METROLINX

MEMORANDUM

To: Metrolinx Board of Directors

From: Leslie Woo*, Chief Planning Officer*

CC: Robert Siddall, *Acting President and CEO*

Date: September 14, 2017

Re: **Draft 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area**

RECOMMENDATION

THAT, as described in the Chief Planning Officer's September 14, 2017 report (the "Report") and subject to the Board's comments and any minor copy-editing and final formatting of content and document design, the Board direct staff to prepare the Draft 2041 Regional Transportation Plan (the "Draft Plan") (Appendix A to the Report) for public consultation;

And THAT as described in the Report, staff undertake a comprehensive outreach and engagement plan for receiving public comments on the Draft Plan between September and December 2017;

And THAT staff report back to the Board at its meeting of December 2017 on the input received and present a Draft Final RTP for consideration;

And THAT the Board extend its thanks to the members of the Residents Reference Panel for their significant contributions to the development of the Draft Plan.

INTRODUCTION

The Board is being asked to consider a Draft 2041Regional Transportation Plan for the Greater Toronto and Hamilton Area (the Draft Plan) for an official public release following the September 14, 2017 Board meeting, at which time a 90-day public consultation process will be launched. The feedback received will inform a draft final Plan for consideration by the Board in December 2017.

This memo provides background on the Draft Plan, outlines progress on the development of the Draft Plan since the publication of the RTP Discussion Paper (August 2016), presents an overview of the Draft Plan and outlines next steps toward a draft final Plan at the end of 2017.

BACKGROUND

History

Metrolinx is required to review the GTHA regional transportation plan under the *Metrolinx Act* (2006) at least every 10 years, in alignment with Ontario's Growth Plan for the Greater Golden Horseshoe. The review and update of the RTP provides an opportunity to:

- Evaluate and incorporate evidence-based research, new analysis and innovative approaches;
- Assess progress, change and the impacts of committed provincial investments on the region's transportation system, and
- Continue to strengthen relationships with stakeholders by advancing and aligning the provincial, regional and local priorities that together can achieve the shared vision for the GTHA's transportation system.

In August 2016, the Discussion Paper on the Regional Transportation Plan was released for consultation with:

- GTHA residents on-line and at Metrolinx open houses and public meetings,
- Municipal planning staff and senior management, including the RTP Municipal Planning Leaders Forum members and GTHA transit agency heads;
- Non-governmental organizations and private sector companies with a transportation interest (e.g. environment; health; goods movement).

Since the release of the RTP Discussion Paper in August 2016, staff have:

- Refined the vision and goals based on stakeholder and public feedback;
- Finalized technical studies and academic research to provide the evidence-based foundation of the Draft Plan, including studies on regional approaches to new mobility, cycling, transit network planning and many others;
- Undertaken transportation demand modelling and scenario analysis to determine the most appropriate strategies and actions, and
- Developed a web-based consultation platform to support the launch of the public consultation and engagement phase through fall 2017.

In spring 2017, Metrolinx established a Residents Reference Panel on the Regional Transportation Plan (the Final Report of the Panel is attached).

OVERVIEW OF THE DRAFT 2041 RTP

The Draft 2041 Regional Transportation Plan includes strategies and actions required to create a transportation system that supports a high quality of life, a prosperous economy and a protected environment for the next 25 years. More than $30 billion is being invested by the Province in rapid transit infrastructure in the GTHA over the next eight years:

- The Eglinton Crosstown Light Rail Transit (LRT) is under construction in the City of Toronto and the first phase of Viva/YRT Bus Rapid Transit is being built in York Region.

- By the end of 2017, the extension of the Yonge-University Subway to Vaughan Metropolitan Centre will be complete.
- The decades-long call for a permanent and fast rail link between Lester B. Pearson International Airport and downtown Toronto was answered with the completion of the UP Express train in time for the 2015 Pan Am/Parapan Am Games.
- The Regional Express Rail program, our most ambitious program yet, will transform GO Transit and the region with frequent, two-way all-day rail service, more than doubling the number of riders by 2031.
- Planning and engineering design is well underway for 15 additional projects that are currently in delivery. This includes LRTs, BRTs and subway expansions.
- Union Station – the hub of the regional transit network – is undergoing an enormous expansion in order to meet the needs of the 200,000 people who use it now every workday and the greater number who will use it in the future.
- Fare payment has been modernized with the PRESTO fare card.

But the work of building an integrated transportation system for the GTHA is far from done. When the Province of Ontario created Metrolinx as a new regional transportation agency in 2006, a generation of underinvestment in transit had resulted in a transportation crisis. Travellers in the region wanted action to address congested roads and highways, gridlocked urban streets, unreliable and inconvenient transit, and a lack of safe and well-maintained bikeways and sidewalks. With the release in 2008 of the region's first ever transportation plan, *The Big Move*, Metrolinx set out a common vision for the region and a multimodal blueprint of how the region could transform transportation.

By 2041, over 10 million people will live in the region. We need to plan for a future characterized not only by continued population and employment growth, but also by changing demographics (including an aging population), the changing nature of work, new transportation technologies and services, and the impacts of climate change. In short, we cannot stop. Our plan for moving forward – the Draft 2041 Regional Transportation Plan – calls for governments to move beyond *The Big Move* to put people's needs at the core of planning and operations. This means:

- Completing delivery of current regional transit projects;
- Connecting more of the region with frequent rapid transit;
- Optimizing the transportation system to make the best possible use of existing and future transit and transportation assets;
- Integrating land use and transportation, and
- Preparing for an uncertain future.

As the transportation network in the GTHA becomes more extensive and complex, travellers' expectations will rise and transit infrastructure alone will not be sufficient to meet the needs of a growing region. Transit providers need to broaden the focus to address not just the quantity, but the quality of transit service for travellers. That means making transit more accessible, frequent, reliable, comfortable and convenient.

As the only body with a regional mandate, Metrolinx is in a unique position to plan, build, operate and connect transportation in the GTHA. But we cannot do this alone. The transportation system of the future will be complex and interconnected. Implementation will require new approaches to financing and new approaches to collaborative decision-making in the region. Working with our federal, provincial and municipal partners, the private sector and stakeholders, we can create an integrated transportation system for 2041, one that is focused on delivering the best traveller experience possible.

NEXT STEPS

On approval by the Board, the Draft Plan will be posted online for public consultation through Metrolinx Engage throughout the fall of 2017, supported by social and digital media promotion to invite people to provide feedback. The public will also be able to provide feedback at one of six regional roundtables being held in each region in the GTHA.

Metrolinx will also be engaging with municipal partners through the:

- Municipal Planning Leaders Forum
- RTP Technical Advisory Committee
- Regional municipal meetings
- Metrolinx Transportation Symposium
- Mayor, Regional Council and Chief Administrative Officer Outreach
- Targeted outreach to Elected Officials

In addition, the Draft Plan with be posted on the Province's Environmental Registry. Following the consultation period, a draft final RTP will be brought forward to the Metrolinx Board of Directors in December 2017.

ATTACHMENTS:

- Draft 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area
- Final Report and Recommendations of the Residents Reference Panel on the Regional Transportation Plan

Respectfully submitted,

Leslie Woo

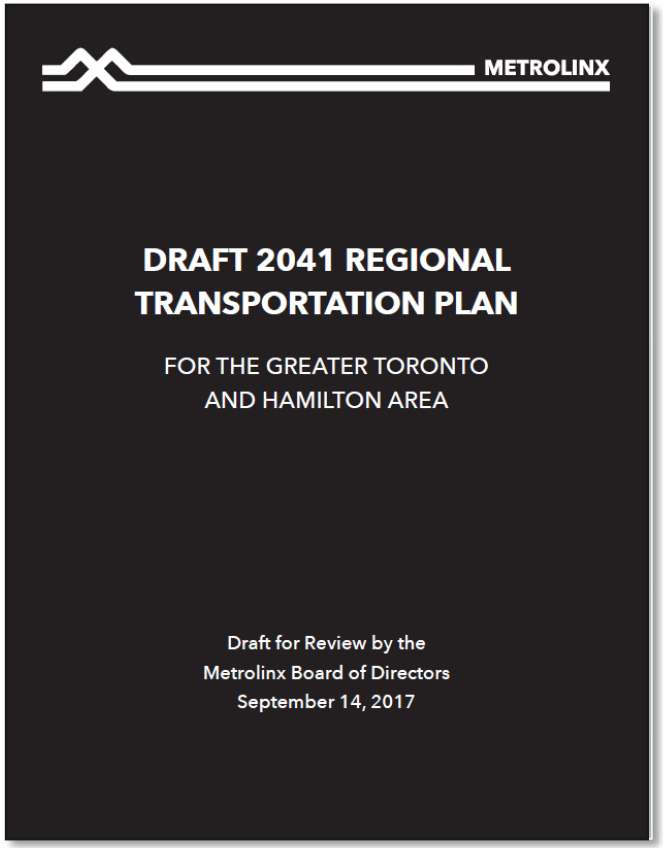
METROLINX

The Draft 2041 Regional Transportation Plan

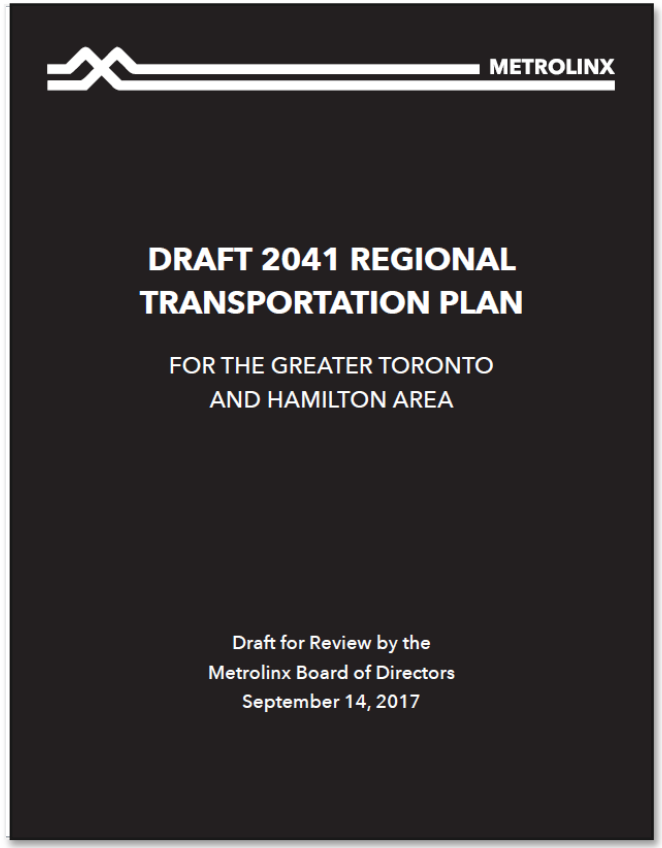
Leslie Woo, Chief Planning Officer

BOARD OF DIRECTORS MEETING – SEPTEMBER 14, 2017

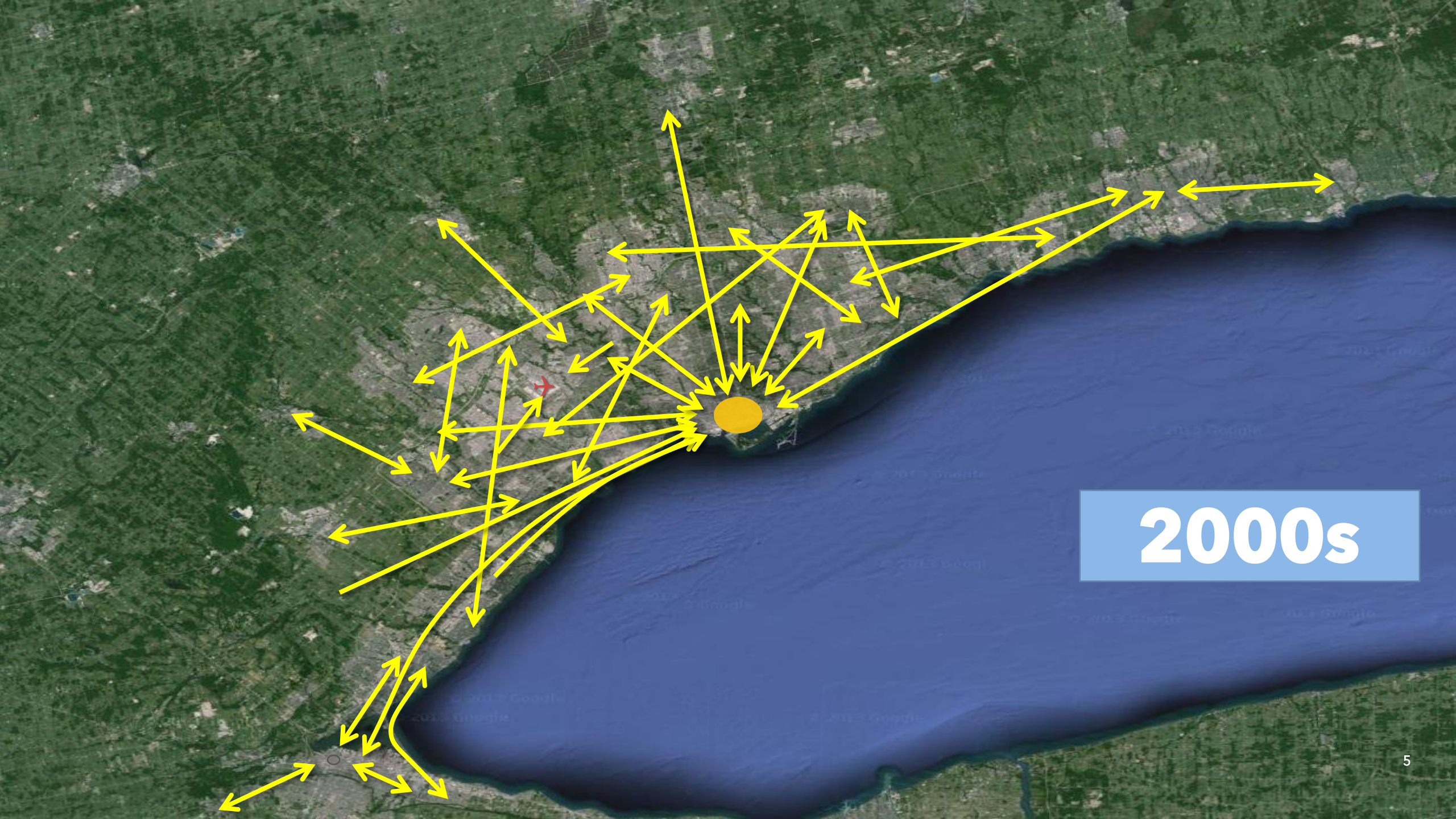
REVIEW OF THE RTP

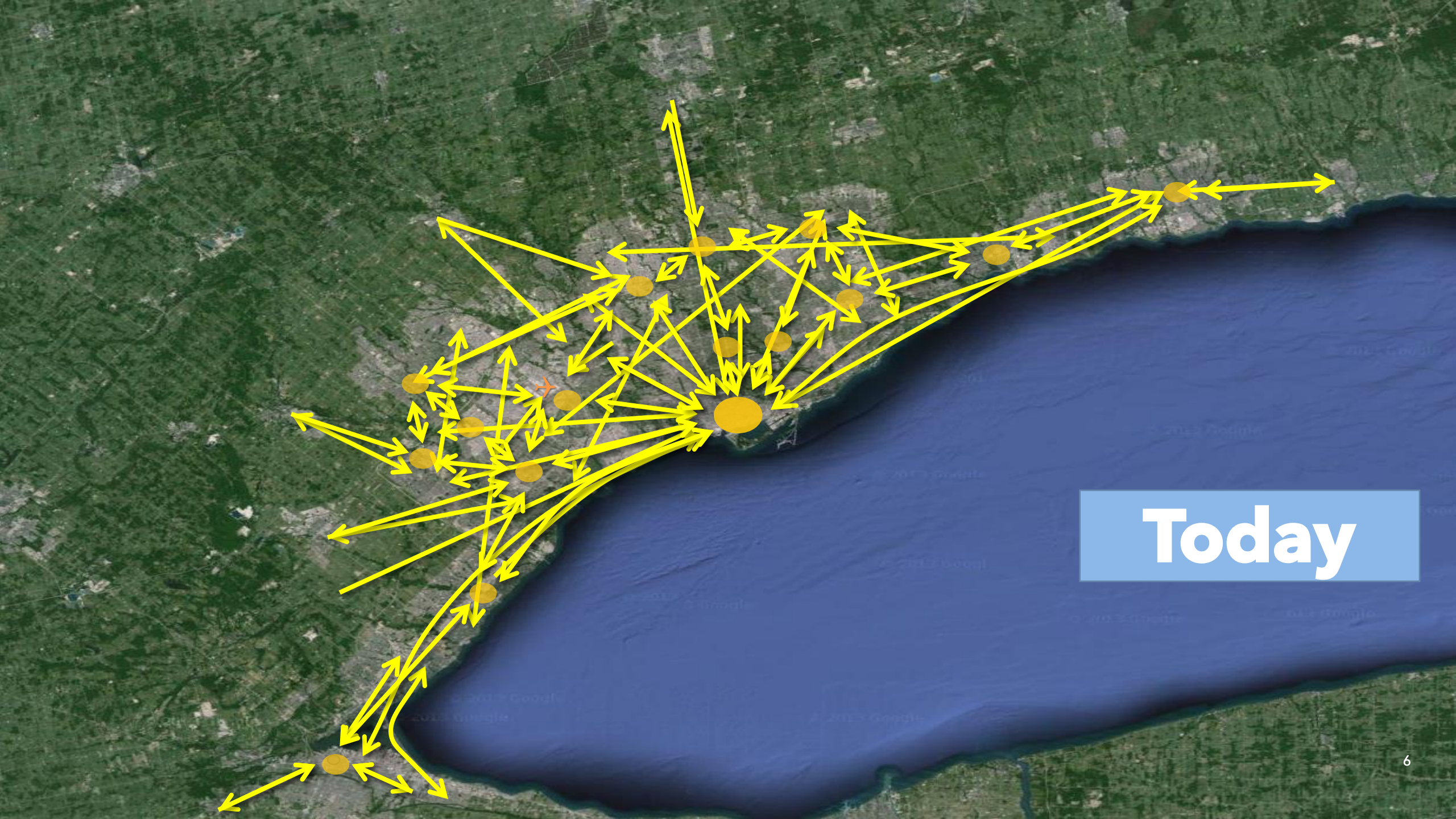


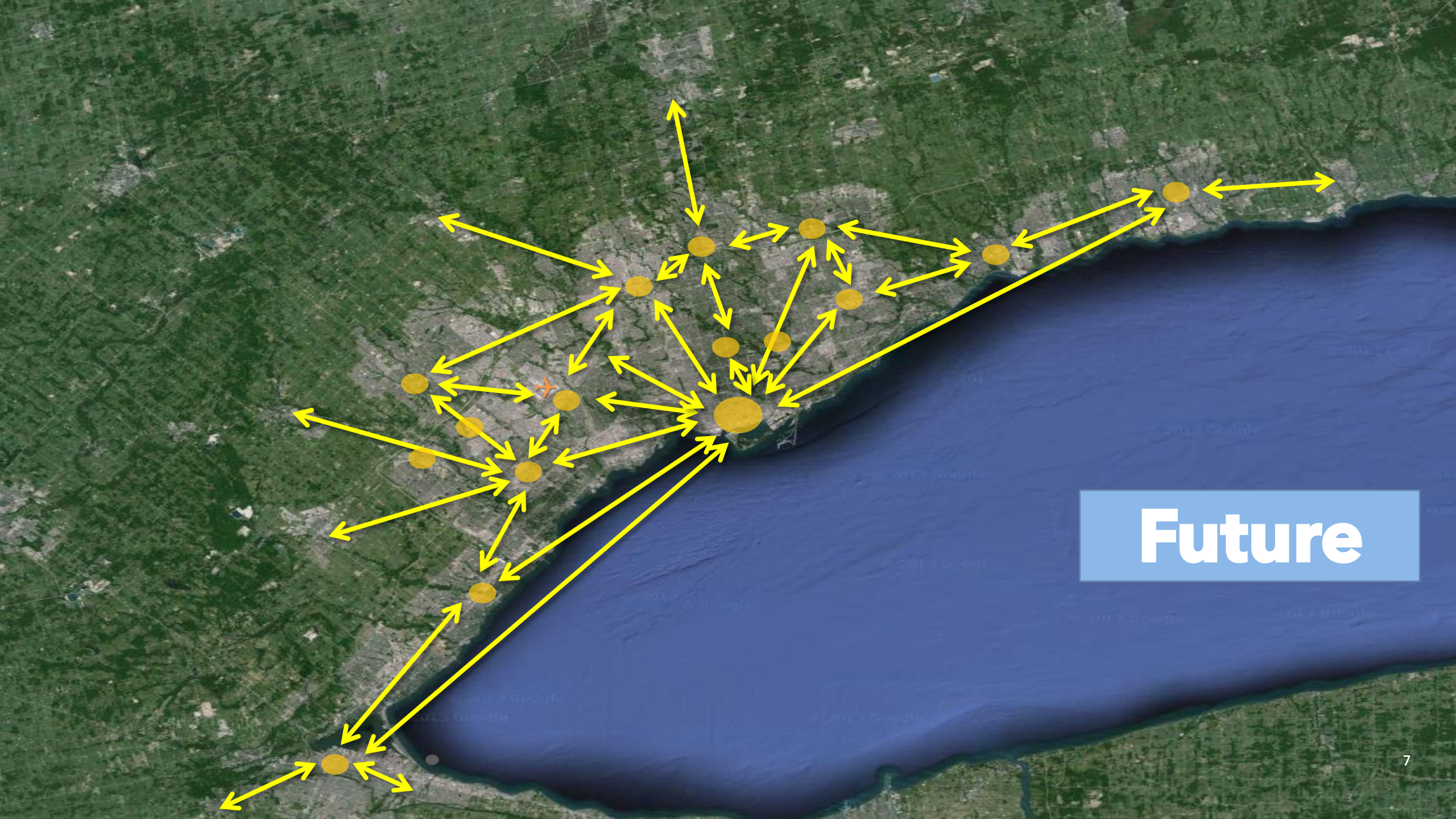
COORDINATION WITH THE GROWTH PLAN




1970

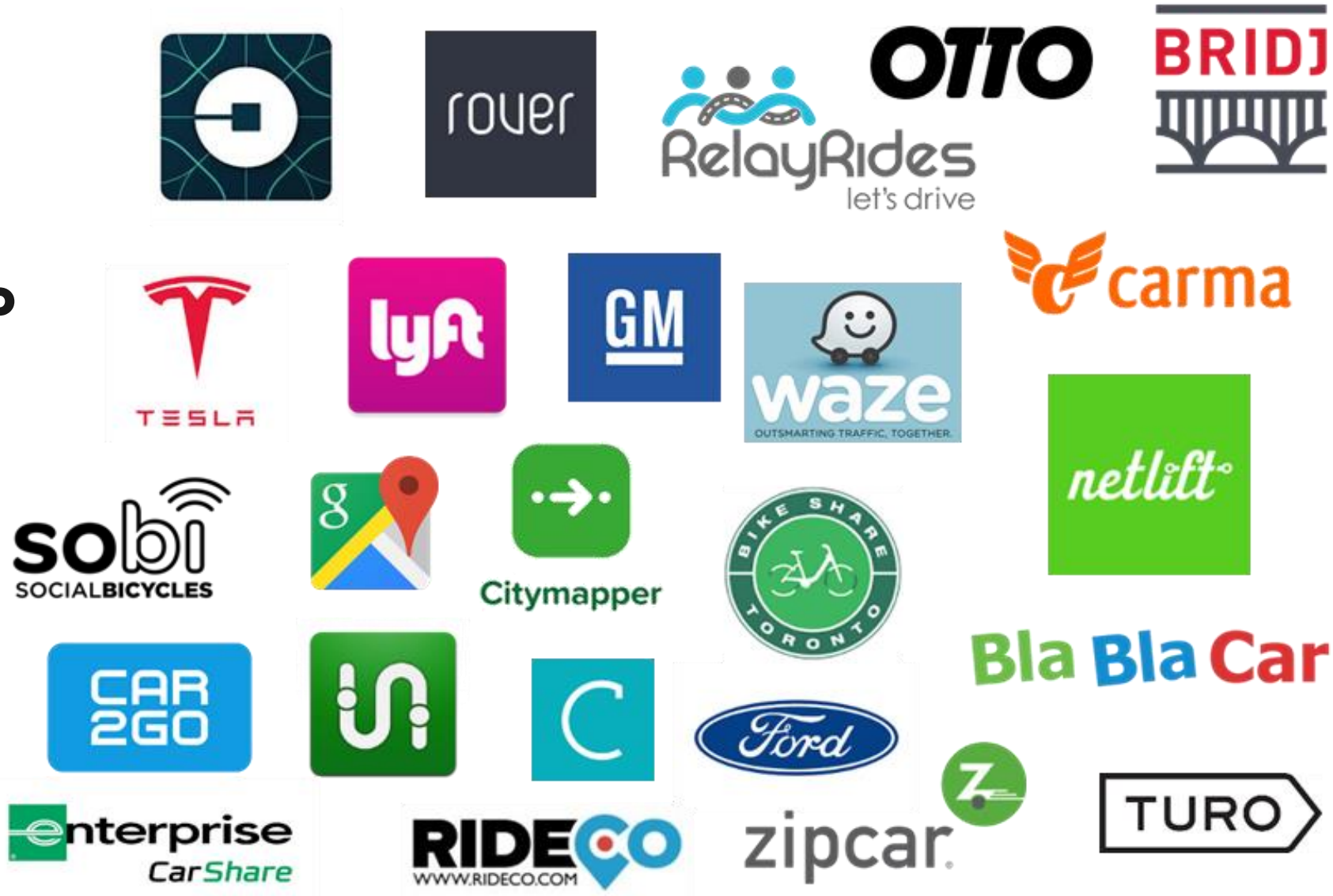

2000s


Today

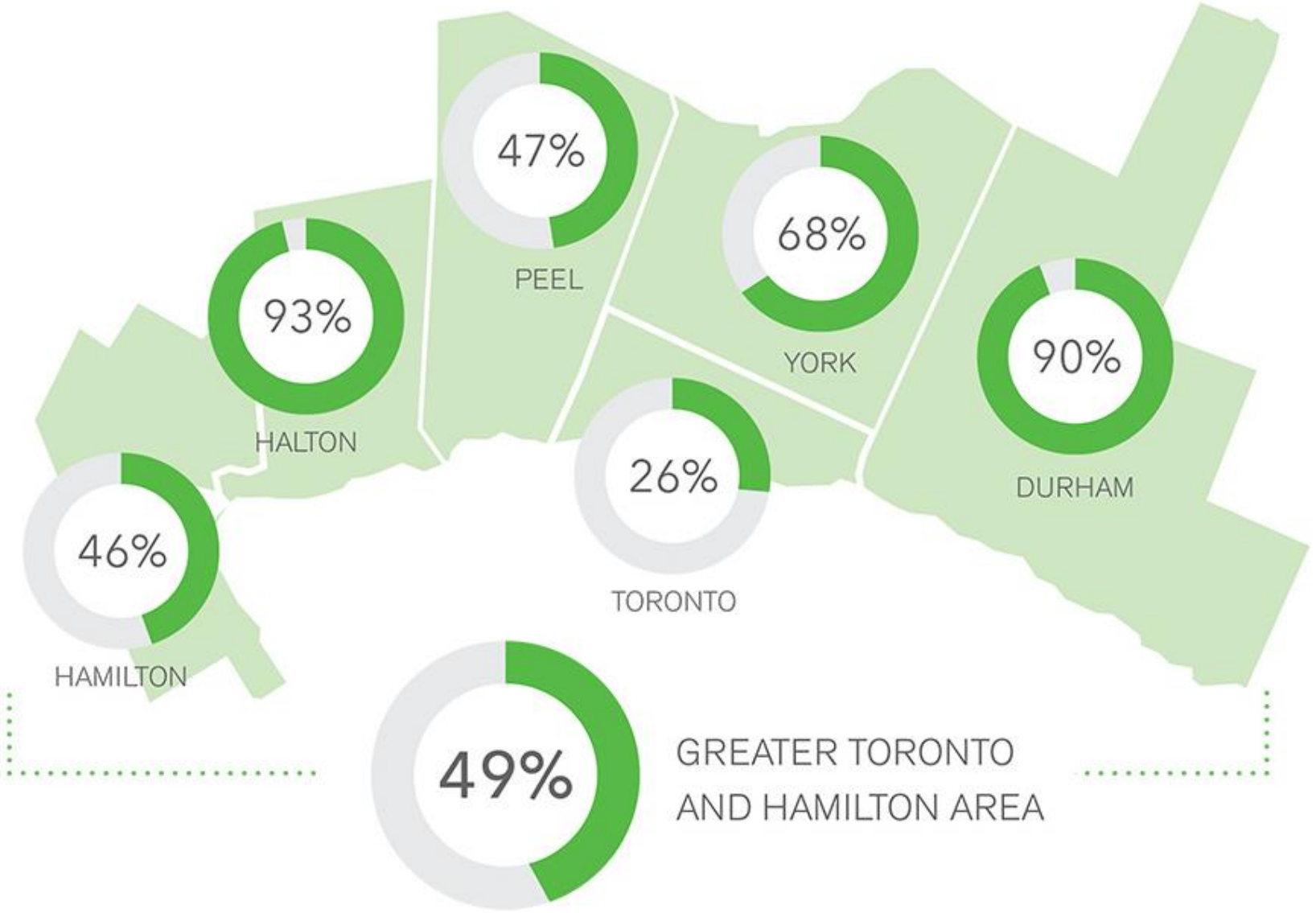

Future

A LOT HAS CHANGED SINCE 2008 ....

