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Rapid Transit Rescue For Toronto



Photo from Canadian Dimension, Article by Nick Grover

Every day, more than two million people use Highway 401 in the core of the Greater Toronto Area, from Mississauga to Pickering. The flow of cars and trucks is slowing down in ever-longer peak periods, and it's not going to get better.

Population growth over the next thirty years – a million more people in Toronto alone – means that Highway 401 in Toronto will become nonfunctional for much of every day. The highway needs a relief valve to ensure that essential traffic moves efficiently across the region.

Many tens of thousands of commuters who are slogging through it dream for another way to get to where they want to go. Unfortunately, it now costs anywhere between \$11,000 per year to buy and operate a used car, and \$16,000 and more per year for a new car. It's essentially a massive hidden road toll that cuts deeply into the budgets of moderately income households, preventing them from investing in other priorities.

Personal relationships are affected, too. As the Toronto Star's Francine Kopun has written, relationships, family gatherings softball games and much more are falling victim to the city's gridlock.

The Ontario government is rushing to build new rapid transit lines to try to keep things moving in Toronto. The Finch West and Eglinton LRTs will be completed soon, and other projects – the Ontario Line, extensions of the Line 1 and Line 2 subways, and more GO Transit – are underway. Beyond 2030, nine more rail rapid transit expansions and bus rapid transit are planned for Toronto.

The Ontario Ministry of Transportation’s Greater Golden Horseshow Transportation Plan (GGHTP) also an “Ontario Line Loop Connection”, a long rapid transit circle line around the edges of Toronto that would be a hugely expensive undertaking that will not produce enough transit ridership to make it operationally viable.

But will rapid transit expansions keep pace with travel demand growth? If everything in the (GGHTP) for Toronto is implemented, and improvements to the Toronto Transit Commission’s existing services inch forward, it looks like it might – sort of, maybe. One reason it’s uncertain is because about half of forecasted boardings on new rapid transit system expansions will be current transit users rather than new transit users.

Offsetting demand for travel by automobile also needs to include good municipal growth planning focused on increasing population and employment densities that boost transit ridership growth, and promote walking and bicycling as modes of travel. There is also a need for the government of Ontario to provide capital funding for massive increases in bus services throughout the region, and 100% or close to 100% funding for operating deficits of municipal transit systems. This funding should improve service frequencies, add express buses to rapid transit and other significant destinations, and also include autonomous electric buses to serve communities on secondary roads.

Will it be enough just to keep pace?

But just keeping pace with congestion and its impacts won’t do. Torontonians won’t be happy if all that can be said in 2051 will be “Well, at least it hasn’t gotten worse”. That would mean unending road congestion and failure in the war on the climate crisis. Is that what Torontonians want to be giving our kids and grandkids?

True progress requires that the number of kilometres traveled by motor vehicle plunges from today’s volumes. It means that fewer and shorter trips will need to be taken by fewer cars. In general, that is not happening.

