METROLINX

THE 2041 REGIONAL TRANSPORTATION PLAN EVALUATION PROCESS BACKGROUNDER

2041 Regional
Transportation Plan

Prepared by Metrolinx
2018

The 2041 Regional Transportation Plan Evaluation Process Backgrounder

Introduction

This document provides an overview of the process followed to evaluate initiatives - projects, programs and policies - for the 2041 Regional Transportation Plan (RTP). **Figure 1** provides a schematic overview of the steps, from developing a long list of potential initiatives to scenario modelling conducted to test the resiliency of the preferred network. After the steps in the evaluation process are outlined, the document concludes with a set of supporting tables containing detailed information on the long list of projects, programs, and the evaluation scores of these initiatives:

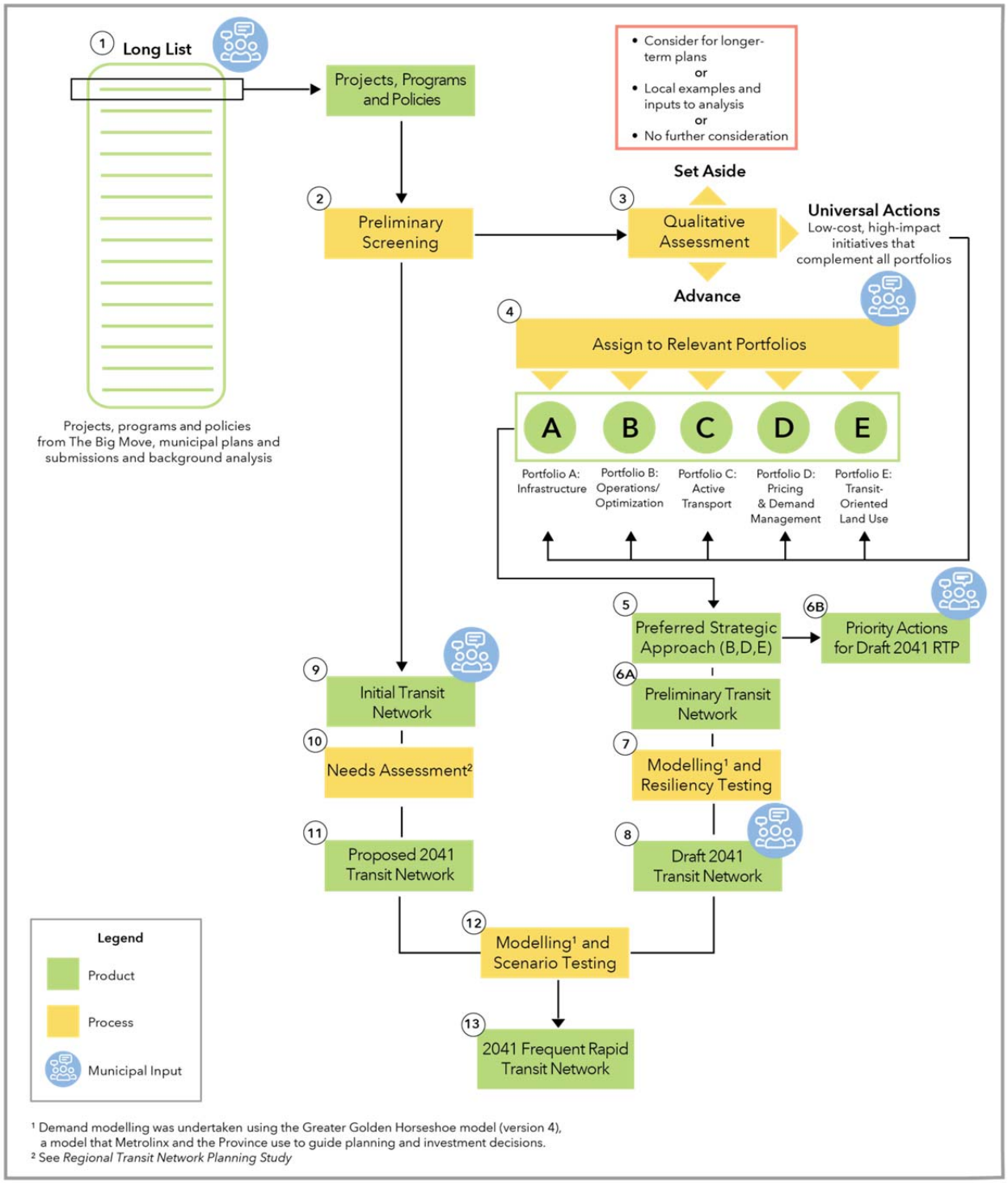
- Table 5: Descriptions of the Projects, Programs, and Policies
- Table 6: Qualitative Assessment Scores
- Table 7: Bundled Project Scores
- Table 8: List of Universal Actions
- Table 9: Outcomes of Transit Needs Assessment from the Transit Network Study
- Table 10: Forecasted Ridership for Transit Projects

Steps in the Development of the 2041 Regional Transportation Plan

Step 1: Generation of the Long List

The long list is an inventory of potential projects, programs and policies generated to develop the Draft 2041 Portfolios, and more broadly, to support the development of Strategies and Priority Actions for the 2041 Plan and subsequent implementation planning. The long list includes projects from The Big Move (2008), Metrolinx technical studies, academic background research and best practice reviews undertaken to support the legislated review of the RTP, as well as from municipal transportation master plans, official plans, transit plans, and local studies. Municipal input was solicited after an initial list was assembled to ensure that the long list reflected the most current municipal priorities. The long list of initiatives and a brief description of each is presented in **Table 5**.

Figure 1: Evaluation Methods Diagram



Step 2: Preliminary Screening

To proceed through to initiative scoring, the initiatives on the long list had to pass through a preliminary screen. Projects with approved funding for construction are classified as In Delivery projects. This group of projects is included in the 2041 RTP and were therefore not scored and will not be present in Table 5 through 10.

The screen that comprised this step is that a project must be considered regionally-significant, which involves a project that supports longer distance trips that cross municipal borders, connects to higher order transit such as GO rail or the TTC subway, serves a major destination, such as an Urban Growth Centre or a university or serves a large number of transit riders. Thus projects that are entirely local in scope or within the federal remit were not considered. The focus of the RTP is on regionally-significant projects, policies that apply across the GTHA or on programs that may be implemented locally but are rolled out across multiple jurisdictions within the region. This definition of regionally-significant transit from the Regional Transit Network Planning Study (IBI, 2017) provides guidance on the types of projects from the long list that remained after the preliminary screening step: "A regionally-significant facility or service represents a transit project that generally meets one or several of the following criteria:

- Connects to a major regional centre or major trip generator;
- Provides an important network integration role;
- Involves infrastructure investment to provide higher speeds and reliability compared to conventional transit services;
- Serves longer-distance travel; and/or
- Serves a cross-boundary market."

Step 3: Qualitative Assessment

The initiatives that passed through the preliminary screening were scored against 20 criteria that aligned with the draft RTP vision, goals and objectives assigned (either individually or as part of a bundle) and were assigned to a preliminary portfolio. Table 1 indicates how the plan objectives are aligned to the RTP goals. Table 2 indicates the connection between the 20 criteria and the RTP objectives. It should be noted that in many cases, criteria are aligned to more than one (or several) plan objective, but the focus was on the closest linkages. The results of this qualitative assessment are presented in **Table 6**. Many of the initiatives are expected to perform better (and receive higher scores) if they are bundled together with complementary initiatives due to network effects and other synergies. **Table 7** lists the initiatives that were bundled and then re-evaluated and also provides the bundled qualitative assessment score. Appendix B contains more detail on the scoring process, as well as a scoring

rubric[1] used to score all the initiatives on the long list that remained after the preliminary screening step.

Table 1: Relationship between 2041 RTP Goals and Objectives

Objectives		Goals		
		Strong Connections	Complete Travel Experiences	Sustainable Communities
1	The transportation system aligns with compact development and complete communities, making walking, cycling & transit competitive for most trips.	✓	✓	✓
2	The transportation system prioritizes active transportation options, supporting healthy communities.	✓	✓	✓
3	Travel by transit is seamless and well-coordinated with other modes.	✓	✓	
4	Transit provides good connectivity to jobs, services and other destinations, specifically for those who rely on it most.	✓	✓	✓
5	Transportation infrastructure, services and technology are accessible to everyone.	✓	✓	
6	Transit offers an attractive, high-quality user experience.		✓	
7	The transportation system is designed to be safe for all users.		✓	✓
8	The transportation system is maintained, expanded and continually innovating to support the region's economic growth and prosperity.	✓		✓
9	The transportation system provides a range of reliable options for the efficient movement of people and goods.	✓		✓
10	The transportation system is designed to be environmentally sustainable and resilient to climate change.		✓	✓
11	Planning, building, and operating the transportation system will be collaborative with all invested partners.	✓	✓	✓

[1] This scoring rubric was developed from the one outlined in SDG, *Strategic Evaluation Framework: Guidance Manual*, 2016.

Table 2: Relationship between 2041 RTP Objectives and Scoring Criteria

	1	2	3	4	5	6	7	8	9	10	11
	The transportation system aligns with compact development and complete communities, making walking, cycling & transit competitive for most trips.	The transportation system prioritizes active transportation options, supporting healthy communities.	Travel by transit is seamless and well-coordinated with other modes.	Transit provides good connectivity to jobs, services and other destinations, specifically for those who rely on it most.	Transportation infrastructure, services and technology are accessible to everyone.	Transit offers an attractive, high-quality user experience.	The transportation system is designed to be safe for all users.	The transportation system is maintained, expanded and continually innovating to support the region's economic growth and prosperity.	The transportation system provides a range of reliable options for the efficient movement of people and goods.	The transportation system is designed to be environmentally sustainable and resilient to climate change.	Planning, building, and operating the transportation system will be collaborative with all invested partners.
Transit Mode Share	x									x	
Travel Time									x		
Travel Reliability			x			x			x		
Service Coverage				x				x			
Active Mode Share	x	x						x		x	
Traveller Info.			x		x						
Fare Integration			x								
Seamless Travel			x								
Transit Affordability				x	x						
Universal Accessibility		x		x							
AODA Compliance				x	x		x				
Passenger Comfort						x					
Transit Capacity						x		x			
Safety (& Perceptions)		x				x	x				
Development Densities	x	x									
Network Resilience									x	x	
Efficient use of Resources									x		
Air Quality										x	
Transportation Innovation								x			
Goods Movement								x	x		

Note: meeting the collaborative objective will be assessed by monitoring whether programs or policies are applied in multiple jurisdictions or if transit projects cross municipal boundaries.

Step 4: Assignment to Portfolios

As a starting point for analysis, subsets of projects from the long list were combined into portfolios in order to capture network impacts that would be associated with a significant expansion of the transit system without including all projects on the long list. The portfolios were constructed to vary in terms of total capital and operational costs, as well as the number of initiatives in each category (infrastructure projects, operations projects, active transportation projects, TDM projects or pricing policies, or TOD-supportive policies). The portfolio analysis was used to test different strategic directions for the Draft RTP to guide the development of the Frequent Regional Transit Network.

The portfolios represent 5 key strategic areas of emphasis:

A. Infrastructure
B. Operations/optimization
C. Active transportation
D. Pricing and demand management
E. Transit-oriented land use

It is worth noting that to ensure a minimum level of network connectivity was maintained in the portfolios, core infrastructure projects were identified and added to all the portfolios. In addition, at this stage, universal actions were identified from the long list. To be considered an universal action, an initiative on the long list had to be a relatively low-cost and high-impact initiative that provided region-wide benefits. These universal actions were included in every portfolio. The proposed list of Universal Actions is presented in **Table 8**.

Step 5: Portfolio Analysis and Determination of Preferred Strategic Approach

The results of the portfolio analysis shaped the initial strategic approach for the Draft 2041 Plan. **Table 3** presents the results of evaluating the preliminary portfolios using the Greater Golden Horseshoe Model (GGHM v4) travel demand model. The main finding is that a portfolio that emphasizes improving transit operations performs very similarly at the regional level to the portfolio that has a strong infrastructure emphasis, but at a significantly lower capital cost. Indeed, most of the portfolios produced similar mode share results, with the land use (TOD) and pricing/TDM strategies resulting in the highest transit mode share and the active transport strategy resulting in the largest shift towards active transport (though no meaningful reduction in VKT compared to the infrastructure or operations portfolios). The land use (TOD) has the lowest overall VKT, but actually the highest congested VKT of the portfolios, whereas the pricing/TDM is the reverse, in part because drivers with a high value of time travel slightly further to access managed lanes which then operate with higher

speeds and lower congestion. This assessment led to an understanding that there was no single "silver bullet" to improve the transportation system but a blended approach, taking the best elements of each portfolio would lead to success. The resulting preferred strategic approach was a combination of working towards the completion of the infrastructure projects considered in development with a renewed focus on operations/optimization, pricing and demand management, and transit-oriented land use. Metrolinx presented the findings of the preliminary portfolio analysis with municipal staff. Metrolinx took into consideration municipal suggestions on revising the portfolios to include additional projects. There was broad support of the overall finding that the 2041 RTP should be developed as a balanced plan, rather than one that only emphasized transit infrastructure expansion.

Table 3: Evaluation of Strategic Portfolios

THEME	INDICATOR		PORTFOLIOS - 2041 GROWTH PLAN LAND USE				
		2011 BASE	Infrastructure	Operations	Active Transport	Pricing/TDM	Land Use
			A	B	C	D	E
TRANSIT ACCESS	People Near Transit [1]	9%	31%	30%	26%	29%	28%
	Jobs Near Transit [1]	21%	42%	42%	38%	39%	38%
	Jobs Accessible within 60 minutes By Transit [2]	742,000	927,000	915,000	881,000	925,000	872,000
	% of GTHA Jobs Accessible within 60 minutes By Transit [2]	22.4%	19.1%	18.9%	18.2%	19.1%	18.0%
MODE OF TRANSPORTATION	Peak Period Transit Trips [3]	1.23 million	1.84 million	1.84 million	1.79 million	1.86 million	1.86 million
	Transit Mode Share [3]	14.2%	14.2%	14.2%	13.8%	14.4%	14.4%
	Morning Peak Active Trips [2]	737,000	1,001,000	999,000	1,394,000	1,020,000	1,008,000
	Active Mode Share [3]	8.5%	7.7%	7.7%	10.7%	7.9%	7.8%
QUALITY OF LIFE	Morning Peak Transit Travel Time [2]	41.1 minutes	40.7 minutes	40.9 minutes	41.2 minutes	40.4 minutes	41.7 minutes
	All Driving Trips (vkt) [4]	13.22 million	19.67 million	19.65 million	19.66 million	19.73 million	19.51 million
	Congested Driving (vkt) [4]	3.7 million	9.2 million	8.9 million	9.1 million	8.9 million	9.5 million
	Environmental Impact (GHGs per capita)	2.68 tonnes	1.54 tonnes	1.54 tonnes	1.54 tonnes	1.55 tonnes	1.53 tonnes
Estimate of Portfolio Cost ($ Billions)		NA	55.0	35.0	25.0	37 [5]	30.0

[1] Walking Distance is 400 m from Priority Bus, BRT and LRT, and 800 m from Subway and Frequent Regional Rail.
[2] Represents trips made between 6:45 a.m. - 8:45 a.m.
[3] Represents trips in the morning and afternoon peak periods (6:00-9:00 a.m. and 3:00-7:00 p.m.).
[4] Represents trips made in the morning peak hour.
[5] Toll revenues partially offset higher spending on highway infrastructure.

Step 6A/B: Development of Preliminary Transit Network and Priority Actions

The ultimate outcome of the portfolio analysis was the Preliminary Transit Network and a set of Priority Actions. Projects that had performed well during portfolio testing and/or fit with the preferred strategic approach were combined into a preliminary transit network. The Priority Actions for the Draft RTP were developed, starting from the Universal Actions, as well as incorporating other programs and policies that supported the preferred strategic approach.

Municipal input was solicited after Preliminary Transit Network was developed. This resulted in an adjustment of the preliminary transit network to more closely reflect municipal TMPs and current planning priorities.

Step 7: Assessment of the Preliminary Transit Network (Modelling and Resiliency Test)

The performance of the Preliminary Transit Network was assessed using demand modelling and a resiliency assessment (See Figures A-2 and A-3 in Appendix A). The assumptions used in the demand modelling are discussed in Appendix C.

Step 8: Development of the Draft Transit Network

Refinements to the Preliminary Transit Network led to the development of the Draft Transit Network which was further reviewed with additional demand modelling and scenario testing in Step 12.

Municipal input was solicited after Draft Transit Network was developed. While most municipal feedback had already been incorporated, there were minor adjustments made to more closely reflect municipal planning priorities.

Step 9: Development of the Initial Transit Network

The portfolio analysis work was complemented by a systematic analysis of area- and corridor-level regional transit needs. This exercise, which built upon the Transit Needs and Opportunities Background Paper, ran in parallel and is represented as Steps 2 and 9 through 11. Transit projects from the long list (Step 2) and municipal feedback were compiled into an Initial Transit Network, as detailed in the Regional Transit Network Planning Study report.

Step 10: Needs Assessment

This set of transit infrastructure projects was evaluated against a set of criteria, including existing and future land uses, areas of social needs, flows, existing demand and transit competitiveness with auto (**Table 9**). Note that the Transit Needs Assessment was carried out on transit infrastructure projects only, not on programs or policies, so **Table 9** only contains infrastructure projects. Table 9 was also revised to reflect input received during municipal consultations. For further detail see the Regional Transit Network Planning Study report.

Step 11: Development of the Proposed Transit Network

Projects that best fulfilled the area and corridor needs, and worked best together as part of a comprehensive regional frequent rapid transit network, were combined into a proposed network. Municipal input on the Proposed Transit Network was solicited at a working session convened by Metrolinx. The consultant team took detailed notes and reviewed municipal suggestions in the refinement of the Proposed Transit Network.

Step 12: Assessment of the Combined Transit Networks (Modelling and Scenario Testing)

The transit networks that emerged from the two processes, i.e. Steps 6-8 and Steps 9-11, were reviewed and synthesized into one network, which was then modelled using the 2041 baseline future, as well as several alternative future scenarios. Appendix A: Scenario Development contains more detailed discussion of the scenarios and their role in sensitivity testing and resiliency testing of the Draft 2041 Plan. For further detail see Navigating Uncertainty: Exploration of Alternative Futures for the GTHA. For additional details on how the preferred network performs under alternative future scenarios, please refer to **Table A-1** in Appendix A.

Step 13: Development of the Draft 2041 Frequent Rapid Transit Network

The modelling results confirmed the synthesized transit network proposed as the Draft 2041 Frequent Rapid Transit Network for the Draft 2041 Plan. Based on municipal feedback, providing additional information on routing and overall feasibility, minor adjustments were made to a small number of Priority Bus Routes in the Draft 2041 Frequent Rapid Transit Network.

Finalizing the Frequent Rapid Transit Network

The Draft 2041 Frequent Rapid Transit Network was published as part of the Draft RTP in September 2017. Metrolinx received municipal feedback on many aspects of the Draft RTP, including suggested changes to the Draft 2041 Frequent Rapid Transit Network. Based on municipal feedback, minor adjustments were made to the Frequent Rapid Transit Network, with the most significant change reflecting an increase in transit priority associated with TTC streetcar routes. The changes to the network were coded and the regional travel demand model (GGHM v.4) was run again. The system-wide modelling results are presented in **Table 4**, providing

information on the preferred network and its expected performance compared to 2011 (the base year of the model) and against a "Do Minimum" approach for 2041.

Table 4: Model Outcomes of Various Transportation Networks

THEME	INDICATOR		2041 GROWTH PLAN				IMPROVEMENT (PLAN vs. 2011 BASE)
		2011 BASE	DO MINIMUM	IN DELIVERY	IN DEV	2041 PLAN	
PLAN OUTCOMES							
TRANSIT ACCESS	People Near Transit [3]	9%	11%	18%	24%	38%	4.0 x
	Jobs Near Transit [3]	21%	21%	29%	34%	49%	2.3x
	Jobs Accessible within 60 minutes By Transit [4]	740,000	620,000	800,000	880,000	1,060,000	+320,000
	% of GTHA Jobs Accessible within 60 minutes By Transit [4]	22%	13%	17%	18%	22%	stable
MODE OF TRANSPORTATION	Peak Period Transit Trips [5]	1.2 million	1.6 million	1.7 million	1.7 million	1.9 million	700,000
	Transit Mode Share [5]	14.2%	12.3%	13.1%	13.9%	14.7%	+0.5 points
	Morning Peak Active Trips [4]	740,000	1,010,000	1,010,000	1,000,000	1,390,000	650,000
	Active Mode Share [5]	8.5%	7.8%	7.8%	7.7%	10.7%	+2.2 points
QUALITY OF LIFE	Morning Peak Transit Travel Time [4]	41 minutes	46 minutes	43 minutes	41 minutes	39 minutes	-2 minutes
	Congested Driving (vkt) [6]	3.7 million	11.1 million	9.9 million	9.3 million	8.1 million	+4.4 million
	Environmental Impact (GHGs per capita)	2.7 tonnes	1.6 tonnes	1.6 tonnes	1.6 tonnes	1.5 tonnes	-1.2 tonnes

[1] Only streetcars in dedicated rights-of-way counted toward FRTN length.
[2] Lane-km accounts for roadway length as well as the number of lanes in each direction.
[3] Walking Distance is 400 m from Priority Bus, BRT and LRT, and 800 m from Subway and Frequent Regional Rail.
[4] Represents trips made between 6:45 a.m. - 8:45 a.m.
[5] Represents trips in the morning and afternoon peak periods (6:00-9:00 a.m. and 3:00-7:00 p.m.).
[6] Represents trips made in the morning peak hour.

Table 10 shows the forecasted ridership for transit projects included as part of the Frequent Rapid Transit Network included in the 2041 RTP. While the travel demand model reflects the impacts of key policies, such as efforts to integrate transit service across municipal boundaries, transit ridership projections can only be generated for individual routes, so **Table 10** focuses on the presentation of bus and rail ridership projections, assuming that all of the projects in the 2041 RTP are completed by 2041.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
INFRASTRUCTURE		
In the RTP (Project # on Map 6)		
34	**Dundas Street BRT**	BRT corridor along Dundas Street from Kipling Station to Bronte Rd.
35	**Brampton Queen St. BRT**	BRT corridor along Queen St. from Main St. to Highway 50.
36	**Eglinton West LRT**	LRT corridor along Eglinton Ave. W. from Mount Dennis Station to Pearson International Airport.
37	**Highway 7 West BRT Extension**	BRT along Highway 7 from Highway 50 to Helen St.
38	**Waterfront West LRT**	LRT corridor from Union Station to Port Credit GO Station.
39	**Waterfront East LRT**	LRT corridor along the Toronto waterfront from Union Station and Coxwell Ave.
40	**Relief Line Subway**	Subway corridor from Pape Osgoode Station to Sheppard Ave.
41	**Yonge North Subway Extension**	Subway corridor from Finch Station to Richmond Hill Centre/Langstaff Gateway (Highway 7)
42	**Yonge BRT (Richmond Hill, Aurora, Newmarket)**	BRT along Yonge Street from 19th Ave. to south of Mulock Dr.
43	**Eglinton East LRT**	LRT corridor from Kennedy Station to Sheppard Ave.
44	**Highway 7 East BRT Extension**	BRT corridor along Highway 7 from Unionville GO Station to Donald Cousens Pkwy.
45	**Durham-Scarborough BRT**	BRT corridor along Ellesmere and Highway 2 from Scarborough Centre to Downtown Oshawa.
46	**Lakeshore West 15-min GO Service Extension**	Express rail on Lakeshore East corridor from Aldershot Station to Hamilton Station.
47	**Hamilton A-Line BRT**	BRT corridor along James St. from West Harbour GO Station to Rymal Rd.
53	**Missing Link Freight Rail Corridor**	New heavy rail corridor to divert freight traffic from Milton and Kitchener Corridors to facilitate two-way, all-day GO Service to Milton.
53	**Milton 15-min GO Service**	Express rail on the Milton Line from Union Station to Milton GO Station.
54	**Trafalgar BRT/LRT**	RT corridor from Oakville GO Station to Highway 407.
61	**Downtown Mississauga Transitway & Terminal**	Transitway from Mavis Rd. to Hurontario St. and development of Square One transit terminal.
62	**Brampton Main LRT**	LRT corridor from Steeles Ave. (Brampton Gateway Terminal) to downtown Brampton (Brampton GO Station).
70	**Finch West LRT West Extension**	LRT extension from Humber College to Toronto Pearson International Airport.
71	**Jane North BRT/LRT**	RT corridor along Jane St. from Highway 7 to Major Mackenzie Dr.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
72	**Jane South Rapid Transit**	RT corridor along Jane St. from Bloor St. to Vaughan Corporate Centre (Highway 7).
73	**Bloor-Yonge Station Capacity Enhancements**	Capacity improvements to support future ridership at Bloor-Yonge Station.
73	**Line 2 Subway Capacity Enhancements**	Capacity enhancements for Line 2 including new subway trains, ATO/ATC, new carhouse
74	**Sheppard West Subway Extension**	Subway extension of the Sheppard Subway from Sheppard Station to Sheppard West Station.
75	**Steeles BRT/LRT**	RT corridor along Steeles Avenue from Jane St./Spadina Subway (Pioneer Village Station) to Milliken GO Station.
76	**Finch West LRT East Extension**	LRT extension along Finch Avenue connecting Finch West Station and Finch Station.
77	**Leslie North BRT/LRT**	RT corridor along Leslie St. from Highway 7 to Major Mackenzie Dr.
78	**Don Mills/Leslie BRT/LRT**	RT corridor from Sheppard Ave. (Don Mills Station) to Highway 7.
79	**McCowan South BRT/LRT**	RT corridor along McCowan Rd. from Scarborough Centre (Ellesmere Ave.) to Steeles Ave.
81	**Sheppard East LRT Extension**	LRT extension along Sheppard Avenue from east of Morningside Drive to Meadowvale Rd.
83	**Malvern Connection LRT**	LRT corridor connecting Malvern with the Eglinton East LRT and Sheppard East LRT.
85	**Major MacKenzie Rapid Transit**	RT corridor along Major Mackenzie Dr. from Jane St. to Leslie St.
88	**Barrie 15-min GO Service Extension**	Express rail service extended from Aurora GO Station to East Gwillimbury GO Station.
89	**Stouffville 15-min GO Service Extension**	Express rail service extended from Unionville GO Station to Mt. Joy GO Station.
90	**Richmond Hill All-Day GO Service**	All-day service on Richmond Hill corridor from Union Station to Richmond Hill Station.
97	**Lakeshore East 15-min GO Service Extension**	Express rail service extended from west of Oshawa GO Station to Downtown Oshawa GO Station.
98	**Simcoe BRT/LRT**	RT corridor along Simcoe St. from Downtown Oshawa to Highway 407.
100	**Lakeshore East All-Day GO Service**	All-day rail service extended from Downtown Oshawa GO Station to Bowmanville GO Station (Martin Rd.).
	GO Regional Express Rail Program	Regional rail improvements on all 7 GO corridors.
In the RTP (Priority Action #)		
1.3	**Expansion and revitalization of Union Station**	Union Station
1.4	**Southwestern Ontario High-Speed Rail**	High-speed rail corridor connecting Windsor with Toronto through Southwestern Ontario

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
2.5	**Pearson Airport Area Sidewalk Network improvement**	Fill gaps in the network of pedestrian facilitities in and around the Pearson Airport Area, including sidewalks and mid-block crossings. Municipalities should prioritise roads with transit routes for adding crosswalks and mid-block crossings, The provision of sidewalks is an urban realm improvement, encouraging walking and transit use, yielding public health benefits, and support non-employment land-uses.
3.6	**Implement targeted infrastructure improvements in high risk areas based on injury**	As part of the wider strategy of incorporating the Vision Zero framework, initiate a program of improving streetscape and enhancing pedestrian/bicycle infrastructure, beginning with high risk areas.
4.6	**Develop a regional interconnected cycling network**	A regional cycling network would provide a cohesive network of regional corridors and local routes designed to facilitate cycling commuter trips, especially in crossing municipal boundaries and for longer trip distances. The network will include conistent, clear wayfinding signage, high-quality infrastructure, and direct routes.
2.1	**Broadview Streetcar Extension**	Extension of streetcar infrastructure on new extended Broadview Ave from Queen St to Commissioners St
2.1	**St. Clair Streetcar/LRT Extension**	1.5 km extension of the existing St. Clair Streetcar line connecting with Jane Street.
2.1	**Relocate eastern terminus of TTC Route 505 (Dundas streetcar) from Broadview subway station to new Gerrard**	Dundas St. Broadway to Carlaw, and Carlaw north to Gerrard (Toronto)
Other Long List Initiatives for Consideration		
	Bloor-Danforth Subway West Extension	3.5 km subway extension from Kipling Station to Sherway Gardens (The Queensway/Evans Avenue) with potential extension to Dixie GO in Mississauga.
	Bolton GO Transit Extension	GO Rail (spur line) extension from the Georgetown South corridor north to Bolton
	Burlington Connector Rapid Transit [Project combined with Brant Priority Bus]	RT corridor connecting Burlington GO Station and Downtown Burlington.
	Cambridge GO Transit Extension	Milton Line corridor extended west to Cambridge
	Crosstown GO Rail - Dundas West to Summerhill	Former CP Rail corridor from Dundas West Station to Summerhill Station
	Don Mills/Leslie Rapid Transit **[REPLACED BY Project 323 Don Mills/Leslie BRT/LRT]**	RT corridor connecting Highway 7 to Danforth Avenue (Pape Station) if the "Small J" RL is built or Don Mills station if the "Big J" RL is built.
	Further develop the Provincial carpool lot network	Continue to develop and expand the provincial carpool lot network to include additional lots or expand existing lots at strategic locations, aligned with HOV, rapid transit and interregional bus networks. (The Big Move Priority Action 3.7)
	GO Rail Simcoe Concourse	Union Station Rail Corridor

