





Transit OVER Traffic

Hard Truths for Addressing Gridlock in the GTHA



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About Transport Action Ontario

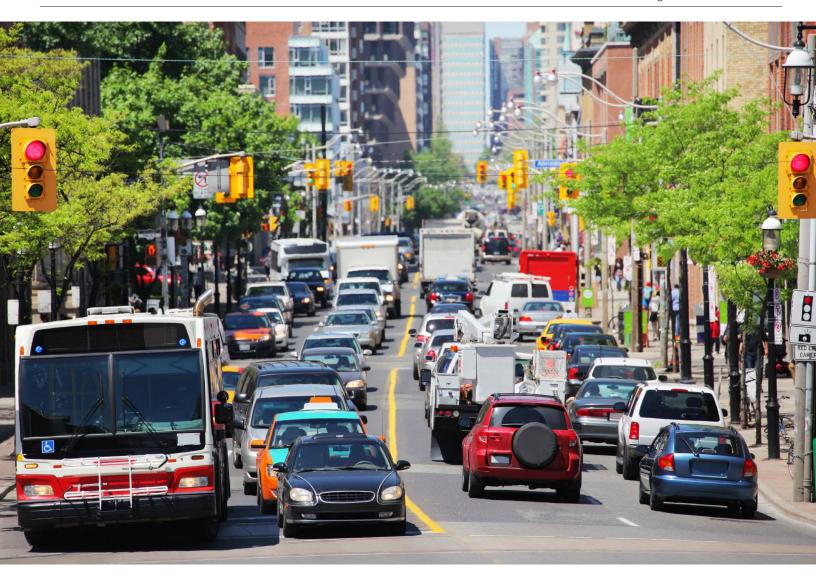
Transport Action Ontario is a non-partisan, non-profit, volunteer-based advocacy group focused on improving public transport across Ontario.

For 50 years Transport Action Ontario has worked with a broad cross section of stakeholders including public and private institutions, municipalities and the provincial government on building an integrated, barrier-free, public transportation system allowing car-free mobility. Transport Action Ontario advocates for cost-effective, low-risk solutions that promote environmental responsibility and wellness.



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Executive Summary

The Greater Toronto and Hamilton Area (GTHA) is at a crossroads. The GTHA's population continues to grow rapidly and along with it, traffic congestion. Various studies estimate the economic impact of congestion to be about \$10B/yr, and a recent report estimated the quality of life cost to be an additional \$35B/yr, for a total of \$45B/yr.

Residents, visitors to the GTHA, and governments' including Premier Ford's own government, agree that road congestion is a problem. Worldwide surveys routinely identify the GTHA as one of the worst regions for congestion. For example, a recent traffic index from TomTom shows Toronto has the 4th worst congestion in North America out of 106 cities.

Where experts disagree with the Ontario government's approach is in the current push to build more mega-highways and the under-the-401 highway tunnel. This report makes the case for cancelling three proposed highway projects (Highway 413, the

Bradford Bypass and the 401 Tunnel) and instead funding key public transportation projects that would actually reduce congestion. The report provides compelling evidence that the capital cost for these highway projects estimated at \$80 billion should be reallocated to rapid transit projects for maximizing public benefits.

Our research demonstrates that by focusing on investments that increase the frequency of transit while also constructing new transit lines, we can deliver real solutions to congestion. In Canadian urban centres, achieving 30% of trips by transit is readily achievable, easing pressure on roads and highways. In the case of the GTHA, an additional operating cost subsidy of \$3 billion/year would be needed - which could be largely funded by reversing recently-implemented driver subsidies in Ontario.

I. Ontario's response to the congestion crisis is making traffic problems worse

Regrettably, the Province of Ontario's approach to tackling traffic congestion is making the problem worse. The current approach includes:

A. Mismanagement and Cost Overruns of Higher-Order Transit Investments.

After decades of underinvestment, the current wave of large-scale capital spending (\$100 billion from three levels of government) on new higher-order transit projects, such as the Ontario Line subway, GO Train Expansion and new light rail transit (LRT) and bus rapid transit (BRT) systems in cities such as Toronto, Brampton and Hamilton - are welcome and very much needed to keep pace with population growth. And while there is truth in the government's claim that these are the largest capital investments in transit in North America - there are significant issues. First, dozens of badly-needed rapid transit projects remain unfunded, resulting in poor access to transit for the majority of GTHA residents whose car-dependency continues due to a lack of public transit alternatives. Second, delays, litigation and cost overruns have plagued many projects, including the GO Expansion, Toronto Lines 5 and 6 and Mississauga's McCallion Line. This means that new-in-place rapid transit capacity has not kept pace with the region's population growth nor does it provide value for money to Ontario's taxpayers.

B. Reduced Transit Operating Funding by Senior Levels of Government.

The Province has effectively cut permanent sources of public transit operating funding support such as the Dedicated Public Transit Fund (DPTF), and is only supporting new rapid transit operations through temporary, time-limited arrangements. The DPTF program remains at 2 cents/liter of gasoline sales, but since this funding source has not scaled with inflation, its purchasing power has eroded by roughly 30% since its inception. Since 2018, per-capita public transit service levels in municipalities across Ontario have declined, on average by 18%. This has had a disastrous effect on ridership as the most important factor to public transit's success is service frequency, in particular for bus networks. Simply put governments are not prioritizing the operation of more frequent and convenient service to ensure that more people will use it.

Another concerning development is the recent cancellation of the Metrolinx contract with Deutsche Bahn (DB) under the GO Expansion project - allegedly because DB had aspirations to run higher train frequencies than Metrolinx wished.



C. Environmentally Damaging, Expensive and Ineffective Mega-Highway Projects.

Politically driven and very expensive urban highway projects will not address the congestion challenges facing the GTHA today due to the well-known induced demand effect. In 2022, the Auditor General of Ontario noted with concern that Highway 413 and the Bradford Bypass were prioritized at the request of the Minister of Transportation, despite advice from Ministry experts to the contrary. The Ontario government is also proposing a tunnel under Highway 401 at an estimated capital cost of \$50-100 billion with no publicly-released feasibility studies in place. Between Highway 413, the Bradford Bypass and the Highway 401 tunnel, the Ontario government will be committing approximately \$80 billion for projects that will exacerbate GTHA congestion in the next 25 vears.

D. Significant Subsidies for Drivers.

The Ontario government has reduced general revenues by more than \$2.5 billion per year through gasoline tax reductions, the elimination of annual license plate fees, and the removal of tolls on Highways 407 East, 412 and 418 - all for the benefit of automobile drivers.

E. Changing Land-use Rules to Encourage Sprawl.

The Ontario government has reinforced land-use rules that promote sprawl, thereby locking Ontarians into increasingly car-dependent and less affordable neighbourhoods. These measures ignore the recommendations of Ontario's Housing Affordability Task Force to legalize as-of-right fourplexes and liberalize restrictive zoning to enable more secondary suites and laneway housing. Rather than encouraging density and affordability, the Ontario government has

facilitated growth outside established urban boundaries by weakening legal protections through changes to the Provincial Planning Statement and the Cutting Red Tape to Build More Homes Act (Bill 185).

What is Induced Demand?

There is a large body of evidence that new highways or additional lanes do not reduce "gridlock" in urban areas. This is due to the phenomenon known as induced demand whereby new road capacity always attracts more drivers. This phenomenon reflects a long-standing economic principle where making something more available and cheaper only increases its consumption. Indeed, the Ministry's own modeling shows crushing highway traffic congestion in the region by 2041 with or without the construction of the proposed Highway 413. A recent investigation by Global News, for example, revealed that, despite adding 134 kilometres of new lanes to Highway 401 across the province over the past decade, the Province of Ontario expects the congestion in Toronto to double (and speeds to decrease by half) on Highway 401 by 2051. Induced demand also exists for urban transit - as new services (e.g. higher frequencies) are introduced, ridership increases. This, however, is a positive and self reinforcing outcome and is the basis for our recommendation to increase transit operating funding.

"Adding car lanes to deal with traffic congestion is like loosening your belt to cure obesity." - Lewis Mumford, 1955.



II. Bold Action Required: Using Highway 413 as a Case Study

By using Highway 413 as a case study, we demonstrate that equivalent investments in three major transportation focus areas would provide better public transit options while also relieving congestion faced by commuters.

a. Focus Area One - Build Out Transit Capital Projects in the Western GTA Beyond Current Funded Projects (Total Cost: \$14 Billion)

The current planned capital improvements to the GO Transit rail network, called the "GO Expansion" project, stand as one of the GTHA's most important funded transit initiatives. It proposes to bring all-day two-way 15-minute train service on core portions of five out of seven GO corridors. This capital program is anticipated to cost \$30 billion.

Beyond the "GO Expansion", there are other important unfunded GO rail capital projects in the same geographic area as Highway 413.

- GO Kitchener Service Expansion 85 km (Bramalea to Kitchener) at \$1.5 billion
- GO Bolton/Caledon 30 km (Bolton to Weston) at \$1.0 billion
- Pearson Airport GO Connection 5 km (spur line) at \$2.0 billion+

Municipalities are also still waiting for funding for public transit projects identified long ago - namely bus rapid transit and or light rail for Vaughan, Bramton and Mississauga. In addition to the higher order GO Rail projects identified above, the Province of Ontario could move forward with supporting one LRT project and two BRT projects:

- The recently-proposed "East-West Cross-Regional BRT Connector" running in the existing transitway right of way in the Highway 407 corridor from Yonge St to Milton - 43 km at \$6.4 billion
- The Brampton Main Street LRT 4 km at \$2.8 billion
- The Brampton Queen St/York Hwy 7 BRT 24 km at \$0.1 to \$0.5 billion

In total, these rapid transit projects would move 17,300 people per hour per direction, more than twice as many people per hour as Highway 413 at roughly the same capital cost.





Table A: Comparison of GTA-West Rapid Transit Projects with Highway 413

Project	Estimated Capital Cost, \$ billion	Capacity Increase – people per hour peak direction
GO Kitchener Service Expansion - 85 km	\$1.50	1,300
GO Caledon - 30 km	\$1	2,000
Pearson Airport Kitchener Line Connector - 5 km	\$2.0+	4,000
East-West Cross-Regional Connector BRT (Yonge St. to Milton – 43 km)	\$6.40	3,000
Brampton Main LRT - 4 km	\$2.80	5,000
Brampton Queen St York Hwy 7 BRT - 24 km	\$0.1 - \$0.5	3,000

TOTAL TRANSIT	\$13.8 - \$14.2+	\$17,300
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HIGHWAY 413	\$45.944	\$7,000 (a) ¬
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⁽a) Three lanes per direction. Free flowing traffic (optimistic case) with 2 second spacing between vehicles. Average vehicle occupancy 1.25

If some of the proposed funds of \$50 to 100 billion for the 401 tunnel are instead directed to transit, many more LRT/BRT projects could be funded, including those identified in this report for the western GTA, as shown in Map A.