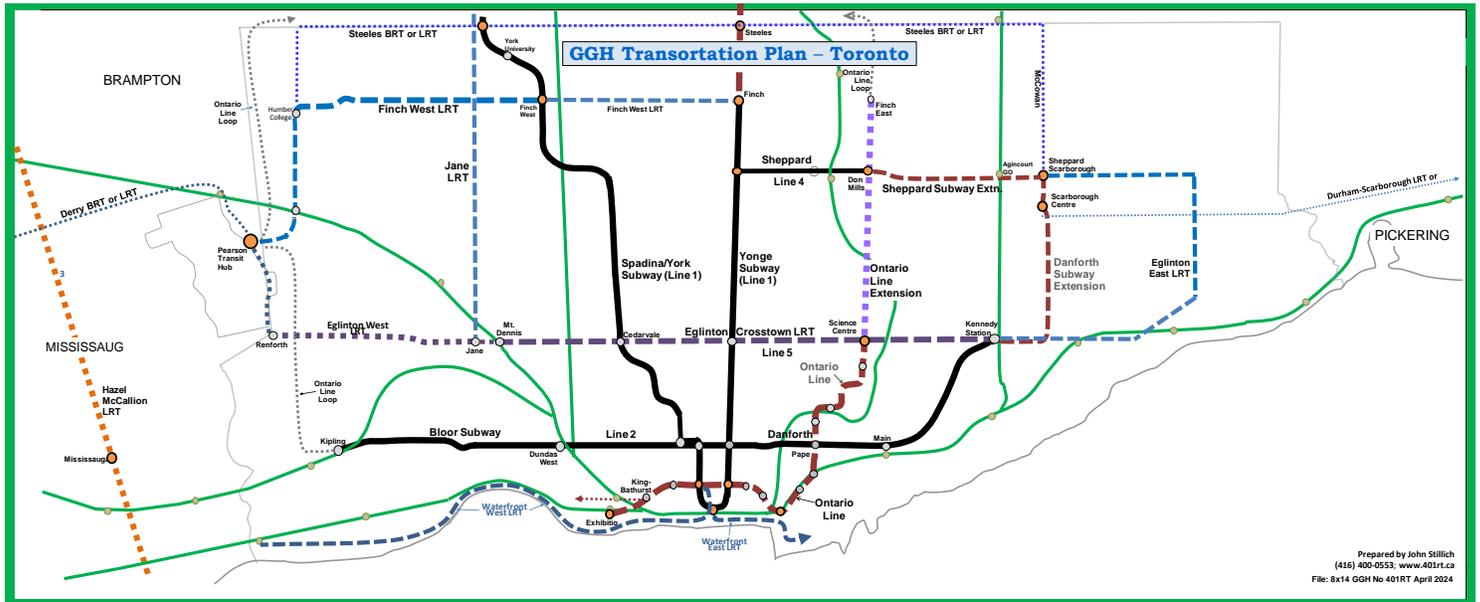
Toronto’s Northern Rapid Transit Gap

The crux of Toronto’s road congestion and Highway 401’s slow crawl to death by strangulation lies in the dismal planning for rapid transit in the northern half of Toronto. The Toronto portion of the GGHTP is mostly a collection of scattered pieces that have been around for decades, without anything that can enable rapid travel across the whole of the northern half of the city, or to connect to north-south rapid transit. It is why people drive into the downtown core, clogging the Don Valley Parkway and other arteries across the city.

2051 Rapid Transit Scenario (Figures in Millions)	Approx. Cost to Build	Approx. New Transit Trips per Yr.
Finch W LRT to Humber Coll	2,500	6.4
Eglinton LRT Mt.Dennis to Kennedy	12,800	19.0
Eglinton W LRT to Renforth	4,700	9.0
Ontario Line - Exhibition to Eglinton	14,000	72.4
Yonge Sbwly extn to Richmond Hill	5,600	11.4
Scarborough Sbwly to Sheppard E	5,500	13.9
GO Transit 2051	1,600	21.5
	46,700	153.5
Other Rapid Transit initiatives:		
Eglinton East LRT to UTSC& Malvern	4,650	11.0
Sheppard Subway to McCowan	4,800	6.5
Eglinton LRT Renforth to Pearson	1,200	3.9
Finch W LRT extension to Yonge	1,900	5.7
Finch W LRT extension to Pearson	1,200	1.1
Jane Street LRT	2,600	8.0
Ontario Line extn to Finch	6,900	19.5
Waterfront West LRT	1,900	13.7
Waterfront East LRT	900	2.4
Go Transit Enhancements	11,900	118.0
Varous BRT Routes	16,500	21.2
	54,450	210.9

It is assumed that traffic on Highway 401 will continue to increase as the Toronto region's population continues to increase rapidly. It is why the GGH Transportation Plan has a stated policy to add road capacity to Highway 401, rather than providing a rapid transit alternative to driving across the city.

This has been actualized by the Premier of Ontario recently announcing that a feasibility study will be undertaken to determine whether a new highway tunnel under Highway 401. The tunnel plan will not work. It would require massive property acquisitions for on and off ramps and cost between \$60 billion and \$120 billion to construct. Enormous multi-year disruptions for travelers would be created, and all that will happen is to add more cars to city streets.



High-occupancy lanes on Highway 401 for buses have been suggested as one solution, but that would require hundreds of buses to make a dent in traffic volumes. Moreover, the costs and complexities of hundreds of new bus routes will be daunting for transit operators and for travelers.

What do Torontonians want? Do they want more highway lanes, or do they just want – somehow – less traffic congestion, not only on the 401, but everywhere?

The only east-west rapid transit lines that exist north of Eglinton Avenue are the Finch West LRT – which will be too slow and too remote to make a noticeable difference in Toronto's traffic volumes – and the five kilometre long Sheppard Subway. Even if the Sheppard subway's planned extension to McCowan Road happens, it will be only 13 kilometres long. Toronto is 40 kilometres wide.