... and will continue to change...

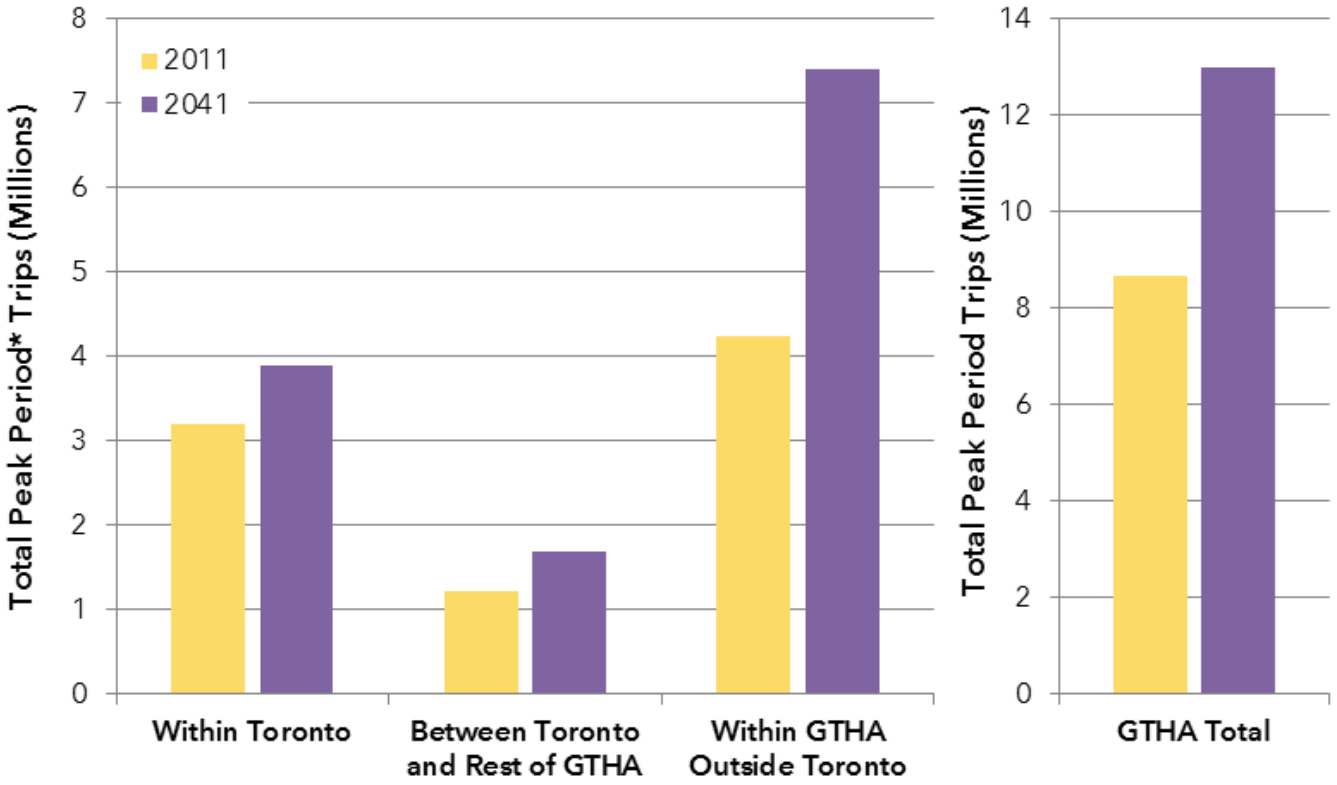


POPULATION GROWTH 2011 - 2041

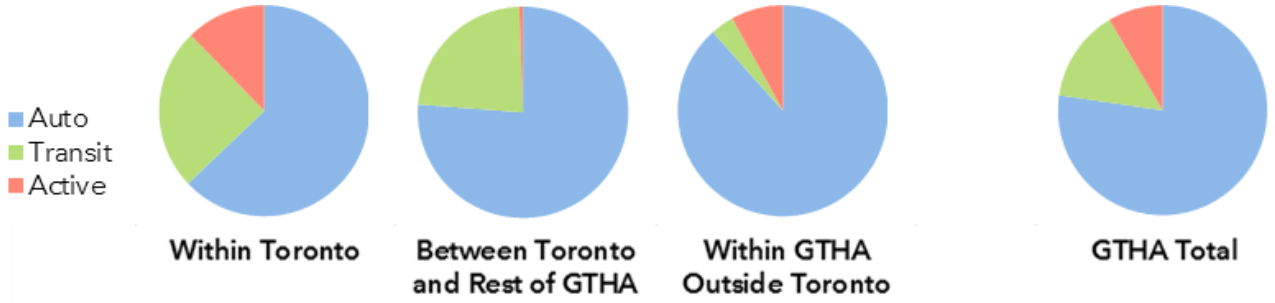


TRAVEL DEMAND AND MODE SHARE FOR DIFFERENT TRAVEL MARKETS

2011 and 2041 Total Trips (Peak Period*)



2011 Mode Share (Peak Period*)



*6:00 a.m. – 9:00 a.m. and 3:00 p.m. – 7:00 p.m.

MORE THAN $30B IN DELIVERY

THE BIG MOVE LEGACY

2041 VISION

THE GTHA URBAN REGION WILL HAVE A TRANSPORTATION SYSTEM THAT SUPPORTS COMPLETE COMMUNITIES BY FIRMLY ALIGNING THE TRANSPORTATION NETWORK WITH LAND USE.

THE SYSTEM WILL PROVIDE TRAVELLERS WITH CONVENIENT AND RELIABLE CONNECTIONS AND SUPPORT A HIGH QUALITY OF LIFE, A PROSPEROUS AND COMPETITIVE ECONOMY AND A PROTECTED ENVIRONMENT.

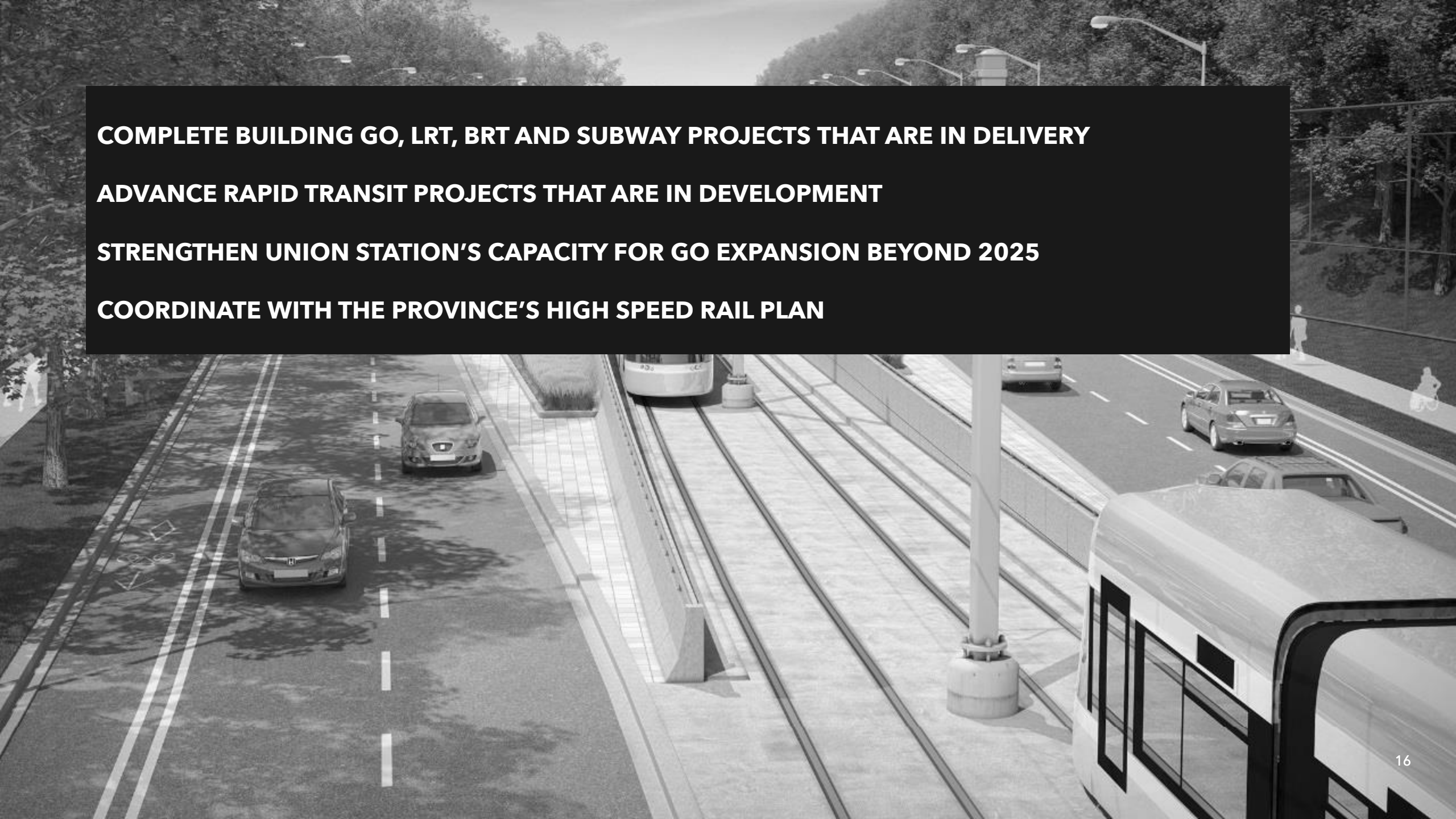
2041 GOALS

STRONG CONNECTIONS

COMPLETE TRAVEL EXPERIENCES

SUSTAINABLE COMMUNITIES

STRATEGY 1: COMPLETE DELIVERY OF CURRENT REGIONAL TRANSIT PROJECTS



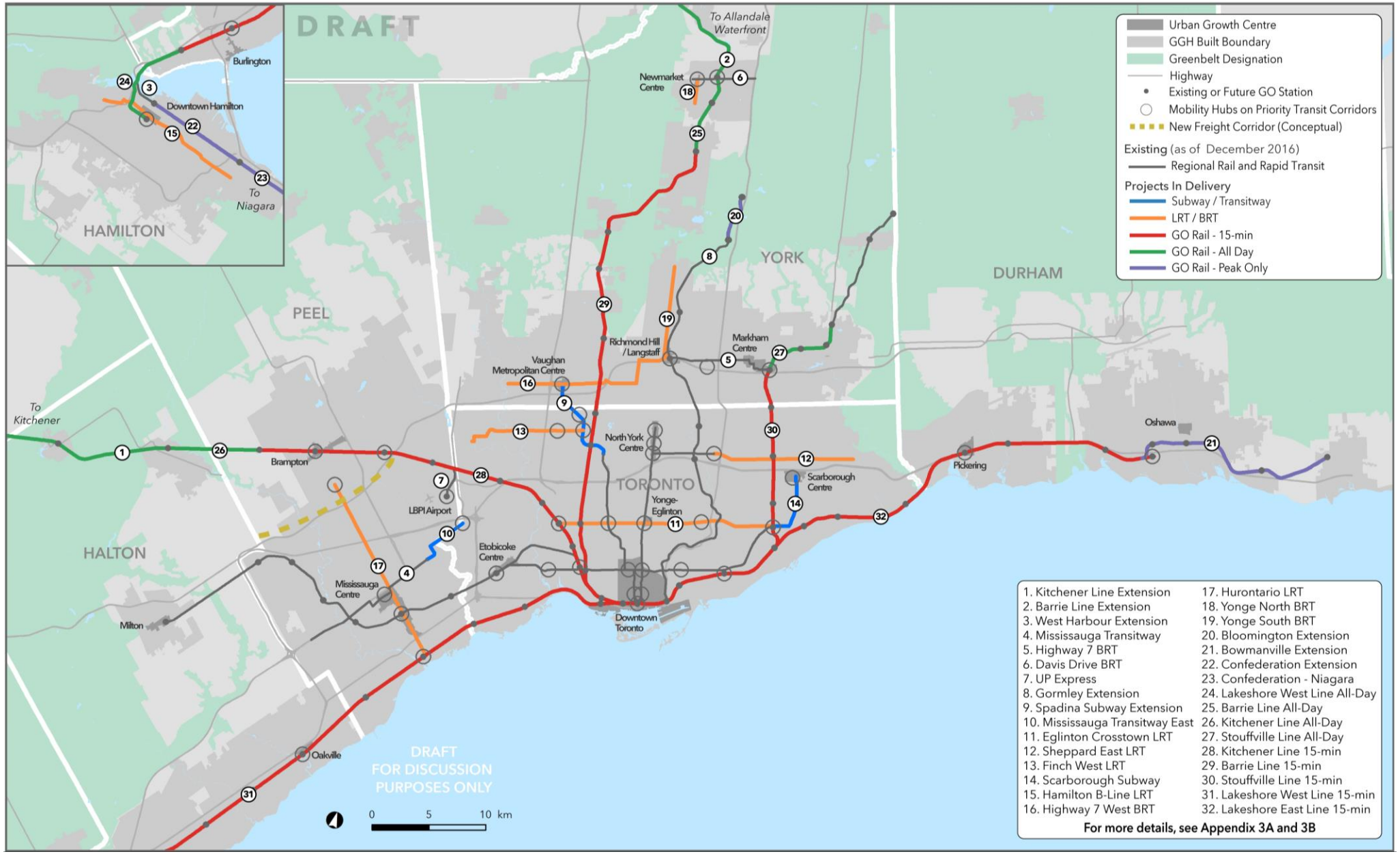
COMPLETE BUILDING GO, LRT, BRT AND SUBWAY PROJECTS THAT ARE IN DELIVERY

ADVANCE RAPID TRANSIT PROJECTS THAT ARE IN DEVELOPMENT

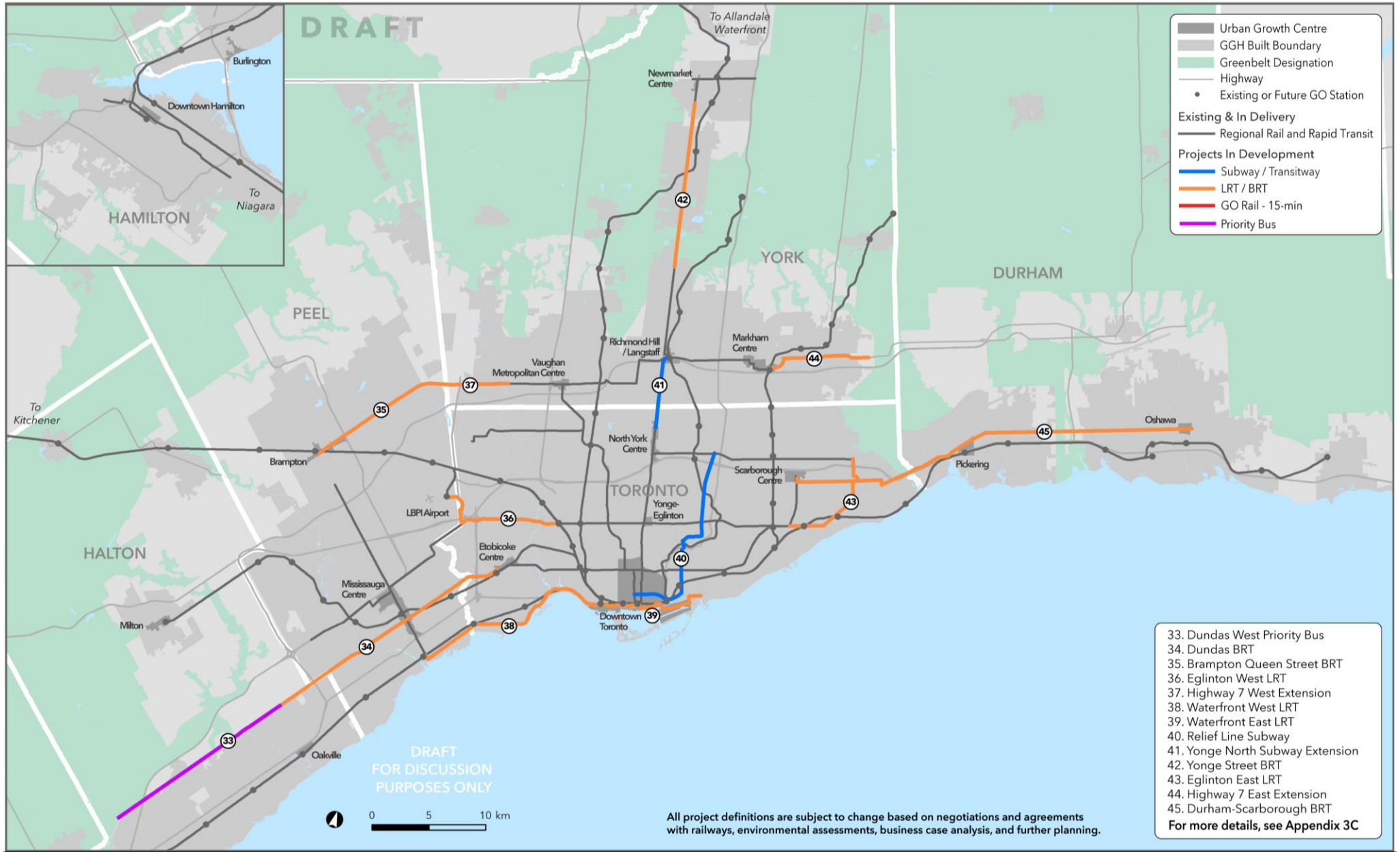
STRENGTHEN UNION STATION'S CAPACITY FOR GO EXPANSION BEYOND 2025

COORDINATE WITH THE PROVINCE'S HIGH SPEED RAIL PLAN

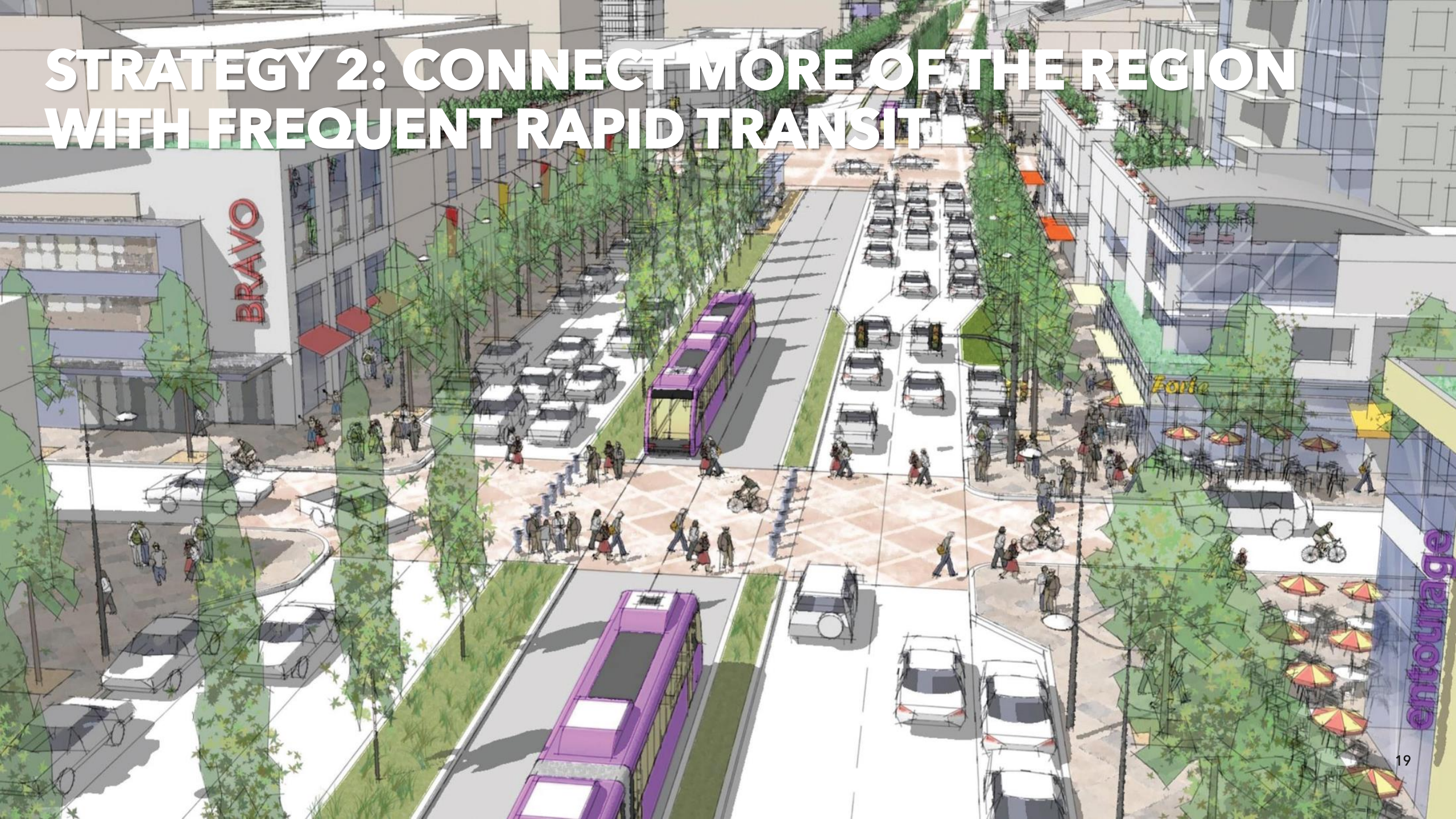
EXISTING AND IN-DELIVERY REGIONAL RAIL AND RAPID TRANSIT



PROJECTS IN DEVELOPMENT



STRATEGY 2: CONNECT MORE OF THE REGION WITH FREQUENT RAPID TRANSIT

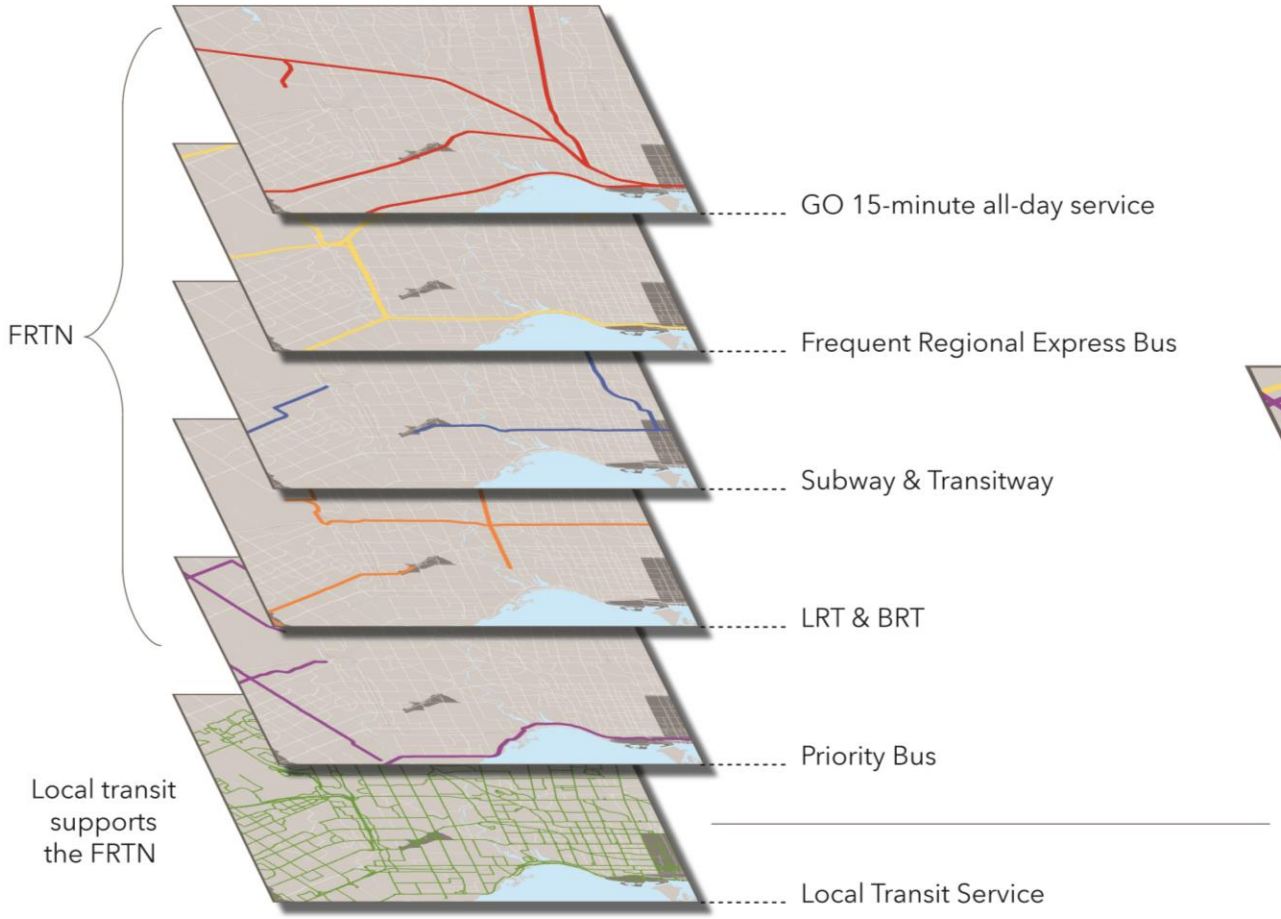


IMPLEMENT A COMPREHENSIVE FREQUENT RAPID TRANSIT NETWORK

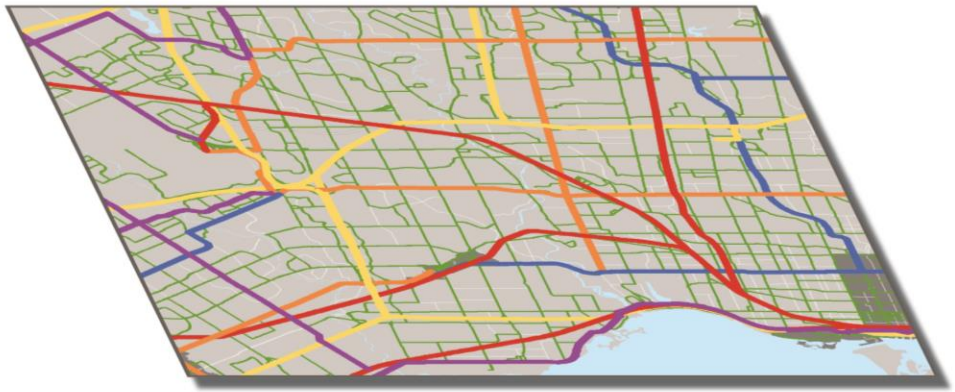
DEVELOP COMPLEMENTARY BUS SERVICES (SUCH AS A REGIONAL 24 HOUR BUS NETWORK)

IMPROVE ACCESS TO AIRPORTS BY TRANSIT

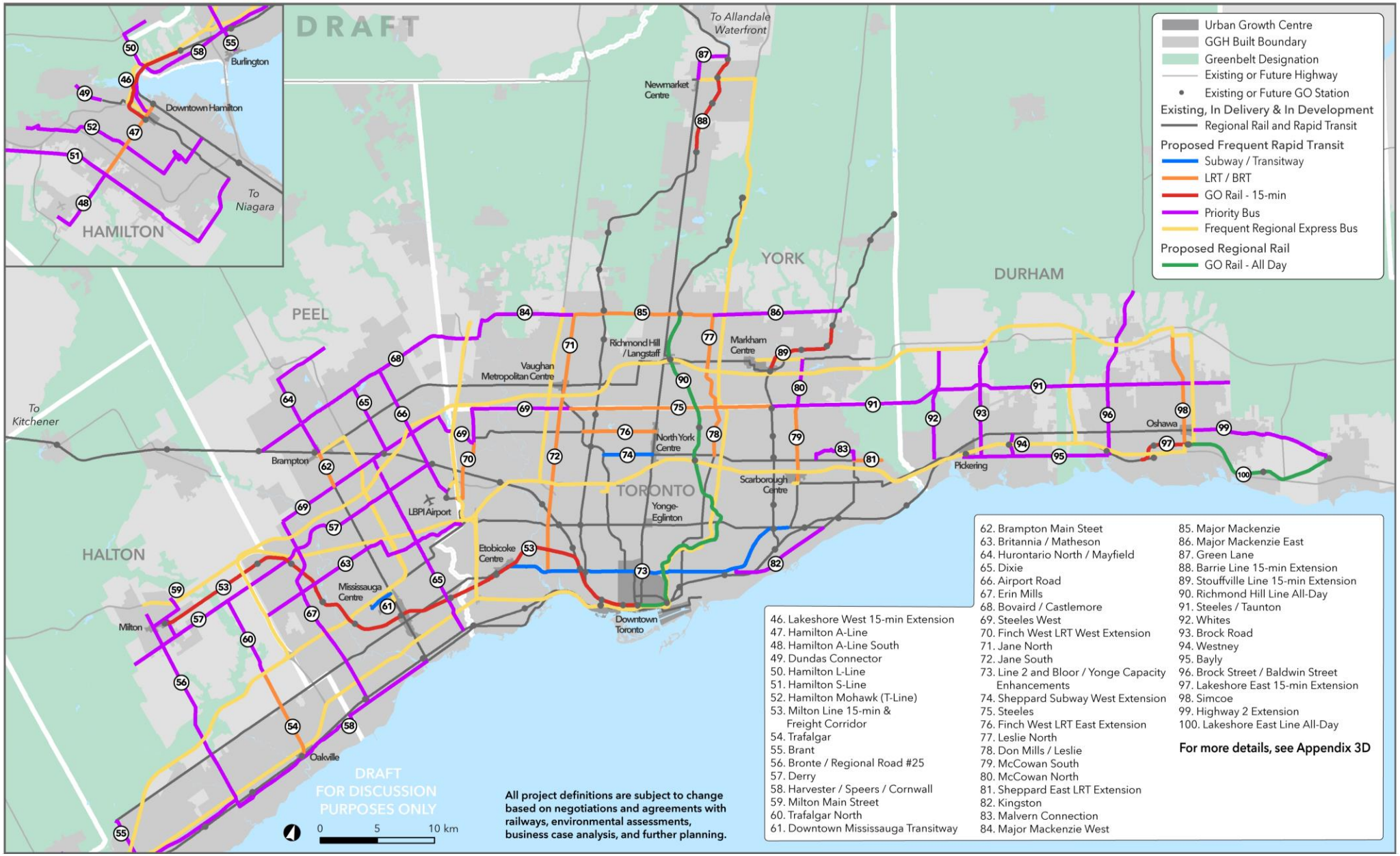
FREQUENT RAPID TRANSIT NETWORK CONCEPT



The Frequent Rapid Transit Network will connect Urban Growth Centres and key Mobility Hubs in the GTHA. It is envisaged as a seamless and reliable network of transit services that will run every 10 to 15 minutes all day, every day.