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
	GTA-West Highway[2]	Highway corridor from Highway 400 (between Kirby Road and King-Vaughan Rd.) to the Highway 401/407 ETR interchange.
	Hamilton B-Line West Extension	B-Line Corridor extension from Eastgate Mall to Fifty Road, and from McMaster University to Dundas
	Hamilton Maintenance and Storage Facility	(specific address), impact city-wide
	Havelock GO Transit Extension	Rail corridor from Union Station/Summerhill to Locust Hill (Markham), potentially using Havelock, Uxbridge and/or Belleville Subdivisions
	Highway 400 Widening for HOV	Highway 400 from Major Mackenzie Dr to Hwy 9
	Highway 404 and Highway 400 Link	Road corridor parallel and north of Queensville Sideroad between Highways 404 and 400
	Highway 404 Widening for HOV	Highway 404 from Highway 407 to Green Lane
	Highway 407 Transitway (Highway 400 to Kennedy)	Highway 407 ROW from east of Highway 400 to Kennedy Rd.
	Highway 407 Transitway (Hurontario to Highway 400)	Highway 407 ROW from Hurontario St. to east of Highway 400
	Highway 407 Transitway (Kennedy to Brock)	Highway 407 ROW from Kennedy Rd. to Brock Rd.
	Level Boarding for all Regional Rail	All GO Rail corridors
	Midtown Regional Express Rail	Regional rail connecting Cooksville and Seaton through Summerhill.
	Palermo Transit Hub	Intersection of Bronte Road and Dundas Street
	Pearson Airport Area Cycleway Provision	Implementation of all municipally-planned bikeways in and around the Pearson Airport Area. The Pearson Airport Area contains many busy multi-lane arterial roads that to support cycling would benefit from bikeways. A high-level analysis of municipal plans in the Pearson Airport Area suggests approximately 100km of proposed multi-use trails and on-road bike lanes.
	Peterborough GO Extension	Rail corridor along Havelock Subdivision to Peterborough.
	Plan and implement complete, integrated walking and cycling	GTHA region-wide
	QEW BRT (Oakville to Hamilton)	BRT corridor along the QEW from west of Trafalgar Rd. to Hamilton
	Redevelop the Union Station Bus Terminal	Union Station Bus Terminal
	Relief Line Subway West	Subway corridor connecting Osgoode Station to Dundas West.
	Relief Line Subway Westerly Extension	Subway extension from Osgoode Station to Bloor Street West in vicinity of Dundas West station.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
	Rossland Road/Sideline 22 High-Order Transit	Rossland Road/Sideline 22, from the Town of Ajax through the Seaton urban area to Highway 7
	Scarborough Subway Extension	Subway extension from Scarborough Centre to Sheppard Ave.
	Seaton GO Transit Extension	Rail corridor from Union Station/Summerhill to Seaton, using the CPR Belleville Subdivision
	Toronto Bus Terminal Expansions	Select subway stations including: Finch (without Yonge North), York Mills, Kipling, Royal York, Jane, Broadview, Pape, Main Street, Warden, Kennedy
	Upgrade & Recognize Pickering GO Station as a VIA	Connectivity of Mobility Hub as a Pickering Growth Centre
	Uxbridge GO Extension	Stouffville GO corridor from Lincolnville Station to Uxbridge.
	Woodbine Rapid Transit	RT corridor along Woodbine Ave. between Steeles Ave. E and Major Mackenzie Dr.
PRIORITY BUS		
In the RTP (Project # on Map 6)		
33	**Dundas West Priority Bus**	BRT corridor along Dundas Street from Kipling Station to Bronte Rd.
48	**Hamilton A-Line South Priority Bus**	Priority Bus corridor along James St. from Rymal Rd. to Hamilton Munro International Airport.
49	**Dundas Connector Priority Bus**	Priority Bus corridor from McMaster University to Downtown Dundas.
50	**Hamilton L-Line Priority Bus**	Priority Bus corridor from Downtown Hamilton to Waterdown.
51	**Hamilton S-Line Priority Bus**	Priority Bus corridor along Rymal Rd. and Centennial Parkway from Ancaster Business Park to Confederation GO Station.
52	**Hamilton Mohawk (T-Line) Priority Bus**	Priority Bus corridor connecting Centre Mall (Hamilton), Limeridge Mall (Hamilton Mountain) and Ancaster (Meadowlands Terminal).
55	**Brant Priority Bus**	Priority Bus corridor along Brant St. from Downtown Burlington to Dundas St.
56	**Bronte/Regional Road #25 Priority Bus**	Priority Bus corridor along Bronte Rd. and Regional Road #25 from Bronte GO Station to Steeles Ave.
57	**Derry Priority Bus**	Priority Bus corridor along Derry Rd. from Airport Rd. to Tremaine Rd.
58	**Harvester/Speers/Cornwall Priority Bus**	Priority Bus corridor along Harvester/Speers/Cornwall from Waterdown Rd. to Port Credit GO Station.
59	**Milton Main Street Priority Bus**	Priority Bus corridor along Main St. (Milton) from Ontario St. to James Snow Parkway, and James Snow Parkway from Main Street (Milton) to Steeles Ave.
60	**Trafalgar North Priority Bus**	Priority Bus corridor along Trafalgar Road/Main St. from Highway 407 to Milton GO Station.
63	**Britannia/Matheson Priority Bus**	Priority Bus corridor along Britannia Rd. and Matheson Blvd. from Highway 407 to Renforth Dr.
64	**Hurontario North Priority Bus**	Priority Bus corridor from Downtown Brampton (Brampton GO Station/Queen St.) to Mayfield Rd., and along Mayfield Rd. to Dixie Rd.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
65	**Dixie Priority Bus**	Priority Bus corridor along Dixie Rd. from Lakeshore Rd. to Bovaird Dr.
66	**Airport Rd. Priority Bus**	Priority Bus corridor along Airport Rd. in Brampton from Castlemore Ave. to Toronto Pearson International Airport.
67	**Erin Mills Priority Bus**	Priority Bus corridor along Erin Mills Parkway connecting Steeles Ave. and Clarkson GO Station.
68	**Bovaird/Castlemore Priority Bus**	Priority Bus corridor along Bovaird Dr. and Castlemore Ave. from Mount Pleasant GO Station to Highway 427.
69	**Steeles West Priority Bus**	Priority Bus corridor along Steeles Avenue connecting Lisgar GO Station and Pioneer Village Station.
80	**McCowan North Priority Bus**	Priority Bus corridor along McCowan Rd. from Steeles Ave. to Highway 7.
82	**Kingston Priority Bus**	Priority Bus corridor along Kingston Rd. from Victoria Park Station to Eglinton Ave.
84	**Major Mackenzie West Priority Bus**	Priority Bus corridor along Major Mackenzie Dr. from Highway 427 to Jane St.
86	**Major Mackenzie East Priority Bus**	Priority Bus corridor along Major Mackenzie Dr. from Leslie St. to Donald Cousens Pkwy.
87	**Green Lane Priority Bus**	Priority Bus corridor along Yonge St. from Davis Dr. to Green Ln., and along Green Ln. from Yonge St. to East Gwillimbury GO Station.
91	**Steeles/Taunton Priority Bus**	Priority Bus corridor along Steeles Ave. and Taunton Rd. connecting Milliken GO Station to Seaton, Ajax, Whitby and Oshawa (Townline Rd.).
92	**Whites Rd. Priority Bus**	Priority Bus corridor along Whites Rd. from Highway 407 to Bayly St. (Pickering GO Station)
93	**Brock Rd. Priority Bus**	Priority Bus corridor along Brock Rd. from Downtown Pickering (Bayly St.) to Highway 407.
94	**Westney Priority Bus**	Priority Bus corridor along Westney Rd. from Bayly St. to Highway 2.
95	**Bayly Priority Bus**	Priority Bus corridor along Bayly Street from Pickering GO Station to Whitby GO Station.
96	**Brock St./Baldwin Priority Bus**	Priority Bus corridor along Brock St. and Baldwin St. from Whitby GO Station to Brawley Rd.
99	**Highway 2 Priority Bus**	Priority Bus corridor along Highway 2 from Simcoe St. to Bowmanville GO Station.
101	**Highway 7 Pickering Priority Bus**	Priority Bus corridor along Highway 7 from Donald Cousens Parkway to Brock Rd.
Route shown on Map 6	**Highway 10 Express Bus**	Regional Express Bus on Highway 10 from Orangeville to Brampton.
Route shown on Map 6	**Highway 27 Express Bus**	Regional Express Bus on Highway 27 from Bolton to Vaughan.
Route shown on Map 6	**Highway 35 Express Bus (Oshawa – Peterborough)**	Regional Express Bus on Highway 35 from Oshawa to Peterborough.
Route shown on Map 6	**Highway 400 Express Bus**	Priority Bus service in managed lanes on Highway 400 from Highway 401 to Major Mackenzie Dr.
Route shown on Map 6	**Highway 400 Express Bus (Barrie – Pearson Airport)**	Regional Express Bus on Highway 400 from Barrie to Toronto Pearson International Airport.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
Route shown on Map 6	**Highway 400 Express Bus (Barrie – Yorkdale)**	Regional Express Bus on Highway 400 from Barrie to Yorkdale Mall, Toronto.
Route shown on Map 6	**Highway 403 Express Bus (Brantford – Hamilton)**	Regional Express Bus on Highway 403 from Brantford to Hamilton.
Route shown on Map 6	**Highway 404/DVP Express Bus**	Priority Bus service in managed lanes on the Don Valley Parkway and Highway 404 from Downtown Toronto to Major Mackenzie Dr.
Route shown on Map 6	**Highway 48 Express Bus (Uxbridge – Markham)**	Regional Express Bus on Highway 48 from Uxbridge to Markham.
Route shown on Map 6	**Highway 6 Express Bus**	Regional Express Bus on Highway 6 from Hamilton to Guelph.
Route shown on Map 6	**Highway 7 Express Bus**	Regional Express Bus on Highway 7 from Brampton to Kitchener.
Route shown on Map 6	**Highway 8 Express Bus**	Regional Express Bus on Highway 8 from Hamilton to Kitchener.
Route shown on Map 6	**QEW/Gardiner Express Bus**	Priority Bus service in managed lanes on the QEW/Gardiner Expressway from Downtown Hamilton to Downtown Toronto.
Route shown on Map 6	**Queen Elizabeth Way Express Bus (Hamilton – Niagara Falls)**	Regional Express Bus on the QEW from Hamilton to Niagara Falls.
Route shown on Map 6	**Highway 407 Regional Express Bus**	Regional Express Bus on Highway 407 from Burlington to Oshawa.
Route shown on Map 6	**Highway 427 North Regional Express Bus**	Transitway along Highway 427 north from Pearson Airport to Major Mackenzie Dr. (includes the Highway 427 extension)
Route shown on Map 6	**Highway 427 South Regional Express Bus**	Regional Express Bus along Highway 427 South from Kipling Station to Toronto Pearson International Airport.
Other Long List Initiatives for Consideration		
	Appleby Priority Bus	Priority Bus corridor along Appleby Ln. connecting Fairview St./Appleby GO Station and Highway 407.
	Bramalea ZUM	Bramalea Road from Bovaird Drive
	Chinguacousy Zum	Chinguacousy Road from Sandalwood Parkway to south of Steeles Avenue
	Eglinton Priority Bus	Priority Bus on Eglinton Ave. connecting Highway 427 and Erin Mills Town Centre.
	Halton Steeles Priority Bus	Priority Bus corridor along Steeles Ave. east from Trafalgar Rd. (to Lisgar Station if considering the existing network proposed in The Big Move)
	Highway 401 Transit Priority	Priority Bus corridor on Highway 401 from LBPIA to Rouge River
	Kennedy ZUM	Queen Street to Steeles
	Milton Steeles Priority Bus	Priority Bus corridor along Steeles Rd. from Trafalgar Rd. to Regional Rd. #25.
	Mississauga Road ZUM	Queen Street to Steeles
	Oshawa Connector Rapid Transit	RT corridor along Simcoe Street from existing Oshawa GO Station to the Central Oshawa GO Station.
	Plains/Fairview Priority Bus	Priority Bus corridor along Plains Rd./Fairview St. connecting Brant St., Burlington and Hamilton.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
	Sandalwood ZUM	Queen Street to Steeles
	Trafalgar North Priority Bus	Priority Bus corridor along Trafalgar Rd. connecting Derry Rd. and Georgetown GO Station.
	TTC Airport Rocket Priority Bus	Priority Bus from Kipling Station to Pearson International Airport.
	Viva Network Expansion Plan (Phase 1 Curbside Service)	Viva curbside service network expansion on Jane St/Major Mackenzie Dr/Leslie St/Hwy 7/Clark Ave
	Winchester Road Priority Bus	Winchester Rd. between Baldwin St. and Simcoe St.
POLICIES, PROGRAMS AND OTHER		
In the RTP (Priority Action #)		
2.1	**Expand the region's frequent transit network**	All new homes and businesses shall be within walking distance of a transit stop with frequent service (The Big Move Supporting Policy 7.11).
2.3	**24-Hour Base Transit Network**	Coordinate and work towards increased after-hours transit services and work towards the establishment of a region-wide 24 hour base transit network (The Big Move Priority Action 1.10).
2.4	**Establish bus bypass shoulders on highways**	Remove the barriers to, and establish bus bypass shoulders on highways to facilitate more reliable and competitive bus service (The Big Move Priority Action 1.7).
2.4	**Expand the network of express bus routes, and clarify the roles and responsibilities for operating express services**	Expansion of the express bus network, and clarification of the roles and responsibilities for operating express services would serve to increase the efficiency and attractiveness of transit routes connecting key nodes and destinations.
2.5	**Pearson Airport Area Bus Frequency Increase**	Provision of increased local transit service frequencies in Mississauga, Brampton, and western Toronto to provide all-day frequent transit service serving the PAA.
2.5	**Pearson Airport Area Transit Stop Infrastructure Provision**	Provision of better transit stop infrastructure at and around all transit stops in the Pearson Airport Area, including signage, shelters, real-time and static information display. Bundled with service, operations and fare integration improvements, transit stop infrastructure would support increased transit mode share and more seamless travel.
2.5	**Transit Connectivity to Pearson Airport**	Establish high-order transit connectivity to the Pearson Airport district from all directions, including a multi-purpose, fast transit link to downtown Toronto. The Union Pearson Express opened in June 2015, but there remains opportunity to better serve the Pearson Airport Area with transit service (Priority Action 1.2 of The Big Move).
3.1	**Coordinate transit schedules among service providers**	Coordinate transit schedules among transit service providers, including demand-responsive services for persons with disabilities, and establish best practices to ensure GO transit and local transit provide advance notice regarding service changes (The Big Move Priority Action 5.3).

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.1	**Expand use of U-PASS programs offered by transit providers**	Provide financial incentives to encourage greater transit use, such as expanding the use of U PASS programs currently offered by many transit providers (The Big Move Priority Action 6.3).
3.1	**Regional fare integration**	A region-wide integrated transit fare system that allows users to pay a seamless, integrated fare for all systems across the region. Similarly, the expansion of GO Transit's co-fare local transit subsidy program for travellers travelling to GO stations. As of 2017, the PRESTO fare card will be rolled out across the region, but the need still exists to adopt a regional integrated fare policy system (which is currently under development) (The Big Move Priority Action 6.1).
3.2	**Coordinate effort between Metrolinx and MSPs to better integrate local transit service to GO rail stations**	As part of the implementation of the GO Rail Station Access Plan, Metrolinx should engage with MSP's to improve fare and service integration, including supporting work to develop more direct routes serving stations and destinations around GO stations, improve frequency and schedule harmonization, share knowledge and research regarding on- demand mobility solutions, and explore the feasibility of using dynamically assigned bus bays at GO stations to allow more efficient use of facilities, and improve integration with other modes.
3.2	**Coordinate effort between Metrolinx, MSPs, and municipalities to deliver micro-transit service to GO rail stations**	As part of the implementation of the GO Rail Station Access Plan, explore opportunities for Metrolinx to coordinate with MSPs and municipalities to deliver micro-transit services to GO rail stations, including validating and refining locations to consider, and supporting research, knowledge sharing and exploring of pilot initiatives with the aim of offering more frequent, targeted and convenient transit-like services for prices that are comparable to competing modes of private travel, and encourage implementation of municipal-specific micro-transit service.
3.2	**Deliver GO station parking expansion using a range of alternative parking solutions that reduce up-front capital costs (e.g. reduce new dedicated GO parking structures)**	As part of the implementation of the GO Rail Station Access Plan, explore opportunities to deliver parking expansion using a range of alternative parking solutions that reduce capital costs, including exploring: delivery of modular parking, delivery of co-located and/or shared structure/surface parking, leasing or partnership opportunities to use underused on-street, public or private spaces, and opportunities to promote the use of publically available private parking around GO stations (including peer-to-peer spaces).