For example, getting from Scarborough's Neilson Road at Ellesmere Road (near the hospital) to Pearson International Airport by public transit will continue to be a struggle. Even if the planned Sheppard Subway and Finch West LRT extensions are built, it would mean a bus trip to Sheppard Avenue, a wait, another bus to the Sheppard subway at McCowan, the subway ride to Yonge Street, a wait for the Yonge subway, a ride to Finch Station, a wait for the Finch West LRT, and a trip on the Finch West LRT past Humber College to the airport. Altogether, about 1 hour and 50 minutes. The Eglinton LRT, geographically in the southern half of Toronto, won't be of much help.

The only sensible way to travel will seem to be to drive to Pearson on Highways 401 and 409; however, the 401 will also be congested for most of the day, and be gridlocked during peak periods.

Parking lots across the northern half of the city will remain full. The downtown core will continue to be congested with cars from Toronto's northern suburbs. As air travel continues to increase, Pearson's parking lots and garages will remain full, despite LRT extensions from Finch and Eglinton Avenues. The Don Valley Parkway and other roads will remain clogged for most of the day (even with the Ontario Line nearby). And too many households will have to bear the stifling costs of owning and operating personal automobiles, often one for every adult in the home.

Being able to get quickly to Pearson and its massive surrounding employment area from east of Yonge Street, and to Scarborough from west of Yonge, is critical.

Filling the Rapid Transit Gap

The solution seems obvious. Cutting the need to travel by automobile in Toronto from today's volumes means building an east-west rapid transit line through northern Toronto and into Pickering and Mississauga. One that's fast and comfortable enough to compete with driving across Toronto on Highway 401 and provides direct and easy connections to both legs of the Line 1 subway, plus the Ontario Line (extended north of Eglinton East), the Line 2 Subway extension at Scarborough Centre, any of six GO Transit rail lines, Pearson airport and its massive surrounding employment area, and to myriad other destinations and a hundred bus connections along the way. It can be made to happen.

So, here's the vision: A rapid transit line that would be 69 long, running seamlessly from Pickering Town Centre to Islington Avenue and to Erindale GO station via Pearson International Airport and populous downtown Mississauga. The seamlessness of travel on this "**401RT Express**" would maximize its attractiveness for commuters and for anyone who wants to get across the northern half of Toronto, or to access Toronto's downtown core, or to Mississauga or Pickering.

But where to put it? Tunneling the whole thing would take decades and cost a fortune. Nor can it run on city streets as light rail transit – service would be far too slow and be hugely disruptive. And using hydro corridors won't work either.



The best and most cost-effective location is one that is elevated above or adjacent to Highway 401's eastbound collector lanes and, west of Islington Avenue, above several other transportation corridors. In Mississauga, much of its route would be above the Mississauga Transitway.

Locating the 401RT Express (or just 401RT) above existing corridors means there would be little property acquisition costs or neighbourhood disruptions. 75% of the lands bordering the highway along this route are non-residential. Careful separation of the 401RT from the closest residential lands bordering the highway should minimize NIMBY (Not-In-My-Backyard) reactions. Most stations along Highway 401 would be above the on- and off-ramps along the highway's south edge. Elevating the 401RT also means it can be built much faster than tunneling, and at far less cost. One cost-saving measure can be to enable land developers to build and, at least in part, pay for 401RT stations. In exchange, they would be permitted to build residential and/or office towers above them.

Commuter parking is possible at both ends of the 401RT by replacing the ground-level lots at Erindale GO station and the Pickering GO station with new multi-level garages.

End-to-end travel time for the Pickering-to-Erindale GO station could be less than 80 minutes. It's a speed that's good enough – especially in peak periods – to entice many people out of their cars and onto transit. For example, the 401RT Express will get travelers from its Yonge Street station to Pearson International Airport in 26 minutes. Other comparisons that include time taken to get to the 401RT on buses are shown in the box below.

Travel time for the arduous trip example between Neilson Road and Pearson airport would be cut in half, from 110 minutes to just 56 minutes. That kind of change would have a transformative effect.

With a 401RT operational, many travelers flying out of Pearson International Airport can leave their cars at home instead of fighting traffic and paying for airport parking. Friends and families won't need to drive them to or from the airport.