PROPOSED 2041 FREQUENT RAPID TRANSIT NETWORK



STRATEGY 3:
OPTIMIZE OUR TRANSPORTATION SYSTEM

ADVANCE INTEGRATION OF FARES AND SERVICES

EXPAND FIRST AND LAST MILE CHOICES

SET CONSISTENT QUALITY STANDARDS FOR THE TRAVELLER EXPERIENCE

DEVELOP AND IMPLEMENT MOBILITY AS A SERVICE STRATEGY

PLAN AND DESIGN FOR UNIVERSAL ACCESS

INCORPORATE VISION ZERO FRAMEWORK INTO REGIONAL TRANSPORTATION PLANNING

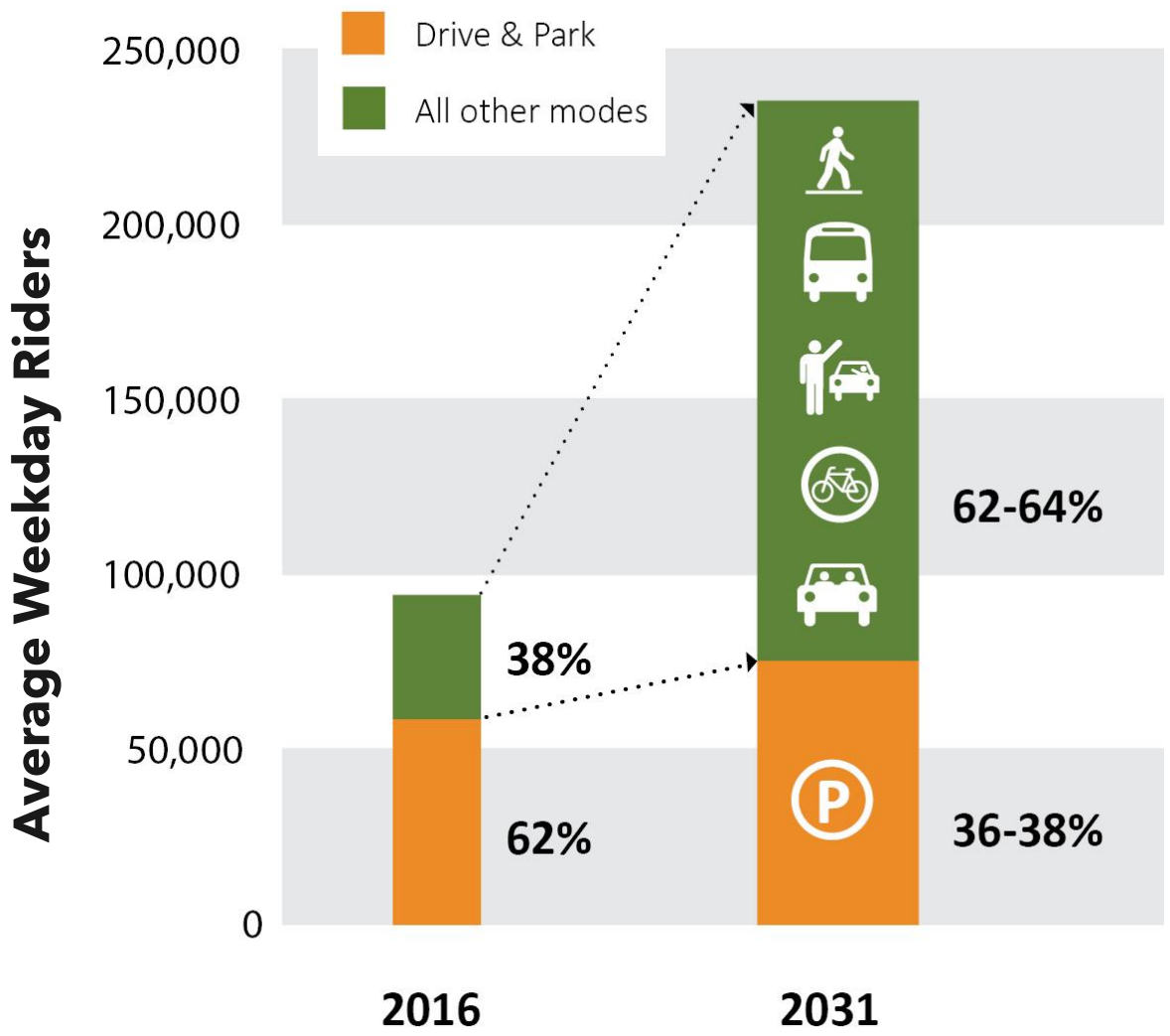
MAKE TRANSPORTATION DEMAND MANAGEMENT A PRIORITY

EXPAND THE HIGH OCCUPANCY VEHICLE (HOV) NETWORK

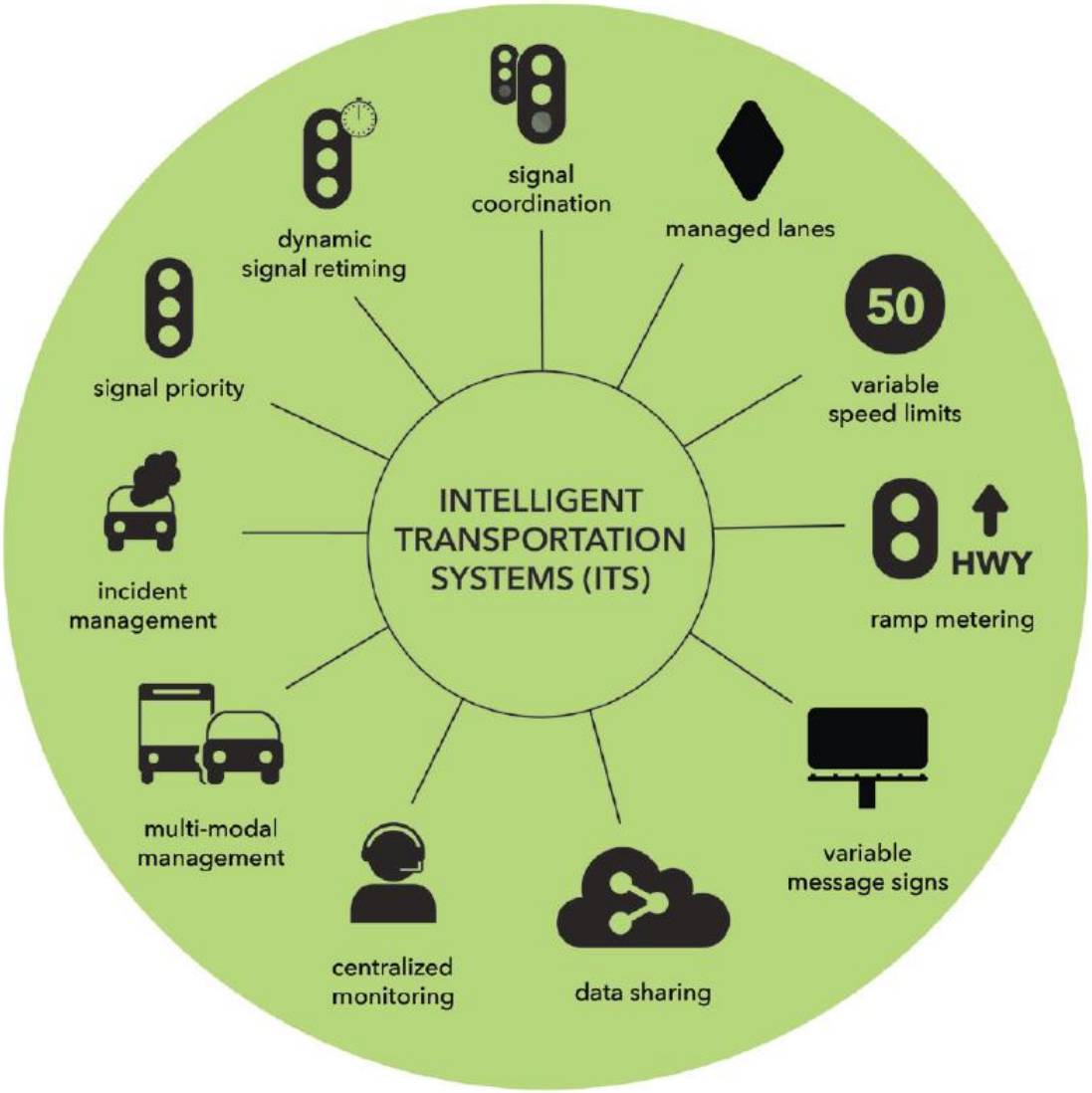
INTEGRATE ROAD AND TRANSIT PLANNING AND OPERATIONS

DEFINE AND SUPPORT A REGIONAL GOODS MOVEMENT NETWORK

PLAN FOR FIRST AND LAST MILE TO AND FROM GO STATIONS



MANAGE ROADS AND HIGHWAYS TO SUPPORT TRANSIT



STRATEGY 4:
INTEGRATE LAND USE AND TRANSPORTATION

REVIEW LEGISLATIVE LINKAGE BETWEEN PROVINCIAL AND MUNICIPAL PLANNING FRAMEWORK

REQUIRE TRANSIT SUPPORTIVE PLANNING BY MUNICIPALITIES FOR PROVINCIAL FUNDING

FOCUS DEVELOPMENT ON MOBILITY HUBS AND MAJOR TRANSIT STATION AREAS, INCLUDING JOINT DEVELOPMENT

EVALUATE INCENTIVES TO SUPPORT TRANSIT-ORIENTED DEVELOPMENT

PLAN AND DESIGN COMMUNITIES TO PROMOTE SHIFT IN TRAVEL BEHAVIOUR

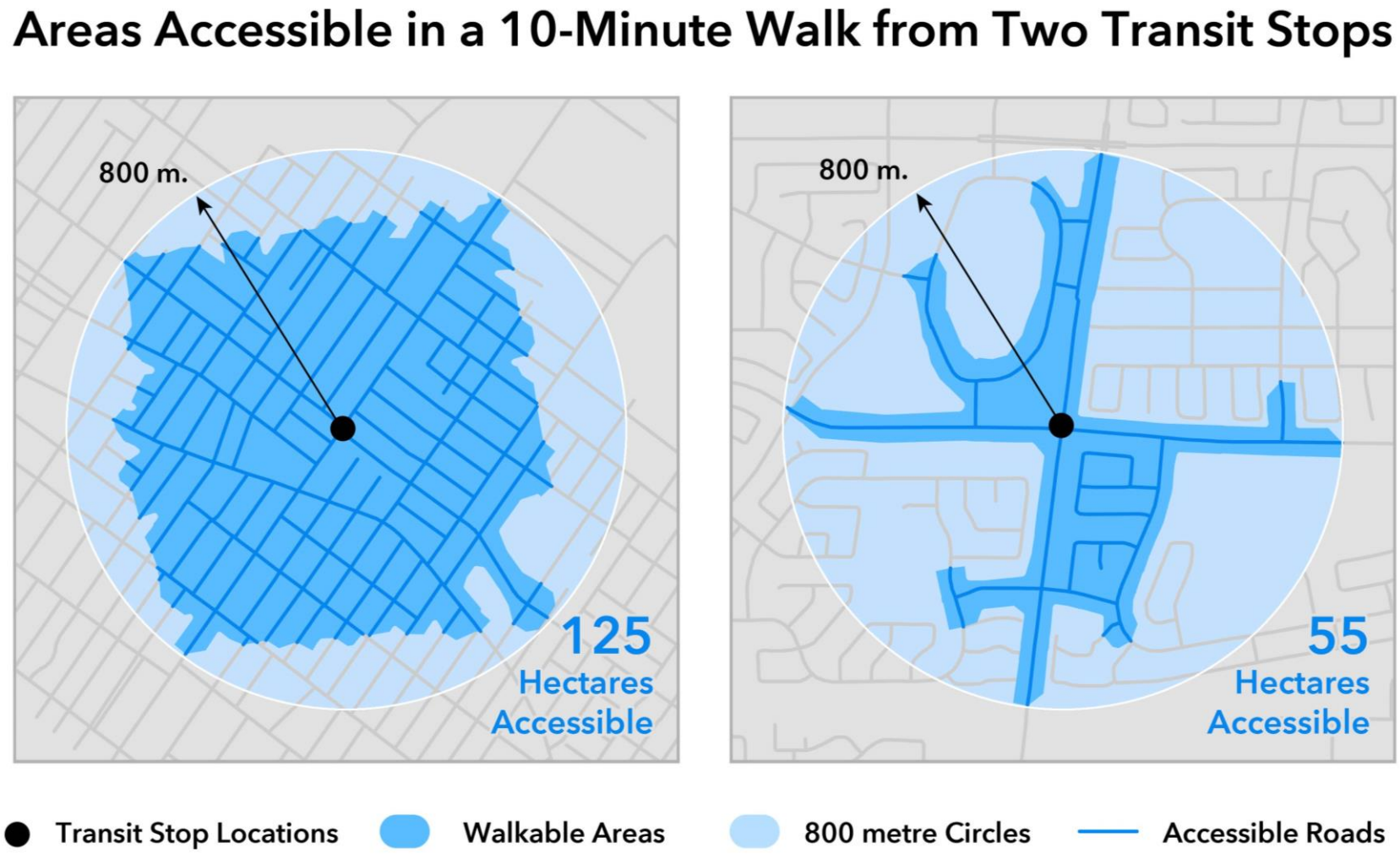
COMPLETE A REGIONAL COMMUTER CYCLING NETWORK

EMBED TRANSPORTATION DEMAND MANAGEMENT INTO LAND USE PLANNING

RETHINK THE FUTURE OF PARKING

ENCOURAGE DEVELOPMENT OF FUTURE GENERATIONS OF PEDESTRIANS AND CYCLISTS

DESIGNING STREETS TO IMPROVE WALK ACCESS TO TRANSIT



STRATEGY 5:
PREPARE FOR AN UNCERTAIN FUTURE

DEVELOP REGIONAL FRAMEWORK FOR ON DEMAND AND SHARED MOBILITY

DEVELOP REGION-WIDE PLAN FOR AUTONOMOUS MOBILITY

ADDRESS CLIMATE RESILIENCY OF THE TRANSPORTATION SYSTEM

PREPARE FOR A FUTURE WITH LOW-CARBON MOBILITY OPTIONS

DEVELOP A REGIONAL TRANSPORTATION BIG DATA STRATEGY

PARTNER FOR INNOVATION

HOW WILL THE PLAN MAKE A DIFFERENCE?

Frequent Rapid Transit Network

Existing Frequent Rapid Transit 68 km

Planned Network will be 1,623 km

Regional Cycling Network

Already Built 990 km

Planned Network will be 1,995 km

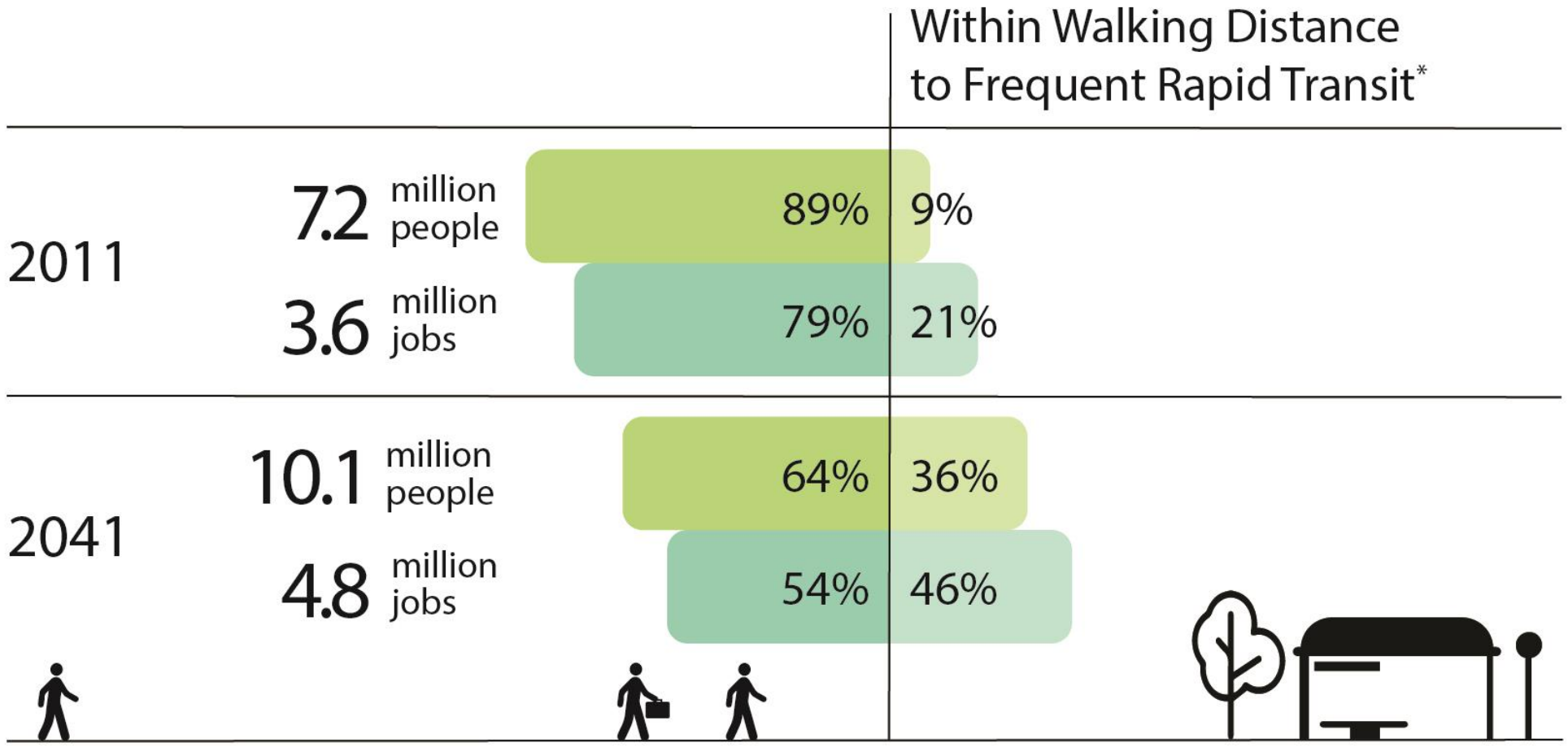
Managed Lanes Network*

Existing Mangaged Lanes 73 km

Planned Network will be 1,130 km

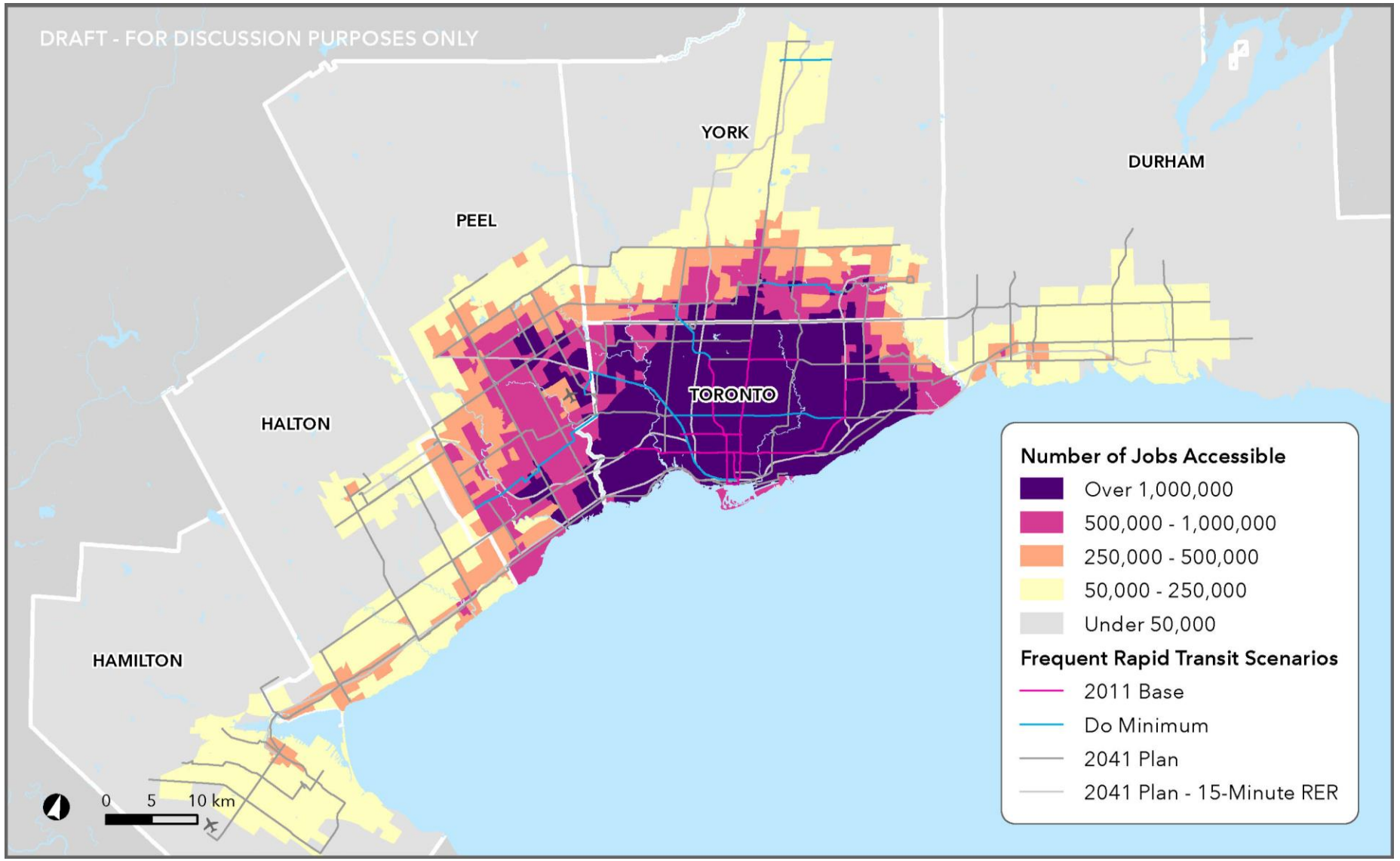
*Includes HOV/HOT Lanes

MORE PEOPLE AND JOBS NEAR FREQUENT RAPID TRANSIT

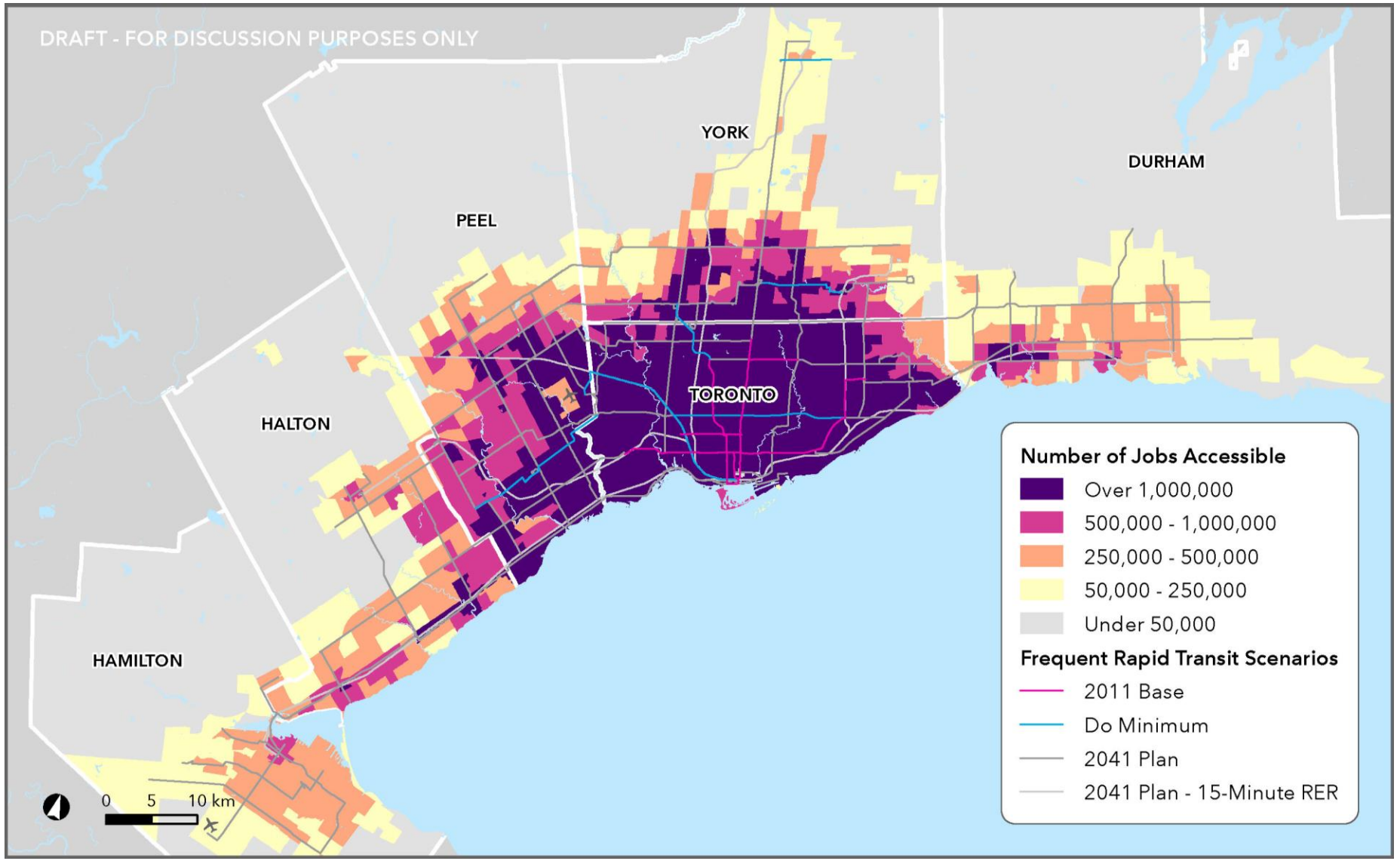


*Walking Distance is 400 m from Priority Bus, BRT and LRT lines, and 800 m from Subway and 15-minute GO stations