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.2	**Establish partnership opportunities (within the regulatory framework) to deliver ridesourcing solutions in support of GO station first mile/last mile needs**	As part of the implementation of the GO Rail Station Access Plan, explore opportunities within the municipal and provincial regulatory framework that can deliver resourcing solutions that prioritize connecting customers to employment uses and other destinations around GO stations during the peak, and provide alternatives for off-peak GO rail customers by validating and refining locations where ridesourcing services should be considered, explore ridesourcing delivery models considering on-demand routing, vehicle types, booking system, payment system, accessibility, pricing scheme, service catchment area, and station infrastructure, and exploring partnership opportunities to support the implementation of municipal specific or system-wide ridesourcing services.
3.2	**Explore opportunities to modify and expand reserved, carpool and electric vehicle parking at GO stations**	As part of the implementation of the GO Rail Station Access Plan, explore opportunities to modify and expand reserved, carpool and electric vehicle parking options at GO Stations to improve the efficient use of existing parking supply and expand its availability to a wider range of customers by considering the following: transition from individually-assigned parking spaces to areas of pooled, unassigned reserved, carpool and EV parking spaces, and pre-allocate and expand their number, develop a dynamic reserved parking pricing model, integrate carpool and EV parking and concession options within the dynamic pricing model, prioritize implementation at stations where majority of commuters originate within 5km, deliver web and mobile applications for real-time parking information and bookings, and a short and medium-term compliance and customer information system
3.2	**Implement targeted first-mile last- mile solutions to support the transit system**	Implementation of context-appropriate first-mile, last-mile transportation solutions to support access to the transit systems, and destinations from the transit system. First-mile, last-mile solutions, including but not exclusive to shuttles, on-demand microtransit, local transit and bike share can reduce the need for transit station parking, increase transit access, and make transit a more convenient and seamless option.
3.2	**Improve cycling access to higher- order transit nodes, including routes from the public network and on-site parking**	Improve cycling access to higher-order transit nodes, including rapid and regional transit corridors and stations. Cycling interventions should include protected routes from the public road and trail network, and on-site bicycle routes and parking facilities as the stations (AT Background Paper).
3.2	**Improve the quality and connectivity of active transportation infrastructure and services to and at GO stations**	As part of the implementation of the GO Rail Station Access Plan, Metrolinx should engage with internal stakeholders, customers and external stakeholders to improve the quality and connectivity of active transportation infrastructure and services by exploring further support for bike sharing programs, expanding covered and secure bike storage and cycling amenities (with integration with existing information and payment platforms), and development of marketing and promotions programs.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.2	**Pilot and operate dynamic on- demand transit services in lower density areas to support and integrate with regional and rapid transit network**	To support higher-order transit services, and compete with new mobility services as they are potentially adopted more broadly, dynamic on-demand transit services have the potential to more cost-effectively complement traditional transit service in lower-density areas. Leading with pilots, on-demand transit has the potential to address first-mile, last- mile challenges and integrate with regional and rapid transit network access.
3.2	**Standardize active transportation enhancements as part of rapid transit corridor investments**	Major transit corridor investments be supported with active transportation enhancements to feed into stations and expand access to rapid transit (AT Background Paper).
3.3	**Identify a practical solution for providing real-time transit station parking lot occupancy**	To improve station access and minimize unnecessary congestion and access/egress time, identify and deploy a practical solution for providing real-time transit station parking lot occupancy data.
3.3	**Improve winter snow removal from active transportation infrastructure to support all-season cycling and transit access**	Improvement of winter snow removal from active transportation infrastructure to support all-season cycling and transit access (AT Background Paper).
3.3	**Integrated regional transit wayfinding system**	Develop a consistent set of procedures, visual and audio cues, and wayfinding measures that make the regional transit system easier to use and navigate. Metrolinx has developed regional wayfinding guidelines, and in 2017 are introducing regional wayfinding pilots at several locations across the region. Going forward, the regional wayfinding guidelines will be incorporated into GO Transit Stations and new rapid transit infrastructure and service, and inform updates to local transit wayfinding practices. (The Big Move Priority Action 5.9)
3.3	**Provide enhanced traffic condition and travel time data for arterial roads**	To support trip planning and encourage transit use, provide enhanced traffic condition and travel time data for arterial roads.
3.3	**Real-time information displays at all mobility hubs, and key transit stations and stops**	Equip all mobility hubs, and key transit stations and stops with real-time information displays. (The Big Move Priority Action 5.5)
3.3	**Road and highway overhead display board expansion**	Expand the availability of overhead display boards on roads and highways that show estimated time to key destinations and travellers notifications. (The Big Move Priority Action 5.10)
3.4	**Expand PRESTO card functionality and partnerships**	Leverage the PRESTO card's technology to offer new fare products, integrate fares across the region, expand functionality, and pursue partnerships. (The Big Move Priority Action 6.2)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.4	**Research and monitor the progress of Mobility as a Service (MaaS) policy models, and develop a regional strategy for coordinated, one-window mobility pricing and operation**	Mobility as a Service (MaaS) is an emerging area of mobility management and delivery that provides a one-window service for mobility pricing and operation, with the potential to increase the ease, seamlessness and attractiveness of sustainable modes of travel, and manage its demand and pricing. The opportunity exists to research and monitor the progress of MaaS worldwide as the public and private sectors partner to develop tools and product offerings.
3.4	**Support and improve regional transportation information portal(s)**	Create a regional transportation information portal. With the launch of TripLinx and additional transportation information portals developed by local municipalities and transit providers, opportunity exists to support their ongoing refinement and feature improvement to maximize user functionality, data reliability, and accessibility. (The Big Move Priority Action 5.1)
3.5	**Commitment to planning for all users**	Needs of all travellers, including transit users, cyclists and pedestrians shall be considered as part of all planning decisions. (The Big Move Supporting Policy 5.12)
3.5	**Develop integrated regional paratransit booking and transfer tools**	To ensure ease of access to mobility services regardless of ability across the region, develop integrated paratransit booking and transfer tools.
3.5	**Support the Accessibility Advisory Committee, identifying opportunities to advance universal access issues**	Create a regional body to advise Metrolinx on matters related to universal access. (The Big Move Priority Action 8.1)
3.5	**Transit Infrastructure and Fleet AODA Compliance Implementation**	Advance transit infrastructure and fleet AODA Compliance Implementation at GO Transit and TTC Stations, prioritizing universal access in the design and procurement of new infrastructure and fleets to exceed AODA standards.
3.5	**Update and continue to implement region-wide and local Accessibility Strategies**	Develop a region-wide accessibility strategy and local implementation strategies to improve specialized transit coordination and delivery and address a number of universal access issues facing the region's transportation network. (The Big Move Priority Action 8.2)
3.7	**Amend the Ontario Public Vehicles Act to better support vanpool and shared mobility operation**	Amend the Ontario Public Vehicles Act to allow third-parties such as non-governmental organizations to provide vanpools to service major trip generators and augment public transit service in low density or dispersed employment areas. With the emergence and growth of innovative shared-mobility models, opportunity exists to use policy to guide their development to support public transit and regional transportation objectives. (The Big Move Action 3.6)
3.7	**Apply lessons from Pan Am Games to develop and require coordinated event-based TDM for medium-large events and construction projects**	Apply lessons from the 2015 Pan Am Games to develop and require coordinated event- based TDM for medium-large events and construction projects. TDM programming provides the awareness and tools necessary to influence traveller behaviours during periods of stress on the transportation system, or leverage opportunities for commuting changes. (TDM Background Paper)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.7	**Deliver behaviour change campaigns**	The delivery of behaviour change campaigns intended to promote sustainable travel behaviour, targeting and educating key traveller groups. Examples of existing campaigns include Bike Month, Smart Commute Week, and Carpool Week. Most of the existing campaigns are delivered as part of the Smart Commute Workplace program in collaboration with Municipalities and local NGO partners, and the cost of their delivery is included in the employer TDM implementation operating cost.
3.7	**Develop and incorporate project- specific TDM for all rapid transit expansion and major service improvements**	Develop and incorporate project-specific TDM programming to support all rapid transit expansion and major service improvements to ensure travellers are aware and prepared to use the new systems and services upon their launch. (TDM Background Paper)
3.7	**Develop Provincial policy to enable congestion charging**	Development of Provincial policy to enable congestion charging, recognizing the opportunity for congestion charging to support behaviour change and generate revenue to reinvest in the transportation system. (TDM Background Paper)
3.7	**Eliminate legal and liability barriers to ride-sharing.**	Identify and eliminate legal and lability barriers to ride-sharing. An example of an opportunity includes updating the public vehicles act to allow improved compensation for carpool drivers or more supportive tax policies to encourage carpooling (over single- occupancy driving). (The Big Move Priority Action 3.5)
3.7	**Encourage employers offer financial incentives as alternative to single- occupancy**	Encourage employers who currently offer their employees free or subsidized parking a choice between parking or a cash equivalent to be used for other means of transportation. (The Big Move Priority Action 4.4)
3.7	**Encourage private sector employer TDM program implementation**	Utilize promotional and policy tools to encourage private sector employers to implement TDM programs. Develop partnerships o advance private sector leadership , collaboration and accountability in commuter transportation solutions. (The Big Move Priority Action 4.3)
3.7	**Explore and establish partnerships to further facilitate and promote dynamic and peer-to-peer ridesharing**	Building upon the work of Smart Commute in promoting and facilitating ridesharing, the opportunity exists to leverage new partnerships, technologies and services to facilitate dynamic and peer-to-peer ridesharing, to support station access, increase occupancy rates, reduce congestion, minimize parking demand, etc. At present, there are potential pilot projects pending.
3.7	**Implement transit pricing strategies to address transit network capacity challenges (e.g. off-peak differential pricing)**	Implementation of transit fare pricing strategies to address network capacity challenges. One example includes off-peak differential pricing which would incentivize travellers use transit when there is excess capacity available.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.7	**Research and develop more flexible and responsible (market-based) pricing practices for public infrastructure and services (e.g. roads, parking, transit)**	The pricing of infrastructure owned and maintained by government is a tool available for enabling mobility management opportunities that can mitigate congestion and environmental impacts. Pricing incentives and disincentives can encourage behaviours like carpooling, active transportation, transit use, time shifting and teleworking, and more flexible and value-based government pricing could facilitate behaviour change and reflect private-sector involvement in mobility services.
3.7	**Support and promote ride-matching service(s)/tool(s)**	Continue to support the Smart Commute ride-matching service, and identify and eliminate legal and liability barriers to ride-sharing. With the growing engagement of the private sector in the ride-matching tool industry, there is an opportunity for the public sector to leverage their innovation to achieve vehicle occupancy and transit access parking goals. (The Big Move Priority Action 3.5)
3.8	**Adding HOT component to all HOV lanes in region**	The inclusion of high occupancy toll programs to the region's HOV network would provide an additional source of revenue for transportation system maintenance and investment, and more accurately reflect the cost of the highway network.
3.8	**Developing HOV network on all 400- series highway**	Expansion of the HOV network onto all 400-series highways to encourage higher vehicle occupancy, improving the efficiency of the highway network, and facilitate improved transit operations.
3.8	**Implement an inter-connected regional network of multi-purpose reserved lanes**	Assess and implement an inter-connected regional network of multi-purpose reserved lanes built upon existing plans for HOV lanes, with potential for HOT lanes - exploring existing and new lane capacity, as well as shoulders. The recently launched MTO HOT lane pilot on the QEW demonstrates progress on advancing this initiative, and will provide lessons for furthering the work in the region. (The Big Move Priority Action 3.3)
3.9	**Develop a coordinated regional Transportation Systems Management (TSM) program**	Development of a coordinated regional Transportation Systems Management (TSM) program. TSM measures focus on operational and policy changes for smoother and safer traffic movements, while improving the utilization of vehicles and their throughput volumes where possible. Technological developments have enhanced the opportunities and effectiveness of TSM. Key strategies that could benefit transit include reallocating road space, HOV lanes, intersection and signal improvements, bottleneck removal programs, data collection to monitor performance and traveller information. Realizing potential of TSM will require a major, collaborative regional program.
3.9	**Develop regional guidelines and standards to provide transit signal priority interoperability between agencies**	Development of a regional guidelines and standards to allow for the development of a coordinated regional Transit Signal Priority Program (TSP) program to ensure that transit vehicles can benefit from TSP (when crossing into neighbouring jurisdictions). This will support the development of boundary-spanning priority bus corridors.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.9	**Establish cross-boundary coordination between neighbouring jurisdictions to coordinate traffic control on priority corridors**	Development of a framework to establish cross-boundary coordination between neighbouring jurisdictions to coordinate traffic control on priority corridors. Consideration of a coordinated traffic control centre could be considered and studied under this framework.
3.9	**Implement an Intelligent Transportation System strategy for the GTHA.**	Create an Intelligent Transportation System strategy for the GTHA, building on successful programs like MTO-'s COMPASS system and the City of Toronto's RESCU system. (The Big Move Priority Action 3.4)
3.9	**Optimize use of existing road infrastructure for road-based transit**	Road-based transit shall make optimum use of existing road-infrastructure, and minimize the need for road extensions, widenings and new roads. (The Big Move Supporting Policy 1.12)
3.9	**Regional Transit Signal Priority Program**	Development of a coordinated regional Transit Signal Priority Program (TSP) program to ensure that transit vehicles can benefit from TSP (when crossing into neighbouring jurisdictions). This will support the development of boundary-spanning priority bus corridors. Realizing potential of TSM will require a major, collaborative regional program.
3.9	**Review of operations to improve streetcar reliability**	Review of operations to improve streetcar reliability, potentially including signal prioritization and ban of most left-turns on streetcar routes.
3.10	**Deploy operational and infrastructural goods movement priority measures**	Research, pilot and deploy operational infrastructural goods movement priority measures on strategic corridors to improve freight travel speed and reliability, minimize emissions, improve safety, and minimize conflicts with other road users.
3.10	**Develop and implement a regional goods movement network**	Develop and implement a regional goods movement network leveraging municipal goods movement networks to mitigate conflict between goods movement, passenger vehicles, and active transportation users to ensure efficient and safe use of the roads network.
3.10	**Develop and implement a regional Urban Goods Movement Data Program**	Development and implementation of a regional urban goods movement data program to collect, manage and report goods movement data to support and inform decision making.
3.10	**Prioritize goods movement corridors for investment**	Development of a framework to prioritize goods movement corridors for investment, which could include improved signage, monitoring and widenings where appropriate.
3.10	**Promote off-peak freight delivery**	Collaborate with the private sector to promote off-peak delivery, particularly in urban areas, to mitigate peak-period road congestion.
3.10	**Study urban distribution (or consolidation) centres**	Study urban distribution and/or consolidation centres that can support more efficient goods movement patterns reflecting the future manufacturing, consumer and commercial demands for deliveries.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
4.3	**Create and refine a system of connected mobility hubs**	Create a system of connected mobility hubs, including Anchor Hubs and Gateway Hubs at key intersections in the regional rapid transit network that provide travellers with access to the system, support high density development, and demonstrated excellence in customer service. Priority Action 7.2 stated that as the regional rapid transit system is implemented, Metrolinx may in consultation with stakeholders refine the list of mobility hubs (a review of mobility hubs is underway). (The Big Move Priority Action 7.1)
4.3	**Develop a financial program to facilitate mobility hub improvements**	Develop a financial program to facilitate mobility hub improvements that would fund or leverage transit-related improvements such as converting surface parking, strategic land acquisitions, station improvements, and local road re-alignments. (The Big Move Priority Action 7.3) *Estimated cost based on proposed annual fund in The Big Move
4.3	**Develop a long-range land protection/acquisition strategy to accommodate future transportation needs**	Develop a long-range land protection and/or acquisition strategy to accommodate future transportation needs. (The Big Move Priority Action 10.3)
4.3	**Establish a dedicated, transit-related urban development capability to lead mobility hub development**	Establish a special purpose, transit-related urban development capability to lead or facilitate development for mobility hubs that are determined to face challenges to successful, integrated development. (The Big Move Priority Action 7.4)
4.3	**Mobility Hub Implementation Guidelines**	Utilize the full range of financial and development tools available as part of a mobility hub development strategy and establish guidelines for their appropriate use. (The Big Move Priority Action 7.5)
4.3	**Prepare Mobility Hub Plans for all Mobility Hubs**	Municipalities in consultation with stakeholders prepare detailed master plans for each mobility hub, ensuring mobility hubs are developed in preparation for and alignment with rapid transit implementation.The Mobility Hub Guidelines provide guidance and inspiration on developing mobility hub plans.(The Big Move Supporting Policy 7.15)
4.5	**Develop (agreed-upon) active transportation infrastructure design guidelines**	Development of agreed-upon active transportation infrastructure design guidelines to ensure regionally consistent, high quality facilities that support safe cycling and walking across the region.
4.5	**Develop a regional Complete Streets policy (or implement CS policies in every GTHA municipality)**	Development and implementation of a regional Complete Streets policy that would support and incorporate the Complete Streets policies being developed at the municipal level.
4.5	**Expand bike-sharing programs**	Since 2008, bike-share programs have launched in Toronto and Hamilton, and opportunity exists to continue growing the existing programs, and pilot and implement programs elsewhere in the region. (The Big Move Priority Action 2.2)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
4.5	**Improve integration of walking and cycling in road design**	Research, standardize and promote best practices to integrate walking and cycling in road design, such as scramble intersections, bike boxes and signal prioritization. (The Big Move Priority Action 2.3)
4.5	**Passenger Transportation Hierarchy Policy**	All relevant decision-making, such as planning, designing, financing and operating the transportation system, locating major trip generators, and designing communities and buildings should promote a shift in travel to the maximum extent feasible, based on the following passenger transportation hierarchy: i) trip reduction, shortening, or avoidance, ii) active transportation, iii) transit, iv) ride-sharing and taxis v) single-occupant vehicles. (The Big Move Supporting Policy 5.11 (referenced in SP 3.10))
4.5	**Regional coordination of bike-share programs, including multi-program memberships and adjacent-system docking**	Regional coordination of bike-share programs, including multi-program memberships and adjacent-system docking ability across the region. With the growth of program/system implementation, it is important that bike-sharing be as seamless and flexible as possible for travellers. (AT Background Paper)
4.7	**Commit long-term sustainable and consistent funding and resources for TDM programming**	Committing to long-term sustainable and consistent funding and resources for TDM programming to ensure region-wide policy and program delivery, with long-term stability. (TDM Background Paper)
4.7	**Expand the role of TDM in the land- use planning and development process, including the development of a regional model and guidelines**	Expand the role of TDM in the land-use planning and development process, including the development of a regional model and guidelines. This expanded role would generate revenue, private sector participation, and ensure the implementation of residential and employment developments that support TDM objectives and program delivery. (TDM Background Paper)
4.7	**Guidelines and model policies to support development and implementation of TDM policies in municipal plans and processes**	Establish guidelines and model policies to help municipalities develop and implement TDM policies in their Official Plans and Transportation Master Plans. (The Big Move Priority Action 4.2)
4.7	**Require TDM strategies as part of all major development applications**	Official Plans to require a TDM strategy as part of planning applications for all major commercial, employment or institutional developments. Municipal policy developed since 2008 has included major residential development applications as well. (The Big Move Supporting Policy 4.6)
4.7	**Undertake household level individualized marketing campaigns**	Undertake individualized marketing campaigns directed at the household level to reach every household near rapid transit (approximately every 3 years). This initiative ensures new residents have the information necessary to inform their mode choice decisions, particularly relating to available or planned transit service and active transportation infrastructure. (The Big Move Priority Action 5.8)
4.8	**Decrease minimum parking requirements**	Update municipal parking and zoning by-laws, including decreasing minimum parking requirements where appropriate. (The Big Move Supporting Policy 7.13)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
4.8	**Develop more flexible, local, context- specific parking requirements as part of a regional parking reduction program**	Develop more flexible, local and context-specific parking requirements as part of a regional parking reduction program. The paper identified innovative approaches from other jurisdictions to effectively manage parking demand. (TDM Background Paper)
4.8	**Establish parking maximum requirements**	Develop a framework for updating municipal parking and zoning by-laws to establish maximum parking requirements. These policies should take local context into account and set lower maximums in neighbourhoods well-served by transit. (The Big Move Supporting Policy 7.13)
4.8	**Provide priority parking for car- sharing**	Develop a framework for updating municipal parking and zoning by-laws to provide priority parking for car-sharing. (The Big Move Supporting Policy 7.13)
4.9	**Amplify the reach and impact of school active transportation promotional events (e.g. Bike to School Week)**	Amplify the reach and impact of school active transportation promotional events, for example Bike to School Week to raise awareness and educate students and parents regarding the benefits of walking and cycling to school. (The Smart Commute 5-Year Strategy)
4.9	**Continue to develop and support the role of the GTHA Active and Sustainable School Transportation Regional Hub**	Continue to develop and support the GTHA ASST Regional Hub to ensure regional collaboration and leadership in the area of school travel. (The Smart Commute 5-Year Strategy)
4.9	**Establish school travel planning (or ASRTS) facilitators at the local and regional levels**	The ASST Roadmap recommended establishing school travel planning (or Active and Safe Routes to School) facilitators at the local and regional levels to ensure local staffing and programing dedicated to ASST.
4.9	**Implement a long-term regional program for delivering TDM for school travel, developing a model for other Canadian regions**	Implementation of a long-term regional program for delivering TDM for school travel, and developing a model for other Canadian regions. This would build on the momentum of pilot projects that have been launched across the region to date but can benefit from sustained resources and commitment to continuity. (The Smart Commute 5-Year Strategy)
5.1	**Collaboration between regional, provincial and federal governments for research, policy development and coordinated action regarding transportation network companies and government's role in mobility**	With the growing influence of transportation network companies and shared mobility, collaboration is needed between each level of government for research, policy development and coordinated action regarding TNCs and government's evolving role in mobility.
5.1	**Develop provincial-level regulation and guidelines for shared mobility services**	The need exists for provincial-level regulation and guidelines regarding shared mobility services, including but not exclusive to ridesourcing to support consistent municipal and regional policy, and optimize benefits to the transportation system and society. MTO is currently leading a Shared Mobility Working Group to look at regulations.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
5.1	**Establish a regional vision for new/shared mobility, including the private sector's role in providing mobility services**	Opportunity exists to develop a regional vision for new/shared mobility to support consistent cross-boundary regional policy, operating procedures, and roles and responsibilities - including defining the private sector's emerging role in providing mobility services.
5.1	**Regularly review and revise new mobility policy, regulations and guidance to reflect latest conditions and outlooks**	New mobility technology and private sector businesses are rapidly evolving, and it's imperative that government regularly review and revise new mobility policy, regulations and guidance to reflect latest conditions and outlooks, ensuring that the benefits of new mobility are being captured, and the societal costs are being mitigated.
5.6	**Comprehensive municipal and regional-level bicycle infrastructure, parking, and use data collection and management**	Collection and management of municipal and regional-level bicycle infrastructure, parking and use data to support business case development, asset management and planning purposes. (AT Background Paper)
5.6	**Develop a coordinated regional approach to acquire and use crowdsourced traffic data**	Improve transportation planning and leverage new sources of traffic and travel data, develop a coordinated regional approach to acquire and use crowdsourced traffic data.
5.4/5.6	**Develop a regional transportation data strategy to address data sources, format and ownership, and ensure its integrity, security and openness is maintained**	New technology and private sector involvement in the transportation industry is producing a large volume of privately and publically owned and managed datasets. There is a need to develop a regional transportation data strategy to address data sources, format and ownership, and ensure its integrity, security and openness is maintained. The data strategy would serve as a valuable resource for planning, monitoring and reporting of transportation projects, programs and policies.
5.6	**Explore opportunities for government to use existing and new transportation data for planning and operations**	New technology and private sector involvement in the transportation industry is producing a large volume of privately and publically owned and managed datasets. Government should explore opportunities to identify and leverage new transportation datasets, establishing partnerships as necessary, that represent untapped potential to support planning and operations.
5.6	**Improve coordination and standardization of transportation data collection, forecasting and modelling**	Improve the coordination and standardization of transportation data collection, forecasting and modelling, including expansion of TTS, development of a leading-edge activity-based transportation demand model, analysis of trip assignment methodologies, analysis of trip assignment methodologies, analysis of induced travel and congestion on emissions, and more. (The Big Move Priority Action 10.2)
5.6	**Regional cycling network sidewalk GIS database, including processes for characterization, updates, and reporting**	Establish a regional cycling network and sidewalk GIS database, including processes for characterization, updates and reporting. The database would support regionally consistent planning, design and analysis of active transportation networks. (AT Background Paper)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
5.6	**Seek (or require) data partnership agreements with mobility companies for licensing and planning purposes**	Seek (or require) data partnership agreements with mobility companies for licensing and planning purposes. This data can support consumer safety, increase understanding regarding mobility service user behaviour, and support planning initiatives, and increase transparency and trust between the public and private sector.
5.7	**Develop a regional new mobility pilot strategy, identifying, prioritizing and distributing pilot projects to evaluate the impacts of new services and regulations**	A regional new mobility pilot strategy would allow for identifying, prioritizing and distributing pilot projects to evaluate the impacts of new services and regulations, in a range of conditions, optimize resources, and avoid duplication of work.
5.7	**Develop more flexible public-sector procurement processes to accommodate innovative private sector partnerships**	Opportunity exists to develop more flexible public-sector procurement processes to accommodate innovative private sector partnerships. The speed and evolution of technology, and the rigid nature of traditional procurement processes has made it difficult for government to effectively and efficiently procure new mobility tools and services that are able adaptable to rapidly changing traveller demands. New procurement processes could better support flexible private sector partnerships, and the implementation of pilot development, allowing for specification updates and encouraging innovation.
MiH	**Facilitate value-capture related to transit**	Provide municipalities with tools and best practices to leverage funding for transit and active transportation infrastructure from new development, including facilitating value- capture related to transit by expanding the use of special-area rating of benefiting areas or developments. (The Big Move Priority Action 1.9)
MiH	**Negotiate accelerated transit investment from beneficiary property owners**	Provide municipalities with tools and best practices to leverage funding for transit and active transportation infrastructure from new development, including negotiating accelerated transit infrastructure investment in exchange for voluntary contributions from benefiting property owners. (The Big Move Priority Action 1.9)
MiH	**Sustainable, consistent, annual regional and provincial funding and investment models for cycling infrastructure and programming**	Develop and establish sustainable, consistent annual provincial- and regional-level funding and investment models for implementing and supporting cycling infrastructure and programming. (AT Background Paper)
MiH	**Continue to advance Business Case methodology to accurately evaluate the benefits of transit investment**	Opportunity exists to continue advancing Business Case methodology for transit, and other sustainable transportation investments, more accurately reflecting the strategic, social, economic and environmental costs and benefits associated with proposed projects. The implementation of a regional business case framework will ensure consistent project evaluation, and increased decision making transparency, providing the qualitative and quantitative analysis necessary to encourage increased investment in the transportation system.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.1/3.5	**Develop and adapt consistent fare discounts as part of regional fare integration to promote transit use and ensure equitable access to transit**	As extension of fare integration framework, develop regionally-consistent fare discounts to promote transit use and ensure equitable access to transit. Investigate options for implementing fare discounts. (TDM Background Paper)
3.2/4.8	**Reduce volume of free parking at transit hubs, supported by wider- spread implementation of paid parking across the region**	Reducing the volume of free parking at transit hubs, supported by wider-spread paid parking in the region would encourage the use of more sustainable modes of travel, especially to access transit (walking, cycling, transit and carpooling), more accurately reflect the real cost of parking provision, and decouple transit fares and transit station parking costs
4.7/MiH	**Amend the Development Charges Act**	Provide municipalities with tools and best practices to leverage funding for transit and active transportation infrastructure from new development, including amending the Development Charges Act to allow municipalities to recover the full growth-related costs of transit infrastructure, and to base cost recovery on transit service above historical levels. (The Big Move Priority Action 1.9)
4.7/MiH	**Re-direct development charge levies**	Provide municipalities with tools and best practices to leverage funding for transit and active transportation infrastructure from new development, including redirecting development charge levies collected with broader transportation envelope to a variety of more sustainable modes (e.g. active transportation). (The Big Move Priority Action 1.9)
POLICIES/PROGRAMS REFLECTED IN THE RTP (further details to be determined through implementation planning) (Priority Action #)		
3.7	**Create provincial legislation or a regional policy to require TDM programming, compliance and monitoring**	Creation of provincial legislation or regional policy to require TDM programming, compliance and monitoring to reinforce the role of employers in mitigating the impacts of commuting on congestion and the environment, and ensure consistent private and public sector employer participation. (TDM Background Paper)
3.6/5.6	**More rigorous cycling and pedestrian injury/fatality data collection and analysis**	More rigorous cycling and pedestrian injury and fatality data is necessary to accurately baseline current state, and support ongoing monitoring of infrastructure and programming. (AT Background Paper)
5.3	**"Futureproof" infrastructure investments to ensure long-term relevancy, including updating modelling to reflect new mobility, and flexible transit station and service design to accommodate technological advancements**	Given the degree of uncertainty regarding future transportation demands in the face of new technology and business models, it is imperative that government "futureproof" infrastructure investments, including updating modelling methodology, and introduce more flexible transit station and service design to reduce the financial risk associated with capital investments in infrastructure.
4.6/4.9	**Active Transportation Master Plan Implementation**	Undertake Active Transportation Master Plans and incorporate them into municipal TMPs. Since 2008, nearly all municipalities in the region have ATMPs, and the priority is now to (better) support their implementation. (The Big Move Priority Action 2.8)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
1.4/3.11	**Align regional and national transportation objectives**	Collaborate with public and private stakeholders to align regional and national transportation objectives. (The Big Move Priority Action 1.6)
3.10	**Apply freight-supportive land-use guidelines**	Application of the freight-supportive land-use guidelines, including the planning and design that promotes the effective siting of goods-generating lands, site development and corridor planning. Avoiding conflicting land uses can greatly facilitate off-peak delivery and operations.
5.6/5.7	**Collaborate with partners and stakeholders to expand body of transportation research**	Consult with private and public partners, post-secondary institutions and others to expand body of transportation research and further innovation. (The Big Move Priority Action 10.5)
5.6	**Collaboration between Metrolinx and Transport Canada to develop consistent standards**	Opportunity exists for Metrolinx to revisit their relationship with Transport Canada to develop standards that will commensurate with the Regional Transportation Plan. Such standards could include safety, operational, service, policy, engineering, environmental, and other areas not yet identified.
4.9	**Consolidate, analyze and report active school travel data on an ongoing basis**	The ASST Roadmap recommended the consolidation, analysis and reporting of active school travel data on an ongoing basis to support program planning and evaluation, and continue to raise awareness regarding the trends and role within the transportation system.
3.10	**Continue to work with an inter- governmental goods movement committee**	Continue to work with an inter-governmental goods movement committee made up of provincial, municipal and private sector partners to build partnerships, policy, share best practices and data, and address mutual issues facing goods movement in the province and region.
3.7	**Define the long-term roles of local, municipal and regional parties for TDM programming, funding, planning, delivery and evaluation**	Define the long-term roles of local, municipal and regional bodies for TDM programming, funding, planning, delivery and evaluation. This would serve to clarify and manage roles, responsibilities and resources and ensure more regionally consistent policy and program delivery. (TDM Background Paper)
4.9/4.7	**Design school catchment areas and campuses to maximize walking and cycling**	Define school catchment areas, and design school campuses to maximize walking and cycling as the primary means of school travel. (The Big Move Supporting Policy 2.11)
3.7	**Develop a coordinated, dynamic road pricing implementation strategy and schedule, including the prioritization of corridors**	Manage traffic demand and capacity on the regions highways and roads by developing a coordinated, dynamic road pricing implementation strategy and schedule, including the prioritization of corridors.
3.3	**Develop an approach to disseminate real-time information of adjacent transit services at stations/stops and on transit vehicles**	To ensure a seamless, high-quality traveller experience, develop a system-wide approach to disseminate real-time information on adjacent transit services at stations/stops and on transit vehicles. It is critical that the approach work for all transit providers in the region, and this information should complement information available to the public via real-time smart phone apps.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.7	**Develop and implement a new employer-based commuter survey mechanism**	Develop and implement a new mechanism for employer-based commuter surveys to support TDM program planning, evaluation and communications. (Smart Commute 5-Year Strategy)
3.9/4.5	**Develop policy and guidance on how to repurpose and prioritize road space to best balance future public and private mobility needs**	Shared and autonomous mobility poses potential changes to the infrastructure required to support their operation. As more research and analysis is conducted to better understand road space and parking needs, policy and guidance will need to be developed on how to repurpose and prioritize road space to best balance future public and private mobility needs.
3.10	**Encourage smart growth for freight**	Promotes the management of growth through compact development with moderate-plus density, mixed land uses and transportation options that promote sustainable travel. For goods movement this means clustering goods movement-intensive land uses to minimize truck-km, with hubs often existing around truck and rail terminals.
4.5/4.9	**Enhanced Support for Law Enforcement on Cycling Issues**	Enhance law enforcement to support increase cycling participation, security and safety, including but not exclusive to the following example initiatives: • Ticketing of cars parking in bike lanes • Additional resources to combat bike theft • Encouraging people to report bike theft • Enhanced tracking of bike theft
4.5	**Establish bicycle parking provision standards for all new development, appropriate for a range of uses**	Establishment of bicycle parking provision standards for all new development to ensure consistent private sector investment in, and regional availability of facilities necessary to support cycling growth across the region. (AT Background Paper)
3.7	**Establish increased partnerships between public agencies and employers to offer and incentivize uptake of employer transit pass**	Establish stronger partnerships between public agencies and employers to offer and incentivize uptake of employer transit pass programs. This would entail increasing employer pass products, and more proactively working with employers to encourage their participation and investment. (TDM Background Paper)
3.2	**Establish Mobility Hub customer service centres**	Develop customer service centres at all mobility hubs where travellers can obtain information on schedules, connecting trips, fares and other information. (The Big Move Priority Action 5.4)
4.5	**Establish protocols to facilitate use of provincially-owned lands for transportation facilities**	Develop protocols within the Ontario government to facilitate the use of provincially- owned lands for transportation facilities. (The Big Move Priority Action 1.8)
1.4	**Establish regional rapid transit connections outside the GTHA**	Establish regional rapid transit connections outside of the GTHA that connects the GTHA transit network to municipalities and destinations outside the region. (The Big Move Priority Action 1.5)
3.3	**Establish region-wide transit service standards and public reporting requirements**	Develop region-wide standards and public reporting requirements for all transit services in the GTHA that are appropriate to the local context and address customer service issues. (The Big Move Priority Action 5.2)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
4.9	**Expand cycling training programs**	Implement or expand safe cycling training programs, similar to programs like CAN-BIKE courses offered across Canada. (The Big Move Priority Action 2.7)
2.4	**GO Bus Regional Transit Spine(s)**	To complement GO Regional Express Rail, GO Bus will create a "Regional Transit Spine", redeploying existing bus resources, and utilizing investments in transit-priority infrastructure (e.g. HOV/HOT lanes, transitway(s), bus bypass shoulders etc.) to focus on suburb-to-suburb and suburb to non-Downtown Toronto travel markets not served by rail, with a focus on the Highway 401, 407, and 403 corridors.
4.3/4.5	**Identification of Transit Priority Zones in municipal plans**	Official Plans, Secondary Plans and Transportation Master Plans should identify transit priority zones where measures will be put in place. (The Big Move Supporting Policy 1.14)
4.9	**Identify and address gaps in Provincial (and local) policy to support and promote active and sustainable school travel**	Identify and address gaps in Provincial and local policy to support and promote active and sustainable school travel. It's recognized that a strategic approach is needed to identify and resolve policies that compromise or provide opportunities ability to encourage and support children walking and cycling to school. (ASST Roadmap)
3.7	**Identify legislative opportunities for commute-based TDM program support from higher orders of government**	Identify and leverage legislative opportunities for commute-based TDM program support from higher orders of government to ensure funding consistency, policy guidance, private sector participation and enforcement. (TDM Background Paper)
2.1/2.2	**Identify, prioritize and resolve transit gaps and bottlenecks**	Identify, prioritize and resolve gaps and bottlenecks in the transit network, particularly at municipal boundaries. (The Big Move Priority Action 1.11)
3.3	**Implement a region-wide wayfinding tool to support travellers with vision loss**	Development and implementation of a region-wide wayfinding tool to support travellers with vision loss to ensure seamless mobility regardless of municipality or service operator.
5.4	**Improve cyber-security, backup systems and contingency plans to mitigate impact of electricity blackouts, network outages and cyber- attacks**	Improved cyber-security, backup systems and contingency plans to mitigate the impact of electricity blackouts, network outages and cyber-attacks are needed to ensure system resiliency, safety and security.
3.10	**Improve the coordination of goods movement into the planning process**	There exists a need to incorporate goods movement into the land use and transportation planning process through public-private freight forums, forecasting models and goods movement data.
4.3	**Incorporation of RTP transportation networks and mobility hubs in all municipal plans**	Regional rapid transit and highway network established in the RTP will be incorporated into all municipal Official Plans, and the planned transit services shall be used as the basis for determining appropriate land uses and densities in conformity with the Growth Plan. Gateway and Anchor mobility hubs be incorporated into municipal plans. (The Big Move Supporting Policy 7.10; Supporting Policy 7.14)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
4.6/4.9	**Increase and coordinate promotional activities to support new cycling facilities and programs**	Increase and coordinate promotional activities to support new cycling facilities and programs. Promotional and educational activities can provide the awareness and skills necessary to optimize the potential benefits of new cycling infrastructure and programs. (AT Background Paper)
4.8/4.7	**Link density bonuses and/or parking reductions to provision/funding of active transportation initiatives**	The AT Background Paper recommended that density bonuses and/or parking reductions be linked to provision or funding of measures that increase active transportation use.
4.5/4.4	**Link transit corridor streetscape guidelines and design standards to streetscape development capital works programs**	Enforce design standards and streetscape guidelines through the site plan process for transit corridors that are identified as intensification corridors. The Baseline Monitoring Report suggested that the guidelines and standards be linked to the capital works programs of streetscape development to respond to the incremental pace of development. (The Big Move Supporting Policy 7.19)
3.9	**New or expanded roads or highways should not undermine the viability of existing or planned rapid transit**	Develop a framework to ensure the compatibility of road uses, in particular, that new or expanded roads or highways do not undermine the viability of existing or planned regional rapid transit services in the same area. (The Big Move Supporting Policy 3.11)
4.8	**Permit more flexible forms of parking to meet requirements**	Update municipal parking and zoning by-laws, including permitting off-site, on-site and shared-parking capacity be counted towards meeting parking requirements, and giving landowners and developers the option of providing alternatives to free on-site parking (e.g. transit passes, financial contributions towards transit or active transportation infrastructure. (The Big Move Supporting Policy 7.13)
3.9	**Planning for new or expanded roads or highways shall consider opportunities to support existing or planned rapid transit**	Planning for new or expanded roads or highways shall consider opportunities to support or improve existing or planned regional rapid transit services or operations. The Big Move Supporting Policy 3.12)
4.8/3.4	**Priority parking for carpool and carshare vehicles**	Provision of priority parking spaces for carpool and carshare vehicles whenever parking is provided at mobility hubs, major transit station areas or major commercial/employment areas. (The Big Move Supporting Policy 3.13)
4.6	**Promote active transportation and connect key destinations when designing greenway strategies and park systems**	Identify and implement opportunities to promote active transportation and connect key destinations, including mobility hubs and major transit stations when designing greenway strategies and park systems. (The Big Move Supporting Policy 2.9)
4.5	**Regional evaluation of cycling infrastructure interventions on effectiveness and safety to support municipal planning**	Regional evaluation of cycling infrastructure interventions on effectiveness and safety to support municipal planning capacity. This is a growing area of work that would benefit from additional regionally consistent resources, expertise and approaches to support planning, design and project evaluation work.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.7	**Research and evaluate demand management mechanisms to minimize VKT and single-occupant vehicle use due to new technology and service models (e.g. autonomous vehicles)**	Establish a research program to evaluate the ability of new technology to minimize VKT and single-occupant vehicle use. This initiative will also need to consider establishing policies to ensure that new technologies, such as autonomous vehicles, do not actually increase region- wide VKT.
3.4/5.2	**Research how on-demand mobility services and autonomous vehicles could impact parking demand and operations**	Establish a research program to evaluate the impact of new technology on parking demand and operations. This initiative will also need to consider establishing policies to ensure that new technologies, such as autonomous vehicles, actually reduce the need to supply parking, particularly at GO stations.
5.5	**Review legislation and identify opportunities for "low emission zones" in collaboration with higher- level government**	Review legislation and identify opportunities to establish "low emission zones" in collaboration with higher-level government to support congestion and air-quality objectives. (TDM Background Paper)
3.7	**Road pricing (Toronto only)**	Implementing pricing scheme on all auto travel in region. The implementation might range from transponder system to an annual inspection of odometers.
3.7	**Road pricing in GTHA**	Implementing pricing scheme on all auto travel in region. The implementation might range from transponder system to an annual inspection of odometers.
3.7	**Streamline Municipal Class Environmental Assessment Process for road diets that include active transportation infrastructure**	Streamline the Municipal Class Environmental Assessment Process for road diets that include active transportation infrastructure to reinforce support for active transportation implementation and expedite the process for its construction.
3.10	**Strengthen role of the Urban Freight Forum, grow collaboration with multi- sectoral freight forums, and broaden outreach**	Opportunity to strengthen the role of the Urban Freight Forum, growing collaboration with multi-sectoral freight forums, and broaden outreach, resulting in a stronger mandate, new private-public partnerships, and advancement of regional goods movement solutions that benefit government and the private sector.
3.10	**Study technological and regulatory initiatives to reduce the environmental impact of goods movement**	Opportunity to study technological and regulatory initiatives that use improvements in vehicle and engine technologies to reduce air pollution, or effect change through compulsory measures (e.g. prohibiting use of older trucks in downtown areas, or moving deliveries to less congested times of the day.
3.1	**Support transit agency agreements to accommodate cross-boundary services**	Phase out restrictions that currently prevent transit agencies from picking up passengers while passing through neighbouring jurisdictions. Not all (if any) of the service restrictions have been removed, but some cross-boundary agreements have been negotiated and are currently in place. (The Big Move Priority Action 5.6)
4.8	**Taxing parking spaces through region (to encourage increase in parking charges)**	Taxation of parking spaces in the region would encourage the introduction (or increase) in parking charges, more accurately reflecting the cost of parking provision, the low value of parking as a land-use, and encourage more sustainable modes of travel for those who have options to driving (particularly to work and transit stations). (Metrolinx Investment Strategy)