Map A - Rapid Transit Alternatives to Highway 413



b. Focus Area Two - Expand Road Pricing or Tolling while Reducing Truck Tolls on Highway 407 (Total Truck Subsidy Cost: \$0.3 Billion/year)

Road pricing or tolling has long been recognized as having a positive impact on congestion. Success stories abound in many jurisdictions, including in the United States. There are many possible approaches. For the GTHA, the best road pricing structure would likely be a dynamic system with different costs-per kilometer ranging from 3 to 10 cents/km depending on the time, location and type of road.

A cost effective usage of tolls would be to facilitate Highway 407 as a goods-movement corridor by subsidizing truck tolls while maintaining tolls for automobiles. Efficient freight transport is important in the GTHA, yet only a small portion use the tolled Highway 407. A study by Eunomia found that subsidizing the toll on Highway 407 for truckers is a win-win solution, improving travel time for trucks and opening up capacity on Highway 401 for commuters. To avoid problems due to induced demand, tolls for automobiles on Highway 407 must be maintained, and should ideally be aligned with a broader road pricing scheme in the GTHA as discussed above.

Recent studies have shown that a truck toll rebate/discount on Highway 407 is substantially less costly than building Highway 413.

c. Focus Area Three - Support Western GTA
 Municipalities with Additional Operating Funds to
 Optimize their Public Transit Assets (Total Cost:
 \$0.75 Billion/year)

Historic experience has shown that the best way to grow transit system ridership is to create a high-frequency bus network that provides all day 'everywhere-to-everywhere' service where passengers can "show up and go" without having to worry about checking a schedule. A strong bus network can dramatically expand the catchment area of rapid transit stations by creating a feeder service into the rapid transit network - as not everyone can live in close proximity to a subway, light rail or BRT station. A strong bus network creates the necessary conditions for public transit to compete with the car.

There is a saying in transit circles that "rail service is capital-intensive, while bus service is labour-intensive". This makes the transit operating budget as the primary constraint for supplying more bus service, while supplying more rail service comes from the capital budget. The federal government's Canada Public Transit Fund that provides capital funding for public transit starting in 2026 has the potential to be transformative for rail, LRT and BRT in cities across the country. That funding, however, will do little to improve bus service.

Environmental Defence's "Putting Wheels on the Bus" report estimates that about 1,700 buses across Canada are sitting idle because municipal transit systems can't afford to run them. That's 1,700 buses that could be moving people every day.

The current operating subsidies for all GTHA transit agencies total more than \$3 billion per year - if we were to double the subsidy for the region spanning Highway 413 (Halton, Peel and York Regions), those municipalities could double transit service, as well as participate in a reauthorized "One Fare" integration program and continue with installing bus-only lanes and transit signal priority. According to experts who have closely studied determinants, a doubling of transit service kilometres and transit service hours results in almost a doubling of ridership.



III. Conclusion

The GTHA is facing a congestion crisis. Modeling by Metrolinx indicates that even with an additional \$45 billion in transit investments beyond currently funded projects, the share of trips made by transit and active transportation would increase only modestly while road congestion would continue to worsen. The Ministry of Transportation's own modeling shows crushing highway congestion even if Highway 413 is built.

BOLD ACTIONS are needed.

Using the estimated \$80 billion from cancelling the three very costly highway projects and reversing the car-centric subsidies, we suggest the funds could be used to:

Increase transit capital funding by reallocating funding from cancelling new highways.

Public transit can move people more cost-effectively than highways. There is a long list of good higher-order transit capital projects that are currently unfunded. The projects cited in Table A would provide 120 km of new and expanded GO Train service and 71 km of LRT/BRT, at a total capital cost of \$14 billion. Assuming additional projects cited in this report are largely LRT/BRT at an average capital cost of \$300 million/km, an additional 220 km of rapid transit could be built. (Total Cost: \$80 billion for 120 km GO and 290 km LRT/BRT)

Strengthen municipal public transit operating funding.

The literature has shown that transit ridership is closely linked to transit service hours and bus frequency. To reduce congestion in the GTHA, 30% of trips need to be made by transit, double that of today. This requires an additional government subsidy of about \$3 billion/year across the GTHA, much of which can be found by reversing the recent car-enabling subsidies. (Cost \$3 billion/yr, of which \$0.75 billion/yr for MiWay, Brampton Transit and York Region Transit)

Reverse car-enabling subsidies by reinstating higher gas taxes, fees and road tolls.

Additionally, study region-wide congestion pricing or road pricing, as this is known to be effective in congestion management. (Revenue generated: \$2.5 billion/yr - province wide)

Position Highway 407 as a useful corridor for efficient freight movement by truck.

Studies have shown that subsidizing truck tolls on Highway 407 is more cost-effective than constructing Highway 413. However, to avoid induced demand, tolls for private vehicles should be retained, potentially aligned with a broader road-pricing scheme across the entire GTHA. (Cost of truck subsidies: \$0.3 billion/yr)

Revise land use plans to stem urban sprawl.

Current land use plans are still slanted too much in favour of sprawl in Ontario's countryside, and these areas are difficult to serve with transit. The Metrolinx Regional Transportation Plan flags the enormous challenge to transportation when much of the region's growth is in greenfield areas. There is no need for boundary expansion in the GTHA as all population growth to 2051 can be met by intensification. (Cost: Marginal)

For a total of \$80 billion capital expenditure and under \$1 billion/yr increased net operating annual subsidies, about 400 km of new transit can be built and operated frequently and reliably.

Together, these can set the GTHA on a new path to reduce gridlock for an improved economy and improved social well-being.

1. Introduction - The GTHA Congestion Problem

The Greater Toronto and Hamilton Area (GTHA) is at a transportation crossroads with its traffic woes. Worldwide surveys routinely identify the GTHA as one of the worst regions in the world for congestion. For example, a recent traffic index from TomTom¹ shows Toronto has the 4th worst congestion in North America out of 106 cities.



Recognition of the congestion problem goes back to at least 2008, when Metrolinx published its report² "Cost of Road Congestion in the GTHA: Impact and Cost Benefit Analysis of Metrolinx Draft RTP". It found that in 2006, the economic burden of congestion amounted to \$3.3 billion for commuters and \$2.7 billion in lost economic opportunities, for a total of \$6.0 billion per year. The report predicted that the economic costs of congestion, if left unaddressed, would more than double over the next quarter century.

During the next decade, the cost of congestion increased with some temporary relief by work-from-home employment during and after the Covid pandemic. The 2022 Ministry of Transportation Ontario (MTO) 2022 report³ "Connecting the GGH: A Transportation Plan for the Greater Golden Horseshoe" cited that "gridlock on our highways and roads cost the economy \$11 billion per year in lost productivity".

Recently the issue has exploded, especially in downtown Toronto, exacerbated by

Repairs and refurbishment of major transportation infrastructure, including the Gardiner Expressway and TTC subway lines 1 and 2.

- Significant construction of new transportation infrastructure, including the Ontario Line and GO Expansion.
- Continued lengthy delays in completing vital new transit lines, particularly Eglinton Crosstown LRT (Line 5) and Finch West LRT (Line 6).

A recent report⁴ by the Canadian Centre for Economic Analysis (CANCEA) estimated the cost of congestion in the GTHA to be \$10 billion per year in direct economic impact, consistent with the earlier studies, plus an additional \$35 billion per year in quality of life impact, for a total of \$45 billion per year.

The 2041 Metrolinx Regional Transportation Plan (RTP)⁵, published in 2018, showed that only 23% of morning rush hour trips were taken by transit, walking or cycling, meaning that valuable road space was primarily taken up by nearly-empty vehicles.

A recent investigation by Global News revealed that despite adding 134 kilometres of new lanes to Highway 401 in the past decade over the province, the Province of Ontario expects the congestion within Toronto itself to double (and speeds to decrease from 47 km/hr to 23 km/hr) on Highway 401 by 2051.6

¹ Traffic Index ranking | TomTom Traffic Index

² www.metrolinx.com. Search for "Cost of Congestion Report 112808"

³ www.ontario,ca. Search for "Connecting the GGH"

⁴ Impact-of-Congestion-in-the-GTHA-and-Ontario-December 2024.pdf

⁵ www.metrolinx.com. Search for "2041 Regional Transportation Plan"

⁶ Global News. April 24, 2025

2. Ontario's Response to the Congestion Crisis is Making the Problem Worse

The GTHA is the economic engine of Ontario and is also a significant contributor to the gross domestic product of the entire country. Hence transportation efficiency is a priority for both Queen's Park and Ottawa. As the municipal tax base is limited, the responsibility to invest in infrastructure and develop transportation policy has largely fallen to the Province, with the federal government providing some financial support on priority projects as identified by the Province.

The response by these governments to the GTHA congestion crisis has been a mixed bag of policies, most of which are making the problem worse.

2.1 Mismanagement and Cost Overruns in Public Transit Capital Investments

While provincial transit infrastructure represents \$24.2 billion or 9.1% of the value of the Province's infrastructure investments, a 2019 report⁷ by the Ontario Financial Accountability Office (FAO) identified that transit also represented 24% or \$4.0 billion of the current infrastructure backlog. This is in contrast to highways and bridges which only represented \$1.9 billion or 11% of the total infrastructure backlog.

The FAO highlighted that in the 2019 budget, only the highways and bridges sector was allocated sufficient

funds over 10 years to eliminate the infrastructure backlog. This is in contrast to the provincial transit sector which had the largest funding gap of \$7.2 billion.

Following years of underinvestment, this is starting to change in the GTHA. Led by the Province, all three levels of government have invested or committed about \$100 billion since 2010 for rapid transit projects. This is the largest public transit investment program anywhere in North America. The program is managed by Metrolinx, as summarized in the table below.