JOBS ACCESSIBLE IN 60 MINUTES BY PUBLIC TRANSIT - 2011



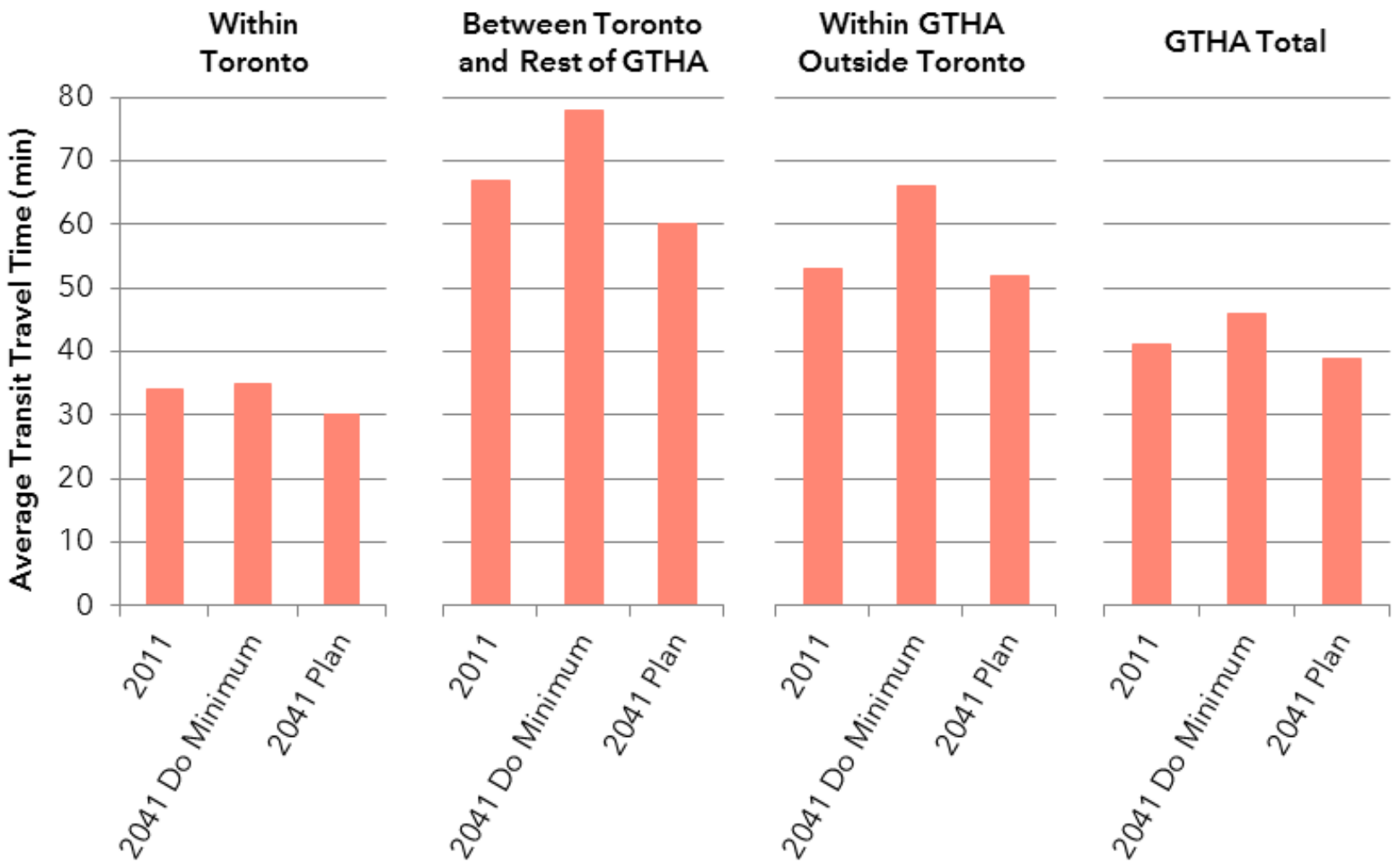
JOBS ACCESSIBLE IN 60 MINUTES BY PUBLIC TRANSIT - 2041



INCREASE IN TRANSIT TRIPS FOR DIFFERENT TRAVEL MARKETS

During Peak Periods (6:00 a.m. – 9:00 a.m. and 3:00 p.m. – 7:00 p.m.)

IMPROVED AVERAGE TRANSIT TRAVEL TIME



Between 6:45 a.m. and 8:45 a.m.

REGIONAL DECISION-MAKING

Regional collaboration –

Prioritization, integration and planning

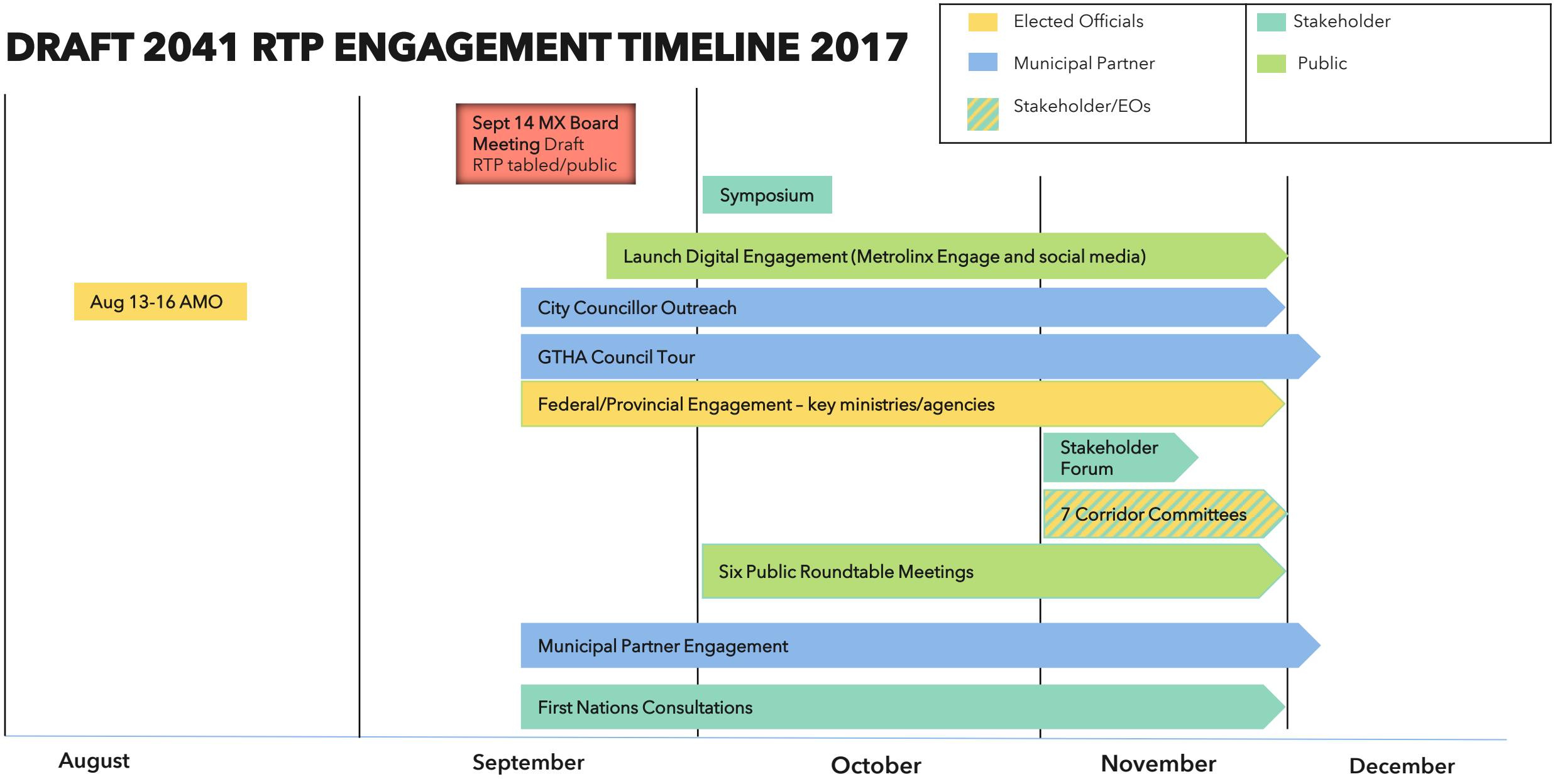
FUNDING THE PLAN

Financial sustainability –

New ways of financing, funding and generating revenue

RESIDENTS REFERENCE PANEL ON THE REGIONAL TRANSPORTATION PLAN

DRAFT 2041 RTP ENGAGEMENT TIMELINE 2017



Public Consultation

Tell us what you think!

www.metrolinxengage.com

Draft Final Plan

December 2017

RECOMMENDATION

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DRAFT 2041 REGIONAL TRANSPORTATION PLAN

FOR THE GREATER TORONTO AND HAMILTON AREA

Draft for Review by the
Metrolinx Board of Directors
September 14, 2017

NOTE: This version of the Draft 2041 Regional Transportation Plan is provided for review by the Metrolinx Board of Directors at its September 14th 2017 meeting . This version has not been approved or endorsed by the Metrolinx Board of Directors and is not the official Draft for consultation. The official Draft 2041 Regional Transportation Plan for consultation will be available shortly after the Board Meeting at: www. metrolinx.com/theplan

Message from the Chief Planning Officer

These are remarkable times for transportation in the Greater Toronto and Hamilton Area (GTHA). More than $30 billion is being invested in rapid transit infrastructure over the next eight years.

Led by Metrolinx, the Eglinton Crosstown Light Rail Transit (LRT) is under construction in the City of Toronto and Viva/YRT Bus Rapid Transit (BRT) is being built in York Region. By the end of 2017, the extension of the Yonge-University Subway to Vaughan Metropolitan Centre will be complete.

The decades-long call for a permanent and fast rail link between Lester B. Pearson International Airport and downtown Toronto was answered with the completion of the UP Express train in time for the 2015 Pan Am/Parapan Am Games.

The Regional Express Rail program, our most ambitious program yet, will transform GO Transit and the region with frequent, two-way all-day rail service, more than doubling the number of riders by 2031.

Planning and engineering design is well underway for 15 additional projects that are currently In Delivery. This includes LRTs, BRTs and subway expansions.

Union Station – the hub of the regional transit network – is undergoing a major expansion in order to meet the needs of the 200,000 people who use it now every workday and the greater number who will use it in the future.

Across the Greater Toronto and Hamilton Area, fare payment has been modernized with the PRESTO fare card.

The work of building an integrated transportation system for the GTHA is truly underway.

When the Province of Ontario created Metrolinx as a new regional transportation agency in 2006, a generation of underinvestment in transit had resulted in a transportation crisis. Travellers in the region wanted action to address congested roads and highways, gridlocked urban streets, unreliable and inconvenient transit, and a lack of safe and well-maintained bikeways and sidewalks. With the release in 2008 of the region's first ever transportation plan, *The Big Move*, Metrolinx set out a common vision for the region and a blueprint of how to transform transportation.

The ambitious expansion of transit in the GTHA is the largest in North America today. But the job is far from over. By 2041, over 10 million people will live in the region. That is comparable to the number who currently live in Paris or London. We need to plan for a future characterized not only by continued population and employment growth, but also by changing demographics (including an ageing population), the changing nature of work, new transportation technologies and services, and the impacts of climate change.

In short, we cannot stop. Our plan for moving forward – the Draft 2041 Regional Transportation Plan – calls for governments to move beyond *The Big Move* to put people's needs at the core of planning and operations. We need to increase the capacity to move people around the region. But as the transportation network in the GTHA becomes more extensive and complex, travellers'

expectations will rise and transit infrastructure alone will not be sufficient to meet the needs of a growing region. Transit providers need to broaden the focus to address not just the **quantity**, but the **quality** of transit service for travellers. That means making transit more accessible, frequent, reliable, safe, comfortable and convenient.

As the only body with a regional mandate, Metrolinx is in a unique position to plan, build, operate and connect transportation in the GTHA. But we cannot do this alone. The transportation system of the future will be extensive, complex and interconnected. Implementation will require new approaches to financing and new approaches to collaborative decision-making in the region. Working with our federal, provincial and municipal partners, the private sector and stakeholders, we can create an integrated transportation system for 2041, one that is focused on delivering the best traveller experience possible.

This Draft 2041 Regional Transportation Plan is being shared to gather broad public input that can be further considered for the final Plan. It represents the choices that need to be made to create a transportation system that supports a high quality of life, a prosperous economy and a protected environment for the next 25 years. We will be actively listening to inform the development of the final Plan.

We would like to thank the Metrolinx Board of Directors for its guidance, the Provincial government for entrusting Metrolinx with this important mandate, and the many municipal officials, civic organizations, educational institutions and citizens who are taking the time to participate in this important public dialogue.

Leslie Woo
Chief Planning Officer

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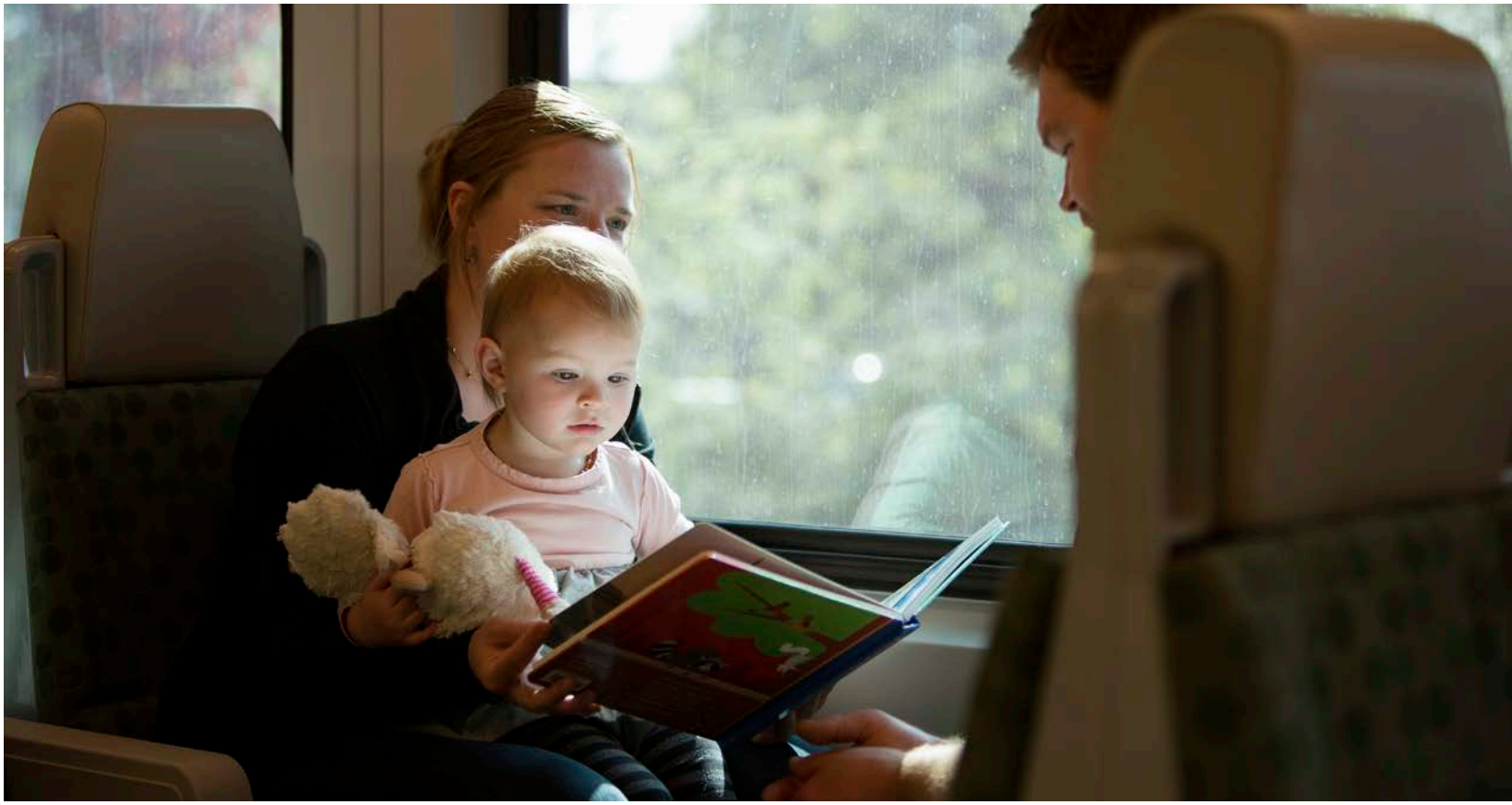


Executive Summary

The Greater Toronto and Hamilton Area is one of the fastest growing regions in North America. Its dynamic economy and diverse population attract about 110,000 new residents every year and predictions are that in 25 years – by 2041 – more than 10 million people will live here. The region will look and feel very different than the region of today, just as today feels different from the region of 25 years ago. Keeping our growing and changing region moving – getting people and goods to where they need to go – will be ever more vital for the regional economy, the quality of life of those who live here, and the natural environment. To succeed in a much more complex, interconnected and challenging environment will require not only new transportation infrastructure, but also new transportation services and new ways of working together.

The Draft 2041 Regional Transportation Plan (Draft 2041 RTP) for the Greater Toronto and Hamilton Area (GTHA) is a blueprint for what needs to be done to build an integrated, regional multi-modal transportation system, one that will serve the needs of residents, businesses and institutions until 2041. The Vision for the RTP in 2041 is that:

> **"The GTHA urban region will have a transportation system that supports complete communities by firmly aligning the transportation network with land use. The system will provide travellers with convenient and reliable connections and support a high quality of life, a prosperous and competitive economy, and a protected environment."**

The goals of the Plan are to achieve strong connections, complete travel experiences and sustainable communities.

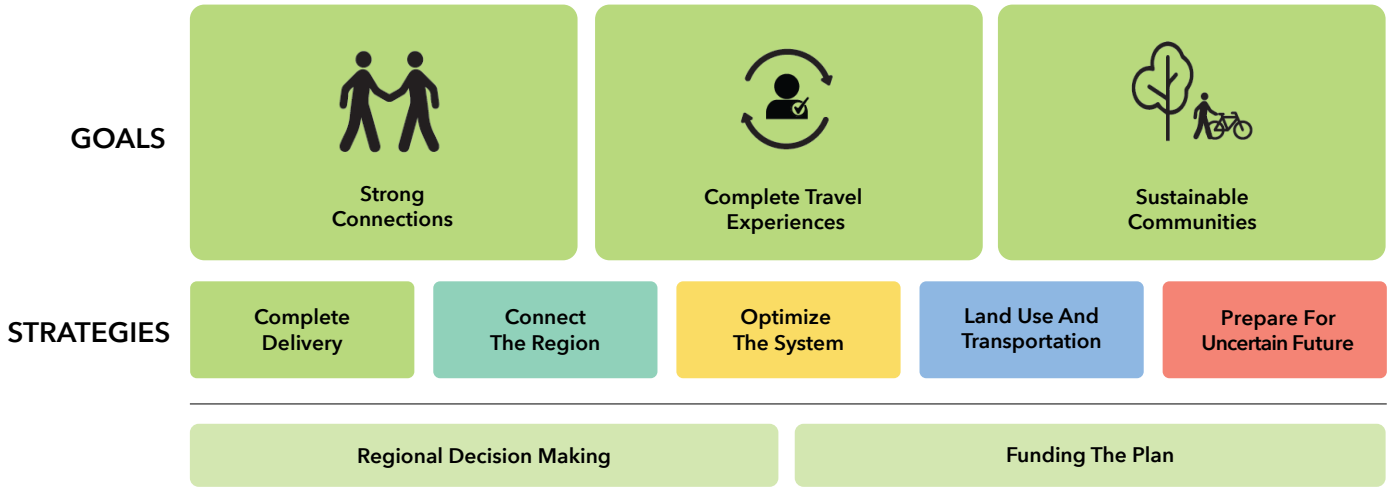
The Draft 2041 RTP was developed by Metrolinx and builds on the success of the first Regional Transportation Plan – The Big Move – that was released in 2008. The Big Move catalysed today's massive investment in rapid transit that has led to the completion of eight major transit projects:

- UP Express (Union Station - Pearson International Airport);
- Highway 7 Bus Rapid Transit (Yonge - Unionville GO);
- Davis Drive Bus Rapid Transit (Yonge - Newmarket GO);
- Mississauga Transitway (Winston Churchill - Orbiter); and
- Four GO Transit extensions (on the Kitchener, Barrie, Richmond Hill, and Lakeshore West lines).

A further 16 transit projects are In Delivery, which means that they are either in the engineering design stage or under construction.

There is little doubt that The Big Move moved the yardsticks significantly for regional transportation, but the work is far from done. In a region that will continue to grow at a rapid rate, it is vital for the region's communities, economy and the natural environment to further build out the transportation system – to increase the capacity to move people around the region. It is also important to make the best possible use of transportation assets and to provide the best traveller experience possible. All this requires that funding and decision-making approaches meet the needs of a maturing region.

The Draft Plan goes beyond (and is different from) The Big Move in that it puts **traveller needs at the core of planning and operations.**



This will be done through:

- providing even more people with transit that is fast, frequent and reliable;
- integrating fares and services to allow people to move seamlessly across the region;
- designing communities, transit stations and mobility hubs to support transit use and active transportation;
- anticipating and preparing for integrated mobility systems that use emerging transportation technologies and business models;
- using parking demand strategies to encourage car sharing and the use of modes other than the car;
- addressing the beginning and end of a traveller's journey – the first and last mile;
- optimizing the use of roads and highways to support transit and goods movement; and
- embedding design excellence in transit planning.

To achieve the 2041 Vision and Goals, the Draft Plan is organized around five Strategies that drive action.

Strategy #1: Complete the Delivery of Current Regional Transit Projects

There can be no slowing down of the current multi-billion dollar commitments made to expand transit infrastructure. A major focus of the Draft Plan is the development of GO Regional Express Rail to transform the existing GO rail system from a commuter-focused service into a regional express system with frequent all-day and two-way service. The completion of 15 other transit projects that are In Delivery (under construction or in the engineering design stage) and 13 projects that are In Development (in the planning and design stage) will extend the reach of convenient transit via subway, Bus Rapid Transit, Light Rail Transit and GO Transit.

Strategy #2: Connect More of the Region with Frequent Rapid Transit

A Frequent Rapid Transit Network will connect more people in the region with the places they want to go and provide an attractive alternative to driving. Priority Bus Corridors and Regional Express Buses will provide fast and frequent transit services to the parts of the region that are remote from rail, Light Rail Transit, Bus Rapid Transit and subway service. Meeting travellers' needs to 2041 will require further expansions to GO Regional Express Rail, other surface transit systems and subways.

Strategy #3: Optimize the Transportation System

Optimizing the transportation system in the GTHA means making the most of what we have. First, this means integrating fares and service across the region so travellers can move seamlessly from one transit system to another without paying double fares. Traveller experience will be enhanced as transit services are provided for the "first and last mile" of every trip. Integrated mobility services will allow travellers to access a fully coordinated and enhanced suite of travel options from different providers. The transportation system will provide universal, barrier-free access. An enhanced HOV (High Occupancy Vehicle) system will support faster, more reliable bus service and help make carpooling more attractive. Roads and highways will be managed to support transit use.

Strategy #4: Integrate Land Use and Transportation

To achieve the vision for the region, land use decision-making must align with transportation planning and investment. The Draft 2041 RTP contains actions to better integrate land use and transportation planning, especially around transit stations and mobility hubs. Regional collaboration supported by appropriate regulatory measures will encourage the planning of communities and road networks to support transit, cycling and walking. Parking management will encourage car sharing and prepare the region for the arrival of autonomous vehicles. A Regional Cycling Network will make it easier for cyclists to commute to work.

Strategy #5: Prepare for an Uncertain Future

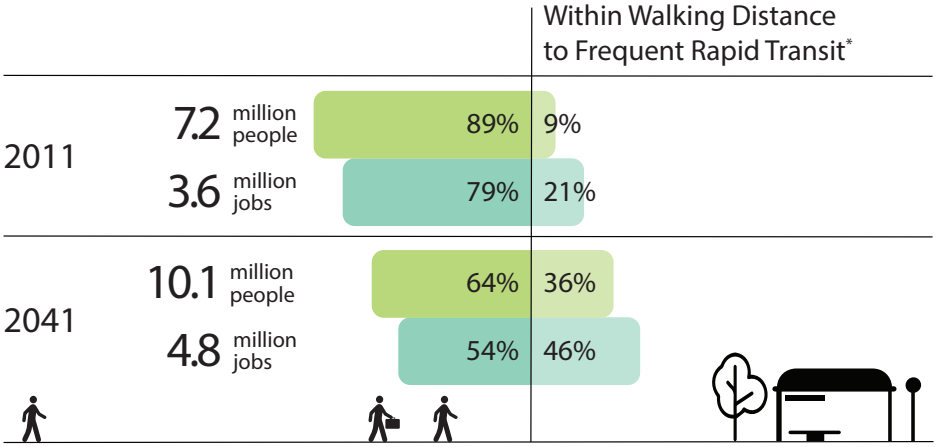
We live in a time of constant and accelerated change, and need to address this in planning for transportation in the future. A provincial framework will provide guidance for the evaluation and regulation of new transportation technologies, such as automated vehicles and shuttles. Regional coordination will produce a transportation system that is resilient to flooding and other impacts of climate change. Joint actions, including a transition to low-carbon transit vehicles, will reduce Greenhouse Gas emissions. Transit providers will partner with the private sector to drive innovation in mobility.

How will the Plan make a difference?

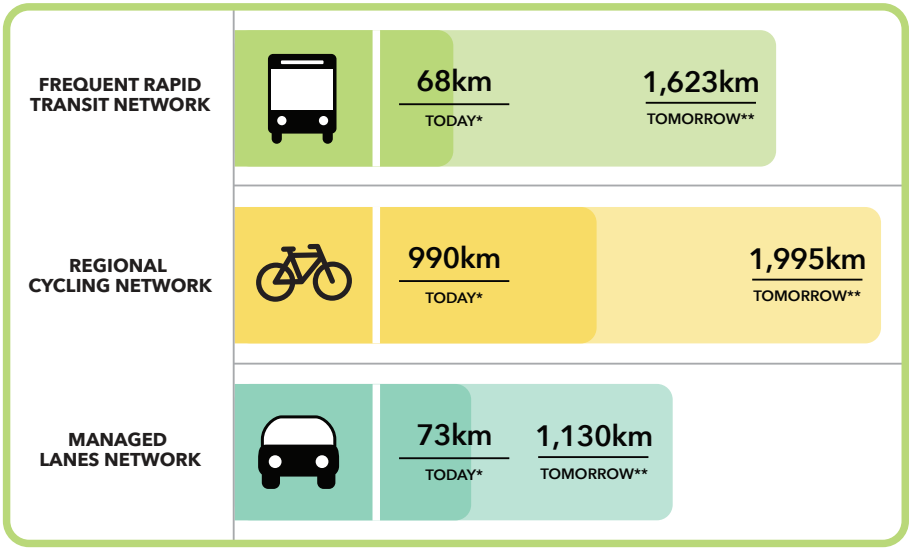
The implementation of the Draft 2041 RTP will have a profound and positive impact on travellers. Compared to today it will:

- increase the length of frequent rapid transit routes by more than 20 times;
- put more than triple the number of residents and double the number of jobs within walking distance of frequent rapid transit;
- stabilize and in many cases improve transit travel times;
- introduce a Regional Cycling Network that will double the length of dedicated cycling facilities in the GTHA;
- double the number of walking and cycling trips; and
- move towards a goal 60% of school trips being made by walking and cycling.