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
3.7	**Tolling - 400 series highways**	This project will incorporate tolls on the 400 series highways. Tolls would not be levied on buses. Tolls could be lower on E.V.s that are properly registered but should not be set to $0. The revenue should more than cover the cost of operating and maintaining tolling system.
3.7	**Tolling - Gardiner/DVP**	This project will incorporate tolls on the DVP/Gardiner. The revenue should more than cover the cost of operating and maintaining tolling system. Tolls would provide a revenue stream for the ongoing maintenance of the Gardiner and DVP and funding for the City's other transportation priorities.
3.9/4.2/4.3	**Transportation Corridor Protection**	Overall policy to protect corridors including GTA West, 400-404 link, RER corridors, subway extensions, future rapid transit corridors, etc.
2.2	**TTC Express Bus Network**	An enhanced and expanded Express Bus Network across the City of Toronto. The initiative involves standardized levels of service for express bus service, potential re-branding, POP/All-Door Boarding on certain high-demand routes, transit priority on express corridors. Service is designed to fill in the gaps of the rapid transit network.
3.10	**Update and continue to implement a Regional Urban Freight Strategy**	Develop a comprehensive, multi-stakeholder strategy for goods movement within the GTHA that identified opportunities to improve efficiency, increase capacity, enhance the region's competitiveness, and reduce emissions, including but not exclusive to a freight corridor optimization strategy, goods movement flow mapping by mode, and identifying innovative approaches for urban and regional freight movement. Metrolinx has since created an urban goods movement strategy, but opportunity exists to update that in collaboration with stakeholders to identify priority policies and actions. (The Big Move Priority Action 9.1)
3.7	**Use environmental laws and policy to mandate (or incentivize) TDM policies, programs and actions**	Opportunity to use environmental laws and policy to mandate or incentivize TDM policies, programs and actions as demonstrated in other jurisdictions (e.g. State of Washington). (TDM Background Paper)
Other Long List Initiatives for Consideration		
tbd	**Collaborate with other regional agencies across the country to develop common national approaches (e.g. prioritizing transportation projects)**	Collaborate with other regional agencies across Canada to identify common approaches to prioritizing transportation projects, including consideration of regional and national benefits. (The Big Move Priority Action 10.4)
tbd	**Convene a GTHA Transit Fare Equity Working Group**	Metrolinx coordinate a GTHA transit fare equity working group to further investigate and implement actions to advance transit fare equity through a consistent regional approach, including the development of a charter that specifies baseline outcomes and strategies to be consistently implemented by each transit agency, the inclusion of front line-focused representatives from Provincial ministries, municipalities, transit agencies and related community organizations, and meaningful participation of equity-seeking groups and outreach to transit users not traditionally part of the conversation.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
no	**Create tax exemption for employer- provided/subsidized transit passes**	Provide financial incentives to encourage greater transit use, such as making employer- provided or employer-subsidized transit passes tax-exempt. (The Big Move Priority Action 6.3)
3.7	**Deliver reward and loyalty programs to sustain and reward behaviour change**	The delivery of reward and loyalty programs to sustain and reward behaviour change by individuals, employers, and other stakeholder groups, leveraging private sector partnerships, and existing platforms like PRESTO. The Smart Commute Awards are an existing example of a rewards program incentivizing employer participation and leadership.
3.7	**Develop a regional approach for local individualized marketing projects**	Develop a regional approach for local individualized marketing projects, recognizing the growth of pilots and policies within municipalities across the GTHA, and opportunity to consolidate knowledge and approaches to optimize project benefits. (TDM Background Paper)
tbd	**Develop and deliver practitioner training regarding active transportation design guidelines, liability, and policy tools**	Development and delivery of practitioner training regarding active transportation design guidelines, liability and policy tools to ensure planners and engineers across the region (or province) have the awareness, education and skills necessary to design and implement infrastructure that supports and encourages safe cycling and walking.
tbd	**Develop road capacity enhancement pilot projects**	Develop road capacity enhancement pilot projects, such as tidal flow operations, contraflow lanes, dynamic lanes, shoulder bus lanes, roundabouts, etc. (The Big Move Action 3.8)
no	**Development of bus only lanes on 401**	Development of bus-only lanes (either newly constructed or conversion of existing lanes) on Highway 401 from LBPIA to Rouge River
no	**Downtown Toronto cordon**	Implementation of a cordon charging program for downtown Toronto, where non-transit vehicles are charged to enter or exit the cordon.
tbd	**Enable Official Plans to better support active transportation**	Enable Official Plans to better support active transportation, including bonusing provisions under the Planning Act should be used to require any major commercial or residential development, particularly in a mobility hub provide appropriate facilities for cyclists and pedestrians, including secure bike storage, showers and change rooms. (The Big Move Supporting Policy 2.10)
4.7	**Encourage developers provide transportation information to new buyers**	Encourage developers to provide information about transportation alternatives to new buyers. This initiative ensures new residents have the information necessary to inform their mode choice decisions, particularly relating to available or planned transit service and active transportation infrastructure. (The Big Move Priority Action 5.7)
3.3	**Establish one source for up-to-date planned road closures and restrictions throughout the region**	Provide reliable and easy-to-find travel information to mitigate the impacts of planned road closures and restrictions by establishing one source for up-to-date information.

Table 5: Long List of the Projects, Programs, and Policies

	Initiative Name	Description
no	**GO Rail Communications-Based Train Control (CBTC)**	Enhanced Train Control is identified as a prudent and necessary investment to support Regional Express Rail service. Initial work at Metrolinx has identified Communication-Based Train Control (CBTC) as the preferred train control system. CBTC regulates and automatically operates trains so they can operate most closely and more efficiently - supporting safer, more frequent, and more reliable service.
no	**Identify opportunities for future-oriented skill development for transit and transportation professionals**	With the emergence of new business models in transportation, and impending arrival of automated vehicles, there may exist a need to identify opportunities for future-oriented skill development for transit and transportation professionals to ensure employee retainment, knowledge of new technology and its effective application, and customer service skills to respond to traveller expectations.
tbd	**Identify, prioritize and resolve gaps and bottlenecks in the road network**	Support regional and municipal collaboration to identify, prioritize and resolve gaps and bottlenecks in the road network to mitigate traffic congestion and improve transit operations, particularly at municipal boundaries. Utilize advancements in intelligent transportation systems, among other design and operations interventions to for resolving bottlenecks. (The Big Move Priority Action 3.2)
tbd/3.5	**Low income car ownership**	Offer car maintenance assistance to people of low income to provide mobility.
3.7	**Promote car-free zones in downtown centres and corridors**	Promote car-free zones in downtown centres and corridors such as King St. in Toronto. The policy would support on-going work by the City of Toronto, and coordinate to ensure provincial laws are in alignment with these bans.
no	**QEW Prosperity Corridor Block Plan**	Structural plan for QEW corridor. Once completed will expedite provincial approvals in QEW Corridor. Multi-agency project that will involve the City of Burlington, Halton Region and MTO.
no	**Regional transit infrastructure (vehicles and technology) compatibility**	New transit infrastructure, including vehicles and technology are compatible across the region and utilize common international standards. (The Big Move Supporting Policy 1.13)
3.6	**Support driver education programs**	Support driver education programs which encourage more efficient driving practices to reduce fuel consumption and decrease emissions. (The Big Move Action 3.9)
4.5	**Support for Finer Grid Road Network in Provincial Policies**	Best practices, related policies to support Regional Express Rail, Urban Growth Centres, Mobility Hubs etc. Examples include mid-block crossings of 400 series highways, freeway ramp extensions, new interchanges, continuous collector roads, etc.

MiH: Reflected in the Making it Happen Discussion Paper and to be further considered in implementation planning

Table 6: Qualitative Assessment Scores

-3	-2	-1	0	1	2	3
High Neg. Impact	High Neg. Impact	Moderate Neg. Impact	No Impact	Moderate Pos.	High Pos. Impact	Very High Pos.

		Score this initiative in terms of its impact on improving:																		
Initiative name:	Total Score	Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (& Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
INFRASTRUCTURE																					
In the RTP																					
Dundas Street BRT	17	2	1	2	3	0	0	0	2	0	1	0	1	2	0	1	0	1	1	0	0
Brampton Queen St. BRT	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Eglinton West LRT	17	2	1	2	2	0	0	0	1	0	2	0	1	3	0	1	0	1	1	0	0
Highway 7 West BRT Extension	18	2	2	2	2	0	0	0	2	0	2	0	1	2	0	1	0	1	1	0	0
Waterfront West LRT	15	2	1	2	1	0	0	0	1	0	1	0	1	2	0	1	1	1	1	0	0
Waterfront East LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Relief Line Subway	23	2	2	2	3	0	0	0	1	0	1	0	2	3	1	2	2	1	1	0	0
Yonge North Subway Extension	13	1	2	1	1	0	0	0	1	0	1	0	1	1	0	2	1	0	1	0	0
Yonge BRT (Richmond Hill, Aurora, Newmarket)	16	2	2	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Eglinton East LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Highway 7 East BRT Extension	18	2	2	2	2	0	0	0	2	0	2	0	1	2	0	1	0	1	1	0	0
Durham-Scarborough BRT	15	2	1	2	1	0	0	0	1	0	1	0	1	2	0	1	1	1	1	0	0
Lakeshore West 15-min GO Service Extension	10	1	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1	1	0
Hamilton A-Line BRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Missing Link Freight Rail Corridor	20	2	1	2	2	0	0	0	0	0	2	0	0	2	2	2	0	2	1	0	2
Milton 15-min GO Service	15	2	1	1	2	0	0	0	0	0	2	0	0	2	0	2	0	2	1	0	0
Trafalgar BRT/LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Downtown Mississauga Transitway & Terminal	14	2	2	2	1	0	1	0	1	0	0	1	1	0	0	1	0	1	1	0	0
Brampton Main LRT	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Finch West LRT West Extension	16	2	2	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Jane North BRT/LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Jane South Rapid Transit	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Bloor-Yonge Station Capacity Enhancements	18	2	2	2	0	0	0	0	2	0	0	0	2	3	2	0	0	2	1	0	0
Line 2 Subway Capacity	13	2	2	2	0	0	0	0	0	0	0	0	2	2	1	0	0	1	1	0	0
Sheppard West Subway Extension	16	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	1	1	1	0	0
Steeles BRT/LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0

Table 6: Qualitative Assessment Scores

Initiative name:	Total Score	Score this initiative in terms of its impact on improving: Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (&Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
Finch West LRT East Extension	17	2	2	2	2	0	0	0	1	0	1	0	1	2	0	1	1	1	1	0	0
Leslie North BRT/LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Don Mills/Leslie BRT/LRT	16	2	1	2	3	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
McCowan South BRT/LRT	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Sheppard East LRT Extension	11	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1	0	1	1	0	0
Malvern Connection LRT	12	1	1	2	1	0	0	0	1	0	1	0	1	1	0	1	0	1	1	0	0
Major MacKenzie Rapid Transit	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Simcoe BRT/LRT	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Expansion and revitalization of Union Station	17	1	0	0	1	0	2	0	2	0	1	1	2	3	0	1	0	2	1	0	0
Southwestern Ontario High-Speed Rail	19	2	2	1	3	0	0	0	0	0	2	0	1	2	0	0	0	1	2	3	0
Pearson Airport Area Sidewalk Network improvement	14	1	0	0	1	1	0	0	0	0	2	2	0	0	3	1	1	1	1	0	0
Implement targeted infrastructure improvements in high risk areas based on injury and fatality data	9	0	0	0	0	2	0	0	0	0	1	0	0	0	3	0	1	1	1	0	0
Develop a regional interconnected cycling	18	0	1	0	2	3	2	0	3	0	2	0	0	0	2	0	1	1	1	0	0
Broadview Streetcar Extension	16	2	2	2	2	0	0	0	0	0	2	0	1	1	0	2	0	1	1	0	0
St. Clair Streetcar/LRT Extension	11	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1	0	1	1	0	0
Other Long List Initiatives for Consideration																					
Bloor-Danforth Subway West Extension	14	2	2	2	1	0	0	0	1	0	1	0	1	1	0	1	0	1	1	0	0
Bolton GO Transit Extension	18	2	1	2	3	0	0	0	2	0	1	0	1	2	0	1	0	2	1	0	0
Burlington Connector Rapid Transit [Project combined with Brant Priority Bus]	9	1	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0
Cambridge GO Transit Extension	19	2	2	2	3	0	0	0	1	0	2	0	1	2	0	1	0	2	1	0	0
Crosstown GO Rail - Dundas West to Summerhill	10	1	1	0	1	0	0	0	0	0	1	0	0	1	0	1	1	2	1	0	0
Don Mills/Leslie Rapid Transit [REPLACED BY Project 323 Don Mills/Leslie BRT/LRT]	16	2	1	2	3	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Further develop the Provincial carpool lot network	7	1	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0
GO Rail Simcoe Concourse	16	2	2	1	0	0	1	0	0	0	0	0	2	2	1	0	2	2	1	0	0
GTA-West Highway[2]	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	-2	0	-2	-2	0	2
Hamilton B-Line West Extension	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0

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Initiative name:	Total Score	Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (&Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
Havelock GO Transit Extension	14	2	2	1	2	0	0	0	1	0	1	0	0	1	0	1	0	2	1	0	0
Highway 400 Widening for HOV	8	1	1	1	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	0
Highway 404 and Highway 400 Link	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Highway 404 Widening for HOV	8	1	1	1	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	0
Highway 407 Transitway (Highway 400 to Kennedy)	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Highway 407 Transitway (Hurontario to Highway 400)	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Highway 407 Transitway (Kennedy to Brock)	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Level Boarding for all Regional Rail	9	0	1	0	0	0	0	0	1	0	1	3	1	0	2	0	0	0	0	0	0
Palermo Transit Hub	12	1	1	0	0	0	1	0	2	0	1	1	1	1	1	1	0	0	1	0	0
Pearson Airport Area Cycleway Provision	13	0	1	0	2	2	0	0	0	0	2	0	0	0	2	1	1	1	1	0	0
Peterborough GO Extension	18	2	1	2	3	0	0	0	2	0	1	0	1	2	0	1	0	2	1	0	0
Plan and implement complete, integrated walking and cycling networks	16	1	1	0	2	3	0	0	0	0	2	0	0	0	3	1	1	1	1	0	0
QEW BRT (Oakville to Hamilton)	15	2	1	2	1	0	0	0	1	0	1	0	1	2	0	1	1	1	1	0	0
Redevelop the Union Station Bus Terminal	11	1	0	0	0	0	0	0	2	0	0	1	1	1	1	2	0	1	1	0	0
Relief Line Subway Westerly Extension	20	2	2	2	1	0	0	0	1	0	1	0	2	3	0	2	2	1	1	0	0
Seaton GO Transit Extension	14	2	2	1	2	0	0	0	1	0	1	0	0	1	0	1	0	2	1	0	0
Uxbridge GO Extension	18	2	1	2	3	0	0	0	2	0	1	0	1	2	0	1	0	2	1	0	0
Woodbine Rapid Transit	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
PRIORITY BUS																					
In the RTP																					
Dundas West Priority Bus	17	2	1	2	3	0	0	0	2	0	1	0	1	2	0	1	0	1	1	0	0
Hamilton A-Line South Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Dundas Connector Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Hamilton L-Line Priority Bus	13	1	2	2	1	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Hamilton S-Line Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Hamilton Mohawk (T-Line) Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Brant Priority Bus	13	1	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Bronte/Regional Road #25 Priority	8	1	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0
Trafalgar North Priority Bus	13	1	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Britannia/Matheson Priority Bus	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

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Hurontario North Priority Bus	13	1	1	1	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Airport Rd. Priority Bus	13	2	1	2	2	0	0	0	0	0	0	0	1	2	0	1	0	1	1	0	0
Steeles West Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
McCowan North Priority Bus	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Kingston Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Major Mackenzie East Priority Bus	14	1	2	2	1	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Green Lane Priority Bus	10	1	1	1	1	0	0	0	0	0	0	0	1	2	0	1	0	1	1	0	0
Steeles/Taunton Priority Bus	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Whites Rd. Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Brock Rd. Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Westney Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Bayly Priority Bus	15	2	2	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Brock St./Baldwin Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Highway 2 Priority Bus	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Highway 407 Regional Express Bus	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Highway 427 North Regional Express Bus	15	2	1	2	2	0	0	0	1	0	1	0	1	2	0	1	0	1	1	0	0
Other Long List Initiatives for Consideration																					
Halton Steeles Priority Bus	14	2	1	2	2	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Oshawa Connector Rapid Transit	12	1	1	2	1	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
Winchester Road Priority Bus	12	1	1	2	1	0	0	0	0	0	1	0	1	2	0	1	0	1	1	0	0
POLICIES, PROGRAMS, OTHERS																					
In the RTP																					
Expand the region's frequent transit network	13	2	1	2	1	0	0	0	0	0	2	0	0	1	0	2	0	1	1	0	0
24-Hour Base Transit Network	8	1	0	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0
Establish bus bypass shoulders on highways	9	2	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0
Expand the network of express bus routes, and clarify the roles and responsibilities for operating express services	6	1	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0
Pearson Airport Area Bus Frequency Increase	9	2	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0
Pearson Airport Area Transit Stop Infrastructure Provision	10	1	0	2	0	0	2	0	0	0	1	0	2	0	0	0	0	1	1	0	0
Transit Connectivity to Pearson Airport	7	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0

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Coordinate transit schedules among service providers	8	1	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0
Expand use of U-PASS programs offered by transit providers	7	2	0	0	0	0	0	0	0	2	0	0	0	-1	0	1	0	1	2	0	0
Regional fare integration	10	1	0	0	0	0	0	3	3	1	0	0	0	0	0	0	0	0	1	1	0
Coordinate effort between Metrolinx and MSPs to better integrate local transit service to GO rail stations	17	2	1	1	1	0	0	2	3	2	1	0	0	0	0	1	0	1	1	1	0
Coordinate effort between Metrolinx, MSPs, and municipalities to deliver micro-transit service to GO rail stations	9	1	1	2	1	0	0	0	0	0	2	0	0	0	0	-1	1	0	1	1	0
Deliver GO station parking expansion using a range of alternative parking solutions that reduce up-front capital costs (e.g. reduce new dedicated GO parking structures)	1	0	0	1	0	-1	0	0	0	0	1	0	0	0	0	-1	0	0	0	1	0
Establish partnership opportunities (within the regulatory framework) to deliver ridesourcing solutions in support of GO station first mile/last mile needs	9	1	1	2	1	0	0	0	0	0	2	0	0	0	0	-1	1	0	1	1	0
Explore opportunities to modify and expand reserved, carpool and electric vehicle parking at	5	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0
Implement targeted first-mile last-mile solutions to support the transit system	9	1	0	0	1	1	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0
Improve cycling access to higher-order transit nodes, including routes from the public network and on-site parking facilities	14	1	1	0	1	2	0	0	1	0	2	0	0	0	2	1	1	1	1	0	0
Improve the quality and connectivity of active transportation infrastructure and services to and at GO stations	14	1	1	0	1	2	0	0	1	0	2	0	0	0	2	1	1	1	1	0	0
Pilot and operate dynamic on-demand transit services in lower density areas to support and integrate with regional and rapid transit network	9	1	1	2	1	0	0	0	0	0	2	0	0	0	0	-1	1	0	1	1	0
Standardize active transportation enhancements as part of rapid transit corridor investments	11	0	1	0	1	2	0	0	1	0	2	0	0	0	0	1	1	1	1	0	0

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Identify a practical solution for providing real-time transit station parking lot occupancy data	9	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	2	0
Improve winter snow removal from active transportation infrastructure to support all-season cycling and transit access	20	1	1	2	0	2	0	0	1	0	3	2	1	0	3	0	1	2	1	0	0
Integrated regional transit wayfinding system	8	0	0	0	0	0	3	0	2	0	1	1	0	0	1	0	0	0	0	0	0
Provide enhanced traffic condition and travel time data for arterial roads	12	0	2	2	0	0	3	0	0	0	0	0	0	0	1	0	1	2	1	0	0
Real-time information displays at all mobility hubs, and key transit stations and stops	12	1	0	2	0	0	3	0	1	0	0	0	2	0	0	0	1	0	1	1	0
Road and highway overhead display board expansion	10	0	1	0	0	0	2	0	0	0	0	0	0	0	2	0	1	2	1	0	1
Expand PRESTO card functionality and partnerships	9	1	1	0	0	0	0	1	3	0	0	0	0	0	0	0	0	1	1	1	0
Research and monitor the progress of Mobility as a Service (MaaS) policy models, and develop a regional strategy for coordinated, one-window mobility pricing and operation	17	1	0	1	0	1	1	2	2	0	2	0	0	0	0	1	1	1	1	3	0
Support and improve regional transportation information portal(s)	8	0	1	0	0	0	3	0	1	0	0	0	0	0	0	0	1	0	0	2	0
Commitment to planning for all users	4	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0
Develop integrated regional paratransit booking and transfer tools	10	1	0	1	1	0	1	1	2	0	2	0	0	0	0	0	0	0	0	1	0
Support the Accessibility Advisory Committee, identifying opportunities to advance universal access issues	6	0	0	0	0	0	0	0	1	0	0	3	1	0	1	0	0	0	0	0	0
Transit Infrastructure and Fleet AODA Compliance Implementation	19	1	0	2	2	0	0	0	2	0	2	3	2	0	2	0	0	1	1	1	0
Update and continue to implement region-wide and local Accessibility Strategies	6	0	0	0	0	0	0	0	1	0	0	3	1	0	1	0	0	0	0	0	0
Amend the Ontario Public Vehicles Act to better support vanpool and shared mobility operation	7	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	2	1	1	0	0
Deliver behaviour change campaigns	4	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0

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Develop and incorporate project-specific TDM for all rapid transit expansion and major service improvements	7	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
Develop Provincial policy to enable congestion charging	12	2	2	2	0	1	0	0	0	0	0	0	0	0	1	0	0	3	1	0	0
Eliminate legal and liability barriers to ride-sharing.	6	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0
Encourage employers offer financial incentives as alternative to single-occupancy work trips	5	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0
Encourage private sector employer TDM program implementation	5	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
Explore and establish partnerships to further facilitate and promote dynamic and peer-to-peer ridesharing	12	1	1	1	2	0	0	0	0	0	2	0	0	0	0	0	1	1	1	2	0
Implement transit pricing strategies to address transit network capacity challenges (e.g. off-peak differential pricing)	9	0	1	1	0	0	0	0	0	0	0	0	1	2	1	0	0	2	0	1	0
Research and develop more flexible and responsible (market-based) pricing practices for public infrastructure and services (e.g. roads, parking, transit)	6	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	0
Support and promote ride-matching service(s)/tool(s)	9	0	0	1	0	0	2	0	0	0	1	0	0	0	0	0	1	1	1	2	0
Adding HOT component to all HOV lanes in region	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Developing HOV network on all 400- series highway	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	-1
Implement an inter-connected regional network of multi-purpose reserved lanes	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Develop a coordinated regional Transportation Systems Management (TSM) program	6	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1
Develop regional guidelines and standards to provide transit signal priority interoperability between agencies	7	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0

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Establish cross-boundary coordination between neighbouring jurisdictions to coordinate traffic control on priority corridors	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Implement an Intelligent Transportation System strategy for the GTHA.	6	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0
Optimize use of existing road infrastructure for road-based transit	6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0
Regional Transit Signal Priority Program	9	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0
Review of operations to improve streetcar reliability	5	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Deploy operational and infrastructural goods movement	8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
Develop and implement a regional goods movement network	10	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	3
Prioritize goods movement corridors for investment	9	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	2
Develop and implement a regional Urban Goods Movement Data Program	9	0	1	1	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	1	2
Promote off-peak freight delivery	9	0	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	2
Study urban distribution (or consolidation) centres	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Create and refine a system of connected mobility hubs	19	2	1	0	0	1	1	0	3	0	2	1	2	0	0	2	0	2	2	0	0
Develop a financial program to facilitate mobility hub	10	1	0	0	0	1	0	0	1	0	1	0	1	0	0	2	0	2	1	0	0
Establish a dedicated, transit-related urban development capability to lead mobility hub	8	1	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	2	1	0	0
Mobility Hub Implementation Guidelines	8	1	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	2	1	0	0
Prepare Mobility Hub Plans for all Mobility Hubs	12	1	1	0	0	1	1	0	1	0	1	1	1	0	0	2	0	1	1	0	0
Develop (agreed-upon) active transportation infrastructure design guidelines	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Develop a regional Complete Streets policy (or implement CS policies in every GTHA municipality)	12	0	0	0	0	2	0	0	0	0	2	1	0	0	2	1	1	2	1	0	0
Expand bike-sharing programs	12	0	1	1	2	2	0	0	0	0	2	0	0	1	0	0	1	1	1	0	0