A Northwest 401RT Express

Something else needs to be fixed. Nearly every day, thousands of people get caught in the massive gridlock on Highway 401 from Dixie Road in Mississauga eastward, often to Highway 400. It's brutal and hellish, not only for the average commuter, but also for enormous numbers of trucks. The outlook is for total gridlock. Even now during peak periods, there is barely room for more traffic. Unfortunately, the myriad rapid transit initiatives already planned for Toronto will provide little relief for this part of Highway 401.

Trip Time Examples (Minutes)	
<u>Keele at Sheppard E to UTSC:</u>	
Using extended Sheppard Sbw	71
Using 401RTX	66
<u>From Scarborough Centre to Pearson:</u>	
Using Eglinton LRT	68
Using 401RTX	45
<u>Jane at Sheppard to Kennedy at Sheppard:</u>	
Via Sheppard bus es + extended Sbw	44
Via 401RT	41
<u>Neilson at Finch to Humber College:</u>	
Using Finch bus to Yonge + LRT	90
Using 401RT	76
<u>St. Andrew Station to Pearson:</u>	
Via Eglinton LRT	44
Via 401RT Express	45

Avoiding increases in road congestion on Highway 401 requires a **“Northwest 401RT Express”** (or simply NW401RT), a rapid transit line above or along Highway 401 that extends for 21 kilometres from Derry Road in Mississauga to the 401RT station at Islington Avenue. The NW401RT would be integrated with the primary 401RT Express as a seamless branch of it. Travelers would have the option of boarding a train in Scarborough that will take them to Pearson International Airport or downtown Mississauga, or one that bypasses Pearson and takes them to northwestern Mississauga.

Among the NW401RT's ten stations would be a junction station east of Renforth Drive that connects the NW401RT with the Mississauga Transitway, the Eglinton West LRT, and the primary 401RT Express alignment across Toronto. Modal shifts to transit would need to be supported by multiple large multi-level pay-as-you-go commuter parking garages over the Highway 401 right-of-way (for example, at Mississauga Road and at Hurontario Street), and by enhanced local and express bus services that shuttle commuters to NWRT stations from trip origin across Brampton, Milton and northern Mississauga. Bus services can include private shuttles to and from places of employment.

The benefits of the Northwest 401RT are worth more than its estimated \$7.3 billion cost. It would have enough capacity to offset all non-commercial traffic growth on Highway 401 between its Derry and Islington stations through 2051, and reduce current highway traffic volumes across much of Toronto. The NW401RT's intersection with the Hazel McCallion LRT would boost ridership on that LRT. Express buses to NW401RT stations west of Dixie Road would encourage new transit use by Brampton commuters. Travel time from Derry to Islington would be a very competitive 23 minutes.

Overall, the perceived need for adding road lanes to any part of Highway 401 would end.

Success In the Suburbs

A subway in the suburbs? It's sometimes said that high-capacity rapid transit doesn't work in the suburbs because urban densities are too low. But GO Transit's Lakeshore Line shows that it can. It works because

it brings commuters directly into Toronto's downtown core. In comparison, the 401RT Express has key destinations across all of its route, the most noteworthy being Pearson International Airport and its adjacent employment zone, and the Line 1 subway. The NW401RT mostly serves to unclog Highway 401, although each of its stations provide significant access to local destinations. As with the two 401RT Express routes, most GO users arrive at stations by car or bus.

The 401RT Express will entice enough new ridership to ensure its success -- its speed, continuous length and comfortable ride, high visibility above grade, central location in the core of the Greater Toronto Area, population growth, smart urban development, the increasingly unaffordable cost of personal automobiles and other costs of living, intensified bus services on intersecting arterial roads, connections to GO Transit, much easier access to Pearson and its employment area from across Toronto and from Mississauga, and latent transit demand from current Highway 401 users.