Implementation of the Plan will increase access to rapid transit and improve its reliability, comfort and convenience. This will be particularly important for elderly, low income and other socio-economic groups that rely heavily on public transportation. Implementation of the Plan will improve competitiveness and productivity in the GTHA by connecting workers to employers and providing access to more markets.



*Walking Distance is 400 m from Priority Bus, BRT and LRT lines, and 800 m from Subway and 15-minute GO stations



* existing ** planned for 2041

Making it Happen

The Final RTP will articulate the shared goals and actions of municipalities and other partners across the region. The scale of growth anticipated in the GTHA – a 41% increase in population between 2016 and 2041 – demands a new level of cooperation and collaboration among the Province, municipalities, transit agencies, the private sector, and residents. Implementing the 2041 RTP will require **more regional** mechanisms to coordinate transportation planning and investment and a regional approach to long-term funding.

Next Steps

The publication of the Draft 2041 RTP will mark the beginning of a consultation period that will extend through late fall of 2017. During the consultation period, Metrolinx will reach out to the public through its website, social media, public roundtables and events across the region.

A Final Draft of the Regional Transportation Plan will be informed by refined technical work and feedback from municipal partners, stakeholders and the public. It will be presented to the Metrolinx Board of Directors at its December 2017 meeting.

Introducing The Draft Plan

The Greater Toronto and Hamilton Area has emerged as one of the world's most desirable places in which to live, work, learn and invest. Its diverse and talented population, dynamic economy and robust institutions are catalyzing significant growth, making the GTHA one of the largest and fastest-growing regions in North America. This growth is expected to add approximately 110,000 new residents every year to 2041, joining the 7.2 million people who live here today[1].

With this continued growth come many challenges. There will be more than 10 million people in the region by 2041. How can we move people and goods around in ways that are safe, efficient, affordable and sustainable? How can we meet the transportation needs of tomorrow's travellers, businesses and institutions? The continued success of the region will depend on smart, timely and optimized transportation infrastructure investments. And that takes planning.

Welcome to the Draft 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area. The Plan outlines how governments and transit agencies can work together to continue building an integrated transportation system to support a high quality of life, a prosperous and competitive economy, and a protected environment in the region.

The Draft 2041 Regional Transportation Plan (Draft 2041 RTP) has been developed by Metrolinx, the provincial agency mandated with improving the coordination and integration of all modes of transportation in the Greater Toronto and

Hamilton Area (GTHA). It is being released in draft form for review and consultation with partners, stakeholders and the public. Metrolinx is seeking input to further refine the Vision, Strategies and Priority Actions before finalizing the Plan. Once approved by the Metrolinx Board Directors, the Final Plan will serve as the Board's advice to the Province and will complete Metrolinx's legislative requirements under the Metrolinx Act, 2006. More on the consultation process and the process for finalizing the Plan can be found in section 4, "Next Steps".

What is the Draft 2041 Regional Transportation Plan?

The Draft 2041 RTP is the second Regional Transportation Plan developed by Metrolinx. The first – *The Big Move* – was released in 2008. It was focused on transforming transportation in the GTHA by identifying nine 'Big Moves' and ten Strategies aimed at developing and implementing an integrated multi-modal transportation plan for the GTHA. *The Big Move* set the stage for today's massive investment in rapid transit and is responsible for the completion of a dedicated rail link to Pearson International Airport (UP Express), extensions to GO Transit, and Bus Rapid Transit (BRT) systems in York and Peel Regions. More detail on these improvements and 16 other projects that are In Delivery (in the engineering design stage or are under construction) can be found in section 2, "Setting the Stage for the Draft 2041 RTP". A list of all the transit projects that have been completed, are In Delivery, are In Development and have been proposed in the Plan can be found in Appendix 3.

The Draft Plan goes beyond *The Big Move* to put **traveller needs at the core of planning and operations.** It recommends continued expansion and optimization of the region's rapid transit network. It aims to build a truly integrated transportation system for the GTHA, one that is comprehensive, connected, accessible, sustainable, and focused on people. This requires more than just the building of transit projects. It requires collective work on the "connective tissue" that will make implementation possible – the integration of planning, fares and service, and the development of new approaches to financing and collaborative decision-making in the region.

At the heart of the RTP are five Strategies that aim to:

- complete the delivery of current regional transit projects;
- connect more of the region with frequent rapid transit;
- optimize the transportation system;
- integrate land use and transportation; and
- prepare for an uncertain future.

The Vision and Goals for 2041 and the five Strategies and the Priority Actions that relate to them are presented in section 3, "The Draft 2041 RTP".

The Draft 2041 RTP conforms to the Growth Plan for the Greater Golden Horseshoe 2017 (Growth Plan), which together with other provincial land use policy documents[2], sets the policy framework for managing growth, establishing complete communities and delivering sustainable transportation choices.

The Growth Plan and the RTP align to support the Province's Climate Change Action Plan (2016) and the goal of a low carbon future. All three plans work together to help and encourage people to travel less by car, travel over shorter distances, live closer to work, and use available resources more efficiently.

Once finalized and approved, the 2041 RTP will replace *The Big Move* and shift the planning horizon from 2031 to 2041. The 2041 horizon was chosen to correspond to the horizon of the Growth Plan for the Greater Golden Horseshoe, to which the RTP must conform. The year 2041 is also 30 years from 2011, the last year for which complete Census results are available, and thus maintains the 25-year planning horizon from *The Big Move*.

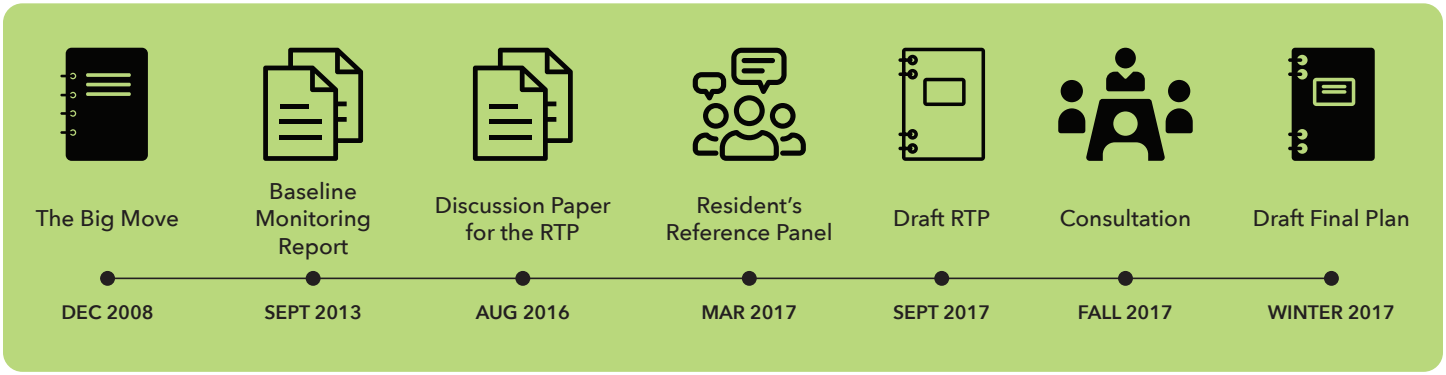
Why was it developed?

Much has changed in the decade since The Big Move was released in 2008. Significant investment has been made in rapid transit. But along with this progress has come many challenges. The GTHA has experienced rapid population growth along with changes in demographics and the nature of work. Poverty continues to be an issue and housing affordability is an increasing concern. New transportation technologies have been developed and new disruptive business models are challenging the transportation status quo. All this means that integration and coordination of transportation planning in the region is more important than ever. It is vital that transportation dollars are well spent, and that access to transportation options is improved. The Draft 2041 RTP aims to meet these influences and challenges, which are outlined in section 2.

How was it developed?

The Draft 2041 RTP was developed collaboratively over a two-year period with input from transportation experts, municipal planning professionals, stakeholders from across the region, and the lived experiences of GTHA residents. It is based on extensive research. (A list of background reports and academic studies that were developed to inform the Plan is provided in Appendix 1). It also used some new planning approaches

Figure 1: RTP Development Process



including scenario planning to examine a range of possible futures, regional traveller profiles to understand travel behaviours and attitudes, and a residents' reference panel to understand the values, issues and priorities of residents. A summary of these approaches is presented in section 3, and more detail can be found in Appendix 2.

The Strategies and Priority Actions in the Plan were identified by screening projects, programs and policy initiatives against key performance criteria, such as potential transit ridership or accessibility to jobs. The release of the RTP Discussion Paper in August 2016 enabled partners, stakeholders and the public to comment on early directions for the Draft Plan.

What will it achieve?

When fully implemented, the 2041 RTP will lead to an integrated and seamless transportation system for the GTHA. Importantly, it will improve the traveller experience and provide travellers with increased transportation choices. It will improve access to reliable and frequent rapid transit. By creating more travel options, it will make travel more affordable by reducing the need to own a car. These mobility benefits will be particularly important for elderly, low income and other demographic groups. It will help achieve the Province's objectives for land use intensification and the reduction of Greenhouse Gas emissions. It will improve competitiveness and productivity in the GTHA. More detail on the outcomes of the Plan are presented in section 3, "How Will the Plan Make a Difference?"

How will it be implemented?

The RTP is a plan for the entire region and those who plan, build, maintain and operate transportation in the region. The final RTP will articulate the shared goals and actions of municipalities and other partners across the region. Implementation will require a concerted effort by all partners, a regional mechanism to coordinate transportation planning and investment, and a regional approach to long-term funding. Recommendations on implementation are presented in section 3 under "Making It Happen".

The implementation and funding of the final RTP will be a shared responsibility of Metrolinx and its partners, including federal, provincial and municipal governments. Realizing the vision will also require the involvement of the private sector, civil society, academic partners and the public.

The final RTP will provide the strategic blueprint for Metrolinx, the Province, municipalities and transit agencies to build the integrated transportation system for the GTHA for 2041. It will also inform subsequent Metrolinx corporate strategies and how the organization executes its day-to-day work of planning, building, operating and connecting multi-modal transportation across the region.

Setting the Stage for the Draft 2041 RTP

The Greater Toronto and Hamilton Area by the Numbers

The Regional Transportation Plan for the GTHA needs to support and reflect the region's unique character. The region is large – one and a half times bigger than Prince Edward Island – and stretches 170 km from west to east (see Map 1). Rather than being one large urban area, the region is polycentric, with its 7.2 million people living in 30 municipalities. Land-use is diverse, and includes high density and low density residential areas, commercial and employment lands, extensive green space and rural and agricultural areas. The Oak Ridges Moraine and Niagara Escarpment are prominent landforms and have special status under provincial law.

There are nine municipal transit agencies, eight transit agencies for people with disabilities, and one regional transit agency (Metrolinx) in the region. Figure 2 provides some key facts about the existing transportation system that includes roads and highways, public transit, three international airports, two intermodal freight terminals and three major ports. There are about 3.46 million cars in the region and its residents take some 668 million transit trips annually.

Thirty years ago the dominant travel pattern in the region was characterized by commuters travelling into Toronto in the mornings for work, and outward from the city in the evenings. With the growth of communities outside Toronto and the development of employment and amenities across the region, this is no longer the case. Today, there is continual movement of traffic and transit in all directions at all times of the day and night. Residents may live in Pickering and work in Burlington, or live in Toronto and work in Georgetown.

As the region has grown, it has become more integrated socially and economically. It is also tied in many ways to the areas outside of the region, in the rest of the Greater Golden Horseshoe, notably the Waterloo Region, which is connected to the GTHA by a Toronto-Waterloo "technology and innovation corridor".

Figure 2: The Region's Transportation System: Key Facts[3]

490
km of regional rail and rapid transit in the GTHA

Includes GO rail, subway, Scarborough RT and BRT.

61
GO train stations in the GTHA

2.8+
million PRESTO customers

Includes GO Service Area and Ottawa.

721
million transit trips taken in the GTHA annually (2015)

66.8
million GO transit trips taken annually (2016)

300,000+
daily Union Station transit users

585
km of provincial highways within the GTHA

Includes 407 ETR (107 km), Highway 407 (22 km) and Highway 412 (10 km).

5
municipal expressways

Don Valley Parkway, Gardiner Expressway, Allen Road, Red Hill Valley Parkway, Lincoln M. Alexander Parkway

3.55
million cars owned in the GTHA (2011)

33
carpool lots in the GTHA

110
lane-km of HOV or HOT lanes

13.6
million daily trips made by GTHA residents (2011)

370
bike-share stations

3,500
bike-share bicycles

Hamilton, Toronto

3
international airports

Lester B. Pearson International Airport, John C. Munro Hamilton International Airport, Billy Bishop Toronto City Airport

3
major ports

Hamilton, Oshawa, Toronto

Roles in the RTP: Metrolinx, the Province and Municipalities

Metrolinx

Metrolinx was created by the Province under the *Metrolinx Act, 2006*. Its role is to develop and adopt a transportation plan for the regional transportation area (GTHA) and plan, co-ordinate and set priorities for its implementation. As specified in the Act, the Regional Transportation Plan must:

- take into consideration all modes of transportation, including highways, railways, local transit systems, the regional transit system, cycling and walking;
- make use of intelligent transportation systems and other innovative technologies;
- comply with the Minister's transportation plans, policies and strategies for the province as they apply to the regional transportation area;
- comply with the prescribed provincial plans and policies;
- conform with the growth plans prepared and approved under the Places to Grow Act, 2005 applicable in the regional transportation area;
- promote the integration of local transit systems in the regional transportation area with each other and with the regional transit system;
- work towards easing congestion and commute times in the regional transportation area;
- work towards reducing transportation-related emissions of smog precursors and Greenhouse Gases in the regional transportation area; and
- promote transit-supportive development to increase transit ridership and to support the viability and optimization of transit infrastructure.

Metrolinx also plans for and operates GO service in the GO Transit Service Area, which is established by regulation under the Act.

Province of Ontario

The Province's Growth Plan for the Greater Golden Horseshoe (the Growth Plan) issued under the Places to Grow Act, 2005 sets out a broad vision for transportation and accessibility within the Greater Golden Horseshoe (GGH) region. In addition, the Minister of Transportation has a mandate to "oversee a world-class provincial transit and transportation system that moves people and goods safely, efficiently and sustainably to support a globally competitive economy and a high quality of life". The Province's policy priorities and the Minister's mandate letter set the policy framework for transportation in the province and the region. The Ministry of Transportation (MTO) funds transit and transportation capital investments through its *Moving Ontario Forward* program and others. The Province also provides eligible municipalities a guaranteed source of funding to improve and expand their transit services through the Gas Tax program.

The Province created Metrolinx in 2006 to provide leadership in the coordination, planning, financing, development and implementation of an integrated, multi-modal transportation network in the Greater Toronto and Hamilton Area (GTHA). The Minister sets Metrolinx's mandate and priorities through annual mandate letters and other letters of direction, as provided through the *Metrolinx Act, 2006*.

The Ministry of Transportation is also developing a multi-modal transportation planning study to 2050 for the GGH, to be completed in early-2019.[4] The work will advance multi-modal transportation planning in the GGH and provide planning direction to transportation agencies and service providers for all modes, including highways, railways, regional transit systems, cycling, and walking. It will also include a review of the provincial HOV lane network, development of a High-Occupancy Toll (HOT) network in the GGH, and development of a goods movement network.

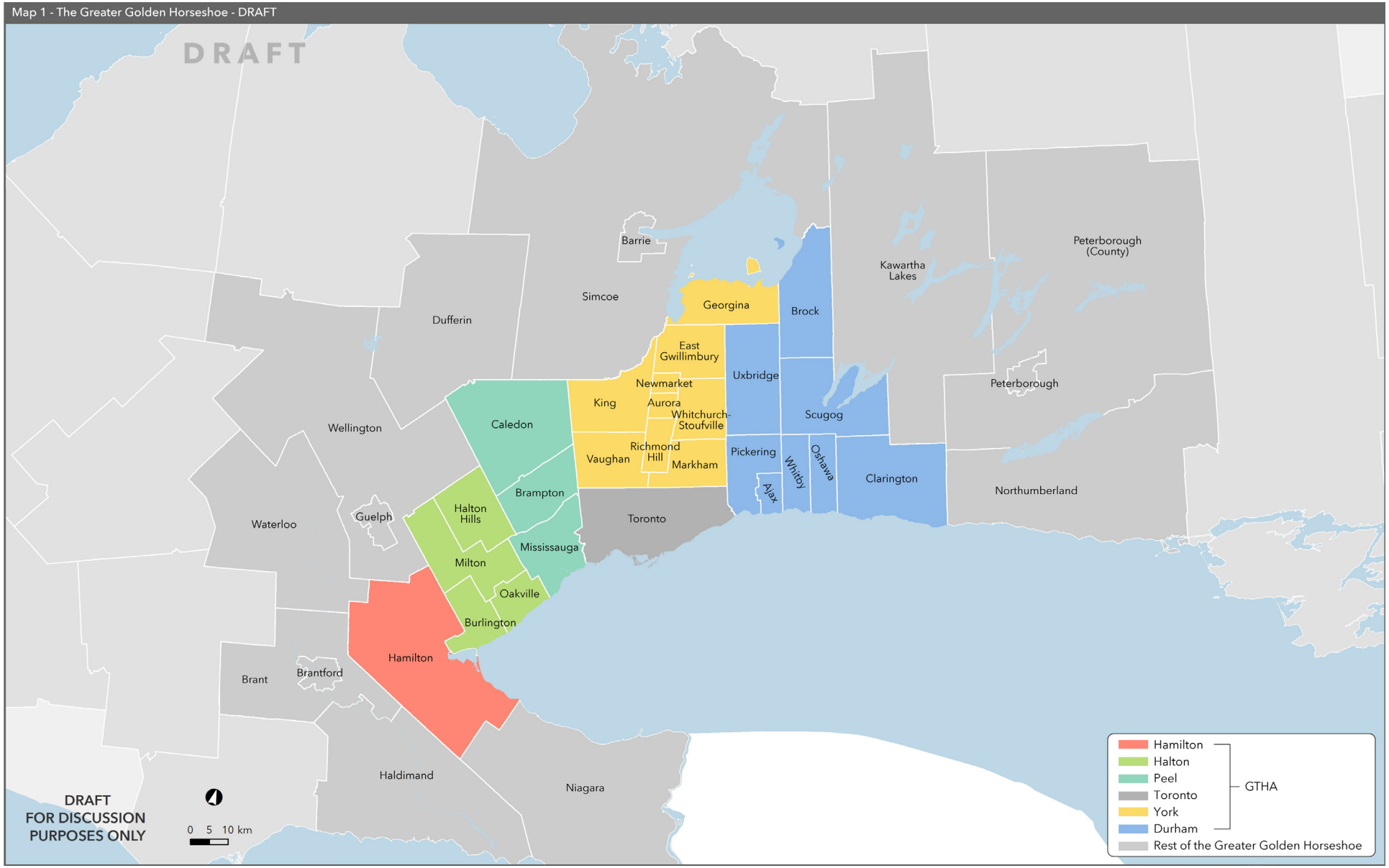
Municipalities

All municipalities in the GTHA have Transportation Master Plans (TMPs) with a multi-modal focus that includes transit, roads and active transportation. While they are not required by legislation, municipalities develop TMPs to complement official plans and support the integration of transportation planning with land use planning. Some municipal TMPs consider other policy areas including safety, goods movement and demand management that would also benefit from a regional lens.

Transit has been the sole purview of governments for decades, but in recent years new global private sector companies have entered the field with novel services that do not fit the traditional definitions of transit or taxis and transcend municipal boundaries. In the absence of provincial direction, municipalities are wrestling with the potential impacts of these private sector companies. With a clear policy framework covering the region, more private sector companies could potentially be induced to enter the region. This will increase opportunities for new partnerships and allow for consistent approaches to be used. Regional coordination can help to review and evaluate new services and technologies and, if appropriate, establish innovative partnerships to meet the travel needs of residents.

The Draft 2041 RTP builds on municipal TMPs and integrates them into a more coherent and logical plan for the whole region. Strong municipal leadership provides a foundation for some of the region-wide approaches in the Draft 2041 RTP and remains crucial for these approaches to progress. approaches to progress.

Map 1 - The Greater Golden Horseshoe - DRAFT



The Big Move Legacy

The publication by Metrolinx in 2008 of *The Big Move* came at a time when decades of under-investment in transit had led to "congested roads and highways, gridlocked urban streets, unreliable and inconvenient transit, and a lack of safe bikeways and pedestrian pathways".[5] The regional rail and rapid transit system as it was in 2008 is depicted in Map 2. *The Big Move* – the region's first RTP – was a call to action by municipal governments for regional coordination of transportation and a blueprint for what needed to be done together for the GTHA to succeed.

Ten years later, it is evident that *The Big Move* was the springboard for a historic more than $30 billion dollar investment in rapid transit. This investment is aimed at improving and expanding transit by heavy rail, including the GO RER program and UP Express, Light Rail Transit (LRT), Bus Rapid Transit (BRT) and subway throughout the GTHA. Perhaps most notably, it will fund the transformation of GO Transit from a commuter-focused service into Regional Express Rail with 15-minute service all day in both directions. Initial two-way all-day service has already been introduced on the Barrie and Stouffville lines. The introduction of half-hour service on the Lakeshore line in 2013 was the largest service expansion in GO Transit's history.

The Big Move contained ten strategies that addressed all aspects of the transportation system and dozens of the original Priority Actions. Work has begun on almost all the actions recommended in *The Big Move*, but the major focus of implementation in the last ten years has been the planning and construction of rapid transit. Significant improvements to the rapid transit network have

already been made and these have improved access, choice and level of service for travelers in the GTHA. Recently completed projects include:

- UP Express (connecting Union Station with Pearson Airport);
- Highway 7 Bus Rapid Transit (BRT) (Yonge - Unionville GO);
- Davis Drive BRT (Yonge - Newmarket GO);
- Mississauga Transitway (Winston Churchill - Orbiter); and
- Four GO Transit extensions (on the Kitchener, Barrie, Richmond Hill and Lakeshore West lines).

Sixteen more transit projects are In Delivery and are currently being planned or are under construction[6] (see Figure 3). These projects vary in scale and include GO RER, five LRTs, three BRTs, a Transitway, four GO Transit extensions and two subway extensions. These are all targeted for completion by 2024.The existing and In Delivery regional rail and rapid transit network is shown on Map 3. A list of all the transit projects that have been completed, are In Delivery, are In Development and have been proposed in the Plan can be found in Appendix 3.

Figure 4 highlights more of the accomplishments of *The Big Move* that support investments in transit infrastructure. This includes an $800 million revitalization of Union Station, the adoption of the PRESTO card system by transit agencies throughout the GTHA, the introduction of bus bypass lanes on the Don Valley Parkway and 400 series highways, and the construction of over 25 new bridges and underpasses that allow pedestrians and cyclists to cross highways, rail lines and waterways. With shovels in the ground across the region and many rapid transit projects In Delivery, it is important to ensure that these investments are completed and optimized to provide the greatest benefits to travellers.

Figure 3: Transit Projects In Delivery

Metrolinx and partners are delivering an array of new rapid transit solutions across the Greater Toronto and Hamilton Area to serve the people currently travelling in and out of the GTHA, and support the projected future growth in the region.

GO Regional Express Rail (RER)

The GO RER program will shift from a largely commuter system to a comprehensive regional rapid transit option. Additional stations and line extensions will bring the GO rail network to new markets which will enable seamless travel across the region. There will be service improvements on all 7 lines with 5 lines seeing electric trains running two-way all-day service every 15 minutes or better

- Opening Year: 2024

Mississauga Transitway

Completion of the Mississauga Transitway across Mississauga to its western terminus, Renforth Gateway.

- From Orbitor Station to Renforth Gateway in Mississauga.
- Length: 1.4 km (Total transitway length is 18 km)
- Opening Year: 2017

Toronto-York Spadina Subway Extension

First extension of the subway into York Region; links Vaughan Metropolitan Centre and York University to downtown Toronto.

- From Sheppard West Station in Toronto to Highway 7 in Vaughan.
- Length: 8.6 km
- Opening Year: 2017

Yonge BRT (North)

Bus rapid transit along Yonge St.; connects to the the Viva Davis Drive rapidway.

- From Savage Rd. to Davis Dr. in Newmarket.
- Length: 2.4 km
- Opening Year: 2018

Yonge BRT (South)

Bus rapid transit along Yonge St.; connects to the Viva Highway 7 rapidway and future Yonge North Subway Extension.

- From Highway 7 to 19th Ave./Gamble Rd. in Richmond Hill.
- Length: 6.5 km
- Opening Year: 2018

Highway 7 West BRT

Extension of the Highway 7 Viva rapidway westward; links Richmond Hill and Vaughan.

- From Yonge St. in Richmond Hill to Helen Ave. in Vaughan.
- Length: 16 km
- Opening Year: 2019

Bloomington GO Extension

Extension of the Richmond Hill line north to the border of Richmond Hill and Aurora.

- From Gormley Station to Bloomington Rd. and Highway 404 in Richmond Hill.
- Length: 4 km
- Opening Year: 2019

Figure 3: Transit Projects In Delivery (continued)

Eglinton Crosstown LRT

New light rail transit corridor across Eglinton Ave., including a 10 kilometre underground portion.

- From Mount Dennis to Kennedy Station in Toronto.
- Length: 19 km
- Opening Year: 2021

Confederation GO Extension

Extension of the Lakeshore West line; links Stoney Creek to downtown Toronto.

- From West Harbour Station to Centennial Parkway in Hamilton.
- Length: 9 km
- Opening Year: 2021

Finch West LRT

New light rail transit corridor along Finch Ave.; links the Toronto-York Spadina Subway Extension and Humber College.

- From Finch West Station to Humber College in Toronto.
- Length: 11 km
- Opening Year: 2021

Hurontario LRT

New light rail transit corridor along Hurontario St.; links Port Credit to downtown Mississauga and Brampton.

- From Port Credit GO Station in Mississauga to Steeles Ave. in Brampton.
- Length: 20 km
- Opening Year: 2022

Niagara GO Service

New peak-period GO rail service; links Niagara Falls to Hamilton.

- From Confederation Station in Hamilton to Niagara Falls.
- Length: 62 km
- Opening Year: 2023

Bowmanville GO Extension

Extension of the Lakeshore East line; links Bowmanville and downtown Oshawa to downtown Toronto.

- From Oshawa Station to Bowmanville.
- Length: 20 km
- Opening Year: 2024

Hamilton B-Line LRT

New light rail transit corridor through downtown Hamilton along Main and King Streets, and Queenston Rd.

- From McMaster University to Eastgate Square in Hamilton.
- Length: 14 km
- Opening Year: 2024

Scarborough Subway

Extension of the Bloor-Danforth Subway eastward; links Scarborough and downtown Toronto.

- From Scarborough Centre to Kennedy Station in Toronto.
- Length: 6 km
- Opening Year: Less than 10 years

Sheppard East LRT

New light rail transit corridor along Sheppard Ave., extending rapid transit access eastward from Don Mills Station.

- From Don Mills Station to east of Morningside Ave. in Toronto.
- Length: 13 km
- Opening Year: Less than 10 years

Figure 4: Accomplishments of The Big Move that Support Investments in Transit Infrastructure

THE BIG MOVE STRATEGIES

- BUILD A COMPREHENSIVE REGIONAL RAPID TRANSIT NETWORK
- ENHANCE AND EXPAND ACTIVE TRANSPORTATION
- IMPROVE THE EFFICIENCY OF THE ROAD AND HIGHWAY NETWORK
- CREATE AN AMBITIOUS TRANSPORTATION DEMAND MANAGEMENT PROGRAM
- CREATE A CUSTOMER-FIRST TRANSPORTATION SYSTEM
- IMPLEMENT AN INTEGRATED TRANSIT FARE SYSTEM
- BUILD COMMUNITIES THAT ARE PEDESTRIAN, CYCLING AND TRANSIT-SUPPORTIVE
- PLAN FOR UNIVERSAL ACCESS
- IMPROVE GOODS MOVEMENT WITHIN THE GTHA AND WITH ADJACENT REGIONS
- COMMIT TO CONTINUOUS IMPROVEMENT

The Big Move set out ten strategies to achieve its Vision, Goals and Objectives. Here is a snapshot of progress to date and some key examples of actions and policies.