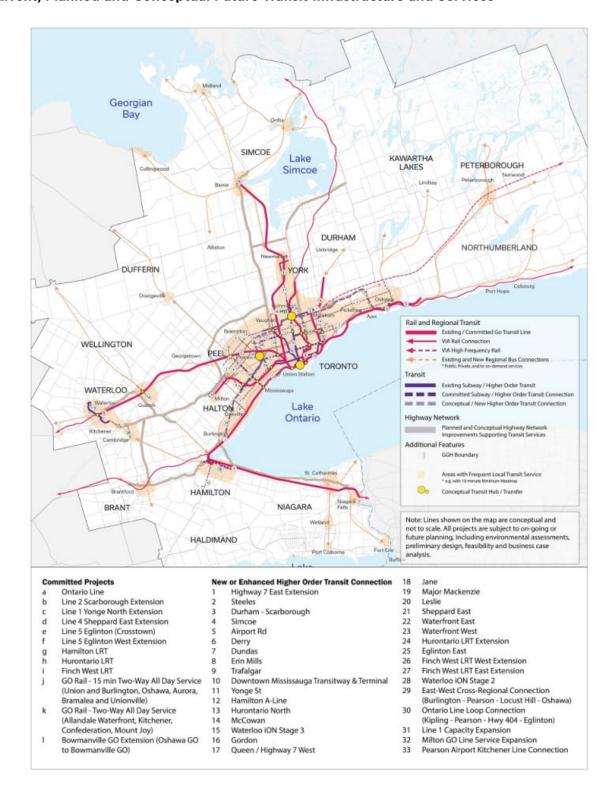


Table 1 - New Rapid Transit in GTHA since 2010

	Heavy Rail (Subway or Commuter Rail)	LRT (Light Rail Transit)	BRT (Bus Rapid Transit)	
	Commuter Rany			
	Line 1 to Vaughan	Union Pearson Express	York VIVA	
Built and Operating	GO Train extensions (Richmond Hill, Kitchener, Niagara)	(grade-separated from car traffic)	Mississauga Transitway	
		Eglinton XT = Line 5		
Nearly Built (2025)		Finch West = Line 6		
Nearry Built (2025)		Hazel McCallion LRT		
		(Hurontario St)		
	GO Expansion (numerous projects on all corridors)	Line 5 Eglinton West extension (grade- separated)		
Under Construction	Ontario Line Subway	Hamilton King/Main		
	Line 2 Scarborough Extension	Brampton Main St.		
	Line 1 Yonge North Extension			
Detailed Planning or	Sheppard Ave East and West Subway	Waterfront East	Dundas St. (Kipling to Waterdown)	
Design (unfunded for construction)	GO Extension to Bowmanville	Eglinton East	Durham-Scarborough	
construction)			Brampton Queen St.	

Although this is an impressive list of projects, delays and litigation in virtually all of them have resulted in new transit capacity not keeping pace with the Region's population growth.

Despite these large investments, there are still dozens of unfunded rapid public transit projects identified by Metrolinx in its 2041 RTP and, more recently, by the 2022 MTO GGH Plan cited earlier.



Map 1 - Current, Planned and Conceptual Future Transit Infrastructure and Services

The map, taken from the GGH Transportation Plan, shows a plan for about 25 additional rapid public transit connections, all currently unfunded, including such signature projects as

- East-West Cross-Regional Connector: Burlington Pearson Locust Hill Oshawa (For further details, see later section of this report)
- Ontario Line Loop Connection: Kipling Pearson Highway 404 Eglinton

2.2 Senior Levels of Government Have Reduced Transit Operating Funding

In addition to investment in new rapid transit infrastructure, it is important that transit service levels (frequency, speeds, hours of operation) on existing routes are maintained or improved. Historically, transit operating funding, outside of fares generated through ridership, has fallen to municipalities. At this time only limited subsidization by senior levels of government exists for transit operations.

Funding for public transit operations in Ontario have become considerably lower since Premier Ford's government was elected in 2018. Data from the Canadian Urban Transit Association (CUTA) has revealed that since 2018, per-capita public transit service levels in municipalities across Ontario have been cut on average by 18%.8

These service cuts and fare hikes have a direct impact on the delivery of public transit. As a result of declining provincial transit operations funding, Ontario transit systems have become excessively reliant on fares to fund day-to-day service. When transit ridership declined during the COVID-19 pandemic, it created a massive funding crisis that still lingers to this day. Stopgap emergency funding to cover the shortfall in funding was co-delivered by the federal government and provinces from 2020 to 2022, which has now ended, and left transit in a still-precarious state.⁹

Public transit operations funding by Ontario has a long history. Premier Bill Davis began an extremely successful program in 1971 that shared 50% of the net operating costs of public transit in Ontario municipalities. This program was later cancelled by Premier Mike Harris in 1998. Premier Dalton McGuinty later revived a much smaller replacement program, called the Dedicated Public Transit Fund (DPTF) that dedicated two-cents of gasoline tax revenues towards

public transit in 2004.¹⁰ This program was scheduled to be expanded to four-cents following the last provincial budget tabled by Premier Kathleen Wynne, but was cancelled by Premier Ford's first budget in 2019.¹¹ In Toronto for example, this represents a \$1.1 billion cut to the TTC's budget over 10 years.¹²

The DPTF program remains at 2-cents, but since this funding source has not scaled with inflation, its purchasing power has eroded by roughly 30% since its inception.¹³

Ontario does however subsidize Metrolinx operations and is also supporting two time-limited programs¹⁴ - One Fare (fare integration between TTC and GO Transit and 905-transit agencies) just announced to expire 2027-28 and the Ontario-Toronto New Deal (support for operations of Eglinton Crosstown and Finch West LRTs, expiring in 2026-27).

At the federal level, despite advocacy from many stakeholders, the new Canada Public Transit Fund does not include operating funding.¹⁵

With the bulk of operational funding support falling to municipalities, and the limited revenue sources available to them, transit service levels have fallen in many cities across Ontario since 2019 (pre-pandemic). For example, there is now a growing number of buses sitting idle in garages rather than being put in service, due to lack of funding for drivers.

The debate over transit operational support has recently been extended to the GO Transit level. Metrolinx has cancelled its contract with Deutsche Bahn (DB) under the "GO Expansion" project, allegedly because DB wanted to run higher train frequencies than Metrolinx wished.¹⁶

https://ontariopublictransit.ca/wp-content/uploads/2024/12/OPTA-Lobby-Day-Leave-Behind-Dec-2024.pdf

⁸ Canadian Urban Transit Association, Conventional Transit Statistics, 2018-2023

⁹ FAO (2024) Ontario's Public Transit Agencies: Ridership, Finances and Operating Subsidies. https://fao-on.org/en/report/transit-subsidies-2024/

¹⁰ MTO (2017) An Introduction to the Provincial Gas Tax Program. https://www.ruralontarioinstitute.ca/uploads/userfiles/files/Kevin%20Dowling%20-%20Gas%20Tax%20Introduction.pdf

¹¹ What Ontario's budget means for Toronto: Goodbye gas tax revenue hike, hello circus at Ontario Place. CBCNews. https://www.cbc.ca/news/canada/toronto/what-ontario-s-budget-means-for-toronto-goodbye-gas-tax-revenue-hike-hello-circus-at-ontario-place-1.5090512

¹² https://www.thestar.com/politics/provincial/provincial-budget-cuts-1-1-billion-in-funding-to-toronto-transit/article_0a95f6ae-5a66-5f0e-8033-9a5abb8b487 4.html#tncms-source=login

¹³ Ontario Public Transit Association (2024)

¹⁴Financial Accountability Office of Ontario

¹⁵Transit for Tomorrow Summit issues joint call for funding reform – Transport Action Canada

¹⁶Jack Hauen in "The Trillium", June 10, 2025 "How Metrolinx's plan to deliver European-style train service went off the rails"

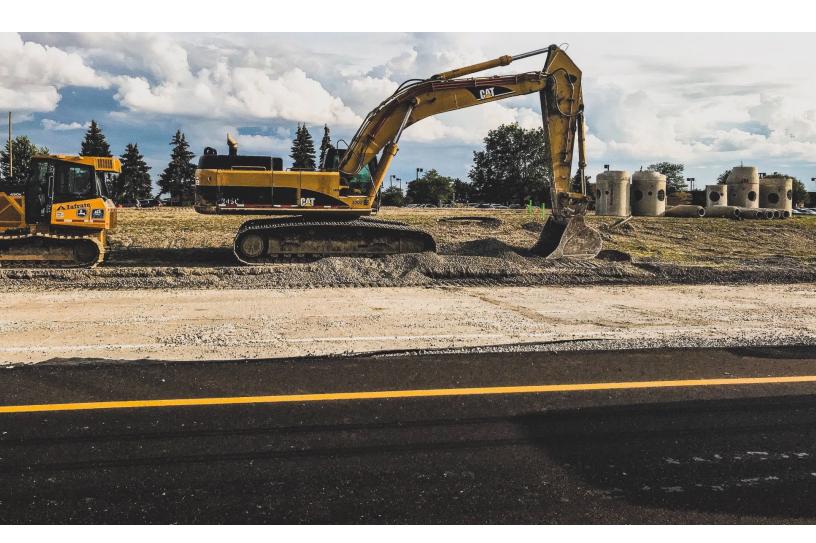
2.3 Proposing Damaging, Expensive and Ineffective Mega-Highways

Each year, Ontario's Ministry of Transportation prepares a rolling 10-year infrastructure plan and budget that is submitted for approval to the Treasury Board, a committee of Cabinet. As part of this process, the Ministry will add new highway expansions projects to the infrastructure plan. The projects that the Ministry adds to its plan are typically assessed and recommended by the Ministry's technical and engineering staff using an internal framework.

The 2022 Greater Golden Horseshoe Transportation Plan cited earlier lays out the Province's long term plans for current, planned and conceptual highway expansion. About a dozen projects are located in the GTHA. Committed projects are primarily expressway widenings for addition of High Occupancy Vehicle (HOV) lanes. Although every new highway lane brings induced demand into play (see Section 3.3), managing these lanes for HOVs mitigates this effect to a significant degree.

Of the remaining highway projects in the GGH Plan, two are being actively advanced – Highway 413 and the Bradford Bypass. The 2022 Auditor General of Ontario (AGO) report revealed some alarming details about the involvement of politicians in these two projects. The AGO found that in 2019, the Ministry was asked to add four new highway expansion projects by the Minister's Office. According to the AG, they found that "the Ministry's subject matter experts would not have added these projects at that time" and that the combined proposals "exceeded the planned 10-year budget by \$245 million".

In order to stay within the 2019 budget while accommodating the four additional highway projects (including the Bradford Bypass and Highway 413), the Ministry had to defer six expansion projects across Ontario for construction and another seven for planning and design work.



