wave, Second Wave, GO RER, other GO extensions and Smart Track. Additionally, many of these projects have complete or partial committed funding. Table 3 summarizes these projects, totalling \$57.7B. Committed capital funding from 3 levels of government is \$48.4B, leaving a capital funding gap of \$9.3B.
- The remaining projects in the FRTN have no specific published capital costs. We have estimated these costs based on generic \$/km for the different technologies. To ensure no projects are overlooked, Table 4 lists the remaining projects requiring this generic estimate, and Table 5 provides the estimate, totalling \$16.9B. None of these projects has committed funding.
- Note that this estimate excludes the 30 Priority Bus projects in the FRTN. In discussions with Metrolinx, Priority Bus is the new term for “BRT-lite” and involves running BRT-type buses in mixed traffic at a higher frequency and greater stop spacing than conventional bus transit. The capital cost of BRT-lite is essentially for the vehicles only. Assuming vehicle capital cost of under \$1M per vehicle, and an average of 10 minute headways, the capital cost per km would be well under \$1M/km. This is too small to significantly affect the capital cost of the total FRTN.

Therefore the capital construction costs of the draft FRTN network, excluding Priority Bus, is $\$57.7B + \$16.9B = \$74.6B$, which is 108% of the cost of the network assumed in our 2016 MTGTHA report. The capital funding gap is $\$9.3B + \$16.9B = \$26B$. O&M and rehab, net of fares, over the 28 year period 2014-2042 are assumed to be 108% of our 2016 value, or $108\% \times \$49B = \$53B$.

Total funding gap over 28 years is $\$26B + \$53B = \$79B$ or $\$2.8B/yr$.

Note that this capital estimate is remarkably close to that given on Pg 109 of the draft RTP, which quotes over \$30B + \$45B (order of magnitude estimates) = over \$75B. The RTP does not quote federal and municipal commitments which we estimate at \$14B, but still the agreement is close.

4. Capital and Operating Funding Gap for Conventional Transit Network now low

The September 8, 2017 TAO update report assumed, due to the abridged RT network in the 2016 Metrolinx discussion paper, that conventional transit, such as a Frequent Transit Network, would have to pick up the slack. Assuming traditional funding sources continued at typical levels, the unfunded gap was about \$1.0B/yr. With the more extensive FRT network now in the draft RTP, it is reasonable to assume that traditional municipal funding sources, namely transit fares, development charges, municipal taxes and traditional levels of the provincial and federal gas taxes, can pick up the operating and routine expansion needs for conventional transit.

5. Conclusions

The grand total of unfunded gaps, net of fares, traditional municipal contributions and other ongoing funding, is

Table 2 – Summary of Unfunded Gaps

New FRT network (construct and operate, maintain and rehabilitate subsidy)	\$2.8B/yr
Conventional transit - operating and routine expansion	Nil
Minus ongoing funding from CCAP and new increment of provincial gas tax	(0.4B/yr)
NET FUNDING GAP	\$2.4B/yr

Table 3- Capital Costs and Commitments for First Wave, Next Wave and Other Approved RT Projects

	\$B	Prov Comm.	Fed Comm.	Mun Comm.
First Wave (2008\$)				
TYSSE (Spadina Subway Extension)	2.6	1.1	0.7	0.9
Eglinton LRT	5.3	5.3		
Scarborough LRT	1.8	1.8		
Finch LRT	1.0	1.0		
Sheppard LRT	1.0	0.7	0.3(now Finch)	
Mississauga BRT	0.3	0.1	0.1	0.1
VIVA BRT	1.4	1.4		
UP Express	0.5	0.3	0.2	
GO Georgetown	1.5	1.1	0.4	
Union Station	0.7	0.4	0.2	0.1
TOTAL (2008\$)	16.1	13.1	1.9	1.1
INFLATE TO 2014\$ (15%)	18.5	15.0	2.2	1.2
New Costs in First Wave (2014\$):				
-Replace Scarborough LRT with SSE	1.6		0.7	0.9
-TYSSE overrun	0.7			0.7
TOTAL (2014\$)	20.8	15.0	2.9	2.8
Next Wave(2008\$)				
Relief Line	7.4	0.15(2017\$)	0.03(2017\$)	0.03(2017\$)
Yonge Subway	3.4	0.05 (2017\$)	0.04(2017\$)	
GO Rail Expansion	**			
GO Lakeshore Expansion	**			
Electrify GO Kitchener and UP Exp.	**			
Brampton Queen	0.6			
Dundas BRT	0.5			
Hamilton LRT	1.0	1.0		
Hurontario LRT	1.6	1.6		
TOTAL (2008\$)	14.5	2.8		0.1
TOTAL(2014\$)	16.7	3.2	0.0	0.1
GO RER (2014\$)	13.5	13.5	1.9	
Other GO extensions:				
-Bowmanville	0.6	0.6		
-Kitchener (Missing Link)	2.2	2.2		
-Niagara	0.2	0.2		
ST (6 stns+Egl. W. LRT) (2016\$)	3.7		1.2	
OTHER FED \$ (NO PROJ. ASSIGNED) – Prov. Matching \$ not included			4.8	
GRAND TOTAL (2014/6\$)	57.7	34.7	10.8	2.9