Although latent demand for an alternative to driving is important and has not been measured, it is likely that a sizable portion of today's Highway 401 users would prefer to use a viable rapid transit alternative, because they will have little or no choice. The 2.0 million trips per day on Highway 401 in 2019 will rise to approximately 2.7 million by 2051. The highway will have become gridlocked during most of each day by the time segments of the 401RTX become operational. Major shifts from driving to the 401RT Express will occur because travel on Highway 401 and on alternative local roads will be significantly slower than traveling on the 401RT Express for the east-west segment of most trips. In effect, commuters will have little or no choice but to use the 401RT Express if they need to travel. Added to this basic modal shift, other factors will increase 401RT Express volumes to 2051:

- GO Transit's six intersects with the 401RT Express will generate approximately 27 million new GO Transit trips and 24 million new 401RT Express trips.
- The Islington-to-Pearson-to-Erindale GO branch of the 401RT Express will generate additional trips to and from downtown Mississauga, the Mississauga Airport Corporate Centre and other points;
- The transit modal share of trips to and from Pearson International Airport and its adjacent employment area will be much higher than is currently the case;
- Additional buses on north-south routes intersecting with the 401RT Express will carry travelers whose destinations are not the 401RTX; an estimate is 52 million new transit trips per year by 2051;
- Some urban development in the form of high density housing and office uses at and near the 401RT Express will have higher than average transit modal share;
- High costs of automobile ownership and use will accelerate the movement of trips to the 401RT Express.
- The growth in truck movements will also affect gridlock and the shift to transit for commuters.

Without the 401RT Express or a similar rapid transit line, those additional transit trips will not occur. Overall, the 401RT Express can generate more than 400 million new transit trips per year by 2051 (1.1 million per day) – together with other planned transit initiatives – enough to offset the growth in demand for use of Highway 401. The northwestern arm of the 401RT Express would reduce dramatically the highly congested portion of Highway 401 between west of Dixie Road and Highway 400.

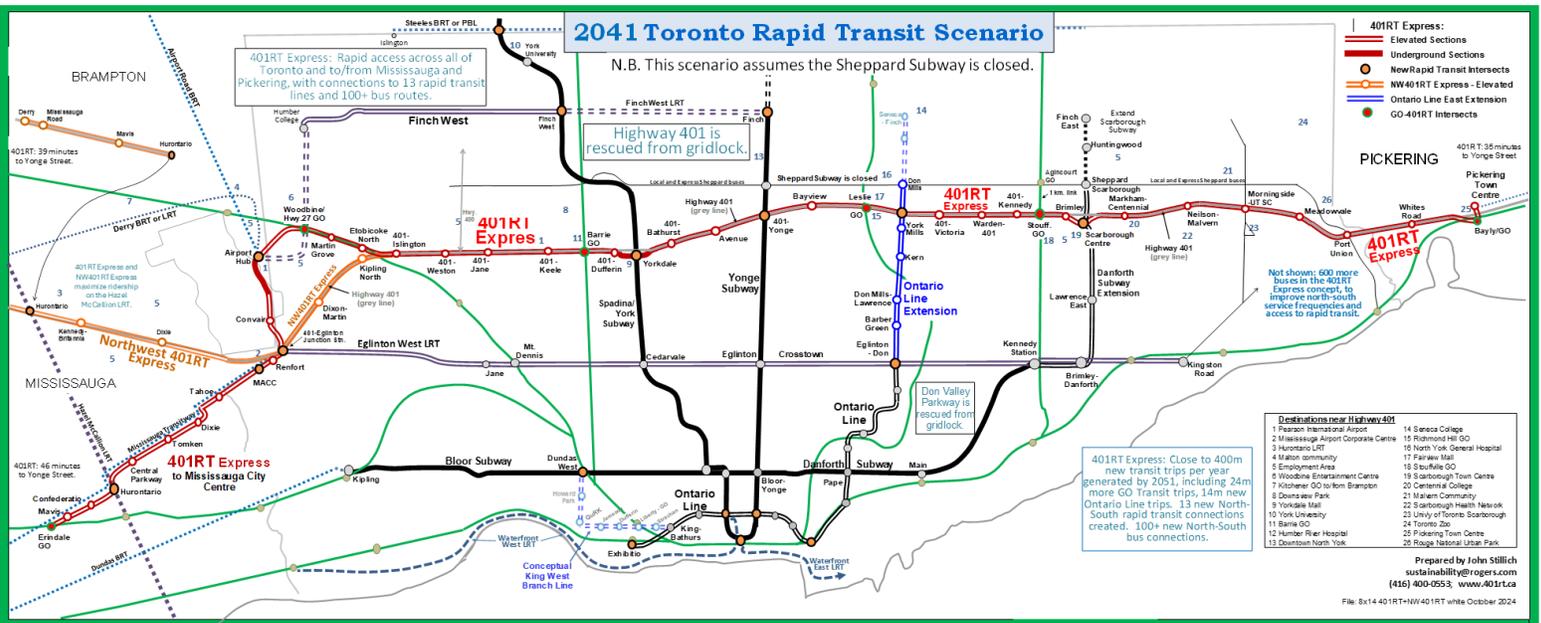
Key destinations directly served by the 401RT would be Pickering Town Centre, Scarborough City Centre, the Line 1 subway and the Ontario Line, Yorkdale Mall, Pearson International Airport and its adjacent employment areas, and the Mississauga City Centre area. Private shuttle buses shared by employers can deliver employees to and from locations not served by municipal bus routes.