Of the four new highways added by the Minister's Office to the infrastructure plan to "fight gridlock", three were in the GTHA:

- **Highway 413.** This planned toll-free 6-10 lane controlled-access highway project¹⁷ has been under study by the MTO since 2007 and is currently in the final stages of a scaled-back Environmental Assessment called an Environmental Assessment Impact Report (EAIR) and preliminary design. It is planned to run from Highway 400 in northern Vaughan to the junction of Highways 401 and 407 near Milton, a distance of 52 km. Northward extensions of Highways 410 and 427 will be built to connect with Highway 413, bringing the total length of new highway construction to 59 km. On October 21, 2024, Ontario Minister of Transportation Sarkaria introduced the "Reducing Gridlock, Saving You Time" Act, that included creation of an accelerated environmental assessment process for Highway 413, plus exempting certain early works that "would have minimal environmental impact". More details on the Highway 413 project, including its estimated capital cost of \$10 - 14 billion, are provided in a later section of this report.
- Bradford Bypass. 18 This is a 16 km controlled-access freeway extending from Highway 400 between 8th and 9th Line in Bradford West Gwillimbury to connect with Highway 404 between Queensville Sideroad and Holborn Road in East Gwillimbury. The project followed a streamlined environmental assessment process and the final EA report was published in late 2023. Early Works construction started in 2022 on a new bridge at Simcoe County Road 4, expected to be open to traffic in 2025. Contracts for the detailed design of the Central and East sections were announced in late 2025. Capital cost estimates for this highway have not been published. A simple proration from the estimated cost/km of Highway 413 would suggest a capital cost of about \$2 billion.
- Highway 404 Extension to Highway 12. Approximate length 40 km. To our knowledge, there has been no recent work by MTO on this project.

A follow-up report¹⁹ from the Auditor General in 2024 found that the MTO had made little progress in improving transparency when Ministerial directives diverge from the advice of subject



matter experts. For example, the Auditor recommended that business cases should be submitted, but none have been released for Highway 413 or the Bradford Bypass.

In late September, 2024, Premier Ford announced an astounding new project – construction of a toll-free tunnel under Highway 401 to carry vehicles and transit.²⁰ In November, 2025, the Province announced it had engaged WSP Canada for a \$9 million feasibility study to determine more details and costs. Premier Ford has insisted that "we're getting the tunnel built" because gridlock in the region costs the economy \$11 billion annually. Reaction from transportation experts has been uniformly negative. Although costs were not cited by Premier Ford, University of Toronto Civil Engineering Professor Shoshanna Saxe²¹ has estimated a cost of between \$50 billion and \$100 billion with completion taking "two decades, if not longer".

¹⁷ Ontario Ministry of Transportation project website. www.highway413.ca

¹⁸ https://bradfordbypass.ca

¹⁹ Highway Planning and Management

²⁰ Ontario Exploring Feasibility of New Highway 401 Tunnel Expressway | Ontario Newsroom

²¹ https://thepointer.com. Article of October 14, 2024. Ontario Exploring Feasibility of New Highway 401 Tunnel Expressway | Ontario Newsroom



Many commentators have suggested that the 401 tunnel is not a serious proposal. However, it has served a useful purpose as a catalyst to bring the congestion issue to prominence and helping to stimulate a discussion about alternatives.

In response to criticisms that the existing and underutilized Highway 407 should be considered rather than building new highway lanes under Highway 401 or in Highway 413, Premier Ford also stated that the Province will consider a buyback of Highway 407, estimated to cost between \$30 - 40 billion.²² With the Premier's stated policy of opposing road tolls, it is clear that Ford's intention would be to make Highway 407 a "free" expressway. Recent media reports have suggested that discussions between Ontario and the 407 consortium have not occurred. Presumably the Province now recognizes this as a bad deal. Further discussion on Highway 407, in the context of truck toll discounts, is covered later in this report.

The total capital cost of the various expressway projects announced or contemplated by the Ontario government exceeds \$100 billion, as seen in the Table below.

Table 2 - Capital Costs of GTHA expressway projects

Project	Capital Cost \$ billion
Highway 413	\$10 - \$14
Bradford Bypass	\$2
Highway 401 Tunnel	\$50 - \$100
TOTAL	\$62 - \$116

²² https://globalnews.ca. Search for "Highway 407 Owners". Ford government 'in conversation' with Hwy. 407 owners as buy back calls grow | Globalnews.ca

2.4 The Implementation of Significant Subsidies for Car Drivers

Ontario has deliberately reduced costs for drivers, with a number of measures as summarized in the table. The measures will encourage more driving, increase traffic congestion while reducing public transit ridership.

Table 3 - New Driving Subsidies in Ontario Since 2018

Measure	Date of Implementation	Fiscal Cost per Year (\$ billion/yr)	Costs to End 2024 (\$ billion)	Future Costs 2025- 2041 (\$ billion)
Gasoline Tax Cut ²³	July 1, 2022	\$1.24	\$3.1	\$21
Cancellation of Drive Clean Emission and Safety Inspection Program ²⁴	April 1, 2019	\$0.04	\$0.2	\$0.6
Rebate and Cancellation of License Plate Renewal fees ²⁵	March 13, 2022	\$1.1	\$4.4	\$19
Freezing Driver's License and Photo Green Card fees ²⁶	January 1, 2019	\$0.02	\$O.1	\$0.3
Elimination of tolls on Highway 412 and 418 ²⁷	April 5, 2022	\$0.02	\$O.1	\$0.4
Elimination of tolls on Highway 407 East ²⁸	June 1, 2025	\$0.07	-	\$1.2
TOTAL		\$2.5	\$8	\$43

²³ Assuming a fiscal cost of \$620 million for each 6 months of the tax cut being in effect, as outlined in the 2024 Ontario Budget, Table A.1, p.199. Currently only committed to June 30, 2025, but campaign promises made by Premier Ford indicate the cut will be made permanent

²⁴ Assuming a cost of \$40 million per year for seven years.

²⁵ Ongoing fiscal cost of \$1.1 billion per year. Fees were rebated for 2021/22 and 2021/22 for a total cost of \$2.2B. Total costs to end 2024 approx \$4.4B

²⁶ Counting \$22 million from regulated freeze in 2019 as well as projected cost of the freeze over 5 years outlined in the Ontario Media Release of the 'Get It Done Act'

²⁷ Global News (2022) Ontario removed highway tolls ahead of election despite previously opting to wait.

https://globalnews.ca/news/9158110/ontario-durham-highway-toll-removal-cost-decision/#:-:text=The%20decision%20resulted%20in%20the,a%20billion%20dollars%20in%20revenue.

²⁸ Toronto Star, May 14, 2025, Robert Benzie "Ford will make gas tax permanent, remove tolls"



2.5 Changing Land Use and Housing Policies to Encourage Sprawl

In addition to proposing the building of Highway 413 through Ontario's Greenbelt and farmland, the province has revised the urban planning framework in Ontario since 2018 with various policies targeted at increasing urban sprawl and reducing intensification within existing built urban boundaries:

- Attempting to open up Ontario's Greenbelt to development, which the Auditor General indicated would have resulted in nearly \$8 billion in windfall profit to politically well-connected property developers. This has resulted in the RCMP undertaking criminal investigation into alleged corruption whose outcome is still pending.
- Cancelling the Growth Plan for the Greater Golden Horseshoe and its requirement to plan to create new settlements with higher employment and

- residential densities and ensure that infill development within existing towns and cities is prioritized.
- Ignoring the recommendations of Ontario's Housing Affordability Task Force to legalize as-of-right fourplexes, and instead explicitly ruling out the policy.²⁹
- Destroying legal protections for urban settlement boundaries which stop sprawl, through changes to the Provincial Planning Statement and the Cutting Red Tape to Build More Homes Act (Bill 185).³⁰ This ignores analysis showing that there is more than enough land available to build over 2 million homes in the Greater Golden Horseshoe by 2031, without touching the Greenbelt or expanding urban boundaries.³¹

 $^{^{29}\} https://globalnews.ca/news/10374953/premier-ford-rules-out-ontario-wide-fourplex-policy/$

³⁰ https://environmentaldefence.ca/2024/05/06/ontarios-bill-185-new-provincial-planning-statement-pose-a-serious-threat-to-farmland-wetlands-habitats-and-housing-options/

³¹ https://environmentaldefence.ca/report/review-of-existing-housing-unit-capacity-in-the-greater-golden-horseshoe/

3. Analysis

3.1 More Transportation Capacity is Needed in the GTHA

With a current GTHA population of about eight million, projected to grow to over eleven million by 2051, there is a need for more transportation capacity. The question remains: which path should be followed to achieve this new capacity - transit, roads and highways, active transportation, or combinations?

3.2 Modeling by Metrolinx shows Sobering Predictions for Future Congestion

The two regional transportation plans produced by Metrolinx (2006 RTP₃₂, projecting out to 2031, and the current RTP projecting to 2041₃₃) provide some eye-opening modeling results.

The key findings from the 2006 plan are summarized in Table 4 below.

Table 4 - Key Findings from 2006 Metrolinx RTP ("The Big Move")

	2006 Base	2031 Forecast
Population	just over 6 million	8.6 million
Total Length of Rapid Transit Service	500 km (not all is frequent)	1,725 km
Transit riders (AM peak period)	467,000	1.1 million
Transit mode share (AM peak)	16.5 %	26.3 %
Active Travel mode share (AM peak)	9 %	12.5 %
Average time spent commuting each day per person	82 minutes	77 minutes

This plan predicted a healthy increase in transit mode share, as well as a significant increase in active travel. Equally important, average time spent commuting each day per person decreased modestly, indicating less congestion. The current plan is much more pessimistic, as can be seen in Table 5, which is extracted from the Metrolinx 2041 RTP Table 1 and shows a clear deterioration in the key metrics versus the earlier plan.

³² Metrolinx 2031 Regional transportation Plan "The Big Move" published in 2006, page 58

³³ Metrolinx 2041 Regional Transportation Plan, published in 2018. Table 1. Regional Transportation Plan | Metrolinx

Table 5 - 2041 Metrolinx RTP Proposed Deliverables and Outcomes

	2011 Base	2041 Plan
GTHA Population	6.8 million	10.1 million
Plan Deliverables		
Frequent Rapid Transit Routes	68 km	1,860 km
Cycling Routes (Regional)	990 km	2,000 km
HOV/HOT lanes	73 lane-km	1,130 lane-km
Plan Outcomes		
Transit Trips/day (AM + PM peak period)	1.2 million	1.9 million
Transit Mode Share (AM and PM peak)	14.20%	14.70%
Active Trips/day (AM peak)	740 thousand	1,390 thousand
Active Trips Mode Share (AM peak)	8.50%	10.70%
Congested Driving (AM peak)	3.7 million km	8.1 million km

Despite a plan that assumed \$45 billion capital investment in rapid transit over and beyond already-committed plans,³⁴ it only resulted in a very modest increase in transit mode share of 0.5% and an increase in active travel mode share of only 2.2%. Congested driving increased substantially. Metrolinx

appears to recognize the problem by noting the "enormous challenges posed by the scale of the GTHA's expected growth and the fact that much of that growth will occur in greenfield areas". Clearly a bold new approach is required if we are to successfully address congestion.