THE STATUS OF THE BIG MOVE'S 92 ACTIONS AND POLICIES*

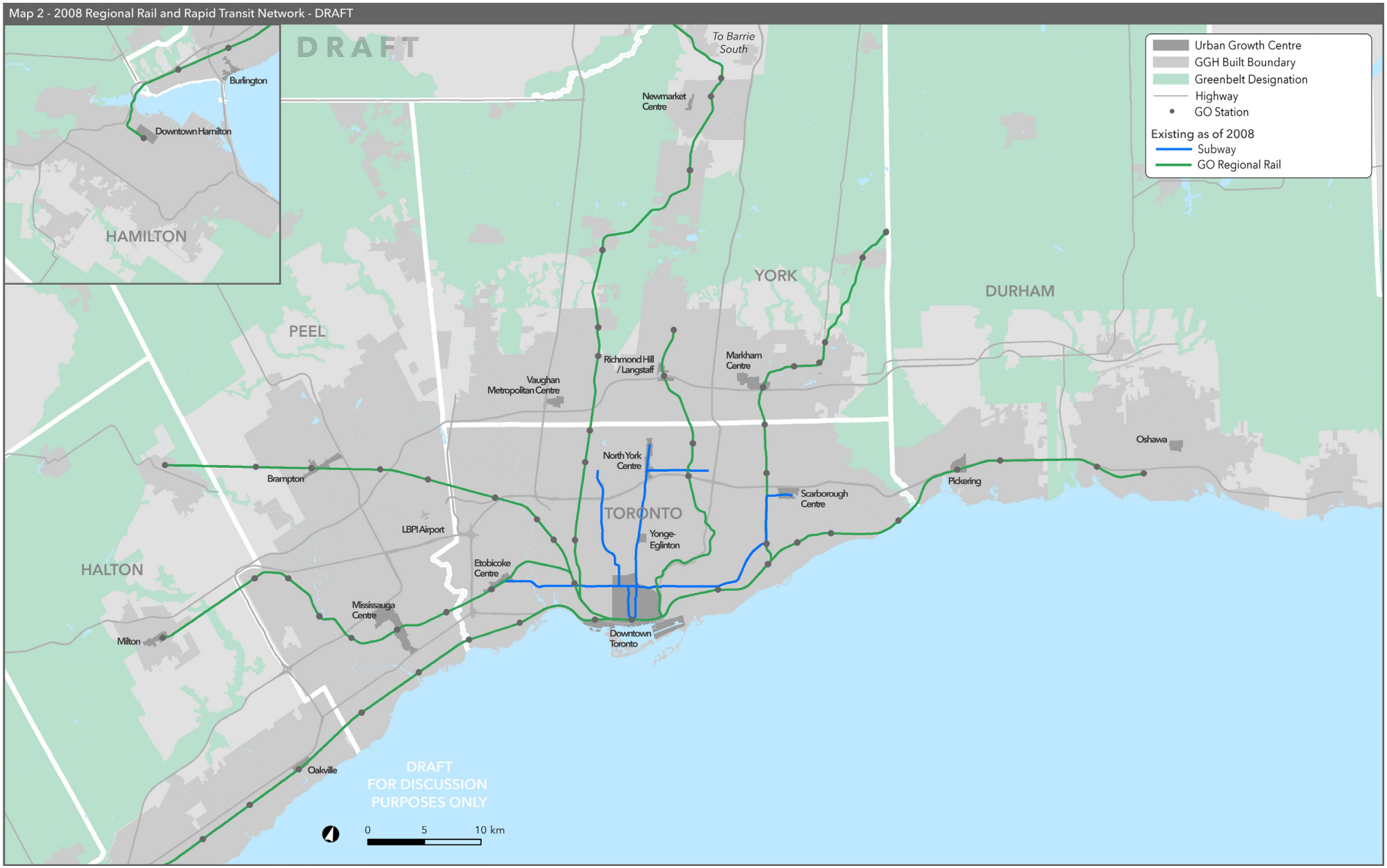
31.5%	62.0%	6.5%
Complete / Continuous	In Progress	To be Initiated

ACCOMPLISHMENTS

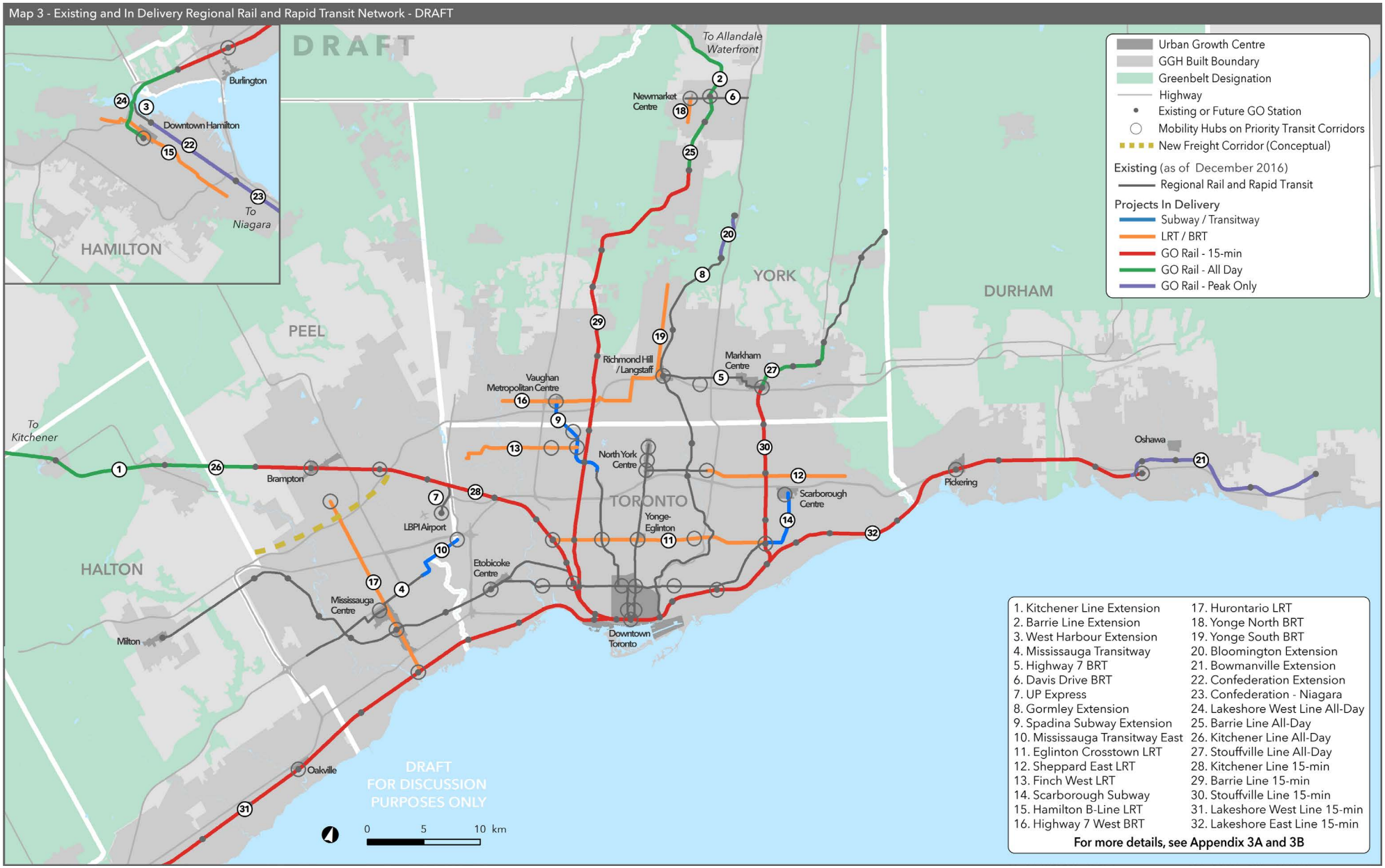
- The City of Toronto, Metrolinx and their partners are undertaking a $800 million **revitalization of Union Station.**
- Public transit agencies added **bike racks** to all GTHA transit buses (4200+).
- Metrolinx introduced **priority parking for carpool users** at 49 GO Transit stations.
- **Bus bypass lanes** were introduced to the Don Valley Parkway by the City of Toronto, and to Highway 403 and Highway 401 by the Ministry of Transportation.
- Municipalities and Metrolinx **expanded the Smart Commute** program to provide TDM programming for over 300 members.
- Metrolinx launched the **Triplinx** regional travel planning tool, and introduced the **GO Passenger Charter.**
- Transit agencies throughout the GTHA (and Ottawa) have adopted the **PRESTO fare card** system, with more than 2.8 million cards activated.
- Metrolinx and municipalities added over 25 new **walking and cycling bridges and underpasses** across highways, rail lines and waterways.
- Metrolinx introduced Mobility Hub Guidelines and the GO Rail Station Access Plan.
- Metrolinx established the Regional Accessibility Advisory Committee.
- Metrolinx established the multi-sectoral GTHA Urban Freight Forum and a goods movement data framework.
- Convened Planning Leaders Forum (commissioners and heads of municipal planning deparments in the Greater Golden Horseshoe) for 8 years.

*For more details, please see *The Big Move Baseline Monitoring Report and Supporting Documents*, 2013 and *The Big Move Priority Action and Supporting Policy Review*, 2016.
Available at: http://www.metrolinx.com/en/regionalplanning/rtp/review.aspx

Map 2 - 2008 Regional Rail and Rapid Transit Network - DRAFT



Map 3 - Existing and In Delivery Regional Rail and Rapid Transit Network - DRAFT



Key Influences on Transportation

Many of the factors that influence transportation in the GTHA have changed since 2008 when *The Big Move* was developed, for example:

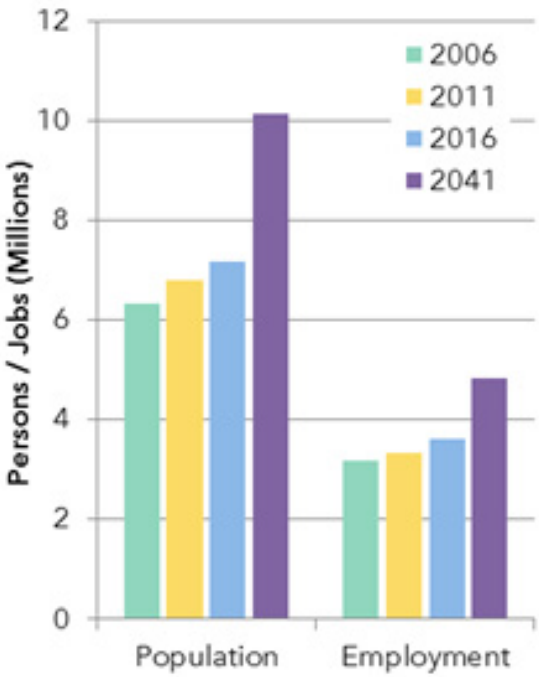
- growth is continuing but growth patterns are changing;
- the demographic profile of the region is changing;
- poverty is an increasing concern;
- housing has become increasingly expensive;
- the nature of work has changed;
- disruptive business models are challenging the transportation status quo;
- new transportation technologies are being developed; and
- climate change is an increasing concern.

Many factors, including ones that we cannot predict, will continue to change over the life of this plan. The Draft 2041 RTP looks beyond current conditions to consider a range of future challenges and opportunities. It also anticipates the prospect of rapid and unknown change. By understanding how the movement of people and goods might change, the Plan can anticipate ways for the transportation system to remain relevant, effective and efficient under a range of possible futures.

Growth is continuing and growth patterns are changing

Over the next 25 years, the population of the GTHA is expected to grow to 10.1 million people and the number of jobs is expected to rise to 4.8 million[7] (see Figure 5). The population and

Figure 5: Total Population Growth and Employment in the GTHA to 2041



employment growth as forecasted in the Growth Plan for the GGH is shown for GTHA municipalities in Figure 6. While most of the growth in people and jobs will continue to occur in GTHA municipalities outside of Toronto, recent trends indicate that significantly more growth is expected to take place in Toronto than was forecasted, particularly in the downtown area.[8] Suburban centres outside of Toronto, including designated Urban Growth Centres, may not see the concentration of growth envisioned in the provincial Growth Plan. Outside of Toronto detached and semi-detached homes are expected to continue to dominate the housing market. Nonetheless, higher density housing forms are becoming increasingly common in these areas, and a few significant urban centres outside of Toronto are starting to emerge.

Office employment, which is a major driver of transit use, is becoming increasingly concentrated in downtown Toronto and in a few large suburban employment centers (see Figure 7).[9] Importantly, significant employment is also occurring outside the designated Urban Growth Centres and away from existing and planned rapid transit services. Suburban employment areas continue to be designed around the car, and are difficult to serve by transit and to navigate on foot or by bicycle.

Figure 6: Growth in Population and Employment by GTHA Municipality Predicted in the Growth Plan

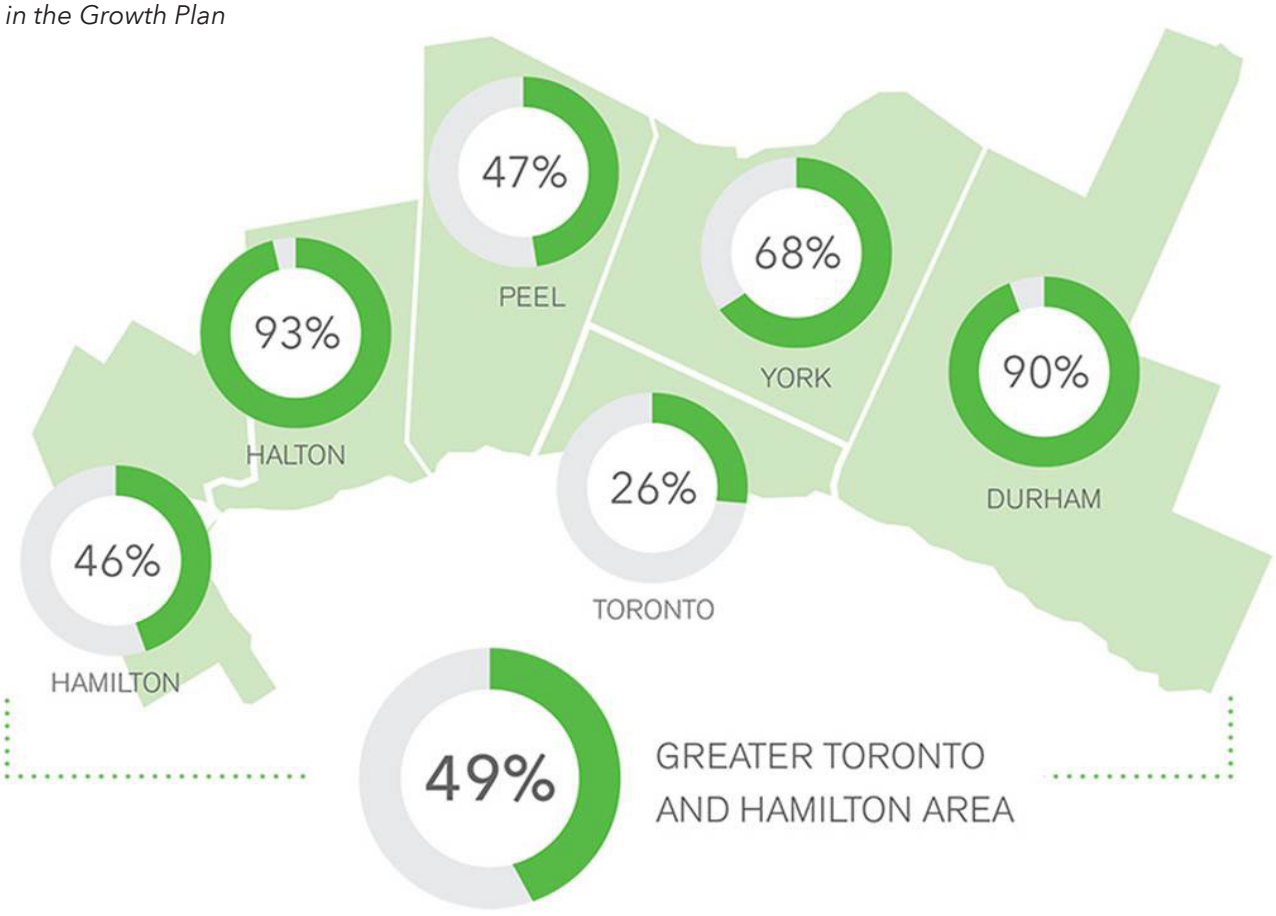
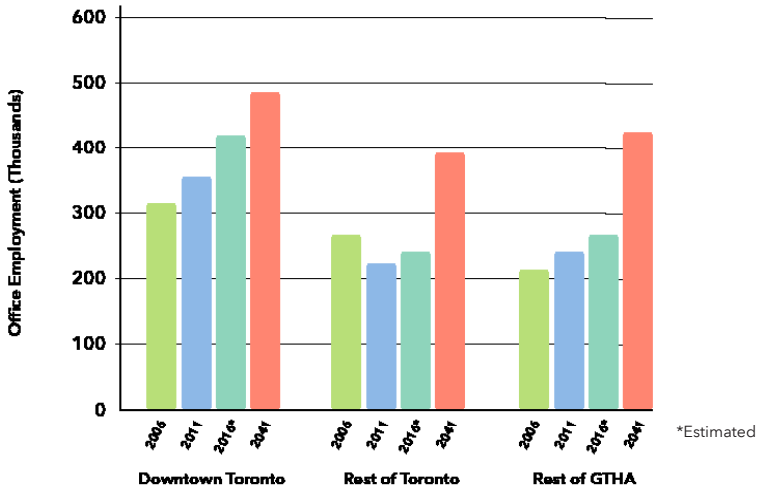


Figure 7: Growth in Office Employment in the GTHA to 2041



The concentration of growth in downtown Toronto, particularly office employment, is expected to continue, furthering the need for increased transit capacity and access to the downtown core from across the region. However, most growth in the region is forecasted to take place outside of Toronto, and this will result in a significant increase in total trips within and between these municipalities (see Figure 8). Travel in these fast-growing travel markets outside of the city of Toronto has traditionally been dominated by the automobile, with transit making up only about 4% of trips in the morning peak period (see Figure 9). Overall, 25% of population growth and 20% of growth in transit trips to 2041 is projected to be in areas of the GTHA where the current transit mode share is less than 5%.

Demographics are changing

Demographic projections in the GTHA are highly sensitive to immigration policy and economic trends. While the population of the region is growing rapidly, it is also changing. The number of seniors (people over 65) will double by 2035, and will increase as a proportion of the total population to almost 24% by 2041 from 14% in 2016 (see Figure 10).[10] Understanding how this is taking place over time will help planners plan and manage the transportation system, as different age groups have different transportation needs.[11] Seniors are less likely to use transit, for example, which will create challenges for planning and delivering the next generation of mobility services. The population is also becoming more diverse demographically, and population growth is becoming increasingly driven by immigration.[12] Understanding the travel preferences of a changing population will be important in planning transportation in different parts of the region, where household sizes and auto ownership rates may be changing.

Figure 8: Total Peak Period Travel Demand by Travel Market to 2041

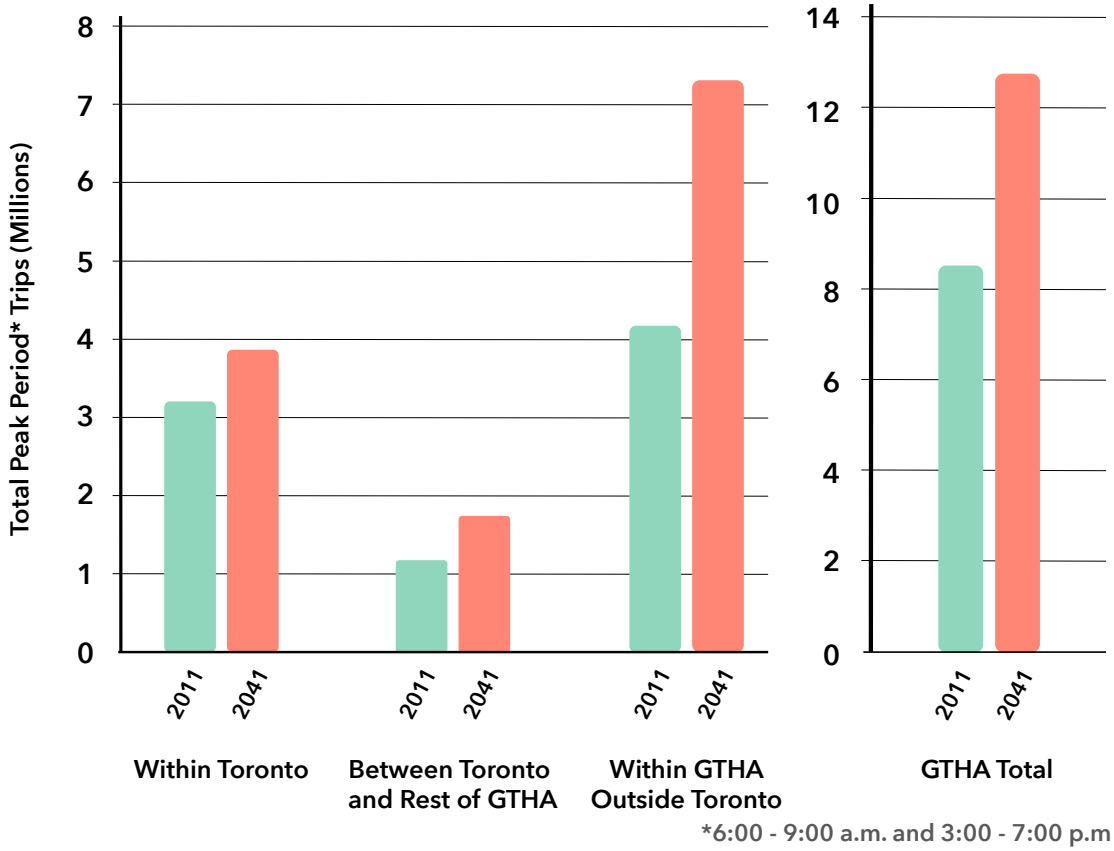


*Figure 9: Current Mode Share in the Peak Period**

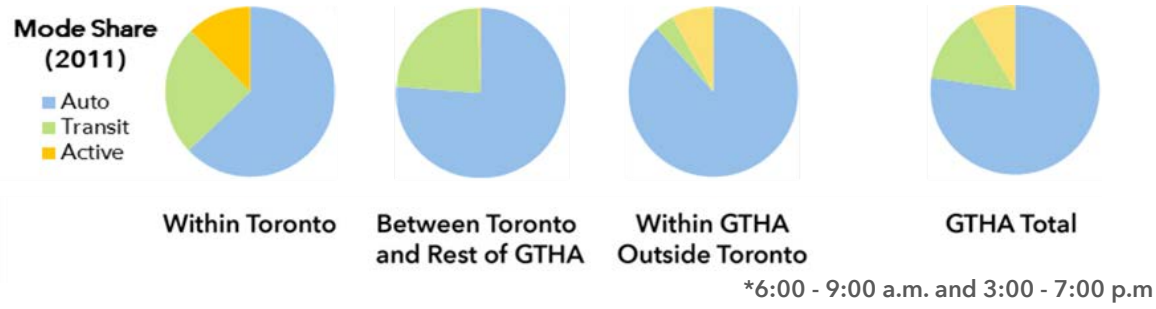
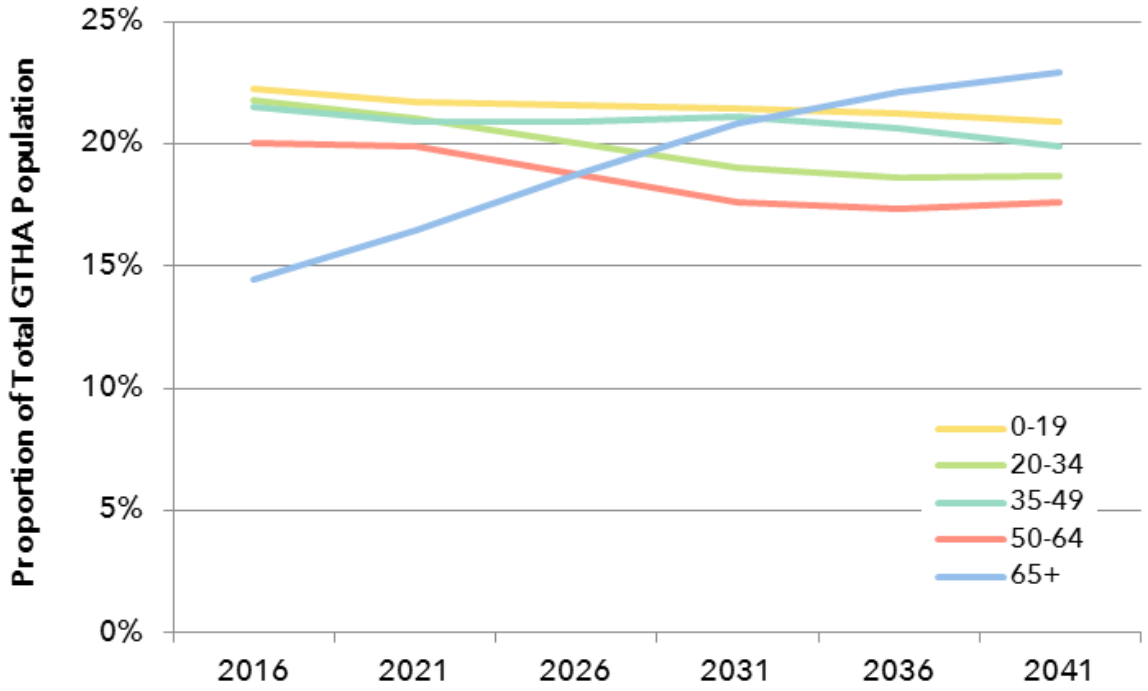


Figure 10: Proportion of GTHA Population by Age Group to 2041



Poverty is an increasing concern

Despite some improvement since the recession of 2008, poverty is an increasing concern in the GTHA. In the Toronto region, for example, the percentage of seniors living in poverty increased from 10.5% in 2011 to 12.1% in 2014.[13] As of 2011, more than one-third of all households and 43% of renters spent more than 30% of their income on housing,[14] a commonly-used marker of affordability. Low income households tend to depend more on transit, but are more likely to live in areas with poor access to frequent rapid transit. This can limit access to employment opportunities, health care, education, and other services.

Housing has become increasingly expensive

The cost of housing in the GTHA has risen dramatically over the past decade,[15] which has affected housing choice in the region and had an impact on the travel and commuting patterns of residents. Rising housing prices have been a major factor in spurring the development of condominiums in downtown Toronto and elsewhere in the region where there is good access to transit. Average household sizes are decreasing in downtown Toronto[16], along with the rate of car ownership.[17] Population growth in downtown Toronto has increased the demand for transit where it is already near capacity and affected the reliability of transit due to congestion. As many families and

larger households feel priced out of the market in core areas, some are choosing to locate further away where housing is more affordable. This poses a growing transportation challenge as lower density suburban areas typically have poorer access to transit.

The relationship between the cost of housing and proximity to transit is complex. Generally, areas with better transit access have higher property values[18] and therefore can be more expensive to live in. However, research also shows that improved transit access can lower the costs of commuting.[19] In other words, while a resident in an area with good transit access may pay more for housing, they can lower overall living costs by using transit and reducing or eliminating the costs of car ownership. It will be increasingly important to monitor the combined affordability of housing and transportation.

The nature of work has changed

Automation and communication technologies are changing the kind of work people do, and how and where they do it. A recent study suggests that in the United Kingdom 30% of all jobs across all sectors are at risk of being automated in the next 20 years, which could cause significant unemployment.[20] The same trends (and pressures on job retention) are found in the GTHA. The proportion of people who work a nine-to-five job is currently decreasing.[21] A recent study found that only 50% of all workers in the GTHA held permanent, full-time jobs.[22] Precarious employment – working one or more part-time or contract jobs to make ends meet – is the reality for many in the region, and disproportionately impacts younger and female workers, as well as new Canadians.[23] When people work more irregular jobs, particularly in multiple locations, they are more likely to see the automobile as a better way of meeting their travel needs than transit.