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Improve integration of walking and cycling in road design	11	0	1	0	1	2	0	0	0	0	1	0	0	0	2	1	1	1	1	0	0
Passenger Transportation Hierarchy Policy	10	1	0	0	0	1	0	0	0	0	1	0	0	0	0	2	1	2	2	0	0
Regional coordination of bike-share programs, including multi-program memberships and adjacent-system docking	5	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0
Commit long-term sustainable and consistent funding and resources for TDM programming	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
Expand the role of TDM in the land-use planning and development process, including the development of a regional model and guidelines	12	2	0	0	0	2	0	0	0	0	2	0	0	0	0	1	1	2	2	0	0
Guidelines and model policies to support development and implementation of TDM policies in municipal plans and processes	8	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0
Require TDM strategies as part of all major development applications	7	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0
Undertake household level individualized marketing campaigns	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Decrease minimum parking requirements	9	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0
Develop more flexible, local, context- specific parking requirements as part of a regional parking reduction program	8	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0
Establish parking maximum requirements	10	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	1	1	0
Provide priority parking for car-sharing	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Amplify the reach and impact of school active transportation promotional events (e.g. Bike to School Week)	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Continue to develop and support the role of the GTHA Active and Sustainable School Transportation Regional Hub	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

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Establish school travel planning (or ASRTS) facilitators at the local and regional levels	7	0	0	0	0	2	1	0	0	0	0	0	0	0	2	0	0	1	1	0	0
Implement a long-term regional program for delivering TDM for school travel, developing a model for other Canadian regions	7	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	2	1	0	0
Collaboration between regional, provincial and federal governments for research, policy development and coordinated action regarding transportation network companies and government's role in mobility	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0
Develop provincial-level regulation and guidelines for shared mobility services	5	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	1	0
Establish a regional vision for new/shared mobility, including the private sector's role in providing mobility services	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Regularly review and revise new mobility policy, regulations and guidance to reflect latest conditions and outlooks	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0
Comprehensive municipal and regional- level bicycle infrastructure, parking, and use data collection and management	7	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0
Develop a coordinated regional approach to acquire and use crowdsourced traffic data	6	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0
Develop a regional transportation data strategy to address data sources, format and ownership, and ensure its integrity, security and openness is maintained	7	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	3	0
Explore opportunities for government to use existing and new transportation data for planning and operations	10	0	1	1	1	0	1	0	1	0	0	0	0	1	0	0	0	2	1	1	0
Improve coordination and standardization of transportation data collection, forecasting and modelling	7	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0	1	0

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Regional cycling network sidewalk GIS database, including processes for characterization, updates, and reporting	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Seek (or require) data partnership agreements with mobility companies for licensing and planning purposes	5	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	0
Develop a regional new mobility pilot strategy, identifying, prioritizing and distributing pilot projects to evaluate the impacts of new services and regulations	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0
Develop more flexible public-sector procurement processes to accommodate innovative private sector partnerships	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Facilitate value-capture related to transit	8	1	0	0	2	1	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0
Negotiate accelerated transit investment from beneficiary property owners	7	1	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	1	1	0	0
Sustainable, consistent, annual regional and provincial funding and investment models for cycling infrastructure and programming	10	0	1	0	1	3	0	0	0	0	2	0	0	0	0	0	1	1	1	0	0
Continue to advance Business Case methodology to accurately evaluate the benefits of transit investment	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0
Develop and adapt consistent fare discounts as part of regional fare integration to promote transit use and ensure equitable access to transit	4	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0
Reduce volume of free parking at transit hubs, supported by wider-spread implementation of paid parking across the region	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0
Amend the Development Charges Act	8	2	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0
Re-direct development charge levies	7	1	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0

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POLICIES/PROGRAMS REFLECTED IN THE RTP (further details to be determined through implementation planning)																					
Create provincial legislation or a regional policy to require TDM programming, compliance and monitoring	9	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	3	1	0	0
More rigorous cycling and pedestrian injury/fatality data collection and analysis	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
"Futureproof" infrastructure investments to ensure long-term relevancy, including updating modelling to reflect new mobility, and flexible transit station and service design to accommodate technological advancements	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	0
Active Transportation Master Plan Implementation	15	0	1	0	2	3	0	0	0	0	2	0	0	0	1	1	2	1	2	0	0
Align regional and national transportation objectives	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Apply freight-supportive land-use guidelines	10	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	1	3
Collaborate with partners and stakeholders to expand body of transportation research	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Collaboration between Metrolinx and Transport Canada to develop consistent standards	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
Consolidate, analyze and report active school travel data on an ongoing basis	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Continue to work with an inter-governmental goods movement committee	6	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Define the long-term roles of local, municipal and regional parties for TDM programming, funding, planning, delivery and evaluation	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Design school catchment areas and campuses to maximize walking and cycling	7	0	0	0	1	2	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0
Develop a coordinated, dynamic road pricing implementation strategy and schedule, including the prioritization of corridors	8	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	2	0	0

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Develop an approach to disseminate real- time information of adjacent transit services at stations/stops and on transit vehicles	7	0	0	2	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	2	0
Develop and implement a new mechanism for employer-based commuter surveys to support TDM program planning, evaluation and communications	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Develop policy and guidance on how to repurpose and prioritize road space to best balance future public and private mobility needs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Encourage smart growth for freight	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3
Enhanced Support for Law Enforcement on Cycling Issues	8	0	0	2	0	2	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0
Establish bicycle parking provision standards for all new development, appropriate for a range of uses	6	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0
Establish increased partnerships between public agencies and employers to offer and incentivize uptake of employer transit pass programs	6	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	1	0
Establish Mobility Hub customer service centres	4	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Establish protocols to facilitate use of provincially-owned lands for transportation facilities	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Establish regional rapid transit connections outside the GTHA	12	2	1	1	2	0	0	1	1	0	2	0	0	0	0	0	0	1	1	0	0
Establish region-wide transit service standards and public reporting requirements	5	0	0	1	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0
Expand cycling training programs	4	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0
GO Bus Regional Transit Spine(s)	18	2	2	2	3	0	0	0	1	0	2	0	0	1	0	1	1	2	1	0	0
Identification of Transit Priority Zones in municipal plans	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Identify and address gaps in Provincial (and local) policy to support and promote active and sustainable school travel	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

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Identify legislative opportunities for commute-based TDM program support from higher orders of government	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Identify, prioritize and resolve transit gaps and bottlenecks	10	1	2	2	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0
Implement a region-wide wayfinding tool to support travellers with vision loss	12	0	0	0	0	0	3	0	1	0	1	3	1	0	3	0	0	0	0	0	0
Improve cyber-security, backup systems and contingency plans to mitigate impact of electricity blackouts, network outages and cyber-attacks	12	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	3	0
Improve the coordination of goods movement into the planning process	9	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	3
Incorporation of RTP transportation networks and mobility hubs in all municipal plans	8	1	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	1	1	0	0
Increase and coordinate promotional activities to support new cycling facilities and programs	5	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0
Link density bonuses and/or parking reductions to provision/funding of active transportation initiatives	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0
Link transit corridor streetscape guidelines and design standards to streetscape development capital works programs	6	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1	1	0	1	0	0
New or expanded roads or highways should not undermine the viability of existing or planned rapid transit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Permit more flexible forms of parking to meet requirements	7	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0
Planning for new or expanded roads or highways shall consider opportunities to support existing or planned rapid transit	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Priority parking for carpool and carshare vehicles	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0

Table 6: Qualitative Assessment Scores

		Score this initiative in terms of its impact on improving:																		
Initiative name:	Total Score	Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (& Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
Promote active transportation and connect key destinations when designing greenway strategies and park systems	8	0	0	0	1	2	0	0	0	0	1	0	0	0	1	0	1	1	1	0	0
Regional evaluation of cycling infrastructure interventions on effectiveness and safety to support municipal planning capacity	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Research and evaluate demand management mechanisms to minimize VKT and single-occupant vehicle use due to new technology and service models (e.g. autonomous vehicles)	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	1	0
Research how on-demand mobility services and autonomous vehicles could impact parking demand and operations	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0
Review legislation and identify opportunities for "low emission zones" in collaboration with higher-level government	5	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
Road pricing (Toronto only)	11	1	1	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	2	1	0
Road pricing in GTHA	13	2	1	0	0	3	0	0	0	0	0	0	0	0	0	2	0	2	2	1	0
Streamline Municipal Class Environmental Assessment Process for road diets that include active transportation infrastructure	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0
Strengthen role of the Urban Freight Forum, grow collaboration with multi- sectoral freight forums, and broaden outreach	6	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Study technological and regulatory initiatives to reduce the environmental impact of goods movement	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1
Support transit agency agreements to accommodate cross-boundary services	8	1	1	1	0	0	0	0	2	1	0	0	0	0	0	0	0	1	1	0	0
Taxing parking spaces through region (to encourage increase in parking charges)	7	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0

Table 6: Qualitative Assessment Scores

		Score this initiative in terms of its impact on improving:																		
Initiative name:	Total Score	Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (& Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
Tolling - 400 series highways	8	2	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Tolling - Gardiner/DVP	9	2	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0
Update and continue to implement a Regional Urban Freight Strategy	12	0	1	1	0	0	1	0	1	0	0	0	0	0	1	1	0	1	1	1	3
Use environmental laws and policy to mandate (or incentivize) TDM policies, programs and actions	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
Other Long List Initiatives for Consideration																					
Collaborate with other regional agencies across the country to develop common national approaches (e.g. prioritizing transportation projects)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Convene a GTHA Transit Fare Equity Working Group	3	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
Create tax exemption for employer-provided/subsidized transit passes	5	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0
Deliver reward and loyalty programs to sustain and reward behaviour change	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Develop a regional approach for local individualized marketing projects	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Develop and deliver practitioner training regarding active transportation design guidelines, liability, and policy tools	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
Develop road capacity enhancement pilot projects	7	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0
Development of bus only lanes on 401	8	1	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0
Downtown Toronto cordon	9	2	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0
Enable Official Plans to better support active transportation	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
Encourage developers provide transportation information to new buyers	4	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Establish one source for up-to-date planned road closures and restrictions throughout the region	12	0	2	2	0	0	3	0	0	0	0	0	0	0	1	0	1	2	1	0	0
GO Rail Communications-Based Train Control (CBTC)	12	1	1	2	0	0	0	0	1	0	0	0	0	1	2	0	0	2	1	1	0

Table 6: Qualitative Assessment Scores

		Score this initiative in terms of its impact on improving:																			
Initiative name:	Total Score	Transit Mode Share	Travel Time	Travel Reliability	Service Coverage	Active Mode Share	Traveller Info.	Fare Integration	Seamless Travel	Transit Affordability	Universal Accessibility	AODA Compliance	Passenger Comfort	Transit Capacity	Safety (& Perceptions)	Dev. Densities	Network Resilience	Efficient use of Resources	Air Quality	Transportation Innovation	Goods Movement
Identify opportunities for future-oriented skill development for transit and transportation professionals	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0
Identify, prioritize and resolve gaps and bottlenecks in the road network	9	0	2	2	0	0	0	0	2	0	1	0	0	0	0	0	0	1	1	0	0
Low income car ownership	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Promote car-free zones in downtown centres and corridors	13	2	1	1	0	2	0	0	0	0	0	0	0	0	2	1	0	1	2	1	0
Regional transit infrastructure (vehicles and technology) compatibility	5	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0
Support driver education programs	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Note: Initiatives not scored by the external reviewing team are omitted the table

Table 7: Bundled Project Scores

(Table only includes initiatives that have a bundled score)

Very Low | Low | No Score | High | Very High

Initiative Name:	Other initiatives that would work in conjunction with this initiative to enhance its success:					Project Scores	Bundled Project Score	Additional Municipal Comments:
INFRASTRUCTURE								
Other Long List Initiatives for Consideration								
Further develop the Provincial carpool lot network	Eliminate legal and liability barriers to ride- sharing.	Support and promote ride-matching service(s)/tool(s)	Developing HOV network on all 400-series highway	Require TDM programming, compliance and monitoring		7	10	
GTA-West Highway[2]	Tolling - 400 series highways	Developing HOV network on all 400-series highway	Adding HOT component to all HOV lanes in region	Establish bus bypass shoulders on highways		-2	-1	
Highway 400 Widening for HOV	Developing HOV network on all 400-series highway	Adding HOT component to all HOV lanes in region	Optimize use of existing road infrastructure for road-based transit			8	11	
Highway 404 Widening for HOV	Developing HOV network on all 400-series highway	Adding HOT component to all HOV lanes in region	Optimize use of existing road infrastructure for road-based transit			8	11	
Level Boarding for all Regional Rail	Commitment to planning for all users	Support the Accessibility Advisory Committee	Region-wide and local Accessibility Strategies	Active transportation infrastructure and services to and at GO stations		9	12	Although not represented as an individual project, the station construction required for implementing Regional Express Rail could provide an opportunity to introduce level boarding to the GO network.
Palermo Transit Hub	Highway 25 HOV and Transit Priority	Dundas Street Rapid Transit				12	12	
Pearson Airport Area Cycleway Provision	Pearson Airport Area Sidewalk Network improvement	Complete, integrated walking and cycling networks	Pearson Airport Area Transit Stop Infrastructure Provision	Annual funding and investment for cycling infrastructure and programming	Establish bicycle parking provision standards for all new development	13	15	
POLICIES, PROGRAMS, OTHERS								
In the RTP								
Continue to work with an inter-governmental goods movement committee	Prioritize goods movement corridors for investment	Develop and implement a regional goods movement network	Deploy operational and infrastructural goods movement priority measures	Promote off-peak freight delivery	Strengthen role of the Urban Freight Forum, and grow collaboration with multi-sectoral freight forums, and broaden outreach	4	4	
Develop an approach to disseminate real-time information of adjacent transit services at stations/stops and on transit vehicles	Regional transit infrastructure (vehicles and technology) compatibility	Real-time information displays at all mobility hubs, and key transit stations and stops	Integrated regional transit wayfinding system	Implement an Intelligent Transportation System strategy for the GTHA.		7	7	

Table 7: Bundled Project Scores

Initiative Name:	Other initiatives that would work in conjunction with this initiative to enhance its success:					Project Scores	Bundled Project Score	Additional Municipal Comments:
Enhanced Support for Law Enforcement on Cycling Issues	Plan and implement complete, integrated walking and cycling networks	Expand cycling training programs	Develop and deliver practitioner training regarding active transportation design guidelines, liability, and policy tools	More rigorous cycling and pedestrian injury/fatality data collection and analysis		8	8	
Establish increased partnerships between public agencies and employers to offer and incentivize uptake of employer transit pass programs	Create tax exemption for employer-provided/subsidized transit passes	Develop and adapt consistent fare discounts as part of regional fare integration to promote transit use and ensure equitable access to transit	Encourage employers offer financial incentives as alternative to single-occupancy work trips			6	6	
Establish Mobility Hub customer service centres	Integrated regional transit wayfinding system					4	4	
Expand cycling training programs	Active Transportation Master Plan Implementation	Sustainable, consistent, annual funding and investment regional and provincial models for cycling infrastructure and programming	Increase and coordinate promotional activities to support new cycling facilities and programs	Implement a long-term regional program for delivering TDM for school travel, developing a model for other Canadian regions	Establish school travel planning (or ASRTS) facilitators at the local and regional levels	4	5	
Strengthen role of the Urban Freight Forum, grow collaboration with multi- sectoral freight forums, and broaden outreach	Prioritize goods movement corridors for investment	Develop and implement a regional goods movement network	Deploy operational and infrastructural goods movement priority measures	Promote off-peak freight delivery	Continue to work with an inter-governmental goods movement committee	4	4	
Support transit agency agreements to accommodate cross-boundary services	Regional fare integration	Coordinate transit schedules among service providers	Develop regional guidelines and standards to provide transit signal priority interoperability between agencies			8	11	
Develop road capacity enhancement pilot projects	Develop a regional Complete Streets policy (or implement CS policies in every GTHA municipality)	Streamline Municipal Class Environmental Assessment Process for road diets that include active transportation infrastructure	Develop a coordinated regional approach to acquire and use crowdsourced traffic data			7	7	
Development of bus only lanes on 401	Road pricing in GTHA	Promote car-free zones in downtown centres and corridors	Establish bus bypass shoulders on highways	Optimize use of existing road infrastructure for road-based transit		8	10	

Table 8: List of Universal Actions

Accelerate Active Transportation Master Plan Implementation
Coordinate effort between Metrolinx and MSPs to better integrate local transit service to GO rail stations
Coordinate effort between Metrolinx, MSPs, and municipalities to deliver micro-transit service to GO rail stations
Coordinate transit schedules among service providers
Decrease parking minimum requirements
Design school catchment areas and campuses to maximize walking and cycling
Develop a coordinated regional Transportation Systems Management (TSM) program
Develop a regional Complete Streets policy (or implement CS policies in every GTHA municipality)
Develop a regional interconnected cycling network, with a consistent signage and wayfinding system
Develop a regional new mobility pilot strategy, identifying, prioritizing and distributing pilot projects to evaluate the impacts of new services and regulations
Develop and implement a regional goods movement network
Develop and incorporate project-specific TDM for all rapid transit expansion and major system improvements
Develop integrated regional paratransit booking and transfer tools
Develop provincial-level regulation and guidelines for shared mobility services
Encourage private sector employer TDM program implementation
Enhanced Support for Law Enforcement on Cycling Issues
Establish parking maximum requirements
Establish partnership opportunities (within the regulatory framework) to deliver ridesourcing solutions in support of GO station first mile/last mile needs
Expand bike-sharing programs
Expand PRESTO card functionality and partnerships
Expand the role of TDM in the land-use planning and development process, including the development of a regional model and guidelines
Explore and establish partnerships to further facilitate and promote dynamic and peer-to-peer ridesharing
Explore opportunities for government to use existing and new transportation data for planning and operations
"Futureproof" infrastructure investments to ensure long-term relevancy, including updating modelling to reflect new mobility, and flexible transit station and service design to accommodate technological advancements
Implement an Intelligent Transportation System strategy for the GTHA.
Implement targeted first-mile last-mile solutions to support the transit system
Implement an integrated regional transit wayfinding system
Implement a coordinated Regional Transit Signal Priority Program
Improve cyber-security, backup systems and contingency plans to mitigate impact of electricity blackouts, network outages and cyber- attacks
Improve cycling access to higher-order transit nodes, including routes from the public network and on-site parking
Improve integration of walking and cycling in road design
Improve the quality and connectivity of active transportation infrastructure and services to and at GO stations
Improve winter snow removal from active transportation infrastructure to support all-season cycling and transit access
Increase and coordinate promotional activities to support new cycling facilities and programs
Integrate the Passenger Transportation Hierarchy Policy into all phases of transit planning
Plan and implement complete, integrated walking and cycling networks
Plan for the expansion of road and highway overhead display boards
Prepare Mobility Hub Plans for all Mobility Hubs
Promote regional fare integration
Provide priority parking for carpool and carshare vehicles
Provide real-time information displays at all mobility hubs, and key transit stations and stops
Regional coordination of bike-share programs, including multi-program memberships and adjacent-system docking
Require TDM strategies as part of all major development applications
Research and develop more flexible and responsible (market-based) pricing practices for public infrastructure and services (e.g. roads, parking, transit)
Research and monitor the progress of Mobility as a Service (MaaS) policy models, and develop a regional strategy for coordinated, one- window mobility pricing and operation
Review of operations to improve streetcar reliability
Strengthen role of the Urban Freight Forum, and grow collaboration with multi-sectoral freight forums, and broaden
Support and promote ride-matching services(s)/tool(s)
Support the Accessibility Advisory Committee, identifying opportunities to advance universal access issues
Support transit agency agreements to accommodate cross-boundary services

Table 9: Outcomes of Transit Needs Assessment from the Transit Network Study

Project is currently In Development ●

		Corridor Needs			Area Needs					
Initiative Name:	**Service**	**High Demand**	**Reliability**	**Network**	**Major Centre**	**Density**	**Social Need**	**Transit-Auto Travel Time**	**Comments**	**Transit Network Study Recommendation**
Milton 15-min GO Service (Union Station – Milton GO)	Frequent Regional Rail (15 min)	✓	✓	✓	✓	✓	✓		Moderate-density corridor, connections to rapid transit, growing, two-way flows; contingent upon new freight corridor to allow electrification	Include
Bolton GO Rail Service (Union Station – Bolton)	Regional Rail (Peak)							✓	Low-demand corridor	Consider Beyond 2041
Crosstown GO Rail Service (Dundas St. – Summerhill)	Regional Rail (Peak)	✓	✓	✓		✓	✓		Union capacity relief, serves mid-town; competes with ECLRT; low ridership, feasibility uncertain	Consider Beyond 2041
Havelock GO Rail Service (Union Station/Summerhill – Locust Hill)	Regional Rail (Peak)							✓	Low-demand corridor through mostly low density areas	Consider Beyond 2041
Seaton GO Rail service (Union Station/Summerhill – Seaton)	Regional Rail (Peak)	✓	✓				✓	✓	Emerging neighbourhood that is underserved. Serves areas of Scarborough with social need.	Consider Beyond 2041
Yonge North Subway Extension (Finch Station – Highway 7)	Subway	✓	✓	✓	✓			✓	High-demand corridor with connections between rapid transit systems	●
Hamilton A-Line BRT (West Harbour GO – Rymal Rd.)	BRT	✓		✓	✓		✓	✓	Moderate-density corridor through high social need areas and connections to Regional Transit	Include
Hamilton A-Line South Priority Bus (Rymal Rd. – Hamilton Munro International Airport)	Priority Bus	✓						✓	Low demand corridor with insufficient congestion for priority transit treatments. Modified from BRT as initially proposed	Include
Brant Priority Bus (Lakeshore Rd. – Burlington GO)	Priority Bus				✓	✓		✓	Low demand corridor, with insufficient congestion to justify more than priority treatments	Include
Dundas BRT (Kipling Station – Trafalgar Rd.)	BRT	✓	✓	✓	✓	✓	✓	✓	Moderate demand, increasingly congested corridor connecting Hurontario LRT to Kipling Mobility Hub	●
Dundas West Priority Bus (Trafalgar Rd. – Brant St.)	Priority Bus	✓	✓					✓	Increasing travel demand and congestion will warrant priority transit treatment	●
Trafalgar South Priority Bus (Oakville GO – Highway 407)	Priority Bus	✓	✓	✓	✓			✓	Offers connections between Lakeshore GO and growth areas in Oakville. Worsening congestion	Include
Hurontario North/Mayfield Priority Bus (Brampton GO – Dixie Rd.)	Priority Bus	✓		✓	✓			✓	Connection north from Downtown Brampton to Mayfield West Community	Include
Brampton Main LRT (Steeles Ave. – Brampton GO)	LRT	✓	✓	✓	✓	✓	✓	✓	Congested, high-demand corridor warranting priority treatment and/or exclusive facility	Include
Waterfront West LRT (Union Station – Port Credit GO)	LRT	✓	✓	✓	✓	✓	✓		High-need corridor with high-density development along waterfront	Include
Brampton Queen St. BRT (Main St. – Highway 50)	BRT	✓	✓	✓	✓	✓	✓	✓	High demand, high need corridor with increasing congestion issues	●

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Eglinton West LRT (Weston Rd. – Toronto Pearson International Airport)	LRT	✓	✓	✓	✓	✓			Important connection to Airport Corporate Centre employment area and Pearson Airport	●
Highway 427 South Express Bus (Kipling Station – Pearson)	Priority Bus		✓	✓	✓				Contributes to improved reliability for regional transit service using managed lane network	Include
Jane South BRT/LRT (Bloor St. – Steeles Ave.)	BRT/LRT	✓	✓	✓	✓	✓	✓		Significantly improves transit service quality in high demand, high need corridor	Include
Don Mills/Leslie BRT/LRT (Danforth – Sheppard Ave.)	BRT/LRT	✓	✓	✓	✓	✓	✓		Replaced by Relief Line North south of Sheppard (#35) and Don Mills/Leslie Transit Priority north of Sheppard to Major Mackenzie (#323)	Consider Beyond 2041
Durham-Scarborough BRT (Scarborough Centre – Simcoe St.)	BRT	✓	✓	✓	✓	✓		✓	Improves service quality for medium-distance transit trips within Durham Region and to Scarborough	●
Brock Rd. Priority Bus (Bayly St.– Highway 7)	Priority Bus	✓	✓	✓	✓			✓	Provides important connection between emerging Seaton community and Pickering GO	Include
Relief Line Subway (Sheppard Ave. – Osgoode Station)	Subway	✓	✓	✓	✓	✓	✓		Provides important relief to Yonge Subway and provides important new connections	●
Hamilton Mohawk T-Line Priority Bus (Centre Mall – Meadowlands Terminal)	Priority Bus	✓		✓	✓		✓	✓	Connects A-line to need areas and provides additional access to Mohawk College; extension to Ancaster	Include
Brant Priority Bus (Burlington GO – Dundas St.)	Priority Bus	✓	✓	✓				✓	Promotes transit use along increasingly congested corridor. Connection to Dundas Street priority bus	Include
Trafalgar North Priority Bus (Highway 407 – Milton GO)	Priority Bus	✓			✓	✓		✓	Section from 407 to Derry provides north-south spine in Halton Region, connecting with Trafalgar South Priority Bus	Include
Steeles Priority Bus (Mississauga Rd. – Humber College)	Priority Bus	✓	✓	✓	✓		✓	✓	Provides improved reliability on increasingly congested corridor, with deviation to serve Humber College in Toronto	Include
Highway 427 North Express Bus (Pearson – Highway 7)	Priority Bus		✓	✓	✓				Provides reliable regional transit service to Pearson Airport employment area, operating on managed lanes	Include
Steeles BRT (Pioneer Village Station – Milliken GO)	BRT	✓	✓	✓	✓		✓		High demand, will play increasingly important role as municipal corridor. Justifies BRT treatment	Include
Green Lane Priority Bus (Davis Dr. – East Gwillimbury GO)	Priority Bus		✓	✓				✓	Increasing congestion in corridor will warrant priority treatment in the future; connects to GO hub	Include
McCowan South BRT/LRT (Ellesmere Rd. – Steeles Ave.)	BRT/LRT	✓	✓	✓	✓	✓	✓	✓	High demand, high need corridor with increasing congestion issues	Include
McCowan North Priority Bus (Steeles Ave. – Highway 7)	Priority Bus		✓	✓	✓	✓	✓	✓	Lower demand north of Steeles, removed in latest York TMP. Modified from BRT/LRT in *The Big Move*	Include
Eglinton East LRT (Kennedy Station – Sheppard Ave.)	LRT	✓	✓	✓	✓	✓	✓		High demand corridor, connecting mobility hub to major institution	●

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Steeles/Taunton Priority Bus (Milliken GO – Townline Rd.)	Priority Bus	✓	✓					✓	Increasing reliability issues, but isolated priority measures will be sufficient to meet needs	Include
Simcoe BRT (Downtown Oshawa GO – Highway 407)	BRT	✓		✓	✓	✓	✓	✓	Increasing demand, high need corridor	Include
Jane North BRT (Highway 7 – Major MacKenzie Dr.)	BRT	✓	✓	✓	✓	✓		✓	Moderate demand, increasingly congested corridor; extend to Steeles for network connectivity	Include
Leslie North BRT (Highway 7 – Major MacKenzie Dr.)	BRT	✓	✓	✓	✓	✓	✓	✓	Increasing demand, service to mobility hubs, and increasing congestion	Include
Major MacKenzie BRT (Jane St. – Leslie St.)	BRT	✓	✓	✓				✓	Increasing demand, increasing congestion	Include
Woodbine / Hwy 404 Priority Bus	Priority Bus	✓	✓			✓	✓	✓	Duplicates Leslie Street Corridor	Consider Beyond 2041
Cambridge GO Transit Extension (Milton – Cambridge)	Regional Rail (Peak)		✓		✓			✓	Increasing commuting flows Cambridge-Milton-Mississauga-Toronto; contingent upon available track	Consider Beyond 2041
Halton Steeles Transit Priority (Trafalgar Rd – Lisgar GO)	Priority Bus								Low-demand corridor travelling through largely low-density industrial land	Consider Beyond 2041
QEW BRT	BRT	✓	✓					✓	Duplicates Lakeshore West GO Rail	Consider Beyond 2041
Bronte/Regional Road #25 Priority Bus (Bronte GO – Steeles Ave.)	Priority Bus	✓	✓	✓	✓			✓	Rapidly growing travel market between Milton and Oakville will warrant improved transit service	Include
Britannia-Matheson Priority Bus (Highway 407 – Tremaine Rd.)	Priority Bus							✓	Increasing demand, but insufficient congestion to justify priority treatment through Halton Region; Derry provides E-W transit	Consider Beyond 2041
Uxbridge GO Extension	Regional Rail (Peak)		✓						Insufficient need to warrant extension	Consider Beyond 2041
Peterborough GO Extension	Regional Rail (Peak)		✓						Insufficient need to warrant extension	Consider Beyond 2041
Brock St./Baldwin Priority Bus (Whitby GO – Brawley Rd.)	Priority Bus	✓		✓		✓		✓	Important connection between Whitby GO and emerging Brooklin community	Include
Winchester Road Priority Bus	Priority Bus	✓						✓	Not regionally significant; largely in rural areas; 407 service more appropriate	Consider Beyond 2041
Waterfront East LRT (Union Station – Coxwell Ave.)	LRT	✓	✓	✓	✓	✓	✓		High density corridor to Downtown Toronto, serving new development along waterfront, including Port Lands	Include
Sheppard Subway West Extension (Sheppard Station – Sheppard West Station)	Subway	✓	✓	✓	✓		✓		Network integration connecting Yonge and University lines; minimal new riders	Include
Sheppard East LRT Extension (Morningside Ave. – Meadowvale Rd.)	LRT		✓	✓		✓	✓		High demand corridor connecting dense high-need areas to rapid transit	Include