3.3 New Highways or Lanes do not Reduce "Gridlock" in Urban Areas due to Induced Demand

While on face value, it may seem obvious that new highways or new highway lanes are the solution to too much traffic, we now know that there is no evidence to support the idea. A recent study found that for each 1% increase in highway lane-kilometres resulted in a total vehicle kilometers increase of 1.2%.³⁵ This is because of the fundamental law of traffic congestion known as 'induced demand', which may be counter-intuitive.

Extensive research indicates that people tend to have fixed travel time budgets, called Marchetti's constant.³⁶ People have a tendency towards a fixed travel time budget that they are willing to tolerate every day for daily tasks like commuting of approximately an hour to an hour and a half. As a result, when travel speeds increase, so do their travel distances. So it is not highway capacity expansions themselves which drive increased traffic, but the fact that it reduces the cost of driving, in terms of travel time, and this in turn changes how people behave.

When a highway expansion allows for faster and less congested car travel, for free, it encourages more people to take advantage of it. This creates the following effects;

- People who would have otherwise taken public or active transportation begin to drive, as their travel speeds are faster.
- People purchase lower-priced homes further away from their place of work because their commute times are shortened and these homes are now within people's travel time budgets. These homes are usually in low-density sprawl developments that typically aren't well-suited to public transit service, meaning people become locked-in to using cars for all their trips, and become a 'captive market' to the new highway.
- People who may have gotten up an hour earlier than most to 'beat the traffic' to work change their travel times to commute during peak hours.
- When drivers experience reduced congestion and shorter travel times on newly built highways, they often change their behavior by driving more frequently, taking longer trips, or choosing routes that were previously avoided due to congestion. This is known as the 'rebound effect'.

(https://ecap.uab.cat/RePEc/doc/wpdea2011.pdf), Ideas (https://ideas.repec.org); at

https://ideas.repec.org/p/uab/wprdea/wpdea2011.html. ³⁶ https://www.vtpi.org/gentraf.pdf

³⁵ Miquel-Àngel Garcia-López, Ilias Pasidis, and Elisabet Viladecans-Marsal (2020), Congestion in Highways when Tolls and Railroads Matter: Evidence from European Cities, Universitat Autonoma of Barcelona



The induced demand effect was first observed decades ago in New York City, where newly constructed bridges and parkways rapidly filled up again without relieving overall traffic congestion. A contemporary example of this problem is the Katy Freeway in Houston, which was widened to 24 lanes but saw no improvement in traffic flow. Interstate 405 in Southern California is another example, and continues to be the most congested freeway in the USA despite the addition of new lanes. This freeway gained notoriety in 2011 in the "Carmageddon" prediction, where it was predicted that a planned construction closure would paralyze the area with traffic. In reality, traffic was lighter than usual, largely due to more public transit use. This is an example of induced demand in reverse. When the road reopened, traffic reverted to the previous congested level.

A good summary discussion of induced demand can be found in the 2011 paper³⁷ The Fundamental Law of Road Congestion: Evidence from US Cities, by Duranton and Turner. The paper analyzed a large array of USA data and found that the extension of interstate highways is met with an exactly proportional increase in highway traffic volume, and also a minimal decrease of traffic on urban arterial roads. Simply put, highway expansions do not decrease traffic congestion.

A more recent independent analysis³⁸ by Transportation for America in 2020 showed that the USA had constructed 30,511 new freeway lane-miles in the largest 100 urbanized areas between 1993 and 2017, an increase of 42%. That rate of expansion significantly outstripped the 32% population growth in those regions over the same time period. Yet congestion grew by 144%, far outstripping population growth.

So whether it is new lanes in a Highway 401 tunnel or new lanes on a new Highway 413 or new free lanes on Highway 407, the result is the same - congestion and gridlock will persist.

A recent statement by Steven Farber, University of Toronto (September 30, 2024, Toronto Star)³⁹ said it well: "Ontarians should give up on the idea that roadways will become less congested. Instead, efforts should go towards making other forms of transportation more accessible".

³⁷ Gilles Duranton and Matthew A Turner "The Fundamental Law of Road Congestion: Evidence from US Cities" American Economic Review 101 (October, 2011), 2616-2652. http://www.aeaweb.org/articles/php?doi-10.1257/aer.101.6.2016

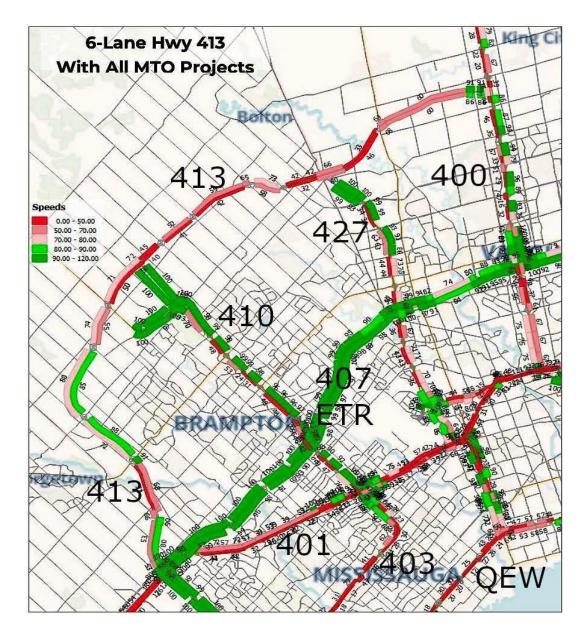
³⁸ https://t4america.org/maps-tools/congestion-con/. Transportation For America The Congestion Con - Transportation For America

³⁹ Toronto Star, September 30, 2024 "Should Doug Ford buy the 407 instead of digging a tunnel to ease gridlock?". Should Doug Ford buy 407 instead of tunnelling under 401?

3.4 Ministry Modelling shows Crushing Traffic Congestion in the GTHA in 2041 with or without Highway 413, due to Induced Demand

Consistent with Dr. Farber's statement above, as reported by The Trillium⁴⁰ on August 22, 2024, internal MTO documents obtained through a freedom of information request show projections of commuter speeds below 20-40 km/hr on all 400-series highways by 2041, except Highway 407, whether or not Highway 413 is built. See Map 2 below.

Map 2: Average Speeds on GTA-West Highways in 2041 (per The Trillium article, August 22, 2024)



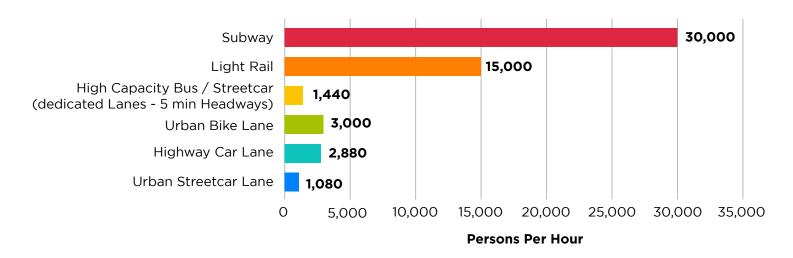
This is not surprising. Induced demand, unless mitigated by road pricing, coupled with regional population growth doubles the impact and leads to inevitable and serious expressway congestion. In our view, the most cost-effective way to move more people in an urban area like the GTHA is by public transit. Transit also supports the kind of non-sprawl development needed to preserve farmland, the environment, housing affordability and quality of life.

3.5 Frequent Reliable Public Transit Can Move People More Effectively than Highways

Many studies have shown that public transit can move people more efficiently than highways. As an obvious example, TTC Line 1 can move more than 30,000 people per hour per direction, a level that could only be achieved with a 10 + lane expressway.

The Table below shows capacity of various transportation modes

Table 6 - Capacity (Persons per hour per direction)



Note, these are example capacities. The capacity of a specific transit route will vary as it is the product of the frequency of service, the number of connected vehicles on a platform, and the maximum number of persons per vehicle. For example, a rail line with a frequency of 15 trains/hr (4 min headways) with 6 cars per train and a maximum of 150 persons per car has a capacity of 13,500 passengers per hour. A Bus Rapid Transit line with a two-minute frequency can move over 3,000 persons per hour.⁴¹

In addition to constructing new rapid transit lines, there is also a need to invest more in local transit (buses, streetcars) to improve service and provide feeder services to the rapid transit routes. For example, the "One Fare" program has been a great success in boosting ridership on suburban transit systems, and needs to be reauthorized for 2026-2027. A 2024 report⁴² prepared by Environmental Defence and Equiterre showed that increasing transit operating subsidies to provide more frequent and reliable service, combined with surface transit priority measures, such as dedicated bus lanes and transit signal priority, could double public transit ridership in Canada by 2035. Real world data is provided in the report comparing Toronto to Chicago and Boston. All

three cities have comparable population densities, but Toronto has twice the per capita transit ridership, due to a deliberate policy of higher service levels. Similarly, transit agencies in the 905 have much lower per capita ridership than Toronto, due to poorer frequencies. The report estimates that, in large regions such as the GTHA, more than 30% transit mode share can be achieved if service is improved across the entire region. This would have a substantial impact on reducing traffic congestion.

Improving transit reliability also requires continued modest investment in city-lead infrastructure projects. These include improvements such as more bus-only lanes on existing roadways, as are currently in place on Eglinton Avenue East in Toronto and Durham Highway 2, and as planned for Bathurst, Dufferin and Jane Streets. There is also a need to increase the number of intersections with transit signal priority - which is currently in place to varying degrees across the GTHA. Additionally, supporting more use of on-demand microtransit to better serve low-performance conventional routes or new routes, and to improve first-mile/last-mile connections to rapid transit is needed.