Disruptive business models are challenging the transportation status quo

Broader and faster access to technology and markets has ushered in the on-demand economy that caters to the independence and instantaneous demands of consumers, bypassing traditional retailing and service providers. In the transportation sector, this poses a challenge to transit service providers, taxi companies and others to find new ways of providing services

Perhaps the best known of these new technology companies is Uber, which started in 2009 as an internet-based alternative to traditional taxicabs, with independent drivers using their own cars. By July 2016, Uber had logged two billion rides worldwide and by 2017 had provided an estimated 60,000 rides per day in Toronto.[24]

Another emerging trend is the rise of Mobility-as-a-Service (MaaS) platforms around the world. MaaS platforms are integrated mobility services available by subscription that offer the traveller the ability to access transportation services from public and private transportation providers through a unified gateway (a single app) as illustrated in Figure 11. As needed, the traveller can access public transit, ride-sharing, bike-sharing and car-sharing services. Future roles and responsibilities for these services are not yet established. To ensure that these services are accessible to all, it will be important to ensure that they operate within a strong policy framework that prioritizes walking, cycling, transit and ridesharing over single-occupant vehicle use.

Figure 11: Mobility as a Service Concept

New transportation technologies are being developed

Real-time access to information and the market potential of new technologies are rapidly changing how people make travel decisions, how they choose to travel and their expectations of the transportation system.

Autonomous vehicles (AVs) and connected vehicles are primed to have major implications on mobility and infrastructure in the GTHA. A major consulting firm predicts robo-taxis (autonomous cabs) will account for 27% of passenger travel by 2030,[25] although other studies predict both a slower fleet turnover and higher share of private rather than shared automated vehicles.[26] Automated shuttles (buses) were first showcased in Europe in 2014 and are being piloted all over the world, including near Montreal.

Many experts predict that autonomous vehicles could make mobility easier and more seamless but they could also be extremely disruptive to transportation systems. Private automated vehicles would almost certainly result in an increase in vehicle kilometres travelled, which will worsen congestion and quality of life.

It is essential to clearly identify the public interest and the role of government in managing and adapting to these new technologies. Municipalities in the GTHA have identified a need for a coordinated, regional approach to prepare for the changes that new technologies and business models will bring.

Climate change is a real and increasing concern

Transportation is both affected by the impacts of climate change and a major contributor to the problem. The impacts of climate change are already being experienced in the GTHA and experts predict that there will be hotter temperatures, more intense rainfall events, and more severe and frequent storms in the future.[27] Figure 12 shows that the total economic cost of weather events in Canada has been increasing over time. A region that is well serviced by an integrated, multi-modal transportation system that responds to the potential impacts of climate change will be more resilient to extreme weather events. Actions such as collaboratively designing new infrastructure for a changing climate, strengthening the existing network, and updating operational protocols will help the transportation system remain operational under difficult and changing climate conditions.

In Ontario, the transportation sector is the leading source of Greenhouse Gas (GHG) emissions – contributing 33% of total GHG emissions.[28] This is illustrated in Figure 13. The Province has committed to reducing GHG emissions to 80% below 1990 levels by 2050.[29] Implementation of the RTP can play a significant role in helping to meet these reduction targets through the electrification of GO rail and the adoption of low-carbon forms of transportation.

Figure 12: Losses in Canada Due to Catastrophic Weather Events

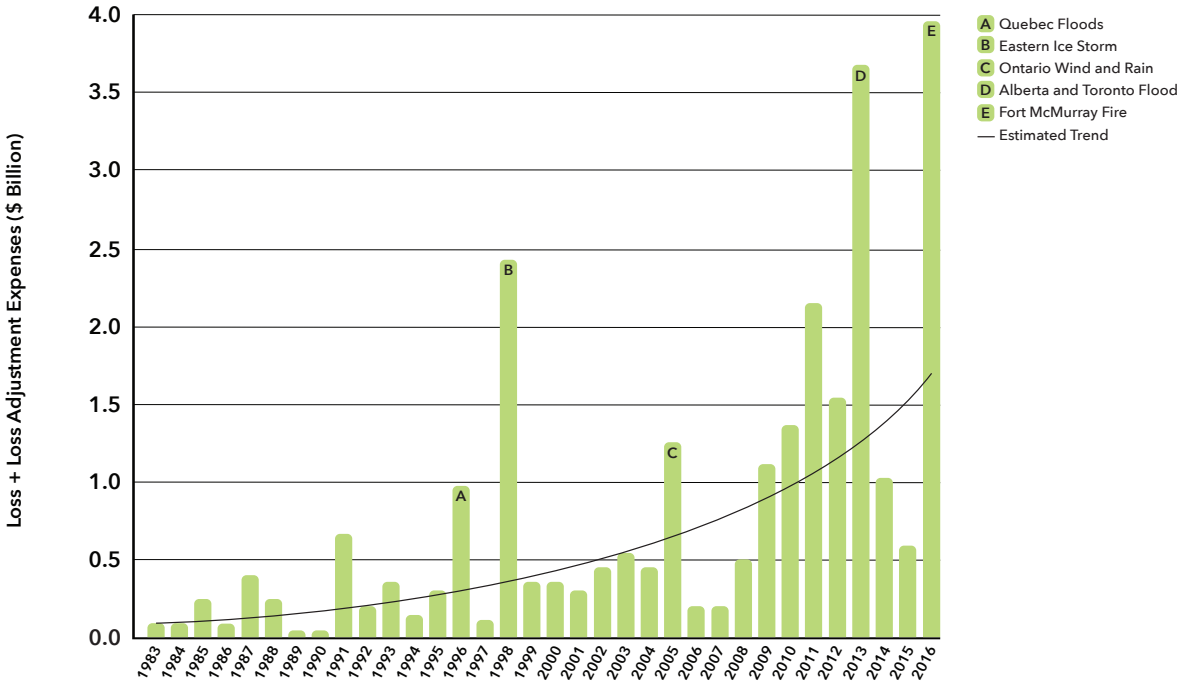
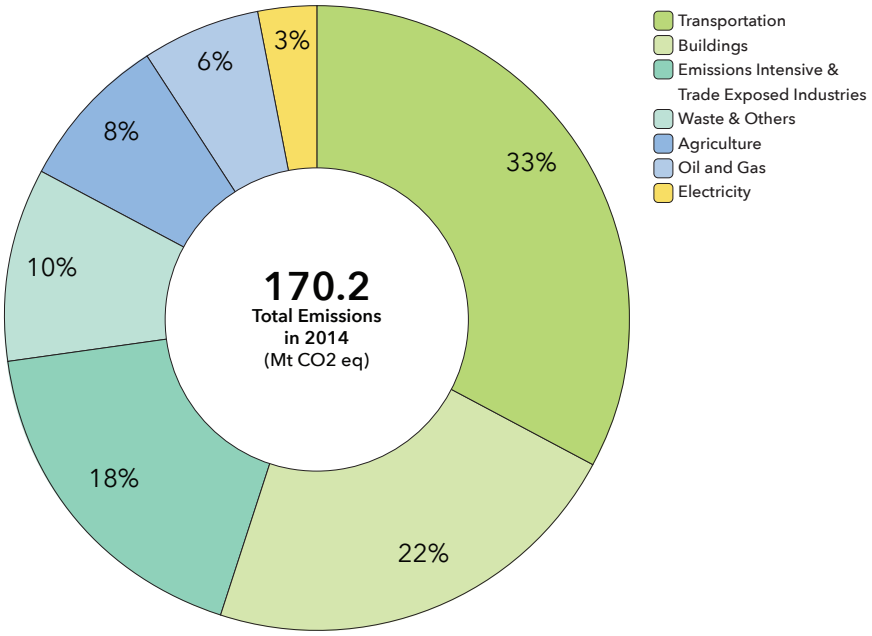


Figure 13: Greenhouse Gas Emissions by Economic Sector in Ontario, 2014



Regional Transportation Challenges

The Big Move set the stage for today's massive investment in rapid transit, most of which is targeted to be in service by 2025. The Draft 2041 RTP aims to build on this. However, there are a number of transportation planning challenges that stand in the way of fully implementing the policies and actions in the Regional Transportation Plan. These are explored in this section.

The need to better integrate land use and transportation

Although the importance of integrating land use and transportation planning has long been established, decisions about land use planning, transportation planning, and investments are still often made in isolation from one another. Full integration of municipal transportation and land use plans with the RTP is voluntary, and the priorities of municipal transit and transportation investments may not always align with the RTP.

The Growth Plan sets a strong policy framework for where and how to grow and requires that municipalities plan for intensification. However, implementation requires that municipalities and the private sector work towards the same goal. Ultimately, municipal policies and market forces determine where growth is distributed within this policy framework. Competing objectives have sometimes led to jobs and services being located in areas that cannot support high-quality transit.[30] It is then a challenge to connect these areas to the rapid transit network.

Growth does not always happen as planned. At present, significant (and more than anticipated) population and office employment growth is taking place in downtown Toronto.[31] This is positive for access to transit and the ability to get around on foot and bicycle. At the same time, growth is not occurring as quickly as planned in some of the other Urban Growth Centres identified in the Growth Plan. The RTP, which looks out 25 years, must use approaches that will be viable under a range of growth outcomes.

Notwithstanding the higher than anticipated growth in Toronto, most population and employment growth is forecasted to be in newly-urbanized areas.[32] While travel to downtown Toronto is expected to increase, travel between suburban regions will grow even faster.[33] Historically, this travel market has been dominated by single-occupant automobile (see Figure 9), so in the face of increasing growth it is critical to reduce the share of people driving alone in this market. If this is not achieved, the result will be higher costs for travellers and taxpayers, and significantly more congestion and emissions region-wide.

How local communities are planned also affects the ability to achieve transportation goals. Ideally, communities should have a mix of uses at sufficiently high densities to make transit, walking and cycling viable options. However, through thousands of decisions that are made every year by many different stakeholders, development sites, roads and streets are often designed to facilitate car and truck traffic, and not to meet the needs of transit users, pedestrians and cyclists. The resulting streetscapes often make it inconvenient, unsafe and uncomfortable to walk or cycle, and can be difficult and expensive to change. As a result, driving remains the mode of choice for a majority of travellers.

Without significant changes to community design new transit services will not meet their ridership targets, walking and cycling will remain marginalized and the use of car will remain dominant.

The need to move people, not just vehicles

For much of the 20th century, transportation planning was focused on moving cars as efficiently as possible. This has resulted in streets and roads that are designed for cars as the dominant mode of transport, and which leave little room for transit, pedestrians and cyclists. Agencies and municipal departments in charge of roads, signals, parking, taxis and transit need to collaborate more closely to shift the focus to moving people as efficiently as possible, and not just vehicles. This is part of putting the needs of the traveller at the centre of transportation planning.

The need to focus on the traveller

To develop the Draft 2041 RTP, Metrolinx undertook intensive research to better understand travellers in the GTHA and their needs. This included panels, focus groups and surveys.[34] It is clear from this research that people travelling across the region want a reliable, consistent and easy experience, no matter what mode of transport they use or what municipal boundary they have to cross. Transit services in particular often end at municipal boundaries. Despite progress being made in coordinating fares and service. decisions by transit agencies may not always prioritize the needs of travellers' end-to-end journey experience. People care little about which system they are on or who is operating it. They simply want to get where they need to be as quickly, comfortably and reliably as possible. If transit agencies do not continually improve the effectiveness and quality of the door-to-door experience, they will fail to attract and retain travellers.

The need to integrate fares and service

With the implementation of PRESTO, travellers can now take advantage of a transit fare card that provides travellers with an easy and consistent method of payment region-wide. The next challenge is establishing and coordinating a fully integrated fare structure and set of fare products and concessions.

Most jurisdictions with fare integration have fares either by distance or zone. The main challenge of fare integration is to find a way to make it financially affordable while not making an undue burden on those who will have to pay more.

On a typical weekday, 21% of all trips in the region cross municipal boundaries in the morning peak period, half of which are destined to Toronto. Of trips destined to Toronto, about 49,000 trips, 13% of all trips, use local transit (not including GO Transit), which represents about 10% of all local transit trips in the morning peak period. Of these, about 25% walk or drive into Toronto to access transit. The remaining 75%, or 37,000 trips, access local transit outside of Toronto and thus face a double fare. This represents 7.5% of all local transit trips in the GTHA in the morning peak period.[35] Double fares make cross-boundary services less attractive and dampen demand. Transit agencies have no formal mandate to address or incentives to address local cross-boundary travel.

The result is that communities across municipal boundaries with strong social links are often poorly served by transit or have duplicate services. This means that some travellers pay double fares for short trips, drive instead of taking transit, or avoid taking a cross-boundary trip, potentially depriving them of educational or employment opportunities. This is especially prevalent for travellers moving between Scarborough, York and Durham, those moving between Etobicoke and Mississauga, and those moving between North York and York Region.

Moving across municipal boundaries is especially problematic for residents with special needs. There are eight different specialized transit agencies in the GTHA and transferring between them requires long transfer windows and complicated booking processes. These transit agencies also have differing service models and eligibility practices. For example, most customers need to book independent legs of their trip with each relevant agency.

Many of the frequent rapid transit routes proposed in the Draft RTP cross municipal boundaries. Without full fare and service integration, travellers and transit agencies will not realise the full benefit of these proposed routes.

The need to coordinate decision-making

Decisions about transit and transportation are made every day by all levels of government – provincial ministries, transit agencies, municipalities and the federal government. Each of these agencies and levels of government promotes its own goals first, within its own timelines. Most agencies also assist in the meeting of regional objectives where feasible. In contrast Metrolinx's focus is predominantly a regional one. Part of its focus is to ensure that each of these agencies and levels of government are working in alignment to achieve regional goals, despite their diverse mandates and responsibilities. While governments have significantly increased their support for transit over the last decade, limited progress has been made on key areas – such as fare and service integration across the entire region – that require more formal coordination and region-wide policies. Governments need to embrace new ways of working collaboratively to ensure that decision-making reflects and supports regional priorities and plans.

The need to provide sustainable and long-term funding

The Province has made an unprecedented investment, more than $30 billion, in the region's transit infrastructure. While this committed funding will cover the capital costs of building the 16 additional rapid transit projects that are targeted for completion by 2025, it does not include maintenance and replacement costs. Additional funding will be needed for new rapid transit projects after 2025, along with the complementary and supporting initiatives that are needed to optimize the transportation system, working collaboratively with other levels of government.

Financial resilience depends on having sufficient funding sources in place and having them tied directly to the RTP. Funding needs to address both capital and operating costs and include the costs of financing and asset management. It also needs to make provisions for maintaining infrastructure assets in a state of good repair. Sustainable and reliable funding is necessary to carry out planning that takes into account what is feasible and what is likely to occur year after year (i.e., to align planning with what can be reliably delivered). Funding is further addressed in section 3 in "Making it Happen".

The Draft 2041 RTP

Vision and Goals

The Draft 2041 RTP holds firm to the original vision of The Big Move, but now refines it into the following more concise statement:

VISION 2041

The GTHA urban region will have a transportation system that supports complete communities by firmly aligning the transportation network with land use. The system will provide travellers with convenient and reliable connections and support a high quality of life, a prosperous and competitive economy and a protected environment.

Under this overall Vision, the Draft 2041 RTP adopts the following Goals:

- **Strong Connections**
  Connecting people to all the places that can make their lives better such as homes, jobs, community services, parks and open spaces, recreation and cultural activities.

- **Complete Travel Experiences**
  Designing an easy, safe and comfortable travel experience that meets the diverse needs of travellers.

- **Sustainable Communities**
  Investing in the transportation system not only today but also for future generations, by supporting land use intensification, climate resiliency, and a low-carbon footprint, while leveraging innovation.

Integral to the Vision for 2041 is the notion of a people-centred transportation system. The system will make people's lives better by providing travellers with choices. The traveller can ask themselves, "Should I take the GO train or carpool with my co-worker? Should I take the LRT or bike-share? Should I walk or take the local bus to the Express Bus stop? Should I let the GTHA transportation app plan my route and way of travelling? "

The transit system of 2041 will be convenient, reliable and safe. Some parts of the system will run rapidly and frequently, allowing people to move quickly over long distances. Other parts will provide local access and 24-hour service for those who work nights or like to stay out late. The system will provide universal access for travellers with disabilities and will be affordable for low income travellers who need it most. The system will sustain the communities and businesses in the GTHA and minimize the impact of transportation on the natural environment.

Preparing the Draft 2041 RTP

As noted in section 1, the Draft 2041 RTP was developed collaboratively over a two-year period with input and expertise from municipal planning professionals, stakeholders from across the region, and the lived experiences of GTHA residents. It is based on extensive research on a wide range of current issues, including active transportation, climate change resiliency, transportation demand management, intelligent transportation systems, goods movement, and more. A full list of background reports and academic studies that were developed to inform the Plan is provided in Appendix 1.

Strategies and Actions were identified by screening projects, programs and policy initiatives against key performance criteria.

The Strategies and Actions were developed with consideration of the passenger transportation hierarchy in Ontario's Transit-Supportive Guidelines, intended to promote a shift in travel behaviour across all modes, while recognizing diverse needs of travellers.[36] The transportation hierarchy includes (from most desirable to less desirable): trip avoidance or shortening; active transportation, such as walking and cycling; transit; ride-sharing, such as carpooling or vanpooling, car-sharing, ride-sourcing and taxis; and single-occupant vehicles.

Metrolinx also used three new approaches in developing the Draft 2041 RTP: 1) scenario planning, 2) a Residents' Reference Panel, and 3) the development of regional traveller profiles. An overview of these new approaches is presented below; more detail can be found in Appendix 2.

Scenario Planning

While the Draft 2041 RTP has been developed in conformity with Growth Plan population and employment forecasts and policy directions for where and how the region will grow, Metrolinx also tested the strategies and actions against six alternative potential future scenarios, including economic decline, the rapid adoption of emerging technologies, and extreme climate change (see Figure 14).
The alternative scenarios were developed based on a scan of current literature and experience in other jurisdictions. They varied the assumptions (compared to a "business as usual" case) for the amount and distribution of population and employment across the region, the nature of employment, and the amount, cost and modes of travel in the region.[37]

The risks associated with each of the six alternative future scenarios were assessed by evaluating each scenario against a range of possible configurations for the future transportation system. The analysis showed that investing in transit operations as well as infrastructure, integrating land-use and transportation to support transit, and comprehensive mobility pricing led to the most resilient overall outcomes.[38] More details on the development of the scenarios and results of the resiliency assessment can be found in Appendix 2A.

Figure 14: Alternative Future Scenarios used in Scenario Planning

Alternative Scenarios have been modelled to consider how the Draft Plan's strategies can be resilient and flexible under a range of possible future conditions. Scenario planning is a tool to help manage the risk of trends unfolding differently than forecasted.

Rapid Growth of Core Areas

Infrastructure in our largest and busiest cities, already having well-used and congested systems, could become increasingly stressed. In this scenario, suburban commuters could face longer travel times due to congestion, and parking supplies could shrink.

Rapid Adoption of Emerging Technologies

Autonomous and electric vehicles, for example, could create a tolerance for longer commutes and increases in vehicle trips, adding to congestion. In this scenario, people may choose other modes over transit, in favour of the independence and comfort.

Extreme Climate Change

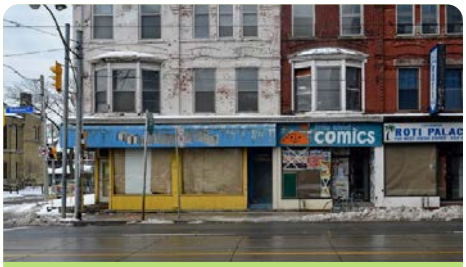
Infrastructure costs and service interruptions could increase rapidly, with more frequent and severe weather events such as storms and extreme temperatures. In this scenario, people could take transit less, and conflicts between vehicles and pedestrians could increase with congestion.

On-Demand Economy

The rise of the casual or "gig economy" could create dispersed and lower density employment clusters, potentially making some fixed infrastructure and services less efficient and responsive. In this scenario, people could become more reliant on technology to make travel decisions and would be more likely to ride-share.

User-Pay Economy

The entry of private companies into the transportation sector could potentially dilute the cost-recovery of conventional transportation systems, and increase travel costs for those who can least afford it. In this scenario, low- and medium-income people would be more likely to choose walking and cycling options over vehicle travel, and live closer to work when feasible.



Economic Decline

The convergence of domestic and global trends, such as a changing markets and decreasing levels of immigration, could threaten the region's ability to continually invest in our transportation and other infrastructure and services. In this scenario, people may find driving longer distances an attractive option due to less congestion and transit service reductions.

Residents' Reference Panel

In spring 2017, Metrolinx convened a reference panel of residents from across the GTHA to provide input into the Draft RTP. Thirty-six participants reflecting the diversity of the region were selected to take part from over 280 who applied. Over the course of five intensive full-day sessions, the participants volunteered their time to enthusiastically learn about regional transportation, services and policies, consider different perspectives, weigh different priorities and recommend a course of action. The participants identified six values that they felt should guide the development of the region's transportation system. These are:

- convenience and reliability;
- safety;
- affordability and cost-effectiveness;
- environmental sustainability;
- comfort and good design; and
- long-term planning and economic growth.

In their report, the panel made seven recommendations[39] on the need for Metrolinx and its partners to do the following:

- Connectivity, convenience and integration: Improve coordination of routes and schedules, integrate transit fares across the region, and make PRESTO more convenient;
- Equity and accessibility: Ensure barrier free access across all facets of the transportation journey for all users and implement discounts or subsidies for low-income residents;
- Health, comfort and safety: Improve infrastructure, lighting, amenities and operations to improve health, comfort and safety of users and employees;

- A well-planned region: Strengthen the regional transportation governance model to promote greater alignment among municipal, regional and provincial priorities, achieve greater collaboration between operators, and expedite the delivery of major transportation projects;
- Exemplary environmental footprint: Encourage the use of public transit and active transportation by whatever means are found to be most effective, improve air quality inside and around stations and corridors, and increase procurement from suppliers with environmental certifications;
- Prosperity and competitiveness: Identify regional nodes where expanded transit services and a mix of other land uses can be developed, leverage emerging technologies to make the system more efficient, and facilitate the efficient movement of goods and people by better utilizing existing road infrastructure; and
- Public awareness and communication: Enhance the profile of regional transportation planning, provide periodic updates on transit expansion for distribution to residents in the region, create campaigns to promote new services and plans, raise the profile of transit operations outside Toronto, and make transportation policy the third pillar in a successful, healthy and prosperous society.

See Appendix 2B for the Panel's recommendations.

Regional Traveller Personas

To better understand the travel behaviours and attitudes of people in the GTHA, Metrolinx engaged in extensive qualitative and quantitative research to better understand the various types of residents, how they travel, and their perceptions of different modes of transportation.[40] Over 8,500 people were surveyed and several focus groups were held. The feedback was used to develop six regional traveller profiles – archetypes of regional travellers – to lend insight and provide a lens through which proposed actions in the RTP could be filtered. The surveys and focus groups identified the demographics of these personas and generated information on how much they travelled, how and why they travelled, and their use of and attitudes towards public transit and active transportation.

One of the major conclusions of this research is that the mode of transport people choose – whether to drive, walk, cycle or take transit – is determined by more than just travel time. The choice of mode of travel is informed by a person's situation – where they live, for example – and their attitudes towards public transit and active transportation. Key determinants are perceptions of safety, convenience, comfort and predictability, as well as the speed of travel. The research revealed that most travellers are generally satisfied with travel in the region, but they often found it to be slow, stressful and not well-integrated. Transit is often viewed negatively compared to driving, and is not seen as a first choice for getting around, especially outside the urban core. See Appendix 2C for more detailed profiles of the Regional Traveller Personas.

Strategies and Actions

The Draft 2041 RTP calls for moving beyond *The Big Move* with five strategies to:

- complete the delivery of current regional transit projects;
- connect more of the region with frequent rapid transit;
- optimize the transportation system to make the best possible use of existing and future transit and transportation assets;
- integrate land use and transportation; and
- prepare for an uncertain future.

Priority Actions are provided under each of these five Strategies to achieve the vision and goals of the Draft 2041 RTP. The Strategies and Actions are informed by the research carried out and the input received from municipal planning professionals, stakeholders from across the region, and GTHA residents.

Strategy #1: Complete the Delivery of Current Regional Transit Projects

The Big Move set in motion a historic expansion of rapid transit infrastructure across the region. Starting with the early successes of the "Quick Wins" program, followed by the "Top Transit Priorities" and the provincial *Moving Ontario Forward* program, more than $30 billion in investments in rapid transit has been committed for projects. Eight of these projects have been completed and 16 others are In Delivery (in the engineering design stage or are under construction). See Figure 3.

This infrastructure will build on the considerable assets already found in the region, including Union Station in downtown Toronto and the Lester B. Pearson International Airport area, both of which have significant employment in the surrounding areas and as such will remain a focus for improved transit investment. These key projects will provide significant benefits to the people, businesses and institutions in the GTHA, connecting people to more places by transit and making transit a more viable option.
In order to sustain the momentum, the Draft 2041 RTP includes recommendations to:

- complete the delivery of regional transit projects that are currently In Delivery and In Development; and
- modify some of the projects from *The Big Move* to reflect more up to date information.

Continue building GO Regional Express Rail to transform transit

GO Regional Express Rail is a major focus of the Province's *Moving Ontario Forward* commitment. GO RER is underway and will transform the existing GO rail system from a commuter-focused service into a regional express system with frequent all-day and two-way service (see Map 3 and Figure 15). The Draft 2041 RTP emphasizes both the need to continue building the GO Regional Express Rail (Strategy #1) and expanding it beyond 2025 (see Strategy #2).

By 2025, the 10-year $16 billion GO RER program will double GO train service during peak periods and quadruple service during off-peak periods. Electrification will bring substantial benefits in terms of reducing both transit operation costs and environmental impacts, and improving travel speed.
All seven GO corridors will see service improvements, of which five corridors will have electric trains running every 15 minutes or better in both directions all day. Travellers will save time through the provision of faster, more frequent transit.

Figure 15: Regional Express Rail (RER) Program to 2025

Improved rapid transit service is coming to the GTHA with Metrolinx's GO Regional Express Rail (GO RER) program. As new subway, light rail transit and bus rapid transit are built across the region, the GO RER program will transform the existing GO rail system into the backbone of an integrated regional rapid transit network.

Since its launch in 1967, the GO Rail system has focused on the suburb-to-downtown commuter market, with diesel locomotive-hauled trains operating primarily in the peak period and in the peak direction. The system has undergone incremental expansions in frequency, span and extent of service since its inception in 1967, most notably the introduction of 30-minute two-way all-day service on the Lakeshore lines in 2013.

The 10-year GO RER program represents a fundamental transformation of GO rail system from a largely commuter system to a comprehensive regional rapid transit option. Infrastructure expansion, including new tracks, bridges, signals and fleet, will enable the doubling of peak period GO train service and quadrupling of off-peak service by 2024. All seven corridors will see service improvements, with five corridors seeing electric trains running every 15 minutes or better in both directions throughout the day. Additional stations and line extensions will bring the GO rail network to new markets, and new connections to rapid and local transit will enable seamless travel across the region.

12 NEW STATIONS ARE INCLUDED IN THE GO RER PROGRAM:

- **Bloor-Davenport**
- **Breslau**
- **Don Yard/Unilever**
- **Finch**
- **Gerrard**
- **Innisfil**
- **Kirby**
- **Lawrence East**
- **Liberty Village**
- **Mulock**
- **Spadina**
- **St. Clair West**

GO RER will reduce travel times and give people more ways to get where they want to go with:

Trains up to **every 15 minutes**

Service in **both directions**

Faster electric trains

4X more off-peak, evening and weekend service

2X more weekday rush-hour service

Additional stations and line extensions will expand the user base for GO rail services and will provide new seamless connections to rapid and local transit. A total of 12 new stations are being added to the existing 64 stations. These stations also have the potential to attract new development and intensification in existing communities.

To support GO RER beyond 2025, governments and transit providers will need to develop a plan to address rail service capacity at Union Station. This will need to be coordinated with the near-term planning for GO RER.

Continue building LRT, BRT and subway projects that are In Delivery

In addition to GO RER, the Province's *Moving Ontario Forward* program also includes a commitment to build 15 LRT, BRT and subway projects that are In Delivery. These projects, which vary in scale, are currently under construction or in the advanced stages of planning. These include five LRTs (Eglinton Crosstown, Sheppard East, Finch West, Hamilton B-Line and Hurontario), three BRTs (Highway 7 West, Young North and Yonge South), the Mississauga Transitway, four GO Transit extensions, and two subway extensions (Toronto-York Spadina and Scarborough) as shown in Figure 3. These projects, together with GO RER, will expand rapid transit services to 2025 and form the foundation upon which to base the future Frequent Rapid Transit Network (see Strategy #2) .