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Finch West LRT West Extension (Humber College – Toronto Pearson International Airport)	LRT		✓	✓	✓		✓		Moderate demand, with important connection to Pearson Airport employment area and serving social need area	Include
Finch West LRT East Extension (Finch West Station – Finch Station)	LRT	✓	✓	✓	✓	✓	✓		Moderate demand, improves connections between North York, Etobicoke, York University, and Pearson Airport	Include
Bloor-Danforth Subway West Extension (Kipling – Sherway Gardens)	Subway		✓	✓	✓	✓	✓		Extends cross-border one stop to 427 to link to Dundas BRT and 427 Priority Bus	Further Study
Kingston Priority Bus (Victoria Park Station – Eglinton Ave.)	Priority Bus	✓	✓				✓		Not regionally significant; moderate demand, duplicates Lakeshore East GO/Eglinton East LRT service	Consider Beyond 2041
St. Clair Streetcar West Extension (Keele St. to Jane St.)	Priority Streetcar	✓	✓	✓		✓	✓		Not regionally significant; serves mid-town Toronto	Consider Beyond 2041
Hamilton L-Line Priority Bus (Downtown Hamilton – Waterdown)	Priority Bus		✓	✓	✓			✓	Provides priority in increasingly congested area. Low-to-moderate demand	Include
Hamilton S-Line Priority Bus (Ancaster Business Park – Confederation GO)	Priority Bus	✓		✓				✓	Minimal congestion, low demand	Consider Beyond 2041
Hamilton B-Line LRT Extension (Eastgate Mall – Fifty Rd.)	LRT	✓	✓					✓	Minimal congestion, moderate demand, low need	Consider Beyond 2041
Dundas Connector Priority Bus (McMaster University – Downtown Dundas)	Priority Bus	✓		✓	✓		✓	✓	Improves connections to McMaster University; lower density to Dundas. Modified from BRT/LRT as initially proposed	Include
Downtown Mississauga Transitway & Terminal (Mavis Rd. – Hurontario St.)	Transitway	✓	✓	✓	✓	✓			Operational improvement to Transitway operations	Include
Whites Priority Bus (Highway 407 – Pickering GO)	Priority Bus		✓					✓	Provides important connection between emerging Seaton community and Pickering GO	Include
Bayly Priority Bus (Pickering GO – Whitby GO)	Priority Bus	✓	✓	✓	✓		✓	✓	Provides service to South Durham employment areas	Include
Westney Priority Bus (Bayly St. – Highway 2)	Priority Bus		✓	✓				✓	Moderate congestion, low to moderate demand; isolated improvements may be warranted; connects to Downtown Ajax	Include
Highway 7 Markham BRT	BRT	✓						✓	Demand through largely rural areas not best served with BRT/LRT facility; better served by 407 service	Consider Beyond 2041
Rossland Road Priority Bus	Priority Bus		✓	✓				✓	Increasing congestion, connection opportunities; likely only isolated measures warranted	Consider Beyond 2041

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Highway 7 West BRT Extension (Highway 50 – Helen St.)	BRT	✓	✓	✓			✓		Increasingly congested corridor linking Peel and York; existing priority bus corridor in need of upgrade	Include
Highway 7 East BRT Extension (Unionville GO – Donald Cousens Pkwy.)	BRT	✓	✓	✓	✓	✓	✓	✓	Increasingly congested corridor, high demand corridor; existing priority bus in need of upgrade	Include
Yonge BRT (Richmond Hill, Aurora, Newmarket) (19th Ave. – Mulock Dr.)	BRT		✓	✓				✓	Isolated congestion will continue to warrant isolated priority measures, but not fully exclusive ROW	Include
Major MacKenzie East Priority Bus (Leslie St. – Donald Cousens Pkwy.)	Priority Bus	✓	✓	✓				✓	Moderate demand, increasing congestion	Include
Major MacKenzie West Priority Bus (Highway 427 – Jane St.)	Priority Bus	✓		✓				✓	Moderate demand, connection to growing north Vaughan population and employment	Include
Highway 427 Extension Express Bus (Highway 7 – Major Mackenzie)	Priority Bus		✓	✓					Effective priority for regional trips; operations in 427 managed lanes	Include
Malvern Connection (Sheppard Ave. & Morningside Ave. – Markham Rd. via McLevin Ave.)	Priority Bus		✓	✓	✓	✓	✓		Connection to Malvern Town Centre. Modified from LRT as initially proposed	Include
Broadview Streetcar Extension (Queen St. – Unwin Ave.)	Priority Streetcar	✓	✓	✓		✓	✓		Not regionally significant ; connection to emerging Unilever employment node	Consider Beyond 2041
Line 2 Subway and Bloor-Yonge Station Capacity Enhancements	Subway	✓	✓	✓	✓	✓	✓		Accommodation of growing east-west travel market	Include
Appleby Line Priority Bus	Priority Bus		✓					✓	Not regionally significant; increasing congestion, but low demand	Consider Beyond 2041
Derry Priority Bus (Winston Churchill Blvd. – Tremaine Rd.)	Priority Bus	✓	✓					✓	Improves connections between Milton and Peel	Include
Harvester/Speers/Cornwall Priority Bus (Waterdown Rd. – Port Credit GO)	Priority Bus	✓						✓	Provides access to local employment. Limited congestion, only isolated measures needed	Include
Milton Main Priority Bus (Ontario St. – Steeles Ave.)	Priority Bus	✓		✓	✓	✓	✓	✓	Provides improved service for trips within Milton and connections to Milton GO	Include
Plains / Fairview Priority Bus	Priority Bus	✓			✓	✓		✓	Minimal congestion, low demand	Consider Beyond 2041
Relocation of eastern terminus of Dundas streetcar	Priority Streetcar		✓	✓		✓	✓		Not regionally significant	Consider Beyond 2041

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Milton Steeles Priority Bus (Trafalgar Rd. – Regional Road #25)	Priority Bus	✓						✓	Service through largely rural, industrial areas	Consider Beyond 2041
Trafalgar North Priority Bus (Derry Rd. – Georgetown GO)	Priority Bus			✓				✓	Service through largely rural, industrial areas	Consider Beyond 2041
Don Mills/Leslie BRT/LRT (Sheppard Ave. – Highway 7)	BRT/LRT	✓	✓	✓	✓	✓	✓	✓	Provides direct connection to Relief Line North and connects with proposed York Region Leslie BRT	Include
Highway 407 Express Bus	Priority Bus	✓	✓	✓	✓			✓	Provides orbital connections throughout the GTHA on managed lanes and serving several UGCs in high demand corridor	Include
Relief Line Subway West Extension (Osgoode Station – Bloor West)	Subway	✓	✓	✓	✓	✓	✓		Very high demand corridor to Downtown Toronto; 15-minute GO serves some of intra-Toronto demand to Downtown	Further Study
Midtown GO Rail (Seaton-Summerhill-Cooksville)	Frequent Regional Rail (15 min)		✓				✓	✓	High demand corridor from west, access to uptown employment	Consider Beyond 2041
Lakeshore West 15-min GO Service Extension (Aldershot GO – Hamilton GO)	Frequent Regional Rail (15 min)	✓	✓	✓	✓	✓	✓	✓	High demand corridor providing direct access into Downtown Hamilton; contingent on resolving track operational issues	Include
Bovaird/Castlemore Priority Bus (Mount Pleasant GO – Highway 427)	Priority Bus	✓	✓	✓			✓	✓	Emerging population and employment area; extended to Mt Pleasant GO	Include
Erin Mills Priority Bus (Clarkson GO – Steeles Ave.)	Priority Bus	✓	✓	✓	✓		✓	✓	Corridor connects Lake Shore and Milton GO stations and serves post-secondary education institutions and retail	Include
Britannia-Matheson Priority Bus (Highway 407 – Renforth Dr.)	Priority Bus	✓	✓	✓		✓			High-demand corridor, direct service through Airport Corporate Centre to Highway 407	Include
Highway 401 Express Bus (Oshawa – Milton)	Priority Bus	✓	✓	✓		✓	✓		High demand corridor; contingent upon managed lanes on Highway 401 and convenient access to stations	Include / Further Study
Dixie Priority Bus (Lakeshore Rd. – Mayfield Rd.)	Priority Bus		✓	✓		✓	✓		Dixie Rd/Bramalea Rd from Lake Shore to Mayfield with connections to Bramalea GO and Airport area	Include
Steeles Priority Bus (Humber College – Pioneer Village Station.)	Priority Bus	✓	✓	✓	✓		✓	✓	High demand, will play increasingly important role as municipal corridor; deviation to serve Humber College	Include
TTC Airport Rocket	Priority Bus	✓	✓	✓	✓	✓			Regionally significant airport connection with high demand, serves a key transportation hub and provides connectivity to the FTN from Pearson	Include
Richmond Hill 15-minute GO Service (Union Station – Richmond Hill GO)	Frequent Regional Rail (15 min)		✓	✓	✓				Poor connections within Toronto due to valley alignment; contingent upon resolving track issues in south; other north-south rapid transit planned	Consider Beyond 2041

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Eglinton Priority Bus (Hwy 427 – Erin Mills Town Centre)	Priority Bus		✓		✓		✓	✓	Duplicates Mississauga Transitway	Consider Beyond 2041
Derry Priority Bus	Priority Bus	✓	✓						High traffic corridor serving Airport area and residential/employment areas	Include
Waterfront West Transit Priority (Port Credit – Oakville)	Priority Bus		✓						Low density land use; served by GO; more suited to a local service	Consider Beyond 2041
Highway 407 Transitway – Hwy 418 (407 – 401)	Priority Bus		✓						Primarily a highway corridor; have other links from 407 to Oshawa	Consider Beyond 2041
Scarborough Subway Extension (Scarborough Centre – Sheppard Ave.)	Subway		✓		✓		✓		Low demand for a subway; LRT option more appropriate	Consider Beyond 2041
Airport Road Priority Bus (Castlemore Ave. – Toronto Pearson International Airport)	Priority Bus		✓	✓	✓		✓	✓	Bovaird Priority Bus branch south on Airport Road to Pearson Airport and mobility hub.	Include
Highway 2 Priority Bus (Simcoe St. – Martin Rd.)	Priority Bus		✓	✓	✓		✓	✓	Serves east Oshawa and Downtown Oshawa with connections to Durham Scarborough BRT Lakeshore East GO	Include
QEW/Gardiner Express Bus	Priority Bus		✓	✓	✓			✓	Service in managed lanes from Downtown Hamilton to Downtown Toronto	Include / Further Study
Highway 404/DVP Express Bus	Priority Bus		✓	✓	✓			✓	Service in managed lanes from Downtown Toronto to Major Mackenzie Drive	Include / Further Study
Highway 400 Express Bus	Priority Bus		✓	✓	✓			✓	Service in managed lanes from Highway 401 to Major Mackenzie Drive	Include
Barrie 15-Minute GO Service Extension	Frequent Regional Rail (15 min)		✓			✓		✓	Provides improved 15-minute service from Aurora GO to East Gwillimbury GO on the Barrie line	Include
Stouffville 15-Minute GO Service Extension	Frequent Regional Rail (15 min)		✓			✓		✓	Extends 15-minute service from Unionville to Mount Joy on the Stouffville line	Include
Richmond Hill All-Day GO Service	Regional Rail (All-Day)		✓	✓		✓		✓	Connects Richmond Hill to Toronto Union station with all-day service	Include
Lakeshore East Extension All-Day GO Service	Regional Rail (All-Day)		✓	✓	✓			✓	Connects Oshawa to Bowmanville with all-day service	Include
Highway 35 Express Bus (Oshawa – Peterborough)	Regional Express Bus			✓	✓		✓		Services Oshawa UGC and Peterborough	Include
Highway 400 Express Bus (Barrie – Yorkdale)	Regional Express Bus			✓	✓		✓		Connects Downtown Barrie with Toronto/Yorkdale mobility hub	Include
Highway 400 Express Bus (Barrie – Pearson Airport)	Regional Express Bus			✓	✓		✓		Connects Downtown Pearson with Toronto/Pearson Airport mobility hub	Include
Highway 8 Express Bus (Kitchener – Hamilton)	Regional Express Bus			✓	✓		✓		Connects Downtown Kitchener with Toronto/Hamilton mobility hub	Include
Highway 6 Express Bus (Guelph – Hamilton)	Regional Express Bus			✓	✓		✓		Connects Downtown Guelph with Toronto/Hamilton mobility hub	Include

Table 9: Outcomes of Transit Needs Assessment from the Transit

		Corridor Needs			Area Needs					
Initiative Name:	Service	High Demand	Reliability	Network	Major Centre	Density	Social Need	Transit-Auto Travel Time	Comments	Transit Network Study Recommendation
Highway 7 Express Bus (Kitchener – Brampton)	Regional Express Bus			✓	✓		✓		Connects Downtown Kitchener with Toronto/Brampton mobility hub	Include
Queen Elizabeth Way Express Bus (Hamilton – Niagara Falls)	Regional Express Bus			✓	✓		✓		Connects Downtown Niagara with Toronto/Niagara Falls mobility hub	Include
Highway 48 Express Bus (Uxbridge – Markham)	Regional Express Bus			✓	✓		✓		Connects Downtown Uxbridge with Toronto/Markham mobility hub	Include
Highway 10 Express Bus (Orangeville – Brampton)	Regional Express Bus			✓	✓		✓		Connects Downtown Orangeville with Toronto/Brampton mobility hub	Include
Highway 27 Express Bus (Bolton – Vaughan)	Regional Express Bus			✓	✓		✓		Connects Downtown Bolton with Toronto/Vaughan mobility hub	Include
Highway 403 Express Bus (Brantford – Hamilton)	Regional Express Bus			✓	✓		✓		Connects Downtown Brantford with Toronto/Hamilton mobility hub	Include

Note: For Regional Express Bus services that do not provide frequent services, serving a secondary centre that is otherwise not serviced is assumed to meet the regional significance and major centre criteria

Table 10: Forecasted Ridership for Transit Projects

Map #/Related Priority Action in Draft RTP	Initiative Name:	Transit Boardings/ Alightings AM Peak (2041)
INFRASTRUCTURE		
In the RTP		
33	Dundas Street BRT	5,900
34	Brampton Queen St. BRT	4,100
35	Eglinton West LRT	7,400
36	Highway 7 West BRT Extension	1,500
37	Waterfront West LRT	7,700
38	Waterfront East LRT	16,300
39	Relief Line Subway	62,300
40	Yonge North Subway Extension	11,700
41	Yonge BRT (Richmond Hill, Aurora, Newmarket)	4,900
42	Eglinton East LRT	10,600
43	Highway 7 East BRT Extension	700
44	Durham-Scarborough BRT	7,100
46	Lakeshore West 15-min GO Service Extension	See Corridor Ridership
47	Hamilton A-Line BRT	3,800
53	Milton 15-min GO Service	See Corridor Ridership
54	Trafalgar BRT/LRT	1,900
61	Downtown Mississauga Transitway & Terminal	1,200
62	Brampton Main LRT	1,200
70	Finch West LRT West Extension	1,300
71	Jane North BRT/LRT	2,000
72	Jane South Rapid Transit	18,500
74	Sheppard West Subway Extension	5,000
75	Steeles BRT/LRT	6,800
76	Finch West LRT East Extension	6,200
77	Leslie North BRT/LRT	3,600
78	Don Mills/Leslie BRT/LRT	8,000
79	McCowan BRT/LRT	3,000
81	Sheppard East LRT Extension	1,400
83	Malvern Connection LRT	2,600

Table 10: Forecasted Ridership for Transit

Map #/Related Priority Action in Draft RTP	Initiative Name:	Transit Boardings/ Alightings AM Peak (2041)
85	**Major MacKenzie Rapid Transit**	1,700
88	**Barrie 15-min GO Service Extension**	See Corridor Ridership
89	**Stouffville 15-min GO Service Extension**	See Corridor Ridership
90	**Richmond Hill All-Day GO Service**	See Corridor Ridership
97	**Lakeshore East 15-min GO Service Extension**	See Corridor Ridership
98	**Simcoe BRT/LRT**	3,900
100	**Lakeshore East All-Day GO Service**	See Corridor Ridership

Initiative Name:	2041 Ridership	Increase attributed to RTP
GO CORRIDOR RIDERSHIP (Entire Corridor)		
Lakeshore West	22,000	1,400
Lakeshore East	23,600	11,700
Milton	20,200	8,100
Kitchener	19,800	15,700
Barrie	18,400	13,400
Richmond Hill	6,300	1,700
Stouffville	16,000	9,800

Map #/Related Priority Action in Draft RTP	Initiative Name:	Transit Boardings/ Alightings AM Peak (2041)
PRIORITY BUS		
In the RTP		
32	**Dundas West Priority Bus**	950
48	**Hamilton A-Line South Priority Bus**	600
49	**Dundas Connector Priority Bus**	700
50	**Hamilton L-Line Priority Bus**	2,300
51	**Hamilton S-Line Priority Bus**	3,000
52	**Hamilton Mohawk (T-Line) Priority Bus**	2,400
55	**Brant Priority Bus**	800
56	**Bronte/Regional Road #25 Priority Bus**	2,800
57	**Derry Priority Bus**	2,500
58	**Harvester/Speers/Cornwall Priority Bus**	2,200

Table 10: Forecasted Ridership for Transit

Map #/Related Priority Action in Draft RTP	Initiative Name:	Transit Boardings/ Alightings AM Peak (2041)
59	Eglinton Mississauga Street Priority Bus	3,500
60	Trafalgar North Priority Bus	2,200
63	Britannia/Matheson Priority Bus	3,400
64	Hurontario North Priority Bus	900
65	Dixie/Bramlea Priority Bus	2,100
66	Airport Rd. Priority Bus	1,100
67	Erin Mills/Mississauga Priority Bus	1,600
68	Bovaird/Castlemore Priority Bus	1,900
69	Steeles West Priority Bus	5,300
80	McCowan North Priority Bus	1,300
82	Kingston Priority Bus	2,500
84	Major Mackenzie West Priority Bus	1,200
86	Major Mackenzie East Priority Bus	1,200
87	Green Lane Priority Bus	1,300
91	Steeles/Taunton Priority Bus	6,100
92	Whites Rd. Priority Bus	2,300
93	Brock Rd. Priority Bus	1,800
94	Westney Priority Bus	300
95	Bayly Priority Bus	1,800
96	Brock St./Baldwin Priority Bus	1,800
99	Highway 2 Priority Bus	1,700
101	Highway 7 Pickering Priority Bus	800
102	Brampton Queen West Priority Bus	650
103	Highway 27 Priority Bus	3,400
104	Dufferin Priority Bus	11,700
	Highway 407 Transitway - West section (Burlington to Peel)	3,000
	Highway 407 Transitway - Central section (Peel to Kennedy Rd)	2,750
	Highway 407 Transitway - East section (Kennedy Rd to Durham)	700

Table 10: Forecasted Ridership for Transit

Initiative Name:	Transit Boardings/ Alightings AM Peak (2041)
TTC STREETCAR RIDERSHIP (Entire Routes)	
King	29,900
Queen	11,900
Spadina	7,400
Bathurst	4,300
Dundas	6,600
Gerrard/Carlton/College	17,300
Harbourfront	1,700
Lakeshore	600
St. Clair	7,500
Cherry	5,900
Downtowner	3,600
Kingston	1,900

[2] Please note that on February 9, 2018 the Ministry of Transportation announced that it would no longer be proceeding with the environmental assessment for the GTA West Highway Corridor.

Appendix A:

Scenario Development

While the Draft 2041 Plan has been developed in alignment with the Growth Plan for the Greater Golden Horseshoe, 2017 (Growth Plan) population and employment forecasts and policy directions for where and how the region will grow, the Strategies and Priority Actions were also tested against a number of alternative potential future scenarios. Each scenario is based on a core broad conceptual idea of a possible alternate future, which shape and influence key demographic, economic, technology and environmental indicators that are used to measure the impacts of each scenario on travel in the region. The alternative future scenarios used in developing the Draft 2041 Plan are as follows:

Rapid Adoption of Emerging Technologies: A future driven by the rapid adoption of new technologies such as virtual reality used for telecommuting, automation of employment (both service and office employment) and autonomous and connected vehicles.

Rapid Growth of Core Areas: A future where the importance of diversity and creative culture fuel heavy growth focused in urban centres.

Extreme Climate Change: A future where the impacts of climate change are experienced earlier than anticipated, such as increasingly frequent and extreme weather events.

On-Demand Economy: A future where on-demand culture permeates the job market to the point where few individuals hold a single full-time job and most piece together casual work and a variety of "gigs."

User-Pay Economy: A future where consumers pay the full cost of their travel and other living expenses (e.g. parking, road maintenance and construction, utilities).

Economic Decline: A future where the region is no longer a prime location for immigration.

The scenario process provided insight into the types of strategies that would be most resilient in the face of uncertainty.

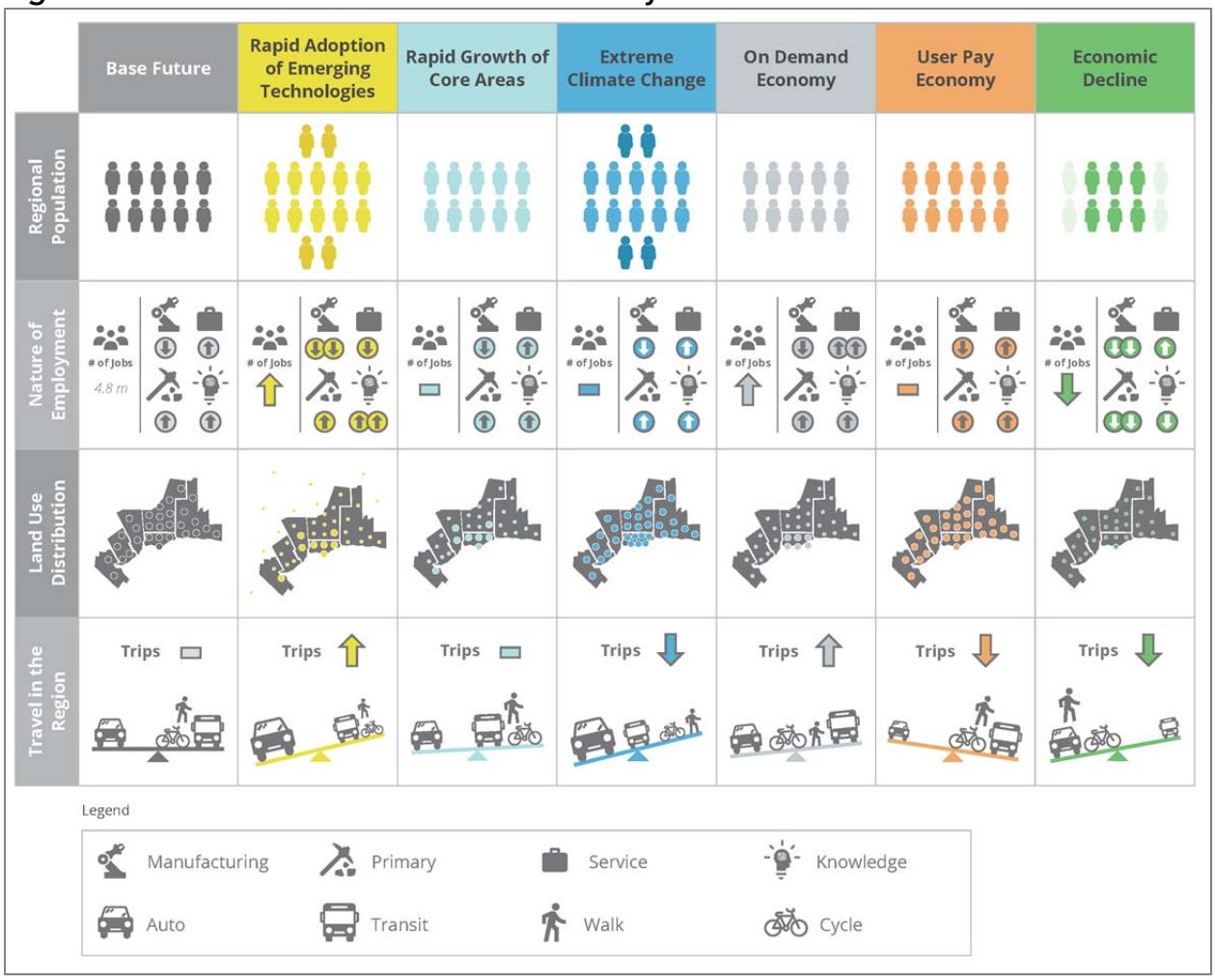
Resiliency Assessment

The six scenarios were considered as part of a resiliency assessment of the potential strategies for the Draft 2041Plan. Each scenario changed the assumptions compared to a baseline future case in which the distribution and growth of population and employment across the region in 2041 was consistent with the Growth Plan. Other

trends, such as the nature of employment (i.e. job types) and the amount and costs of travel in the region by mode, were treated as a continuation of existing trends, i.e. "business as usual" (see **Figure A-1**).[1]
In the base case, travel costs are assumed to be stable in real terms (i.e. any increase is at the annual rate of inflation).

These changes led to different predicted travel demand. The scenarios were not intended to be mutually exclusive; they recognize that advances in technology could happen concurrently with an expansion of the on-demand economy, or economic decline could (and would likely) occur in an extreme climate change scenario. Each was selected to showcase what might happen if an existing trend was amplified.

Figure A-1: Variables Considered in Resiliency Assessment



[1] *Navigating Uncertainty: Exploration of Alternative Futures for the Greater Toronto and Hamilton Area*. Prepared for Metrolinx by WSP. 2017.

Six different combinations of alternative transportation, land-use and pricing strategies for the future transportation system were created and tested under the six alternative future scenarios to determine which would be the most resilient to all possible futures. The six potential strategies that were tested each focused on investing resources into distinct areas of emphasis:

- Infrastructure
- Operations/optimization
- Active transportation
- Pricing and transportation demand management
- Targeted pricing with equity considerations
- Transit-oriented land use

The strategies were evaluated under different future scenarios and given a composite score based on how well they performed against seven criteria:

- Increase in non-auto mode share
- Decrease in congested vehicle kilometres travelled
- Emissions reductions
- Improvement to transport equity and access
- Reduction in transit travel time
- Efficient movement of goods
- Improvement to quality of life and health

The resulting composite score for each strategy under all alternative future scenarios is shown in **Figure A-2**, compared to the score each strategy received under the base future scenario. **Figure A-3** details the portfolio performance under all alternative future scenarios.

The better performing strategies are those with high scores under both the base future and alternative futures. In the face of such high levels of uncertainty, the resiliency assessment showed that emphasizing transit operations rather than fixed infrastructure, planning for transit-supportive land-use, and introducing pricing led to the best overall outcomes across the six scenarios.[2] As the analysis was high-level, the results would vary with more specific information about the strategies. For instance, targeted pricing as a generic strategy under-performed on the transport equity and access measure, but a specific pricing program (e.g. weekly or monthly caps for residents or a rebate for low-income families) would garner a higher overall score.

[2] While an economic evaluation of each strategy was not undertaken, many other regions have found operational improvements are more cost-effective than infrastructure expansion (and BRT is more cost effective than LRT), although corridors with particularly high demand do merit rail investment. Litman, T. *Evaluating Public Transit Benefits and Costs: Best Practice Guidebook* 2017.