⁴¹ David Levinson et al. (2025) Fundamentals of Transportation. 4.2. Transit Operations and Capacity. https://eng.libretexts.org/Bookshelves/Civil_Engineering/Fundamentals_of_Transportation/04%3A_Transit/4.02%3A_Transit_Operations_and_Capacity ⁴² Putting-Wheels-on-the-Bus-Report-EN.pdf

The literature⁴³ shows that the elasticity of transit ridership with transit service hours or transit kilometers travelled is close to 100%, meaning that, for example, an increase in bus frequency of 25% would result in a 25% increase in ridership. To reduce congestion in the GTHA, we believe that the transit mode share needs to be **at least 30%**, which is slightly higher than in the 2006 RTP and double that in the

current RTP. Transit ridership in 2041 would then be about 3.8 Million trips per day (AM + PM peak). This will necessitate a doubling of transit operating funding.

The current operating budgets of the major transit agencies in the GTHA are given in Table 7.

Table 7 - Current Year Operating Budgets for selected GTHA Transit agencies, 2025

Agency	Gross Operating Budget	Net Funding Subsidy from Government
Toronto Transit Commission ⁴⁴	\$2.819 billion	\$1.387 billion
GO Transit ⁴⁵	\$1.977 billion	\$1.146 billion
MiWay (Mississauga) ⁴⁶	n/a	\$113 million
Brampton Transit ⁴⁷	\$246 million	\$94 million
York Region Transit ⁴⁸	n/a	\$221 million
Durham Region Transit (2024) ⁴⁹	n/a	\$93 million

TOTAL \$3.054 billion

The current operating subsidy for all GTHA transit agencies totals more than \$3 billion/yr. If transit service were to double, we expect the government subsidy would also need to double. The extra \$3 billion/yr funding needed for this can largely be sourced by reversing the driver subsidies described in Section 2.4, or from a region-wide road pricing scheme. Additional operating funding could also arise if the Canada Public Transit Fund were expanded to cover transit operating costs, as has long been recommended by transit advocacy groups.

⁴³ Putting-Wheels-on-the-Bus-Report-EN.pdf

^{44 1}Recommended 2025 TTCO perating Budget 2025 2034 - Capital Budget and Plan 15 Year CIP and REIP Update updated, pdf

^{45 2-24-25} Metrolinx Business Plan. Access using metrolin.com Select about us/metrolinx overview/annual reports and corporate plans

⁴⁶ 2023-2026 Business Plan & 2023 Budget

^{47 2025} PROPOSED BUDGET

⁴⁸ York Region 2025 Budget, Page 46

⁴⁹ Budget and Financial - Region of Durham

3.6 Job Creation from Public Transit Investment Exceeds that from Highways

Pushing for more expressways also ignores the fact that public transportation creates more jobs per dollar than car-centric infrastructure. A study of 20 metropolitan areas in the United States found that if half of the public money spent on highway infrastructure was spent on public transportation instead, there would be a net increase of over 180,000 jobs over 5 years or 20% more jobs at no extra cost. 50 Research sponsored by the Ontario Ministry of Infrastructure also found that investing in highways and bridges reduced jobs in the province while public transit created them. 51

3.7 Complete Compact Communities within Existing Urban Boundary are Essential

With significant population growth expected to continue in the GTHA, it is important that the right type of new development, neighbourhoods and communities be constructed. If jobs, retail and recreation are built close to residences ("complete communities"), the need for long-distance travel is minimized and active transportation can become a significant travel mode. In addition, newly constructed neighbourhoods and communities should be of sufficient density to support transit at reasonable service levels.

The Province has sent mixed signals in this area. The requirement for municipalities to identify Major Transit Station Areas and the Provincial Transit Oriented Communities program have encouraged higher density near rapid transit. Municipalities have responded. For example, Markham is developing new secondary plans involving high density complete communities at four of its GO stations on the GO Stouffville line.

On the other hand, the Province has relaxed minimum density requirements for new greenfield development and made it easier to expand urban boundaries. This ignores analysis showing that there is no need for boundary expansion in the GTHA, as all growth to 2051 can be accommodated by reasonable intensification.⁵²



⁵⁰ Swanstom et al, 2010

⁵¹ Pereira and Pereira, 2018

⁵² The Big Sprawl - Environmental Defence

3.8 Road Pricing or Tolling is Effective in Congestion Management

It has long been understood⁵³ that road tolls or congestion pricing will have a positive impact on congestion. Success stories in cities like London, Stockholm and Singapore have shown that, despite initial public opposition, road tolling is effective and ultimately proves popular with residents, especially when the raised revenue is used to fund transportation alternatives like public transit. Road pricing also provides a new revenue source to replace declining gas tax revenue for government, as more fuel-efficient or electric vehicles enter the market. Road pricing programs in Oregon (OReGO), Utah (Road Usage Charge Program) and Virginia (Mileage Choice Program) have been implemented to provide this replacement revenue stream.

There are numerous road pricing approaches, including cordon tolls (where vehicles entering a specific part of a city are tolled, like the London congestion charge), tolled lanes on an expressway (High Occupancy Toll lanes, where single-occupant vehicles are allowed in an HOV lane for a toll fee), or tolled expressways (like Highway 407 or as proposed by the City of Toronto in 2015 to toll the Gardiner and Don Valley Expressways).

In January, 2025, New York City implemented the first full-scale congestion charge scheme⁵⁴ in North America. Drivers entering a congestion zone south of 60th St. in Manhattan must pay a \$9.00/day entry fee. The revenue raised is earmarked for public transit. To date, driver, resident and general public reaction in New York City has been positive and traffic levels have reduced by 11-12% within the congestion zone and 9% overall according to the office of New York state Governor Kathy Hochul.(cite)

One of the longest running programs in North America is the Oregon road usage model, known as OReGO. This test program, currently operating with more than 700 vehicles, uses GPS to track road usage and applies a fixed (static) per-mile charge (currently 2.0 cents per mile) for drivers of cars and light-duty vehicles when they volunteer to participate in the program. To avoid double taxation, the state fuel tax, paid at the pump, or annual vehicle registration fees are credited to the driver.

In the GTHA, the best ultimate structure of road usage charging would likely be a dynamic system based on GPS tracking, as with OReGO. The system would be demand-responsive, with different costs-per-kilometre ranging from 3 to 10 cents/km, based on time, location and type of road. This rate is equivalent to the sum of provincial and federal fuel taxes plus applicable HST. It is comparable to the long-standing rates in the USA for expressways, such as the New York Turnpike (4.5 c/km Canadian) and the Pennsylvania Turnpike (9 c/km Canadian). The GTHA rates would likely be lowest for collector roads in lower-congestion areas at off-peak times, and highest for expressways in congested areas at peak times. As in Oregon, credits for fuel taxes or other paid fees should be sent back to the driver to avoid double taxation, with any remaining revenue going to fund transit investment.

Even though the Ontario government has implemented a ban on new road tolls, road pricing represents a market-driven approach to a scarce commodity (road capacity) that is supported by many transportation experts and conservative commentators. In an interview on TVO's The Agenda (October 4, 2024), Professor Baher Abdulhai of the University of Toronto stated⁵⁵ that road pricing is inevitable in the GTHA. With appropriate time and location road usage charges, it is likely that GTHA congestion would be substantially better managed, as has been the case elsewhere in the world.



⁵³ The best reference for road pricing can be found at Healthy Transport Consulting. https://transportfutures.ca. This organization has held numerous learning events since 2008 which covered road pricing. These are listed on the site. See also "Ontario Road Pricing Demonstration Project" on this site.

⁵⁴ Congestion pricing in New York City - Wikipedia

⁵⁵ https://www.tvo.org/podcasts/the-agenda-with-steve-paiken-audio. October 4, 2024. "How Will Toronto's Traffic Disaster Be Fixed?"

3.9 Highway 407 is a Useful Corridor for Freight by Truck while Keeping Tolls for Autos

There is no question that efficient movement of goods is essential to a healthy GTHA economy. Most goods are moved by truck today, but only a small percentage of truck traffic takes Highway 407, despite its excellent location and length, due to the high toll rates.



The western portion of Highway 407 (west of Pickering Brock Road to Burlington) is owned by the Province but is operated on a 99-year concession/lease agreement (expiring 2098) by a consortium currently consisting of Cintra at 48.29%, CPP Investments and other institutional investors at 44.20%, and PSP Investments at 7.51%. Atkins Realis recently sold its 7% share, at an estimated price of over \$2 billion. This means that the complete buyout of the concession would cost about \$30 - 40 billion.

The eastern portion (east of Brock Road to Highway 35/115) is owned and operated by the Province.

Truck tolls on Highway 407 during peak hours and locations are \$1.50 - \$2.30/km for the leased portion and were \$0.70 - \$1.03/km on the provincially-operated portion prior to being cancelled in August, 2025.

Using Highway 407 as a truck bypass for Highway 401 traffic was a fundamental objective when the highway was built in the 1990's. Later, this concept was recommended in 2017 by the Province's Advisory Panel set up to review the merits of building Highway 413. A study by Eunomia⁵⁶ found that subsidizing the

toll on Highway 407 for truckers is a win-win solution for commuters and the trucking industry. More details are presented in Section 4.2.6.

The announcement⁵⁷ by Premier Ford that the Province will study a buyback of the Highway 407 concession should be viewed with significant caution. The price tag would be significant and presumably could only be justified on a business basis if tolls for automobiles at the existing rates were continued. However, the clear implication of the government announcement is that tolls would be eliminated, as they have been for the provincial portion of Highway 407 and for Highways 412 and 418. This would completely ruin the business case and also exacerbate the induced travel problem discussed earlier. Recent media reports have suggested that discussions between Ontario and the 407 consortium have not occurred. Presumably the Province now recognizes that a concession buy-back coupled with the removal of tolls would turn out to be a bad deal.

Regardless of the ownership of the concession, tolls for autos on Highway 407 must be maintained, although could potentially be aligned with a broader road pricing scheme in the GTHA per Section 3.8.

⁵⁶ https://environmentaldefence.ca. Report is entitled "The Freight Escape: How to get trucks off the 401 without blowing a hole in the Greenbelt", November 7, 2023

⁵⁷ https://globalnews.ca. Search for "Highway 407 Owners". Ford government 'in conversation' with Hwy. 407 owners as buy back calls grow | Globalnews.ca

4. Highway 413 as a Case Study for Supporting Public Transit Investments

By using Highway 413 as a case study, we are able to demonstrate stronger value for money and public benefit outcomes through equivalent public transit investments resulting in relieving congestion faced by commuters.