* Prov and Fed \$ for first wave projects are approximate to force totals to about \$13B and \$2B (2008\$)

** Project became part of GO RER

Table 4 - Additional FRTN projects in Metrolinx draft RTP not covered in Table 3

Appendix	Description	Proj. No's	Number of Proj.	Covered in Table 3?
3A	Completed 2008-2017	1-8	8	All
3B	In Delivery	9-32	24	All
3C	In Development	33-45	13	All but 33,37,38,39,43,44. See Table 5
3D	Other-GO	7 Projects	7	None, see Table 5
3D	Other-Subway	Various	2	None, see Table 5
3D	Other-BRT/LRT	Various	16	None, see Table 5
3D	Other – Priority Bus	Various	30	None, not costed in Table 5
TOTAL			100	

Table 5 – Capital Cost Estimates on Projects not Covered in Table 3 (Excluding Priority Bus)

No.	Description	Km	\$M/km	\$M
37	Hwy 7 W BRT extension	11	20	200
38	Waterfront W LRT	22	60	1300
39	Waterfront E LRT	7	60	400
43	Eglinton E LRT	11	60	700
44	Hwy 7 E BRT extension	6	20	100
	SUBTOTAL			2700
46	Lakeshore W 15 Min GO Ald-Ham ext	10	50	500
53	Milton 15 Min GO	50	50	2500
88	Barrie 15 Min GO Aur-East Guill extension	10	50	500
89	Stouff 15 Min GO Uville-MtJoy extension	7	50	300
90	RH all day GO	26	25	700
97	Lakeshore E 15 Min to DT Oshawa ext	5	50	300
100	Lakeshore E all day GO to Martin	20	25	500
	SUBTOTAL			5300
73	Subway Line 2 and Bloor/Yonge impro	26	?	1000?
74	Sheppard W subway extension	5	400	2000
	SUBTOTAL			3000
47	BRT Hamilton A line	8	20	200
54	Trafalgar BRT/LRT	10	40	400
61	Downtown Miss transitway and terminal	3	20	100
62	Brampton Main BRT/LRT	3	40	100
70	Finch W LRT extension	6	60	400
71	Jane N BRT/LRT	10	40	400
72	Jane S BRT/LRT	18	40	700
75	Steeles BRT/LRT	20	40	800
76	Finch LRT extension east	7	60	400
77	Leslie N BRT/LRT	10	40	400
78	Don Mills/Leslie BRT/LRT	4	40	200
79	McCowan S BRT/LRT	8	40	300
81	Sheppard E LRT extension	3	60	200
83	Malvern Connection LRT	5	60	300
85	Maj Mac BRT/LRT	15	40	600
98	Simcoe BRT/LRT	11	40	400
	SUBTOTAL			5900
	GRAND TOTAL			16900

Notes: -cost of “BRT/LRT” assumed intermediate between BRT and LRT

-Unit costs for 15 minute GO from Transport Action Ontario Regional Rapid Rail report, 2013 at \$50M/km. Unit costs for all-day GO based on half of this.

-Report on Renewal Plan for Line 2 expected by TTC late 2017

-Draft RTP pg. 109 Figure 35 cites capital costs+vehicles of BRT at \$25M/km, at-grade LRT at \$60M/km, elevated LRT at \$200M/km and subway at \$370M/km.