Figure A-2: Resiliency Analysis of Strategic Directions for the Plan against Future Scenarios

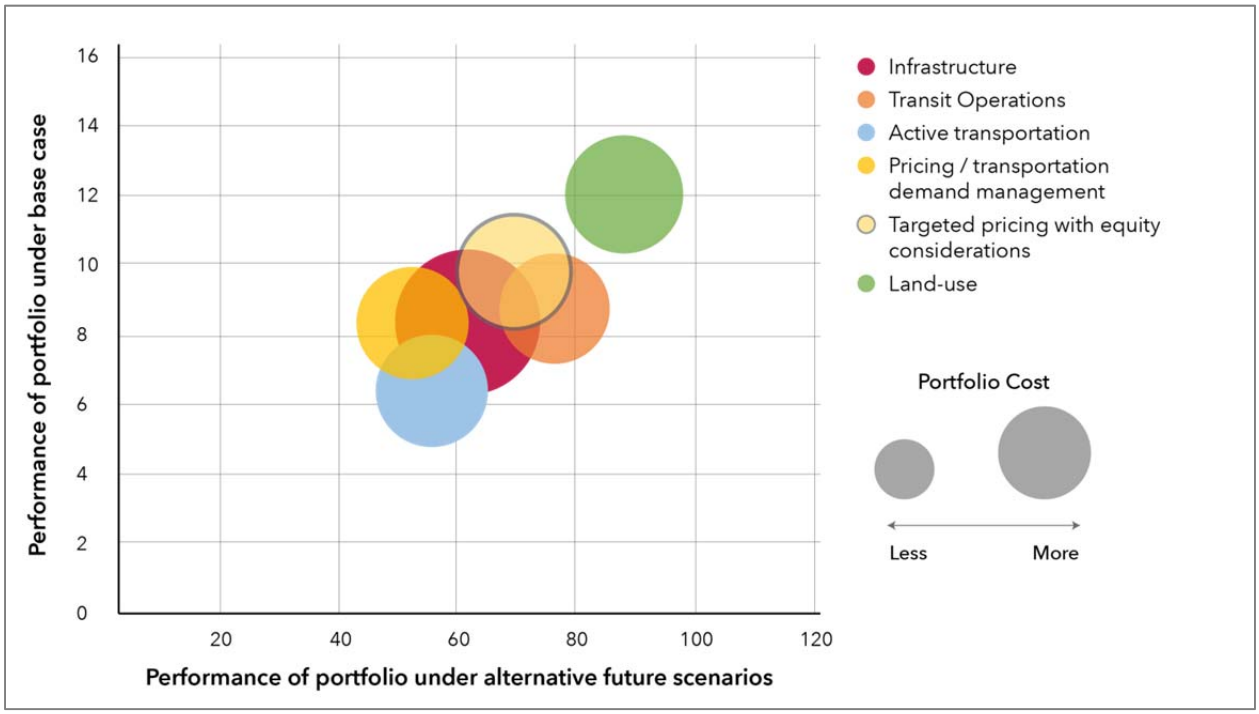


Figure A-3: Portfolio Performance against Future Scenarios (Detailed)

Modelling the Scenarios

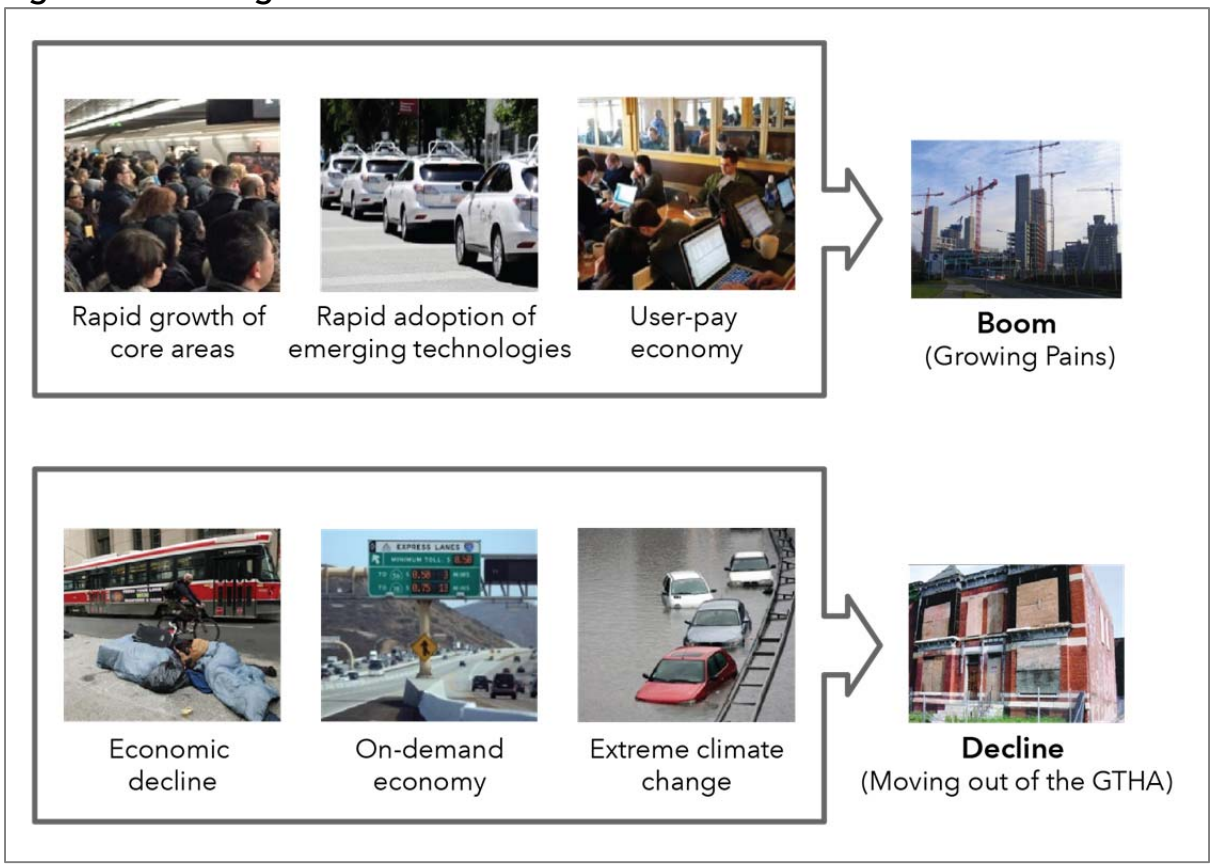
In addition to the more qualitative resiliency assessment shown in **Figure A-2**, the six scenarios were combined to create two contrasting scenarios for modelling purposes in order to quantitatively assess the resiliency of the future base Draft 2041 Plan.

These two contrasting scenarios effectively represent a high- and low-demand scenario that bracket the baseline future case, in which the distribution and growth of population and employment across the region in 2041 was consistent with the Growth Plan. The costs of travel in the region by mode were treated as a continuation of existing trends, i.e. “business as usual."

Feedback received from key stakeholders on the six initial scenarios highlighted the need to recognize that the scenarios are not mutually exclusive.

In order to generate the high- and low-demand scenarios, different aspects of the six scenarios were combined. The high growth “Boom” scenario incorporates aspects of Rapid Growth of Core Areas, the Rapid Adoption of Emerging Technologies and the User-Pay Economy. The low demand “Decline” scenario incorporates aspects of Economic Decline, Extreme Climate Change and the On-Demand Economy (see **Figure A-4**).

Figure A-4: Linkages between Scenarios



The Growth Plan forecasts were modified in these scenarios as follows:

In the Boom scenario:

- Regional population was 14% higher than the official Growth Plan forecasts.
- Regional employment was 9.6% higher.
- Toronto's growth was more extreme with employment 25% higher than the official Growth Plan figures.
- In addition, the Boom scenario assumed considerable growth in the outer ring beyond the Greenbelt.
    - It also assumed a 5% reduction in auto operating costs to reflect the impact of a high penetration of automated vehicles.

In the Decline scenario:

- Employment dropped substantially, 13% lower than 2011 levels and 47%below the expected 2041 level.
- The Decline scenario assumed a 5% increase in auto operating costs, reflecting the worsened condition of the road network, as well as a 5% increase in toll rates[3] and a 5% increase in transit fares above inflation, as the higher maintenance costs (e.g. due to climate change impacts) would be covered by fewer travellers throughout the region.

This scenario was extreme in the sense that the population was fixed at 2011 levels but aged to reflect the increase in the senior population expected by 2041.

Parking costs and parking supply did not vary between the base future forecast and the Boom and Decline scenarios.

In addition to the Boom and Decline scenarios, a third scenario was modelled that reflects how housing and employment market forces would distribute population and employment across the GTHA in the absence of the Growth Plan controls and allowing development to occur in new greenfield areas (the "Market" scenario).

The model outcomes for the Boom, Decline, and Market scenarios are shown compared to the Draft 2041 Plan under baseline future conditions in **Table A-1**.

[3] In addition to road tolls on the 407 ETR, all future networks included High Occupancy Toll (HOT) lanes combined with HOV lanes in selected corridors. The network that represents the Draft 2041 Plan included over 1100 lane-km of HOV/HOT lanes.

Table A-1: Model Outcomes of Various Land Use Scenarios on the Draft 2041 Plan

THEME	INDICATOR	DESCRIPTION	2041 PLAN (BASELINE FUTURE)	SCENARIO RESULTS		
				2041 MARKET	2041 DECLINE	2041 BOOM
PLAN DELIVERABLES						
	GTHA Population (Millions)	In the decline scenario, the population of the GTHA is similar to what it was in 2011, but percentage of seniors increases	10.1	10.1	6.5	11.5
	GTHA Employment (Millions)	In the decline scenario, employment in the GTHA is similar to what it was in 2011	4.8	4.8	2.6	5.3
	Concentration of population in Toronto	In the decline scenario, a significantly higher propertion of the population lives in Toronto	34%	34%	40%	36%
	Concentration of employment in downtown Toronto	In the boom and decline scenarios, jobs are more concentrated in downtown Toronto, comparable to the market trend scenario	12%	14%	15%	14%
PLAN OUTCOMES						
TRANSIT ACCESS	People near transit[I]	The fraction of people that live within walking distance of frequent rapid transit is comparable across all three scenarios	38%	39%	39%	39%
	Jobs near transit[I]	The fraction of all jobs that are within walking distance of frequent rapid transit follows the concentration of employment in downtown Toronto	49%	51%	53%	50%
	Jobs accessible within 60 minutes by transit[II]	The average GTHA resident will have access to fewer jobs within 1 hour by transit in the decline scenario, and more in the boom scenario	1,060,000	1,070,000	910,000	1,160,000
	% of GTHA jobs accessible within 60 minutes by transit[II]	The average GTHA resident will have access to a greater proportion of all jobs in the GTHA in the decline scenario	22%	22%	35%	22%
MODE OF TRANSPORTATION	Transit trips[III]	The number of transit trips in the region generally follows regional population and employment	1.9 million	2.0 million	1.4 million	2.1 million
	Transit mode share[III]	Transit mode share improves the most in the decline scenario, largely because driving costs are higher	14.7%	15.5%	16.4%	14.9%
	Active trips[II]	The number of active trips in the region generally follows regional population and employment	1,390,000	1,380,000	980,000	1,550,000
	Active mode share[III]	The decline scenario has the higher proportion of walking and cycling trips	10.7%	10.7%	11.8%	10.5%
QUALITY OF LIFE	Transit travel time[II]	Rail travel times are comparable in all scenarios, but bus travel is faster in the decline scenario due to less highway congestion	39 minutes	40 minutes	36 minutes	40 minutes
	Congested driving[IV]	Congested vehicle kilometres travelled are far lower in the decline scenario, since all travel, including driving, is reduced	8.1 million	8.4 million	1.9 million	9.9 million
	Environmental impact	Greenhouse gas emissions per capita from auto driver trips are lowest in the boom scenario	1.5 tonnes	1.5 tonnes	0.9 tonnes	1.6 tonnes

[I] Walking distance is 400 m from Priority Bus/Streetcar, BRT and LRT, and 800 m from Subway and Frequent Regional Rail.
[II] Represents trips made between 6:45 a.m. - 8:45 a.m.
[III] Represents trips in the morning and afternoon peak periods (6:00 - 9:00 a.m. and 3:00 - 7:00 p.m.).
[IV] Represents trips made in the morning peak hour.

Appendix B:

Memo on Project Scoring (RTP Long List Evaluation: Approach and Criteria Assumptions)

WSP | PARSONS BRINCKERHOFF

Memorandum

To:	Eric Petersen, Metrolinx
From:	Sonya Terek, WSP Cian O'Neill, WSP
Copies:	Kyle Kellam, Metrolinx Tamsin Silvester, WSP Daniel Haufschild, WSP
Date:	March 15, 2017
File:	161-54669-08 / 5.5
Subject:	RTP Long List Evaluation: Approach and Criteria Assumptions

This memo describes the methodology used in evaluating the "Long List" of projects considered for incorporation into Metrolinx updated Regional Transportation Plan (RTP). Approximately 280 projects were provided by Metrolinx for inclusion in the evaluation, following a preliminary screening. The evaluation was designed using Metrolinx evaluation criteria and scoring guidance in order to assess the degree to which each of the projects supports the draft goals of the RTP. Projects that demonstrated substantial support for the goals will be considered in subsequent work to incorporate and prioritize projects in the RTP.

1 APPROACH

1.1 Individual Project Scoring

Each project was scored utilizing the scoring guidance developed by Metrolinx (see Table 1, below, and Appendix A), supplemented by the methodology assumptions outlined in sections 2 and 3 of this memo. Evaluation assumptions are described both generally and specific to each criterion.

For each of the 20 criteria considered in the evaluation, the scoring assigned a numerical value between -3 and +3 to reflect the degree to which the project meets the criterion requirements. The most commonly awarded scores were between 0 and +2, representing no impact, a positive impact with some uncertainty, or a positive impact limited to a specific corridor, area, or user group. Scores of +3 (representing certain and large-scale positive impacts) or negative scores (representing negative impacts of varying degrees) were used infrequently.

The scoring criteria were developed based on the six draft RTP goals and a secondary evaluation was used, based on a given project's criteria scores, to determine how many of the goals were supported by the project (see Appendix B for criterion-goal association). Projects that demonstrate support for two or more of the goals were carried forward for further consideration for inclusion in the RTP by Metrolinx. Projects that did not meet two or more of the draft RTP goals, were re-evaluated as bundled projects (see section 1.2 for further detail). Policy projects were excluded from the bundle re-evaluation.

	Scoring Guidance						
	Score the proposed project, policy or program in terms of its impact/benefit/contribution to each of the 18 the outcomes listed below, relative to others at a similar geographic scale.						
	(+3)	(+2)	(+1)	0	(-1)	(-2)	(-3)
For each outcome, assign a score of +3 to -3 according to the following guidelines as appropriate:	Transformative impact	Moderate impact	Incremental impact	No impact	May have a limited, indirect negative impact on the outcome for some users	Likely to have a moderately negative direct or indirect impact	High likelihood of having a significantly negative direct impact on most users
	Specifically targets outcome, making a direct contribution	Direct (but potentially limited) contribution through action not specifically targeted at outcome	Supporting or indirect contribution	No contribution			
	Universal benefit	Benefits primarily target user	Benefits only target users with possible disbenefits to others	No benefit			
	Very high likelihood of sucessfully impacting outcome	Reasonable degree of confidence that outcome	Likelihood of sucessfully impacting outcome is	N/A			

Table 1: Metrolinx Scoring Guidance - examples for scoring specific criterion are provided in the expanded Metrolinx Scoring Guidance in Appendix A

		will be sucessfully impacted	**uncertain**				
	Scope is comprehensive and considers multiple factors necessary for a successful outome overall	**Scope ignores some factors that would contribute to a successful outcome**	**Scope is focussed on one or two aspects of a broader suite of potential factors that would contribute to overall success**	**N/A**			

1.2 Bundled Project Scoring

Many inter-dependencies exist between projects in this evaluation, such as one policy that enables an initiative and another that provides funding for it, or two proposed rapid transit corridors that would connect with each other. In recognition that the benefits of a project may be considerably increased if other proposed projects were also implemented, low-scoring projects were re-evaluated in a bundle of projects. If the scores for a project changed sufficiently when bundled, such that it then met the threshold of two or more RTP goals, the project was carried forward with other high-scoring projects to be considered for inclusion in the RTP.

When a bundled project was scored, the benefits of projects within a bundle were not added together, but rather were evaluated to identify potential synergies. That is, if Project A (the project that initially scored poorly) had an incremental increase in transit mode share and Project B (a project included in the bundle) had a moderate increase in transit mode share, this would not necessarily mean that the Bundled Project A would receive an increased score to transit mode share. Project A would only receive an increase in the score for transit mode share if the implementation of Project B created synergies that improved the performance of Project A. As such, the bundled project score represents the benefits of the initial project in a scenario where the other projects are (or have been) also implemented.

1.3 Removing Projects

There were several instances in which projects were recommended to be removed from this evaluation. The following are the various reasons which warranted a recommendation for removal:

- The project is now in service
- The project is better suited for evaluation based local transit operational needs, service planning, and/or ridership data
- The project is better suited for focused transportation planning studies
- It is recommended to delay the evaluation of the project as the performance is highly dependent on preceding development
- The area of impact or scope is unclear
- There is significant scope overlap with one or more other projects

2 GENERAL ASSUMPTIONS

Building on the scoring guidance (shown in Table 1, above), this section describes general assumptions made in the project scoring.

2.1 All Projects

Although all projects were evaluated at a high level, the scope and impacts of some projects involved considerably more uncertainty than others. This uncertainty reduced the magnitude of scores – e.g. a significant but uncertain benefit would be scored 2 rather than 3, and a moderate but uncertain negative impact would be scored 0 rather than -1.

Scores of 3 were generally not applied to projects, except in cases of direct or highly likely impact on a large scale. However, project impacts (and therefore, scores) are anticipated to increase when bundled with other projects.

2.2 Policy & Guideline Projects

Projects that involved the implementation of policies and guidelines were scored based on the perceived and probable outcomes of implementation. In many cases, policies were anticipated to have potential, indirect benefits to some criteria. These criteria were scored “0”, due to the uncertainty, but the potential benefits were noted with comments. In a few cases, policy projects were not sufficiently defined to have likely impacts against many (or any) criteria and, as a result, scored very low overall. In these cases as well, areas of potential impact were noted with comments.

2.3 Data Collection Projects

Projects that were focused on data collection were evaluated based on the probable application of the data collected and its outcome. If it was uncertain how the data would be utilized, due to limited definition of the project scope, a low score was awarded.

3 CRITERION-SPECIFIC ASSUMPTIONS

Further to the scoring guidance and general assumptions (see sections 1 and 2), this section describes assumptions made in the project scoring for specific criterion.

3.1 Increasing Transit Mode Share

It was considered whether to score potential, indirect impacts to transit mode share for active transportation (AT) projects. A significant increase in AT may result in some users choosing not to own a vehicle and also use transit for some trips. On the other hand, AT also has the potential to replace local transit trips for first- and last-mile connections to rapid transit. It was decided that these correlations were too indirect to be considered, and AT projects received scores of 0 for transit mode share unless there was a clear impact based on the project scope.

3.2 Reducing Travel Time

Impacts on all modes of transportation were considered at a conceptual level, however, the level of impact for modes that were not the focus of the project were often difficult to predict. For example in projects with reductions in the number of general purpose lanes, it is possible that a significant increase in transit or AT mode share in the corridor will help relieve automobile congestion and decrease travel times. It is also possible for the opposite to occur - congestion and travel time for auto users may increase. As a result of the uncertainty, the score for this criterion was typically limited to the target user group and the impacts to other modes was often negated.

3.3 Improving Reliability of Travel

Evaluation of this criterion did not include improving redundancy in the network, this was incorporated in the resiliency criterion. Projects that coordinated schedules between transit agencies received scores for reliability, as users could rely on service being available for their required transfers.

3.4 Servicing New Destinations

It was attempted to limit this criterion to focus on new locations or markets in the spatial sense. However, we discovered that this highly limits the criterion as a majority of the projects are already served by some level of transit service (i.e. it is unlikely that any proposed transit project in the RTP would bring a new service to an area that is completely un-serviced). As a result, the evaluation of this criterion also included significant increases in the level of service (e.g. local transit to rapid transit) and consistency of service (e.g. new off-peak or contra-peak service).

For transit infrastructure projects, shorter corridors received lower scores (as they have less stops and therefore serve fewer destinations). The highest scores were given to longer corridors with higher order transit that served multiple destinations, or corridors that were previously significantly under-serviced.

New roadway projects were excluded from this evaluation as the perceived intent of this criterion was to evaluate improvements to primarily transit projects, and supplementary services such as AT or ridesharing. AT infrastructure projects were scored within this criterion because the lack of AT infrastructure was seen as a significant barrier to attracting new users. HOV/HOT lanes and parking projects did not receive scores within this criterion as the lack of this infrastructure was not considered a significant barrier to attracting HOV users.

3.5 Increasing Active Mode Share

Including an indirect benefit to active mode share for transit projects was considered (since transit users often use active modes for part of their trip). However, it was ultimately decided that there was too much uncertainty in this to warrant a positive score.

3.6 Improving Traveller Information

Projects specifically aimed at improving traveller information received the highest scores (e.g. real time information displays), while projects which were likely to indirectly contribute to improving traveller information were given lower, positive scores (e.g. data collection projects).

3.7 Promoting the Integration of Transit Fares

Providing a low, positive score for this criterion to transit projects which were multi-jurisdictional was considered (e.g. a transit line that traversed multiple municipalities), however, it was concluded that this impact was too indirect. Instead, a 0 score was assigned with a comment noting the potential benefit.

3.8 Increasing the Seamlessness of Travel

Projects that improved connections between services received scores for seamlessness. This included new cross-boundary corridors or routes as the need to transfer between services is removed for some users. This category was primarily limited to non-auto projects as travel for auto drivers is (generally) already seamless.

3.9 Increasing the Affordability of Transit

It was discussed whether this criterion should be expanded to include all modes of travel as AT modes offer a level of affordability for users, however, it was concluded that the scope should be limited to transit.

3.10 Improving the Accessibility of Transportation Infrastructure and Services for All Users

This criterion did not include economic accessibility (i.e. affordability). The ability of users to physically access infrastructure and services across the region was the focus. It was understood that this criteria would duplicate scores with criterion 8, Servicing New Destinations, in some cases.

3.11 Improving AODA Compliance

This criterion was limited specifically for projects that addressed AODA compliance. It was not assumed that new infrastructure would necessarily result in improved AODA compliance, and therefore those projects were not scored within this criterion unless benefits were clearly implied by the project scope.

3.12 Improving Passenger Comfort

This criterion was applied primarily to transit and transit-related projects. Higher order transit projects were assumed to contribute to passenger comfort as implementation would likely result in reduced wait times, better passenger amenities, and, in some cases, separation from traffic. Transit projects that were intended to relieve known passenger crowding issues received increased scores for this additional benefit. Projects that reduced road congestion overall received scores for passenger comfort as well.

3.13 Increasing Transit Capacity

Evaluation of this criterion gave consideration to the magnitude of a project's transit capacity increase relative to existing conditions.

3.14 Improving Safety and Perception of Safety

Providing a score for station projects was considered, but it was ultimately decided that a station in of itself will not necessarily contribute to improved safety or perception of safety. Projects which improved the AT network received scores for this category as a result of research which has suggested that a major barrier to AT is a result of users feeling unsafe.

3.15 Increasing Development Densities and Supporting Compact Urban Form

Projects that support increased transit and active mode shares, such as new transit infrastructure or TDM practices, received scores for supporting compact urban form. Projects focused on reducing parking requirements, freeing up land for more dense development, or other transit-oriented development projects received high scores for direct impact to this criterion.

3.16 Increasing Resiliency of the Transportation Network and Infrastructure

This criterion focused on resiliency (including network redundancy) to acute disruptions and changing climate conditions. AT projects which resulted in a strengthened AT network resulted in scores for resiliency; this is as a result of better facilitating alternate modes of travel, providing options in the case of disruptions to the road or transit networks. Certain TDM projects received scores for resiliency when they clearly provided support for alternate modes of travel, as opposed to simply dis-incentivizing auto travel.

3.17 Making Efficient Use of Resources

Roads and land were considered as resources for the purposes of this evaluation. If active or transit mode share increased, a low score was applied within this category as it represented a more efficient use of road space.

3.18 Reducing GHG Emissions and Improving Air Quality

It was assumed that projects which result in an increase in active or transit mode shares also contributed to a reduction in GHG emissions. These projects received low, positive scores for this criterion. Projects for which the scope directly addressed this criterion received higher scores.

3.19 Supporting Innovation in Transportation

Projects that had the ability to support innovative technologies and projects that were innovative to the region were scored.

3.20 Facilitating Regional Goods Movement

The highest scores were assigned to projects directly related to implementing goods movement projects. Lower, postive scores were given to projects that did not specifically include implementation in their scope (e.g. goods movement committees) or that indirectly affect the goods movement network (e.g. an improvement to Intelligent Transportation Systems).

Projects were not solely scored on their ability to positively benefit the goods movement industry, but based on their ability to help facilitate goods movement.

APPENDIX A: METROLINX SCORING GUIDANCE

	Outcomes	Possible Considerations	Examples				
			(+3)	(+2)	(+1)	0	(-1)
1	Increasing Transit Mode Share		New or significantly improved higher-order transit services.	Impovements to transit service levels, reliability, or speed; new higher-order transit services operating at limited times of the day or with substandard service levels.	Road tolls, parking charges, changes to ticketing, policies to encourage compact development.		Highway or road expansions.
2	Reducing Travel Time	Interventions that may reduce the travel time for some may increase travel times for others. Longer term impacts on mode shifting for example may increase or decrease overall travel times.	System-wide improvements to enhance speed such as transit priority, signal optimisation.	Implementation of HOV/HOT lane on a highway.			Increased priority given to pedestrian crossing movements, new transit stops or stations. Impacts might be different for existing users than new users.
3	Improving Reliability of Transit		Long-term, system-wide interventions aimed directly at improving reliability such as improved signaling systems.	Adding dedicated rights of way or signal priority to parts of the transit network.	Improvements in service or scheduling.		
4	Servicing New Destinations		Opening a new higher-order rapid transit line in a previously underserviced area.	Extend services during the weekend and/or off-peak, or adding new peak-only service.	Introducing a park and ride facility serving a major interchange, new development / increased density near transit stations.		
5	Increasing Active Mode Share		New segregated bike lane(s).	Active transportation programmes for school children.	Public realm improvements, lower speed limits.		Road improvements that prioritise vehiclular movements
6	Improving Traveller Information		System-wide real-time transit information.	Area specific improvements such as signage, wayfinding improvements.	Release of transit data, technology improvements on transit vehicles.		
7	Promoting the Integration of Transit Fares	Likely not relevant for non-transit initiatives.	Full integration of transit fares across the network.	Co-fare agreements between agencies.	Diversification of payment method.		New travel systems with payment system not integrated with existing Presto system
8	Increasing the Seamlessness of Travel		Common payment method and/or fare system across the system.	Improving transfers between modes at specific hubs.	Coordinated wayfinding and information system.		
9	Increasing the Affordability of Transit	Policies that result in transit fare changes such as distance-based fares could positively impact some users and negatively impact others.	New funding mecanisms to allow for fare decreases, changes to transfer policies.	Policies to introduce concession fares.	Introduction of off-peak reduced fares as a TDM strategy.		
10	Increasing the Accessibility of Transportation Infrastructure and Services for All Users	This should include considerations of ensuring compliance with AODA.					Moving to digital platform or fully electronic payment method could negatively impact some users.
11	Improving Passenger Comfort			Adding seating or other amenities at a transit station.	Capacity or service improvements.		
12	Increasing Transit Capacity		Significant, reliable capacity improvments for existing users through provision of new or higher-order services.	Increasing service frequency across peak period. Time of day pricing.	Initiatives to encourage mode shift to walking and cycling.		
13	Improving Safety or Perception of Safety	Some initiatives that may improve safety such as increased automation of transit could actually reduce the perception of safety.	Reduced speed limits, dedicated pedestrian and cycling infrastructure.	Implementation of automated transit vehicle technology.	Public realm improvements, improved transit signalling systems.		
14	Supporting Increased Development Densities and Compact Urban Forms		Policies that require new developments to be located within walking and cycling distance of transit, removal of parking facilities.	A moderate positive score should be attributed to development restrictions that are only applicable to one area.	Provision of higher-order transit or new transit station in developed area.		Increased parking, new or expanded road infrastructure.
15	Increasing Resiliency of the Transportation Network and Infrastructure		System-wide programme to retrofit existing transit infrastructure to withstand flooding.	Retrofitting a building, such as transit station.	Introducing flood or other emergency response guidace for station managers.		
16	Making Efficient Use of Resources		Comprehensive service review.	Implementation of automated transit vehicle technology.	Provide higher capacity while reducing headways.		Provision of new / increased transit services in a corridor that is not commensurate with demand.
17	Reducing GHG Emissions and/or Improving Air Quality	Any intitiatives that increase transit, walking or cycling mode share will also reduce GHG emissions. Electrification of vehicles will generally lead to lower GHG emisions.	Measures to significantly reduce personal vehicle use.	Electrification of transit.	Introducing congestion charges.		
18	Supporting Innovation in Transportation	Initiatives to improve innovation in design, implementation, monitoring, maintenance, operation, processes, or communication systems.					Continuing commitment to existing systems where more innovative systems offer a better and more efficient long-term benefit.