Overall, the 401RT will attract ridership from a wide swath of geography, from north of Lawrence Avenue to Steeles Avenue, and into Pickering and Mississauga. While 400 million new transit trips per year by 2051 is a seemingly high volume of new transit trips, it is only half the trips per-kilometre than forecasted for the

Ontario Line from Exhibition GO to Eglinton Avenue East; however, the average per-station usage of the 401RT Express would be greater than for the Sheppard Subway.

An extension of the Ontario Line from Eglinton Avenue East to the 401RT Express will be necessary to keep Express users from overcrowding the Yonge Street subway. A northerly extension of the Ontario Line past Highway 401 is already included in the GGH Transportation Plan.

The volumes of new transit ridership on the 401RT Express would reduce travel by motor vehicle on the heaviest-traveled segment of Highway 401, to the point that increasing the road capacity of the highway, identified as a priority in the GGH Transportation Plan, should be removed from plans.



All of this is a lot to process. It's huge. 90 new kilometres of rapid transit. 50 new stations. 13 new rapid transit connections. But it has to be done – it's critically important. And in reality, it's not a significantly larger project than the sum of rapid transit expansion projects currently underway for Toronto and Mississauga.

Closing the Sheppard Subway

Despite many years of discussion and planning about extending the Sheppard subway to McCowan Road in Scarborough, the 401RT Express will make the entire Sheppard Subway, including its proposed extensions, obsolete. According to TTC statistics, people use the Sheppard subway mostly to go Yonge Street or to catch a Don Mills bus, or to go to points east of the subway's Don Mills terminus. With a 401RT operating, most travelers who want to get to Yonge Street from, for example, somewhere along Markham Road, will take a bus to the nearby 401RT, two minutes south of Sheppard Avenue. **Very importantly**, the 401RT will enable travel to or from west of Yonge Street. Closing the Sheppard Subway could mean replacing it with a seamless bus service that can run from Toronto's eastern border to Weston Road.

OMG! How is the 401RT Express Affordable?

The 401RT Express will cost up to \$26 billion to build; the NW401RT will cost about \$7.3 billion. No doubt, people of thrift – and perhaps most people – will argue “That’s Too Much!! I can’t afford this!! My taxes will go through the roof!” Not so. And Torontonians have already accepted that level of spending. The Ontario Line, Eglinton West LRT extension, Yonge North extension to Richmond Hill, the Line 2’s Scarborough Subway and the Hurontario LRT already cost more than their announced \$28.5 billion.

The \$33.3 billion is deceptively overstated. Today's Toronto taxpayers won't be digging into their wallets to pay that much. For one thing, the cost would be carried forward by public debt; in that way, future users of the 401RT would, very appropriately, contribute to the cost. Debt financing also greatly reduces the annual cost to taxpayers.

And there's more that will bring costs down a great deal. The 401RT would mean some of the Ontario Government's GGHTP's planned rapid transit initiatives can be eliminated-- including fairly high-profile initiatives that have been around for decades and hoped for by many. Altogether, they will save about \$12.7 billion in future infrastructure costs. There are four unneeded projects:

1. The proposed \$5.3 billion Sheppard Subway extension to McCowan Road and to Scarborough Centre, less decommissioning costs. The subway would run closely parallel with the 401RT and not have the ridership volumes to justify its construction. Instead of a 13-kilometre Sheppard Subway, Toronto would have the 69-kilometre 401RT.
2. Most of the proposed \$4.6 billion Eglinton East LRT extension in Scarborough. It's long been thought that an eastern extension from Kennedy subway station to the University of Toronto's Scarborough campus and to the Malvern community, and then westward to the Sheppard Subway extension, should be a priority. However, a 401RT through Scarborough provides much better and faster access between the northern half of Scarborough and the rest of Toronto. It may be worthwhile to extend the LRT to Kingston Road (roughly \$1.7 billion), but not further.