As shown on Map 1, there are about 25 recommended rapid public transit projects for the Greater Golden Horseshoe that are unfunded. These range from additional GO Train service to LRTs, BRTs and routes where the technology has not yet been selected. There are also important program ideas, like "One Fare". Each of these many projects, programs and betterment ideas has its own features - benefits, challenges, costs, timing - but as examples, this report will discuss three focus areas relevant to the need to find alternatives to Highway 413:

- Build out rapid transit capital investments in the western GTA beyond currently funded projects
- Expand road pricing or tolling while reducing truck tolls on Highway 407
- Support western GTA municipalities with additional operating funding to optimize existing public transit assets

Over and beyond "GO Expansion", there are other important unfunded GO rail projects in the western GTA that need to be built.

4.1 Focus Area One - Build Out Rapid Transit in Western GTA Beyond Current Funded Projects

4.1.1 New GO Rail Projects

The planned improvements to the GO Transit rail network,58 called the "GO Expansion" project, represents one of the GTHA's most important funded transit initiatives. First announced in 2015, it has developed into a project where all-day two-way 15-minute train service will be provided on core portions of five out of seven GO corridors. In total, there will be a 3-fold service expansion versus today. The capital program is expected to cost \$30 billion and includes double tracking sections of the corridors, station upgrades, road-rail grade separations, Union Station upgrade, electrified trains up to 140 kph and about 8 new stations. Over and beyond "GO Expansion", there are other important unfunded GO rail projects in the western GTA that need to be built.

4.1.1.1 Kitchener GO line service expansion

This project involves transforming the Kitchener Line into a two-way all-day rapid transit line. It is a significant undertaking and significant investments are required in the CN-owned Halton Subdivision to fully realize increased frequency and capacity beyond the Bramalea GO station. A number of projects have already been completed or are underway.

Metrolinx published a Preliminary Design Business Case⁵⁹ in March, 2021. It showed that there is sufficient capability to run frequent two-way all-day service to Bramalea station, a distance of 85 km. The challenge is to increase service beyond Bramalea to Mt Pleasant, Georgetown and Kitchener stations. The base case showed a total of about 30 trains per day to and from points west of Bramalea, increasing to about 70 trains per day after expansion. With a typical GO train having a capacity of over 1,000 people per train, this represents 40,000 new seats per day, or 1,300 people per hour per direction. The capital cost of the improvements was estimated at \$1.6 billion.

In October, 2025, the province announced it had signed an agreement in principle with CN to purchase land to construct dedicated GO tracks on 20 km of the CN Halton Subdivision. This is an important first step to achieving the planned expansion to Kitchener.





4.1.1.2 New GO Train service to Caledon (Bolton)

The idea of new GO service to Caledon has been around since 2010, when it was studied by Metrolinx in a feasibility study. Fo The 2022 Connecting the GGH Plan identifies actions by Metrolinx and the Town of Caledon (Action 25) to monitor demand and advance a business case. With Caledon expecting to grow to 300,000 residents by 2051, the Town has continued to advocate vigorously for GO Train service. In 2022, it engaged a consultant to conduct technical studies and advance the business case. In 2024, the Town continued to press the Province and Metrolinx for a commitment.

Until the new technical work and business case are completed, we have no up-to-date information about costs of this project. Capital costs in 2010 for this roughly 30 km line were estimated at \$350 million - \$400 million, with ridership capacity estimated for one train every 30 minutes (peak period and direction only) to be 2000 people per hour per direction. Using the Bank of Canada inflation calculator, it is estimated that this project would have a capital cost of \$1.0 billion in 2025.

4.1.1.3 Pearson Airport Kitchener GO Line Connection

It has long been recognized that Pearson International Airport (PIA) and the Pearson Economic Zone (PEZ) represent a major economic engine in the GTHA. PIA is one of the largest airports in North America and the PEZ continues to be a magnet for industrial investment. There is currently a heavy reliance on cars and related parking, and it is recognized by all that the current auto mode share (93%) needs to decrease and that transit service needs to improve.

Studies by Metrolinx and the Greater Toronto Airport Authority were underway⁶¹ in 2020 under the "Union Station West" concept involving numerous rapid transit connections, but were put on the back burner due to the pandemic. One of the envisioned connections was direct heavy rail access from PIA to GO Transit and VIA Rail on the Kitchener GO corridor. This connection is even more important now, if the VIA High Speed Rail (Alto) project advances.

There has been little study of this heavy rail connection to GO Kitchener in recent years. In 2013, a report by Transport Action Ontario entitled "Greater Toronto and Hamilton Area Regional Rapid Rail: A Vision for the Future" proposed such a link. Access from the east would be via a new 5 km spur branching

⁶⁰ The feasibility study for Bolton Commuter Rail does not appear to be on the Metrolinx website any more. However, a good summary was reported to York Region's Planning and Economic Development Committee on May 4, 2011. Report 5 This can be found on York's website www.york.ca

⁶¹ https://www/torontopearson.com. Search for "Improving Regional Transit"

⁶² www.ontario.transportaction.ca. Search for "Greater Toronto and Hamilton Regional Rapid Rail: A Vision for the Future"

off from a point near Highway 401. The spur would rejoin the GO corridor near Highway 427. A new GO station at Carlingview Drive was proposed. Total capital cost was estimated at "likely exceeding \$1 billion", which would inflate to about \$2 billion now.

With 15-minute, all-day two-way service planned on the core portions of the Kitchener GO line, the increased transit capacity to PIA would be about 4,000 people per hour per direction.

4.1.2 New LRT/BRT Projects in the Western GTA

In addition to the higher order GO Rail projects identified above, the Province of Ontario could move forward with supporting some LRT and BRT projects. Perhaps the most promising is the recently-proposed "East-West Cross-Regional Connector" running in a transitway in the Highway 407 corridor, although there are plenty of other good, unfunded projects.

4.1.2.1 East-West BRT Connector

The idea of a dedicated BRT transitway along the Highway 407 corridor has been identified since about 2009, and environmental assessments on various segments to identify and protect the specific route have been completed. However, the project has never moved to the preliminary design stage and was identified as "beyond 2041" in the Metrolinx RTP.

The concept was revived in the 2022 GGH Plan under the name "East-West Cross-Regional Connector". The Plan states that "it would transform the regional transit system from today's radial commuter network centred on Union Station to an expansive grid, so people can get where they need to go without going through the downtown core. This new link will build on already protected lands for the 407 Transitway, a bus rapid transit corridor parallel to Highway 407."

It is unknown if planning work has commenced on this project. It would indeed form an important component of the transit system in this region, with connections to the subway at Yonge St. and Jane St, and connecting to the McCallion LRT. At the present time, there is no up-to-date capital costs or ridership information available for this project. However, the Vaughan 2012 Transportation Master Plan⁶³ obtained a cost estimate from MTO of \$60M/km. Using the Bank of Canada inflation calculator, it is estimated that this project would have a current unit cost estimate of \$150M/km. Assuming an initial distance from Yonge St to Milton (43 km), the capital cost would be about \$6.4 billion. System capacity would

be about one bus every 2 minutes per direction, or 3,000 people per hour in peak direction.

4.1.2.2 Urban Bus Rapid Transit or Light Rail Transit Systems

Both the Metrolinx RTP from 2018 and the 2022 GGH Plan identified numerous BRT or LRT projects for the GTA-West. These are all currently unfunded and include:

- Airport Road
- **■** Bovaird/Castlemore
- Brampton Main Street (LRT)
- Brampton Queen St/Highway 7 (BRT)
- Derry
- Dixie
- Hurontario North
- Jane
- Major Mackenzie West
- Mayfield
- Steeles West

Of these, two projects have had extensive analysis, although no funding for construction is in place.

Brampton Main Street involves an approximate 4 km extension of the under-construction Hazel McCallion LRT line from Steeles Ave into downtown Brampton. It has been controversial due to debates over route selection and elevation in downtown Brampton.

The original Metrolinx proposal involved at-grade LRT along Main Street, but Brampton Council is strongly in favour of an underground path, despite the higher cost. Comparative costs, as developed by Brampton,⁶⁴ are \$0.9 billion for the surface option versus \$2.8 billion for below grade. In a letter in January, 2024, Ontario Minister of Transportation Sarkaria directed Metrolinx to develop a business plan and procurement strategy for this extension. Although it is not clear which option will be chosen, it is likely to be the below grade option. System capacity would be about 5,000 riders per hour per direction.

An Initial Business Case⁶⁵ for the 24 km Brampton Queen Street - York Region Highway 7 BRT was released by Metrolinx in October, 2020. Depending on the degree of road widening, capital costs ranged from \$0.1 billion to \$0.5 billion for this 24 km stretch. System capacity would be about 1 bus every two minutes in each direction or 3,000 passengers per hour per direction.

⁶³ Aecom Table K-2 https://www.vaughan.ca/sites/default/files/Appendix%20K%20-%20Capital%20Cost%20Estimates.pdf

⁶⁴ City of Brampton staff report "Light Rail Transit Extension Study - Advance to TPAP Stage", January 17, 2024

⁶⁵ www.metrolinx.com. Select "About Us", then "Business Cases", then "Brampton Queen Street BRT Initial Business Case 2020"

4.1.3 Summary of Public Transit Initiatives Versus Highway 413

The table below compares the capital cost and people-moving capacity of the suggested transit alternatives versus Highway 413. Despite requests from many stakeholders, the Ontario government has not revealed a cost estimate for building Highway 413. Estimates based on media⁶⁶ reports are between \$10 and \$14 billion. Although the transit capital costs have increased versus our 2020 report, it is clear that rapid transit moves people more cost-effectively than Highway 413.

Table 8: Comparison of GTA-West Rapid Transit Projects with Highway 413

Project	Estimated Capital Cost, \$ billion	Capacity Increase – people per hour peak direction
GO Kitchener Service Expansion - 85 km Kitchener to Bramalea	\$1.5	\$1,300
GO Caledon - 30 km Bolton to Weston	\$1	\$2,000
Pearson Airport Kitchener Line Connector - 5 km spur	\$2.0+	\$4,000
East-West Cross-Regional Connector BRT (Yonge St. to Milton - 43 km)	\$6.4	\$3,000
Brampton Main LRT - 4 km	\$2.8	\$5,000
Brampton Queen St York Hwy 7 BRT - 24 km	\$0.1 - \$0.5	\$3,000

TOTAL TRANSIT	\$13.8 - \$14.2+	\$17,300
	•	

HIGHWAY 413	\$45,944	\$7,000 (a) ┐
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⁽a) Three lanes per direction. Free flowing traffic (optimistic case) with 2 second spacing between vehicles. Average vehicle occupancy 1.25

These transit projects are also better located than Highway 413, as they serve urban growth centres that are job-rich and have many important destinations.