APPENDIX B: GOAL ASSOCIATION

Six broad goals must be considered during the development of the RTP Update:

- Connectivity, Convenience and Integration
- Equity and Accessibility
- Health, Comfort and Safety
- A Well-Planned Region
- An Exemplary Environmental Footprint
- Prosperity and Competitiveness.

The goals are supported by 19 objectives, as indicated in Figure 1.

Figure 1: Goals and Objectives of the Regional Transportation Plan Update

The transportation initiatives are linked to the objectives through the assessment of a wide variety of metrics or criteria. The criteria were themselves selected to align with the objectives but to be more straight-forward for assessment purposes and less multi-dimensional than some of the objectives. Figure 2 displays a matrix showing the relationship between the criteria and the goals and objectives.

Goals		Objectives		What is the impact on ... Transit Mode Share	Reducing Travel Time	Reliability of Transit	Servicing New Destinations	Active Mode Share	Improving Traveller Information	Integration of Transit Fares	Seamlessness of Travel	Affordability of Transit	Access to Transportation Infrastructure and Services for all Users	Improving Passenger Comfort	Increasing Transit Capacity	Improving Safety or Perception of Safety	Increased Development Densities and Compact Urban Forms	Increasing Resiliency of the Transportation Network and Infrastructure	Making Efficient Use of Resources	GHG Emissions or Air Quality	Innovation in Transportation
A	Connectivity, Convenience and Integration	1	People have appropriate, realistic options to move easily and reliably from place to place.	✓	✓	✓	✓	✓													
		2	People have the information they need to optimize their travel decisions.						✓												
		3	Transit services and fares are seamlessly integrated.							✓	✓										
		4	All transportation modes are coordinated.								✓										
B	Equity and Accessibility	5	Transit offers affordable access to jobs, services and major destinations, and is competitive for most trips.				✓					✓									
		6	Transit fleets and transportation infrastructure, services and technology are accessible to users of all ages and abilities.										✓								
C	Health, Comfort and Safety	7	Walking and cycling are attractive and realistic choices for most trips.					✓													
		8	Transit offers an attractive, high-quality user experience.			✓			✓					✓	✓						
		9	People feel safe and secure when travelling, with continuous progress toward eliminating injuries and deaths from transportation.													✓					
		10	Goods are moved safely and securely.													✓					
D	A Well-Planned Region	11	The transportation system supports compact and efficient development.														✓				
		12	Integrated transportation and land use planning reduces the need for travel and encourages walking, cycling and taking transit.														✓				
		13	Transit infrastructure and services have the capacity to meet demand.												✓						
E	An Exemplary Environmental Footprint	14	The transportation system is adaptive and resilient to the stresses of a changing climate, uses resources efficiently, and fits within the ecosystem's capacity.															✓	✓		
		15	The transportation system contributes to the achievement of provincial targets for greenhouse gas emission reductions.																	✓	
F	Prosperity and Competitive-ness	16	Travel times are predictable and reasonable.		✓	✓															
		17	The transportation system offers value to users and governments by providing economical, reliable and environmentally sustainable movement of people and goods.			✓												✓	✓	✓	
		18	Governments promote innovation in the transportation sector.																		✓
		19	Sustainable, coordinated funding supports transportation operations, maintenance and expansion.																		

Figure 2: Regional Objectives and Initiative Criteria

In a general sense, Metrolinx is investigating to see if transportation initiatives are mostly focused on a single goal or if they cover multiple goals. Based on a preliminary assessment, no single initiative covers all 6 regional goals.

To move from the criteria back to the goals, all of the criteria were scored. Then the following formulas were used.

A transportation initiative will be considered to contribute to the goal of **Connectivity, Convenience and Integration** if the sum of the following criteria reaches 6 and/or if any one of these criteria is scored as 3:

- Increasing Transit Mode Share
- Reducing Travel Time
- Improving Reliability of Travel
- Servicing New Destinations
- Increasing Active Mode Share
- Improving Traveller Information
- Promoting the Integration of Transit Fares
- Increasing the Seamlessness of Travel

A transportation initiative will be considered to contribute to the goal of **Equity and Accessibility** if the sum of the following criteria reaches 4 and/or if any one of these criteria (except Servicing New Destinations) is scored as 3:

- Servicing New Destinations
- Increasing the Affordability of Transit
- Improving the Accessibility of Transportation Infrastructure and Services for all Users
- Improving AODA compliance

A transportation initiative will be considered to contribute to the goal of **Health, Comfort and Safety** if the sum of the following criteria reaches 5 and/or if any one of these criteria is scored as 3:

- Improving Reliability of Travel
- Increasing Active Mode Share
- Improving Traveller Information
- Improving Passenger Comfort
- Increasing Transit Capacity
- Improving Safety or Perception of Safety

A transportation initiative will be considered to contribute to the goal of **A Well-Planned Region** if the sum of the following criteria reaches 3 and/or if any one of these criteria is scored as 2 or 3:

- Increasing Transit Capacity
- Increasing Development Densities and Supporting Compact Urban Forms

A transportation initiative will be considered to contribute to the goal of **An Exemplary Environmental Footprint** if the sum of the following criteria reaches 3 and/or if any one of these criteria is scored as 2 or 3:

- Increasing Resiliency of the Transportation Network and Infrastructure
- Making Efficient Use of Resources
- Reducing GHG Emissions and/or Improving Air Quality

A transportation initiative will be considered to contribute to the goal of **Prosperity and Competitiveness** if the sum of the following criteria reaches 5 and/or if any one of these criteria is scored as 3:

- Reducing Travel Time
- Improving Reliability of Travel
- Increasing Resiliency of the Transportation Network and Infrastructure
- Making Efficient Use of Resources
- Reducing GHG Emissions and/or Improving Air Quality
- Supporting Innovation in Transportation
- Facilitating Regional Goods Movements

Appendix C:

Modelling Assumptions used in Developing the 2041 Regional Transportation Plan

This appendix briefly discusses the methodology and core assumptions behind the travel demand modelling that was used to support the development of the 2041 Regional Transport Plan (RTP). The latest version of the Greater Golden Horseshoe Model (GGHM v.4) was used to test the impact of the road and transit network options that were developed and assessed as part of the RTP. The following sections provide more background on the model and its limitations and briefly summarize the key inputs that were used to represent RTP network scenarios.

Travel Demand Modelling Overview

At the most basic level, the GGHM v.4 simulates daily travel activities across the Greater Golden Horseshoe by using forecasts of the distribution and intensity of population and employment levels across the region for the 2041 horizon year. Land use forecasts are a key input and the starting point for the overall modelling process.

The core GGHM v.4 model runs were based on a land use forecast that was consistent with Schedule 3 of the *Growth Plan*. Additional sensitivity runs were conducted with alternative land use assumptions in order to support resiliency testing of plan outcomes against alternative futures (i.e. "Boom," Market," and "Decline"). Please see Appendix A of the Evaluation Backgrounder for a more detailed description of the assumptions and purpose behind each land use scenario. Table C-1 presents the population and employment totals at the municipal level for each land use scenario, rounded to the nearest increment of 500.

Table C-5: Population and Employment Scenarios (2041)

	Growth Plan		Market (with expansion)		Market (constrained)		Boom		Decline	
	pop	emp	pop	emp	pop	emp	pop	emp	pop	emp
Toronto	**3,400,000**	**1,721,000**	**3,449,000**	**1,886,500**	**3,678,500**	**1,932,000**	**4,139,000**	**2,151,000**	**2,575,500**	**1,163,000**
Hamilton	**780,000**	**351,000**	**771,000**	**324,000**	**768,000**	**323,500**	**887,000**	**351,000**	**509,000**	**168,000**
Halton	**1,000,000**	**469,000**	**997,500**	**428,500**	**897,500**	**413,500**	**1,047,000**	**459,500**	**494,500**	**183,500**
Burlington	260,500	122,500	224,000	110,500	233,000	111,500	235,000	118,500	173,500	73,500
Oakville	326,000	155,000	281,500	141,000	288,500	136,500	295,500	151,500	180,000	70,500
Milton	295,000	133,500	328,500	117,000	268,000	114,500	344,500	125,500	83,000	24,000
Peel	**1,970,000**	**970,000**	**1,984,500**	**906,500**	**1,986,000**	**920,000**	**2,231,000**	**1,011,000**	**1,288,000**	**511,000**
Mississauga	949,500	574,500	941,500	556,000	959,000	563,000	1,051,000	608,000	708,500	359,500
Brampton	891,000	333,500	894,500	312,500	896,500	319,000	1,039,000	341,500	520,500	135,000
York	**1,790,000**	**900,000**	**1,785,500**	**842,500**	**1,752,500**	**832,000**	**2,053,500**	**916,500**	**1,022,000**	**375,000**
Vaughan	500,000	317,500	496,000	296,000	489,500	293,500	570,500	320,000	285,500	128,000
Richmond Hill	285,000	111,500	277,000	104,000	281,000	104,000	318,500	114,000	184,000	54,500
Markham	545,500	272,000	534,500	251,500	532,500	249,000	614,500	277,000	300,000	114,000
Durham	**1,190,000**	**431,500**	**1,135,500**	**389,500**	**1,041,500**	**375,500**	**1,192,000**	**419,500**	**599,500**	**163,000**
Pickering	251,500	87,000	247,000	78,500	211,000	73,500	259,500	84,500	87,500	28,500
Ajax	153,000	55,000	140,500	46,500	143,000	46,500	147,500	50,000	109,000	23,500
Whitby	254,500	95,500	235,000	85,000	220,000	82,500	247,000	91,500	120,000	33,500
Oshawa	275,000	116,000	248,500	104,500	237,000	102,000	261,000	112,500	147,000	47,500
GTHA Total	**10,130,000**	**4,842,500**	**10,123,000**	**4,778,000**	**10,123,500**	**4,796,500**	**11,549,000**	**5,308,500**	**6,488,500**	**2,564,000**

A detailed GGH-wide network model is used to represent the regional automobile and transit network (including GO rail, subway, municipal buses, streetcars, GO bus, etc.). The network model includes a representation of the level of service, travel times, and generalized costs associated with mode. The GGHM v.4 weighs the relative attractiveness of available transport modes between origins and destinations across the GGH by considering the congested auto travel times and costs and provided transit service levels and costs output by the network model.

Once the activities behind the need to travel (e.g. travel to work, school, shopping, personal business etc.) have been generated, the model predicts whether travel will be completed by auto, transit or active modes. The key determinants behind this choice of mode are household income, household auto ownership, as well as the relative time and cost to make the trip by different modes. Household income is assumed to be a fixed input across modelled scenarios, but auto ownership, travel times and costs do change based on the road and transit networks being tested.

For the RTP model runs, the performance of the Frequent Rapid Transit Network (FTRN) was tested against a Do Minimum scenario, as well as scenarios that included In Delivery and In Development projects. The Do Minimum case was developed to envision a future where the only additions to the existing transportation system (as of 2018) are those In Delivery projects where construction has already begun, so many of the In Delivery projects are not included. For more details on the network scenarios that were tested (In Delivery, In Development and full FRTN), please see Appendix 3 of the RTP, as well as Maps 3, 4 and 6.

The model was used to forecast and track changes in key regional metrics and outcomes that would arise under each tested network scenario. This included auto transit and active mode shares, transit ridership and congested vehicle kilometres travelled (VKT). All of these metrics were directly derived from the model's predicted changes in the travel times and costs in each scenario.

The Greater Golden Horseshoe Model

The Greater Golden Horseshoe Model v4 (GGHM v.4) is a new best-practice travel demand model, which represents a significant upgrade over the previous v.3 model. The model was developed by WSP for the Ministry of Transportation Ontario (MTO) and is built on the Emme Travel Demand Model software platform. The GGHM v.4 model, which was released to Metrolinx for initial use in early 2017, represents the first step towards a complete activity-based model, which are amongst the most sophisticated types of travel demand models being applied worldwide.

Figure C-1 illustrates the sequence of model processes conducted for a full model run using GGHM v.4. The model utilizes a "loop" structure, where the outputs from the model processes are fed back into the model at different intervals, and iterated until the model achieves convergence to an acceptable degree.

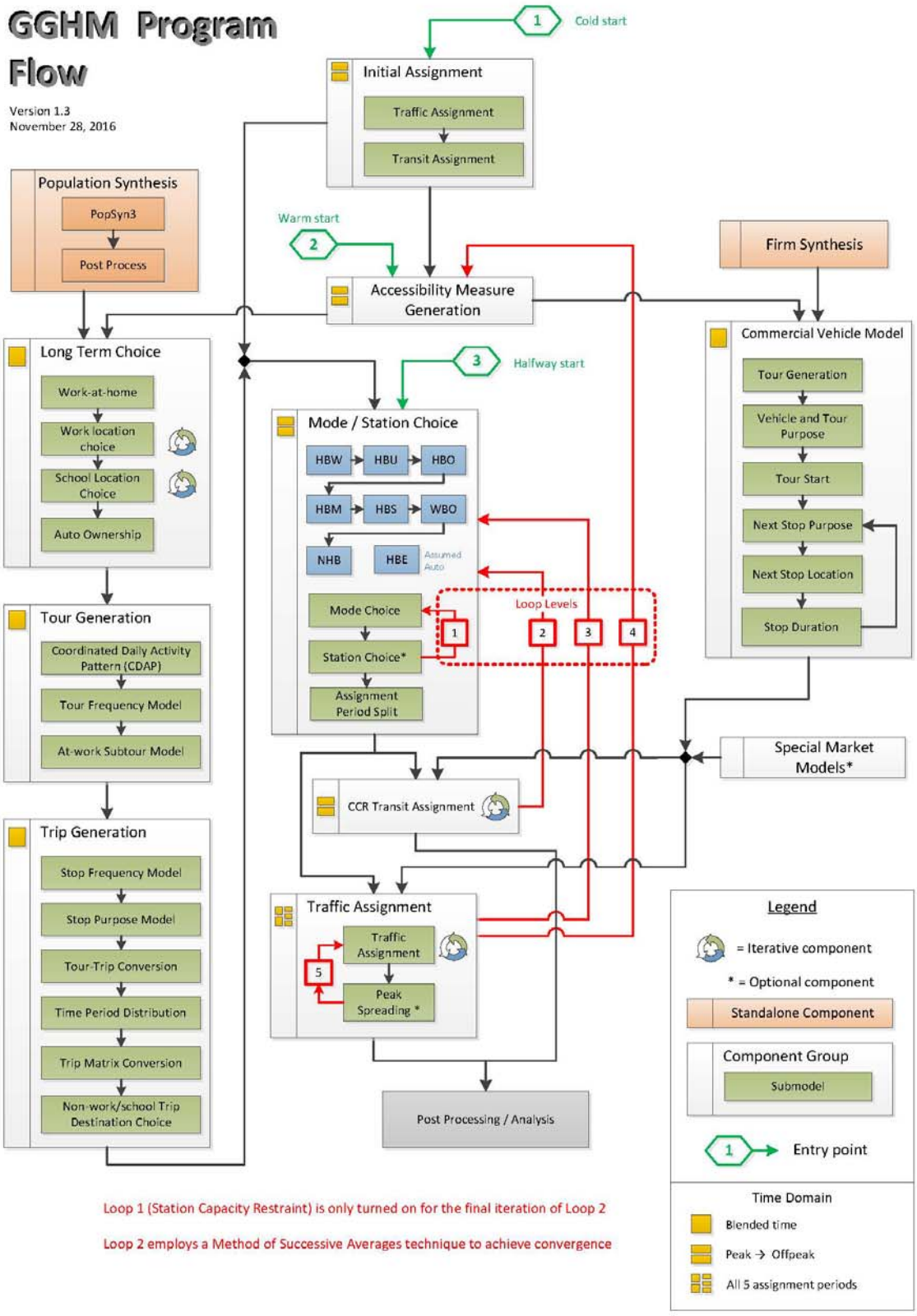


Figure C-1: GGHM v.4 model structure

The program flow displayed in Figure C-1 demonstrates the added complexity of the new model in comparison to previous versions of the GGHM model, incorporating several new capabilities such as population synthesis, tour generation for daily activities, and congested transit assignment.

Key model improvements and enhancements introduced during the development of the GGHM v.4 are summarized as follows:

- Simulation of individual trips by person over a full day (activity-based modelling)
- Consideration of congestion, capacity and reliability on transit
- Modelling of High Occupancy Vehicles (HOV)
- Commercial trucks assigned to roadways together with passenger vehicles
- Improved modelling of pricing (i.e. tolling)

As a key advancement over previous model generations, the GGHM v.4 does take transit capacity, crowding, and reliability on transit vehicles into account. This results in added wait times at stations or stops where passengers are likely to be passed-up by overcrowded vehicles, longer perceived travel times on overcrowded transit vehicles, and longer in-vehicle times for transit modes that are not in a dedicated right-of-way. Capacity, crowding, and reliability affect both the choice of transit modes and the choice of transit routes through the network. For example, a crowded rapid transit route may cause a rider to switch to an alternate bus route or make trip makers more likely to consider taking their automobile or walk or cycle to their destination.

GGHM v.4 was calibrated against a base year of 2011, and utilized the 2011 Transportation Tomorrow Survey as its core foundation. Metrolinx and MTO have been jointly applying, testing, and reviewing the validation of the GGHM v.4 model. As with any newly released travel demand model, project-based learning and testing is important to achieving full model maturity. Metrolinx and MTO are committed to continuing to apply and improve the model to reflect new data and advancements in modelling practices. Future modelling work that will be used to support the next steps associated with the RTP implementation and rapid transit project evaluation and business case analysis will take advantage of incremental improvements to the model.

One such enhancement opportunity will be the 2016 Transportation Tomorrow Survey, which was recently released for use in March 2018. Resources are currently being dedicated to examine this recent household travel survey. Significant processing, verification, and weighting that will be necessary before the survey can be considered to be ready to be used as the basis for future model development enhancement.

Limitations of the Model

As with any model that represents reality, the GGHM v.4 model has limitations which should be kept in mind when interpreting the results. Specifically, the model has been calibrated based on a range of actual behavioural responses observed in the 2011 Transportation Tomorrow Survey. These response ranges and travel choices are based on the travel modes and routes available to trip makers in the transportation system that existed in 2011. The model contains equations that represent observed behavioural ranges provided by the system and measured by the travel survey.

Recognizing that the model is developed and calibrated based on past traveller behaviour, more transformational changes to the economy, transportation technology, and the sociodemographic context pose more significant challenges to forecasts. Attempting to model major transformations in the economy (such as a complete switch from permanent employment to the "gig" economy), significant advances in technology (such as hyperloop or widespread usage personal automated vehicles), or extreme changes in travel inputs (such as the Singapore vehicle fee and road tax, which works out to over $10,000 per year) will require a degree of caution when interpreting absolute model results. While scenario testing (see Appendix A) is useful to gain insights into forecasting a range of future outcomes, given that the future is uncertain, the model results based off of scenarios that are radically different from current conditions should only be taken as indicative of the expected trends in travel behaviour and not as absolute forecasts. Model forecasts are primarily intended to be tools that help the planner to *compare performance outcomes* across different scenarios.

Beyond transformational change, travel demand models are also more limited in their ability to test differences among alternatives that are not readily quantifiable in terms of travel times and costs. This includes more localized pedestrian amenities and "walkability", the presence of and quality of cycling facilities (e.g. whether these are separated facilities or simply painted lanes), passenger comfort, and the maintenance levels of transit stations.

Lastly, it should be noted that uncertainties in model inputs also play an important role in the long-term reliability of model forecasts. For example, the forecasted growth in population and employment across the region to 2041 is a fundamental input to the GGHM model's projections of future trip making and transit ridership. Over 3,000 traffic zones are used by the model to capture both the intensity and distribution of population and employment growth across the GGH. This risk was managed in the RTP analysis by considering and testing the sensitivity of plan outcomes across five different land use scenarios (see Table C-1).

Model Input Assumptions

Transit Network

The base year transit networks were developed from the Google General Transit Feed Specification (GTFS), which contains detailed information about the routing of every individual transit route for the transit agencies in the GGH. A level of translation must occur between the GTFS and the Emme network model, which is primarily limited minor route adjustments, in order to ensure that transit routes are on roads that are present in the Emme network street layer (since local streets are generally omitted from the regional level model). AM/PM peak and midday headways are directly calculated from the GTFS for each transit route. The base year transit network reflects 2011 conditions.

For the Do Minimum, In Delivery and In Development networks, local transit routes and GO bus routes were updated to 2017 conditions for major new routes and existing routes with significant changes to headways in the 2017 GTFS published by each transit operator. For the 2041 FRTN, if a priority bus route was identified where a local transit route existed, then the existing route was upgraded to a priority bus. In some cases where multiple local routes were present in the GTFS data, then the remaining local service was adjusted to a 30 minute headway. The minimum headway for priority bus was 15 minutes, but in some cases existing bus service already had 15 minute or better headways. In such cases, if the existing headways were between 11-15 minutes, the new headways of the priority bus routes were improved to 10 minutes.

Most of the proposed subway, LRT and BRT lines had already been coded in transit networks used for previous GGHM v.3 model runs undertaken for previous planning studies. In almost all cases, the pre-existing headways were used. Generally, subway headways were 2-3 minutes, LRT headways were 5 minutes and BRT headways were 5-10 minutes. The speed of transit routes running in lanes that are shared with automobiles is based on congested travel speeds (drawn from the AM auto traffic assignment in Emme), while the speed of buses in their own right of way is based on transit schedules and modal travel time reliability.

Transit Fares

The GGHM v.4 model used to undertake the RTP technical analysis employs a representation of the transit fare system as it existed 2011, capturing the 2011 base year the model was calibrated against. It should be noted that the GO Rail to TTC co-fare arrangement did not exist in 2011 (i.e. the discounted double fare which applies a $1.50 discount for adult transfers between GO/UP Express and TTC when using Presto) and thus was not captured in the TTS data nor was it considered in the model development or application. Future sensitivity analysis will be conducted to test the

impacts of different fare scenarios as part of analysis that supports RTP implementation and rapid transit project analysis.

Parking at Rapid Transit Stations

2011 parking is consistent with existing conditions, i.e. predominantly free parking at the majority of GO Rail stations. 2041 station parking capacities are consistent with the GO Rail Station Access Plan (2016). The model considers both free and paid parking at stations, with the paid parking at GO Stations being based on the pricing of the reserved parking program.

Parking at current TTC stations is assumed to remain consistent with existing conditions. While most future rapid transit stations are not expected to include parking facilities, for those that will, the parking capacities and costs were set to be consistent with the current planning studies.

The GGHM v.4 model also has the ability to consider the impacts of station parking capacity constraints on transit station and mode choice, but this feature was still in development during the initial RTP model runs and was consequently not enabled. The station parking capacity component of the model will be explored in more detail as part of future analysis related to RTP implementation and rapid transit project evaluation. Capacity constrained analysis is most relevant to the assessment of parking capacity needs and focussed studies for specific rapid transit corridors.

Parking at Destinations

In addition to parking capacity and cost considerations at transit stations, the model also considers traffic zone level parking cost at destinations as part of modal choice decisions. Parking costs are an important factor that travellers consider when choosing between transit and auto mode, particularly in more urban centres with more significant parking charges.

The zone level parking cost assumed for the GGHM v.4 model is consistent with a "Do Minimal" parking charge scheme. The following guiding principles were used to develop the Do Minimal parking charge:

- Starting from a 2006 base year consistent with parking data available from past modelling efforts in GGHM v.3, parking costs were assumed to increase beyond inflation level only in areas with considerable, concentrated intensification relative to base year conditions.
- In Downtown Toronto, such intensification is assumed in the West Don Lands, Portlands, Liberty Village, and East Bayfront areas. A cost of $8.80 is assigned to these zones, which is the same as parking cost east of Parliament Street in the base year.

- Outside of downtown Toronto, parking charges were reviewed at designated Urban Growth Centres (UGC). Different parking charges were assumed based on the UGC location and density target level:
    - 400 people + jobs per hectare for each of the UGCs within Toronto: a charge of $12 is assigned which reflects ~50% increase from the base year charge at North York Centre
    - 200 people + jobs per hectare in inner ring: a charge of $7 is assigned which is the parking cost of North York Centre in the base year
    - 150 people + jobs per hectare in outer ring: no parking charge increase

Overall, the Do Minimal parking scenario is very similar to 2006 default charge, with reasonable parking cost increases assumed at appropriate locations throughout the region. When implemented into GGHM v.4, the parking charge is factored to 2011$ within the model process, to reflect the 2011 base year of the model.

Auto Costs

Auto operating costs are held constant in real terms at $0.1428/km, which means that fuel costs per km are not assumed to increase faster than inflation. Auto operating costs affect the competitiveness of the auto mode relative to transit and active transport choices.

This approach was adopted based on more recent economic research that indicates that future fuel cost increases are expected to be more than be offset by increases in fuel efficiency and that auto operating costs may actually be perceived lower in the future. This conclusion is also aside from any potential cost-savings due to automation. However, a somewhat conservative approach was taken in the modelling to fix auto operating costs in real terms, so they will be treated as if they increase with inflation.

Tolls

Highway 407 toll costs are held constant in real terms in the modelling, while High Occupancy Toll (HOT) lane tolls are set at approximately 50% of the 407 toll rates, though these tolls are only applied to Single Occupant Vehicles (SOV). Consistent with the current rate structure, the 407 rates vary somewhat between sections and by time-of-day, ranging from $19.35/km to $22.80/km for autos (regardless of occupancy), from $38.70/km to $45.50/km for medium trucks, and from $58.05/km to $68.25/km for heavy trucks.

Auto Occupancy

In the GGHM v.4 model, the allocation of auto person trips into Single Occupancy (SOV) and High Occupancy Vehicle (HOV) classes is determined during the mode choice submodel of GGHM v.4, where the competitiveness of HOV facilities relative to SOV facilities is taken into account. Consequently, no exogenous auto occupancy factor needs to be used when generating trips since the model already internally predicts the number of 2-person and 3 or more person High Occupancy Vehicle trips (HOV2 and HOV3+, respectively). However, there is a cost-sharing factor associated with HOV2 and HOV3+ trips, which effectively spreads the costs of the trip to multiple occupants of the vehicle and lowers the perceived cost of driving relative to a solo auto trip. The HOV2 cost sharing factor is 1.2, and the HOV3+ factor is 1.7.

Car-Sharing and Ridesharing

Currently there are no assumptions or adjustments in the model to reflect the rise of car-sharing or ridesharing and the potential for subsequent reduction of auto ownership in urban areas. Research in this area is currently being conducted by the Systems Planning and Modelling and Geomatics teams. Future modelling work can examine potential impacts once this area of research matures and additional data can be examined to better understand the changes in travel behaviour that these new transportation modes may be causing. Metrolinx will also draw upon the *New Mobility Background Paper* prepared by WSP.

Autonomous Vehicles (AVs)

There are no AV assumptions or adjustments in this model to reflect the impact of AVs in 2041. Research in this area is currently being conducted by the Mobility Management, Systems Planning, and Modelling and Geomatics teams. Although AVs certainly appear to be on the horizon, much of the current research and discussion is very speculative in nature and difficult to quantify in a meaningful way. AVs may lead to an increase in roadway capacities (particularly on highways), while also increasing the number of vehicles and vehicle kilometres on the road (including empty vehicles). Individual privately owned versus shared fleet models of AVs will also have a significant impact on how AVs may affect future transportation systems. Future sensitivity testing opportunities will be examined in coordination with MTO. Metrolinx will also draw upon the *New Mobility Background Paper* prepared by WSP.

Post-Model Adjustments

Active transport trips generated by the model were known to be under-simulated by the GGHM v.4 within Planning District 1 (Downtown Toronto). This issue was traced to Non-Home Based trips (i.e. primarily trips from work to shopping, restaurants, personal appointments) which are predominantly auto based trips in less urban parts of the GTHA. However, within PD1 these trips are almost exclusively undertaken by

active modes. Thus, the active transport trips within PD1 were adjusted to better reflect the active mode share observed in the 2011 TTS. Future work will examine methods to tie such Non-Home Based trip mode shares to built form, density and the walkability of the surrounding urban environment.

In addition, for the RTP runs, additional post-model adjustments were introduced to reflect the implementation of policies that are not currently directly modelled with the GGHM v.4. This includes the promotion of bike-share programs, increased funding for safety initiatives, improving the built environment for pedestrians and cyclists, as well as Transportation Demand Management (TDM) policies that discourage auto use. The post adjustment focused on increasing the Active mode share for short trips that can be more easily shifted away from auto: 8% of auto trips of distance 0-5km and 2% of auto trips of distance 5-10km were converted to active transportation trips and 2% of transit trips of 0-5km trips were shifted to active transportation trips.