3. The 401RT and the Eglinton LRT would divert some ridership from a proposed \$2.6 billion Jane Street LRT. For example, a trip from Jane at Wilson Avenue to downtown Mississauga currently takes 78 minutes; a Jane LRT wouldn't make the trip much faster. Using the 401RT, the trip would take just 33 minutes. Overall average trip lengths on Jane buses would shorten, decreasing crowding on Jane buses.

4. The planned \$1.2 billion extension of the Eglinton West LRT from Renforth Drive to Pearson would not be needed. Travelers to Pearson would transfer from the Eglinton LRT to the 401RT at a junction station east of Renforth Drive.

Comparing Rapid Transit Effectiveness

	Infra Cost \$m	New Trips per Year	Cost per New Trip	Kms. Of Track	Cost per Km. of Track
401RT Express - Pickering to Erindale GO	25,500	354.7	} \$68	69.0	\$375
401RT Express Effect on GO Transit	400	27.4			
NW401RT Express - Derry to Islington/401	7,200	59.3	\$121	21.0	\$1,916
Total Recommended Infrastructure	33,100	441.4	\$75	90.0	\$368
Recommended Expenditure Offsets:			} \$416		
Sheppard Subway Extension to Scarboro Ctr.	5,300	7.5		9.6	\$474
Decommissioning Sheppard Sbwy; net	-750				
Eglinton West LRT - Renforth to Pearson	1,200	4.0		7.6	\$763
Eglinton E LRT - Kndy to Malvern to McCowan	4,600	10.9		19.1	\$152
Eglinton E LRT - Kndy to Kingston Rd (build)	-1,700	-3.3		-4.5	-\$2,122
Jane Street LRT - Steeles to Bloor	2,600	8.0	16.5		
Total Expenditure Offsets	11,250	27.1	\$416	48.3	\$233
Net New Cost Commitment	21,850		} \$50		
Potential Gain in New Trips per Year		441.4			

* The 401RT draws ridership from these higher-order transit routes, rendering them operationally non-viable. Overall, these trips are not lost; they would be served by existing bus services.

** Assumes the Sheppard Subway is closed and new track is built along Hwy 401 between Avenue Road and Victoria Park Avenue.

N.B. The 401RTX requires an extn of the Ontario Line N from Eglinton; already in GGHTP.

Based on cost per new transit trip, the 401RT Express is more than five times as cost-effective as the recommended expenditure offsets (\$416/\$75).

For a 401RT Express train across the underserved northern half of Toronto and into Pickering and Mississauga, and 400 million new transit trips per year by 2051, a net \$22 billion cost above current plans for rapid transit is a huge bargain, even before potential federal funding participation, which can reach 40%. The cost of the 401RT Express per new transit user is \$53; for the Ontario Line, it is more than \$193.