If the proposed funds of \$50 to 100B for the 401 tunnel are instead directed to transit, many more LRT/BRT projects could be funded, including those identified in this report for the western GTA, as shown in Map 3.

⁶⁶ Charles Smedmor, forensic accountant, estimated the capital cost of Highway 413 at \$8.2 billion in 2021, as cited in Toronto Star November 11, 2021. Assuming a modest 20% cost escalation to 2025 leads to \$9.8 billion. This is consistent with available 2022 commercial real estate transactions and construction costs published by MTO in 2020 ("Evaluation of Short List of Route Alternatives", August 2020 - see www.highway413.ca). However, given the very large recent escalation in construction costs, coupled with anecdotal evidence of recent land acquisitions, it is possible that the highway (land + construction) may cost as much as \$14 billion.

Map 3 - Rapid Transit Alternatives to Highway 413



4.2 Focus Area Two - Expand Road Pricing or Tolling, Including Truck Discounts on Highway 407 (Total Cost: \$0.3 Billion/year)

As discussed in Section 3.8, road pricing or tolling has long been recognized as having a positive effect on traffic congestion. There are many possible approaches. For the GTHA, the best ultimate structure of road pricing would likely be a dynamic system with different costs-per-kilometer ranging from 3 to 10 cents/km based on time, location and type of road.

A cost-effective use of tolls is to use Highway 407 as a freight corridor for trucks while keeping tolls for autos. The 2017 Advisory Panel suggested scoping some form of truck priority on Highway 407, likely in a dedicated truck lane, and our 2020 report endorsed the same idea. Since then, there has been extensive study of the idea of offering a truck toll discount.

In late 2023, a study⁶⁷ was completed by Eunomia, on behalf of Environmental Defence with input from Transport Action Ontario. It found that subsidizing the toll on the 407 ETR for truckers is a win-win solution for commuters and the trucking industry. Moving trucks from Highway 401 to the 407 will alleviate congestion for all road users and reduce journey times for truck drivers. This would make Highway 413 unnecessary, saving taxpayer dollars and protecting valuable natural spaces including farmland and Greenbelt.

The report found that moving trucks to the 407 will

- Move 12,000 to 21,000 trucks a day off Highway 401.
- Cost \$6 billion less than constructing the proposed Highway 413. Subsidizing the 407 trucking toll is estimated to cost \$4 billion net present value over a 30 year period (\$260 million/year) and would help fund the pensions of Canadians as the 407 is partially owned by the Canada Pension Plan Investment Board. As stated earlier, the Ontario government has not revealed a cost estimate for building Highway 413, but estimates cited in the media are at \$10 12 billion.
- Reduce cost and journey time for truckers using Highway 407 will reduce journey times by more than a factor of two versus the equivalent trip on Highway 401.

In addition to saving truckers time and money and saving Ontario taxpayers billions of dollars, the 407 trucking option can be implemented almost immediately resulting in instant relief rather than the many years of construction that the Highway 413 project would entail.

To avoid problems due to induced demand, tolls for automobiles on Highway 407 must be maintained and should ideally be aligned with a broader road pricing scheme as discussed above.



4.3 Focus Area Three - Support Western GTA Municipalities with Additional Operating Funds to Optimize their Public Transit Assets (Total Cost: \$0.75 Billion/year)

History has shown that the best way to grow transit ridership is to create a high-frequency bus network that provides all day 'everywhere-to-everywhere' service where passengers can "show up and go" without having to worry about checking a schedule. If municipalities are able to pull this off - the phenomenon has been described as the 'network effect'. Put simply - not everyone can live in close proximity to a rapid transit access point (like a subway, light rail or BRT station). A strong bus network can dramatically expand the catchment area of these stations by creating a feeder service into the rapid transit network. This creates the necessary conditions for public transit to compete with the car.



There is a saying in transit circles that "rail service is capital-intensive, while bus service is labour-intensive". This makes the primary constraint for supplying more bus service the transit operating budget, and supplying more rail service the capital budget. This means that while the federal government's decision to fund public transit has been transformative for rail projects in cities across the country, it has done little to improve bus service.

Environmental Defence's "Putting Wheels on the Bus" Report estimates that about 1,700 buses across Canada are sitting idle because municipal transit systems can't afford to run them. That 1,700 buses that could be moving people every day.

The current operating subsidies for all GTHA transit agencies totals more than \$3 billion per year - if we were to double the investment for the region spanning Highway 413 (parts of Halton, Peel and York regions), those three municipalities could conceivably double transit service. According to experts who have closely studied determinants, a doubling of Transit Service Kilometres and Transit Service Hours results in almost a doubling of ridership. Based on the data from Table 7, the annual subsidy for MiWay, Brampton Transit and York Region Transit would then be about \$0.75 billion/year.

5. Conclusions

The GTHA is at a transportation crossroads. In the 1970s, the cancellation of the Spadina Expressway project signalled the end of expressway construction in the City of Toronto. Public transit and complete compact communities stepped up to fulfill the transportation demands of a growing population and the city prospered.

However, expressway construction continued unabated in the 905 portion of the GTHA, with many highways either built or extended.⁶⁸ With the increased awareness of environmental costs, economic costs from farmland loss, a better understanding that congestion will not be cured by new highways or new lanes, a sobering understanding that current development trends cannot continue, and a solid public transit plan that needs continued funding, it is time for

BOLD ACTIONS:

Transit capital funding needs to be increased, and the funding directed to highways needs to be redirected to transit capital investment. Public transit can move people more cost-effectively than highways. There is a long list of good higher-order transit capital projects that are currently unfunded. The 6 projects cited in the table above as alternatives to Highway 413 would provide 120 km of new/expanded GO Train service and 71 km of LRT/BRT, at a total capital cost of about \$14 billion, not that different than the cost of Highway 413, and move more than twice as many people per hour. If additional funding were available by killing the 401 tunnel project, many more projects are fundable. These are likely to be mainly LRT/BRT at an average capital cost of \$300 million/km, meaning an additional 220 km could be built. (Total Cost: \$80 billion for 120 km GO and 290 km LRT/BRT)

Transit operating funding needs to increase dramatically. The literature has shown that transit ridership is closely linked to transit service hours and bus frequency. To reduce congestion in the GTHA, transit mode share needs to be at least 30%, which is double that today. For the western GTA transit agencies that operate in the Highway 413 area (MIWay, Brampton Transit and York Region Transit), this requires an additional government subsidy of about \$0.75 billion/year, much of which can be found by reversing the recent driver subsidies. This would also cover costs to reauthorize "One Fare" and for small city-lead projects like dedicated bus lanes and transit signal priority. (Cost \$0.75 billion/year)

Reverse car-enabling subsidies by reinstating higher gas taxes and road tolls. Additionally, study region-wide congestion pricing or road pricing, as this is known to be effective in congestion management. (Revenue generated: \$2.5 billion/yr - province wide)

Highway 407 is a useful corridor for efficient freight movement by truck. Studies have shown that subsidizing truck tolls is more cost-effective than constructing Highway 413. However, to avoid induced demand, tolls for autos should be retained, potentially aligned with a broader road-pricing scheme across the entire GTHA. (Cost of subsidies: \$0.3 billion/yr)

Revise land use plans to completely stop urban sprawl. Current land use plans are still slanted to too much growth at the urban edge or beyond, and these areas are difficult to serve with transit. The Metrolinx RTP flags the enormous challenge to transportation when much of the region's growth is in greenfield areas. There is no need for boundary expansion in the GTHA as all population growth to 2051 can be met by intensification. (Cost: Marginal)

68 Highways 401, 404, 407, 410, 412, 418 and 427

Highway 413, the Bradford Bypass, and the proposed 401 tunnel will cost taxpayers up to \$80 billion while failing to reduce the gridlock that already costs our region \$45 billion every year in economic and quality of life costs. The government's own modeling predicts that all 400-series highways in the GTHA will be heavily congested by 2041, even if Highway 413 is built.

This report demonstrates that for the same \$80 billion price tag as the proposed mega-highways, Ontario could build 400 kilometres (or the equivalent of light rail from Toronto to Sudbury) of new rapid transit. By using Highway 413 as our case study - we've demonstrated that putting \$14 billion in capital towards transit instead of the highway will move more than double the commuters per hour.

Together, these bold actions can set the GTHA on a new path with reduced gridlock, an improved economy and social well-being.







Glossary

Active Travel or Transportation

Human-powered travel including but not limited to walking, cycling, inline skating and travel with the use of mobility aids, including motorized wheelchairs and other power-assisted devices moving at a comparable speed.

Bus Rapid Transit (BRT)

Transit infrastructure and service with buses running in their own exclusive right of way, fully separated from traffic, with signal priority in place and longer spacing between stops than conventional bus routes (typically 500 m to 1 km) to maintain higher average speeds and ensure reliability of the service.

Capital Costs (Transit)

Costs to construct or expand a route in a transit system, including costs of major rehabilitation in the future.

Complete Communities

Places such as mixed-use neighbourhoods or other areas within cities, towns and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living including an appropriate mix of jobs, local stores and services, full range of housing, transportation options and public service facilities. Often these communities are compact with densities that are high enough to support good transit service.

High Occupancy Vehicle (HOV) Lane

A lane of roadway that is typically designated for use only by vehicles with a specified minimum number of occupants (including transit vehicles). May also be used to support Priority Bus routes.

Higher Order Transit or Rapid Transit.

Transit with higher speeds than urban buses or streetcars running in an exclusive right of way. Typical types are regional rail (i.e. GO trains), subways, LRT and BRT.

Induced Demand.

A phenomenon where increased capacity of a system is rapidly filled up by increased demand. For roads and highways, it means that new lanes or highways in urban areas are rapidly filled up by new drivers who have altered their mode of transit, their time of travel or increased their distance travelled.. This phenomenon also occurs with transit systems, where new services (e.g. higher bus frequencies) result in new riders.

Light Rail Transit (LRT)

Transit infrastructure and service consisting of light rail vehicles running in an exclusive right of way, fully separated from traffic, with signal priority measures in place and longer spacing between stops than conventional bus routes (typically 500 m to 1 km) to maintain higher average speeds and ensure reliability of the service.

Mode Share

The percentage of person-trips made by one mode of travel relative to the total number of trips made by all modes.

Operating Costs (Transit)

Costs per year to operate and maintain a transit system. Includes labour costs, energy costs and costs of regular maintenance.