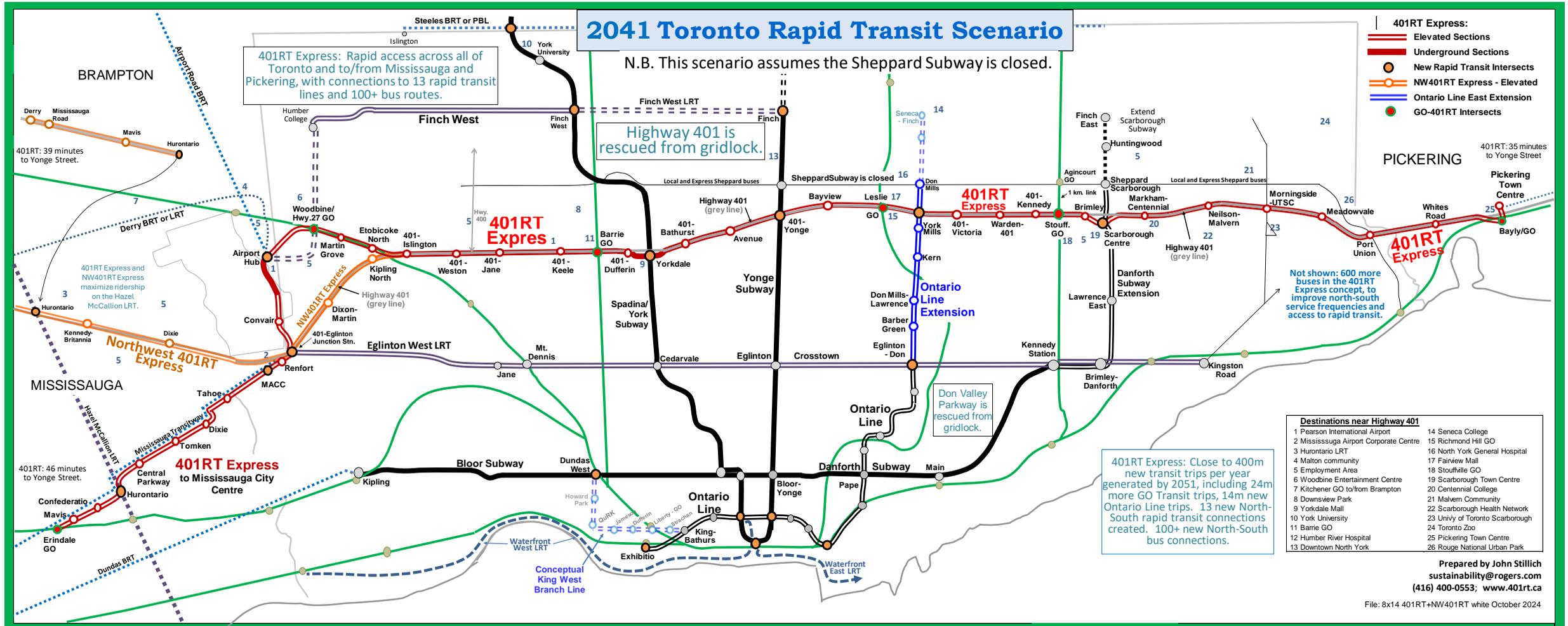
The tax cost to Toronto households would be highly affordable. Cost sharing by non-residential taxpayers and the federal government (assuming 40%), population growth, deficit funding and assuming a borrowing rate for the Ontario government of 3%, the average daily cost per household to build the 401RT and NW401RT works out to about 11 cents per day (see figure below).

And what's the comparison? The average cost per year to own and operate a new gasoline-powered car in Ontario can be, variably, \$15,000 per year. That's \$41 per day.

So, in a way, switching from driving a car to using public transit can be a household budget bonanza.

All of a sudden, it's a no-brainer.

Cost to Build the 401RT Express and NW401RT Express	
(Costs in millions of dollars)	
25,800	Gross Cost - 401RT Express
7,300	Gross Cost - NW401RT Express
<u>33,100</u>	Net additional cost
13,200	Canada Share @ 40%
<u>19,900</u>	Net Ontario cost
3%	Interest rate (N.B. 2023 was 3.2%)
597	million\$\$ per year
46.0%	Household share (per Ontario Budget)
<u>274.62</u>	Household share - millions\$
18,000,000	Ontario population 2031
2.6	Avg. hshld size
6,923,000	Ontario Households in 2031
\$ 39.67	Cost per avg. hshld per year
\$ 0.11	per day (excluding household tax share of Gov't of Canada cost)
N.B. Figures exclude expenditure offsets	
<small>file: 401RT Costs & Riders ELEVATED SIMPLE</small>	



The **401RT Express** is essential if highways and local streets in Toronto are to be decongested, and if plans to add road capacity to Highway 401 in Toronto are to be avoided. Adding road capacity will add to congestion on local roads. Currently-planned rapid transit expansions will struggle to keep up with travel demand growth, and will not reduce overall use of motor vehicles on city streets. The 401RT's length, speed of service, connectivity, and high visibility will make it a success.

The 401RT Express should be recognized as inevitable and urgent. It will render numerous current rapid transit initiatives unnecessary and operationally nonviable: the Eglinton West LRT Phase 2 extension to Pearson, the Jane Street LRT, the Sheppard Subway extn (and the Sheppard Subway itself), and most of the Eglinton East LRT. Spending on these will waste an estimated \$12 billion.

The **401RT Express** is highly affordable, and is estimated to be three times as cost-effective as rapid transit initiatives currently being implemented, based on new transit trips generated. Its net cost to build would be as low as \$20 billion (after cost avoidances of duplicative/nonviable rapid transit initiatives); federal cost sharing can be 40%. The 401RT Express (or similar) would be transformative for transportation in Toronto, essential for achieving climate change goals, and essential for tens of thousands of households that struggle with the high costs of automobile ownership and use. Visit www.401rt.ca for more information. Call John Stillich at 705-294-4110 to talk about this.