Advance key rapid transit projects that are In Development

The next generation of regional transit projects – the projects that are In Development (in the planning and design stage) – are required to meet the needs of the region in the near term. Thirteen projects have received significant planning and design commitment from various levels of government (federal, provincial and municipal). These projects are shown in Figure 16 and illustrated on Map 4. They include the Relief Line, the Subway Extension, BRTs and LRT lines.

Coordinate with High Speed Rail Projects

The Ministry of Transportation (MTO) has been studying High Speed Rail for several years in the context of improving connections within Ontario as well as to the global economy through international gateway hubs. In spring 2017, the Province announced its intention to move ahead with preliminary design and environmental assessment of a High Speed Rail corridor between Toronto and Windsor that will take into account the GO RER expansion program.

VIA Rail has recently announced its intention to pursue a High Frequency Rail project that would be focused on the Quebec City-to-Toronto corridor.

Extensive collaboration will be needed to ensure that the Province's High Speed Rail and VIA's High Frequency Rail projects are complementary to Regional Express Rail and its implementation timelines.

Priority Actions for Strategy #1, Complete the delivery of current regional transit projects

1.1 Complete the building of projects In Delivery, as shown on Map 3, including the GO Regional Express Rail program, the Hurontario, Eglinton, Hamilton and Finch LRTs, and the York VIVA BRTs, ensuring delivery by 2025

1.2 Advance the transit projects that are In Development, as shown on Map 4.

1.3 Strengthen Union Station's capacity as the centre of GO Regional Express Rail to accommodate the growth of GO RER beyond 2025

- In consultation with the City of Toronto, the provincial and federal governments develop a plan to address rail service capacity at Union Station to accommodate the growth of GO RER beyond 2025.
- Ensure that all decisions regarding improvements to Union Station and adjacent areas are consistent with and protect for the long term plan.

1.4 Coordinate with the Province's High Speed Rail plan

- Coordinate with the Province on the optimization of shared resources such as Union Station and rail corridors, and integrate services for a seamless experience.

Figure 16: Rapid Transit Projects In Development

Planning is underway for the next rapid transit projects to be delivered in the Greater Toronto and Hamilton Area. These new corridors and extensions will complement the existing network, and continue the momentum of North America's largest rapid transit expansion program.

Brampton Queen St. BRT/LRT

Upgrade of existing Queen St. Zum to rapid transit; links downtown Brampton and York Region.

- From Downtown Terminal in Brampton to Highway 50 at the Vaughan border.
- Length: 13 km

Dundas BRT

New bus rapid transit corridor along Dundas St.; links Toronto, Mississauga and Oakville.

- From Kipling Station in Toronto to Bronte Rd. in Oakville.
- Length: 22 km

Dundas West Priority Bus

Priority Bus along Dundas St.; links Burlington with Oakville and the Dundas BRT.

- From Brant St. in Burlington to Bronte Rd. in Oakville.
- Length: 18 km

Durham-Scarborough BRT

Upgrade of existing DRT Pulse service to bus rapid transit along Highway 2; links downtown Oshawa and Scarborough.

- From Simcoe St. in Oshawa to Scarborough Centre in Toronto.
- Length: 36 km

Eglinton East LRT

Extension of Eglinton Crosstown LRT eastward; links Scarborough Centre, University of Toronto Scarborough and Sheppard Ave.

- From Kennedy Station to Sheppard Ave. East in Toronto.
- Length: 10.7 km

Eglinton West LRT

Extension of the Eglinton Crosstown LRT westward to Pearson Airport.

- From Mt. Dennis in Toronto to Renforth Gateway and Pearson Airport in Mississauga.
- Length: 12 km

Highway 7 East BRT Extension

Extension of the Highway 7 rapidway eastward; linking Unionville and Cornell.

- From Unionville GO Station to Cornell in Markham.
- Length: 5.5 km

Highway 7 West BRT Extension

Extension of the Highway 7 Viva rapidway westward; links Vaughan and Brampton.

- From Helen St. in Vaughan to Highway 50 at the Brampton border.
- Length: 11.5 km

Relief Line Subway

New subway line linking downtown Toronto, the Bloor-Danforth Subway and Sheppard Ave.; will manage congestion on the Yonge Subway Line.

- From Osgoode Station to Sheppard Ave. East in Toronto.
- Length: 18 km

Waterfront East LRT

New light rail transit corridor along the waterfront; links downtown Toronto, the Port Lands and the Beach.

- From Union Station to Coxwell Ave. in Toronto.
- Length: 7 km

Waterfront West LRT

New light rail transit corridor along the waterfront; links downtown Toronto and Port Credit.

- From Union Station in Toronto to Port Credit GO Station in Mississauga.
- Length: 22.3 km

Yonge BRT (Richmond Hill, Aurora, Newmarket)

Bus Rapid Transit along Yonge St.; links Richmond Hill, Aurora and Newmarket.

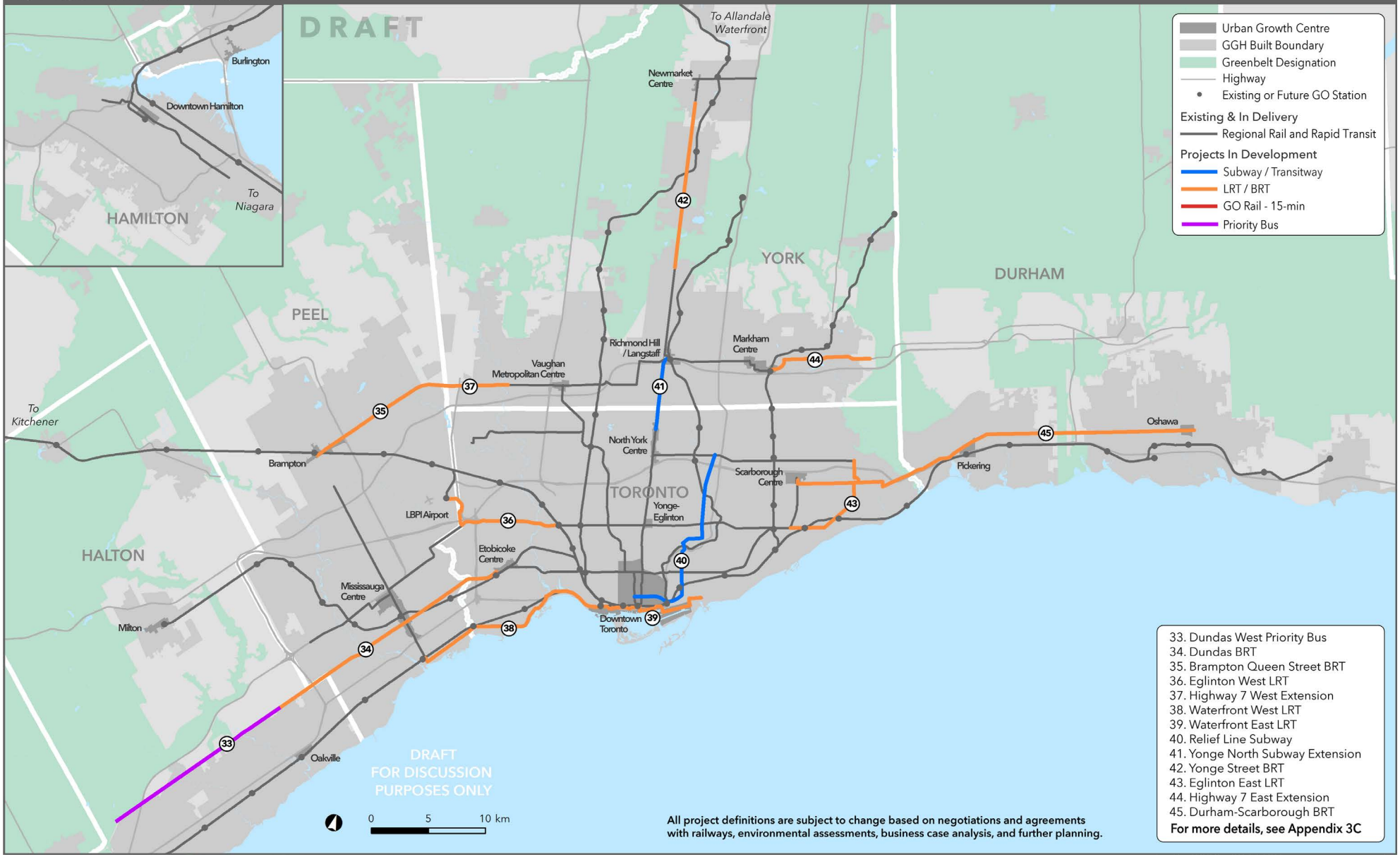
- From 19th Ave. in Richmond Hill to Mulock Dr. in Newmarket.
- Length: 14.5 km

Yonge North Subway Extension

Extension of the Yonge Subway north into York Region; links Richmond Hill to Downtown Toronto.

- From Finch Station in Toronto to Highway 7 in Richmond Hill.
- Length: 7.4 km

Map 4 - Rapid Transit Projects In Development - DRAFT



Strategy #2: Connect More of the Region with Frequent Rapid Transit

The expansion of convenient, fast and frequent rapid transit across the region underway will provide travellers with good alternatives to driving in particular for trips to and from downtown Toronto. Strategy #2 is focused on extending the reach of frequent rapid transit and connecting the various parts of the GTHA with a Frequent Rapid Transit Network. With Regional Express Rail and the subway as the spine of the Network, the FRTN will connect urban centres, employment nodes and regional destinations with Priority Bus, Frequent Regional Express Bus and additional LRT, BRT projects.

Develop a complete Frequent Rapid Transit Network across the GTHA

The Draft Plan proposes an ambitious program to develop a Frequent Rapid Transit Network (FRTN) across the GTHA to provide high quality transit to more people in more places[41] (see Maps 5 and 6). The FRTN would connect existing and planned subway, RER, LRT, BRT and priority bus services to form an interconnected system that will allow people to travel quickly and seamlessly across the GTHA.

Many regions in North America have an established Frequent Transit Network that provides a base grid of service every 10 to 15 minutes. Examples include TransLink's Frequent Transit Network[42] in the Vancouver metropolitan region and TriMet's Frequent Service Network[43] in the Portland metropolitan region. The Toronto Transit Commission (TTC) also operates a network of frequent bus and streetcar services. The FRTN goes beyond this to provide high quality, fast and reliable service across the GTHA.

Figure 17: Key Principles of the Frequent Rapid Transit Network

Criteria

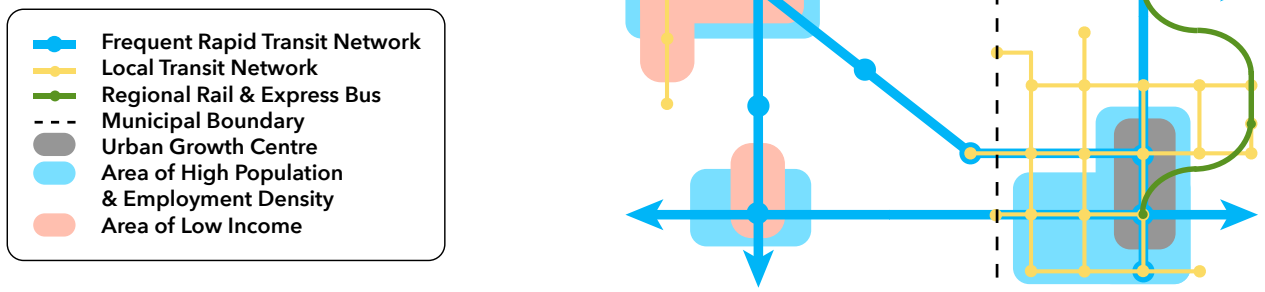
- Regionally significant routes
- Congested, high demand corridors
- Connects major centres (UGCs, employment areas, large institutions)
- Serves areas of high population and employment density
- Serves low income areas
- Fills gaps in service where transit times are not competitive with the car
- Efficient transfers and integration with local and regional routes

Characteristics

- Frequent: 10-15 minute all day service, seven days a week
- Reliable: signal priority measures and traffic protection
- Fast: wide spacing between stops
- Efficient transfers between services

Components

- Subway
- Bus Rapid Transit (BRT)
- Light Rail Transit (LRT)
- GO Rail 15-minute all-day service
- Priority Bus



The FRTN is a logical approach to the problem of moving people efficiently in a polycentric region (a region with multiple population centres). It includes a variety of transit services, depending on conditions in any given market area. Areas with slower growth and lower densities need different approaches than those with higher growth and higher densities. The FRTN will be most effective when residential and employment areas are located close to transit stations and where travellers can easily walk to home or work.

As shown in Figure 17, the FRTN will ensure:

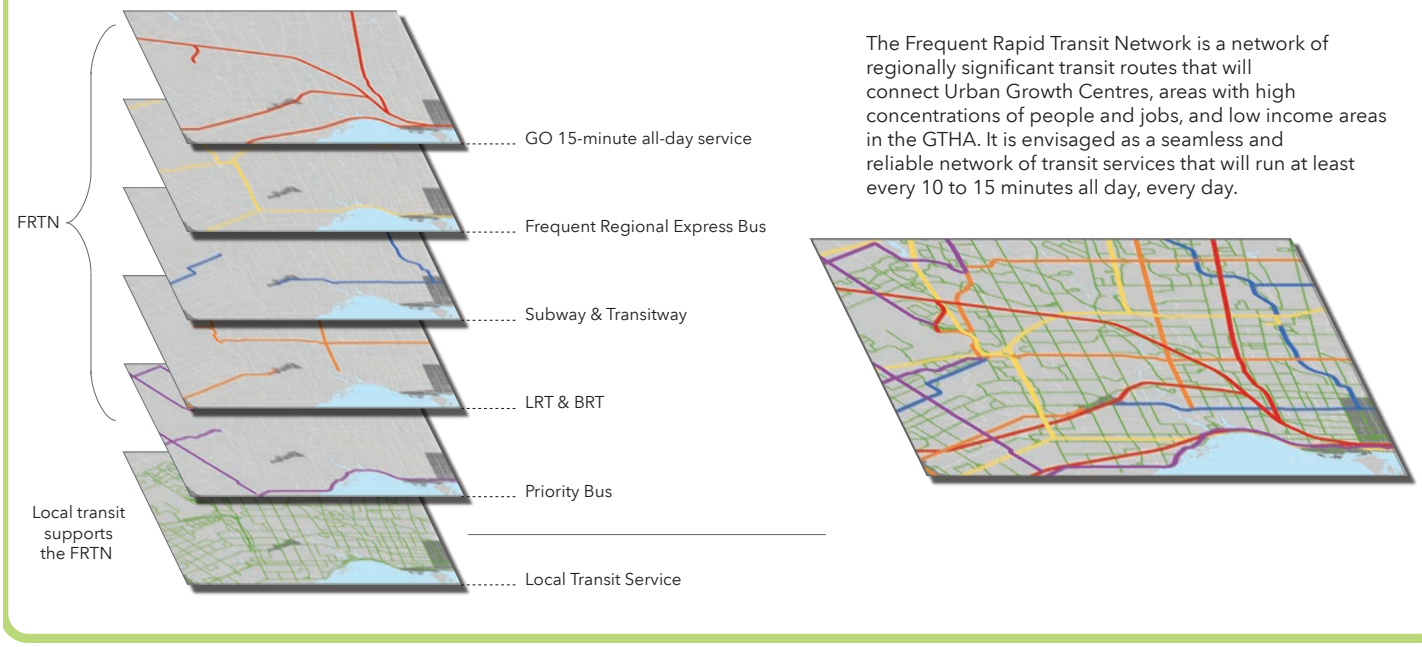
- frequent 15 minute or better service, all day, seven days a week;
- reliable service due to separation from traffic and signal priority measures;
- high speed due to wide spacing of stops; and
- efficient transfers between routes, enabling a traveller to get anywhere in the GTHA easily and reliably without looking at a schedule.

As illustrated in Figure 18, the FRTN will be comprised of the following elements:

- existing rapid transit (see Map 2);
- 15-minute all-day GO RER service and other recently completed and In Delivery rapid transit projects (see Map 3);
- expansion of 15-minute GO RER beyond 2025 (see Map 6);
- transit projects that are In Development (see Map 4)
- additional LRT, BRT and subway projects to meet the needs of the region to 2041 (see Maps 5 and 6);
- Priority Bus Corridors (see Maps 5 and 6); and
- Frequent Regional Express Bus routes (see Maps 5, 6 and 7).

The FRTN consists of high-demand transit corridors of regional significance that connect Urban Growth Centres, key Mobility Hubs and areas of high population or employment density in the GTHA. It will fill gaps in the regional network, and provide improved transit service throughout the region, including in the lowest income areas where it is needed most. A key strategy will be the use of managed lanes to provide protection for transit from mixed traffic, transit signal priority, and other improvements. Gaps in connectivity will need to be addressed through service integration, including the connection of local bus services to the FRTN.

Figure 18: Key Components of the Frequent Rapid Transit Network



The FRTN would in some case replace existing services and in other cases need to work alongside existing services, which may need to continue to provide local stops while the FRTN service would make fewer stops.
The FRTN will focus on providing a consistent and seamless traveller experience regardless of who operates the various parts of the system. Close collaboration among Metrolinx, the Province, municipalities and transit operators will be key to establishing priorities, identifying roles and responsibilities and knitting the region together with Frequent Rapid Transit.

Add more 15-minute GO RER after 2025

Building on the GO RER program currently underway, **t**he Draft 2041 RTP calls for the expansion of the 15-minute, two-way all-day GO rail network to include service on the Milton Line, which will require extensive infrastructure investments and be subject to a review of physical constraints. The Draft 2041 also calls for extensions of 15-minute service on the Barrie, Stouffville and Lakeshore East and West lines (see Map 6). Implementation of these proposed extensions would be subject to negotiations with freight rail operators, in particular where the corridors are not in public ownership.

Further work would be undertaken to assess the need for new stations on the Network as part of the implementation, including updating the new stations analysis that was conducted for the RER program.

The GO RER program can be a catalyst for how people use rapid transit in the region and a strong anchor for the FRTN. It will generate positive benefits over costs, meaning that for every dollar the program costs, it will generate further economic benefits.[44]

Build additional LRT, BRT and subway projects

In addition to the transit projects that are In Delivery and In Development, the Draft 2041 RTP recommends that several new LRT, BRT and subway projects be built by 2041. These are needed to fill key gaps in the rapid transit network and address capacity needs forecasted to 2041. These are illustrated on Maps 5 and 6. Most of these projects were identified in the Big Move for 2031 and they continue to be needed as the plan horizon is extended.

Develop Priority Bus Corridors

Many parts of the GTHA are some distance from existing, planned rail and recommended LRT, BRT and subway facilities. To address these gaps in the system, the Draft 2041 RTP recommends the creation of Priority Bus corridors (see Map 6). These are a practical and affordable way of providing fast, frequent and reliable transit service to more people without the need for fully dedicated infrastructure. Priority Bus corridors will complement the BRT, LRT, subway and 15-minute RER projects that are In Delivery and In Development and fill out the complete FRTN. Cities such as Houston (US), Los Angeles (US), London (UK) and Sydney (AU) have reinvented their bus networks to include high-performing priority bus services and in so doing, have attracted more riders (see Figure 19). The Priority Bus system for the GTHA will build on strong local bus services such as the key Züm routes in Brampton and Viva in York Region[45] that feature the some of the characteristics of the Priority Bus corridor concept.

Priority Bus services run quickly and reliably using transit priority measures such as queue jump lanes, signal priority at intersections, semi-exclusive or shared rights-of-way (such as HOV lanes), and wider spacing between stops. Different priority measures can be applied to different corridors based on local conditions to ensure reliability and ensure that speeds are at least as fast as mixed traffic operations.

Advantages of Priority Bus corridors include:

- They are a cost-effective way of providing new rapid transit access to many travellers. They can be implemented quickly but implementation needs to be consistent with and concurrent with the development of RER.
- Priority Bus corridors provide infrastructure that is flexible enough to support a variety of technologies and vehicle types over time such as shared shuttles. Buses and bus routes can run in both BRT and Priority Bus corridors, which provides flexibility in planning routes. For example, a single bus route could run along a BRT corridor through a higher density area and into a Priority Bus corridor in a lower density area, without requiring a transfer. They can evolve into fully dedicated transit corridors (such as BRTs) as ridership grows.
- Priority Bus corridors allow corridor development to be accelerated where needed and service to be adjusted to meet demand. Population and employment growth may arrive on a different timeline than forecasted, and some parts of the region may grow more or less than anticipated. Where transit demand increases, more intensive interventions can be considered for Priority Bus corridors, such as greater separation from auto traffic, larger stations with more amenities. In addition, corridors that are protected by their inclusion in the Priority Bus system can be used in different ways in the future. New technology can also be introduced rapidly. For example, as the technology advances automated shuttles could share transit corridors.
- The capital costs for developing Priority Bus corridors are expected to be considerably lower than an equivalent BRT or LRT system. A roll-out of the Priority Bus system could begin immediately and be completed within 10 years after capital and operating funds for the network are secured. Then at fixed intervals of 5 or 10 years, the state of the network and the performance of individual routes would be reviewed to determine where adjustments, particularly enhancements, were appropriate.

In short, Priority Bus services can provide benefits to people living outside the high density parts of the region and to communities that are not now serviced with frequent rapid transit. A comparison of Priority Bus with Bus Rapid Transit (BRT) is shown in Figure 20. The creation of the Priority Bus system will require an implementation strategy that addresses priorities, roles and responsibilities.

Figure 19: Examples of Priority Bus Systems in the US and Australia

Seattle, RapidRide

- Runs no less than every 10 minutes during peak commuting hours and every 15 minutes on weekends and during most off-peak hours.
- Services fewer stops for faster travel.
- Makes extensive use of Transit Signal Priority technology to the signals – shortening a red light, or extending a green light – to ensure buses remain on schedule, even in mixed traffic.
- On some lines, uses queue jump lanes to bypass traffic.
- Utilizes roadway improvements such as HOV lanes, bus bumpouts.
- Contactless smart card is used for off-board payment enabling all-door boarding.
- Real time passenger information at the stations shows time until the next bus arrives.
- Automated Vehicle Location system determines buses' actual location on the route.

Portland Metropolitan Area, The Vine

- Peak frequency – 10 minutes; off peak – 15-30 minutes; weekends – 15-30 minute headways.
- Operates in mixed with curbside stations.
- Transit Signal Priority allows Vine buses to communicate with the signal system along the route.
- Off-board Fare Collection: Customers may pre- purchase fares at ticket vending machines at each station before boarding which will speed up boarding.
- Low-floor buses in combination with raised station platforms for level boarding.
- Stations are located are approximately 1⁄3 mile (0.54 km) apart.
- Stations include real-time arrival signs.

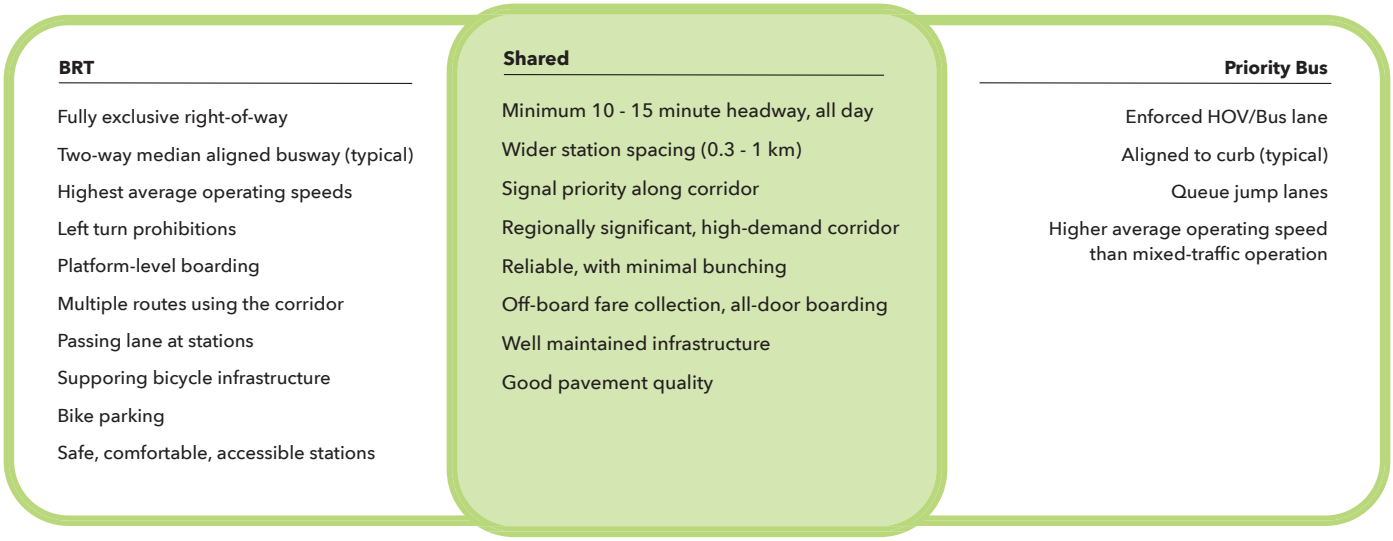
Los Angeles, Metro Rapid

- Express bus service with bus rapid transit characteristics.
- Operates in mixed environments and HOV lanes.
- Has fewer stops than the local bus service.
- Rapid stops located only at major intersections and transfer points.
- Signal priority is used within the City of Los Angeles boundaries.
- Operates five days a week, with a maximum of 10-minute peak headways and 20-minute midday and evening headways. Some rapid routes operate on weekends as well.

Sydney, Metrobus

- No timetable required – high-frequency service running seven days a week.
- 10-minute frequency during peak periods, every 15 minutes during the weekday off-peak, and 20 minutes in the evening and on weekends.
- Uses HOV lanes and transit signal priority.
- Spaces between stops are increased.
- Easy connections – Metrobus services stop at major bus and rail interchanges.
- Wheelchair-friendly – entry and priority seating make Metrobus very accessible.
- Each bus features the latest environmental controls to reduce greenhouse gas emissions.

Figure 20: Key Characteristics of Priority Bus and BRT



Develop coordinated Regional Express Bus routes

With the implementation of RER and the delivery of all-day service on the majority of the GO Rail corridors, GO Bus services can be used in different ways. Routes will be restructured to link transit hubs and Urban Growth Centres, so that travellers can make trips on transit without needing to travel to a downtown hub. Regional Express Buses are typically expected to run every 30 to 60 minutes, and are meant to serve the regional transit needs of areas not connected by the regional Rail network.

Frequent Regional Express buses are intended to serve core areas of the region not served by 15-minute GO RER. They would run at 15 minute service levels all day, typically on highways in HOV lanes, and as such are considered to be part of the Frequent Rapid Transit Network. Most of these proposed routes would be able to access HOV lanes on the 400-series highways and thus will be able to provide superior service compared to what is provided today. The proposed Frequent Regional Express Bus and Regional Express Bus routes are shown in Map 7.

Develop a regional 24-hour bus network (night bus network)

The existence of 24-hour bus service is becoming more important as the regional economy becomes increasingly diversified and precarious employment becomes more prevalent. Currently, only the City of Toronto (TTC) has a 24-hour bus network. With increasing housing costs, lower-income households are likely to become more dispersed throughout the region and be located farther away from good quality transit. Lower-income households are more likely to rely on transit, and members of low income households are more likely to hold part-time or contract jobs. A reliable 24-hour bus network throughout the region would help to improve access to employment and other opportunities for people who need it most, while making it easier for people who depend on transit to get around in a 24-hour society. While the 24-hour network would be comprised of routes offered by the various operators in the GTHA, it would be designed to function as an integrated and connected system.

Strengthen and Support Local Transit Services

Although the 2041 Plan will significantly increase the number of people that live within walking distance of Frequent Rapid Transit, most people will still need to access the FRTN using local transit or another mode. Local transit services thus play an important role in supporting the Network. They also carry the majority of all transit riders, including low income groups and carry the majority of transit riders during off-peak periods (i.e., mid-day, weekends and evenings).
There are many important local transit routes operated by transit agencies across the GTHA that carry significant numbers of riders but are not part of the FRTN. The spines of the FRTN are the routes of regional significance, but that does not preclude local transit agencies and municipalities from implementing transit priority measures on routes of local significance.

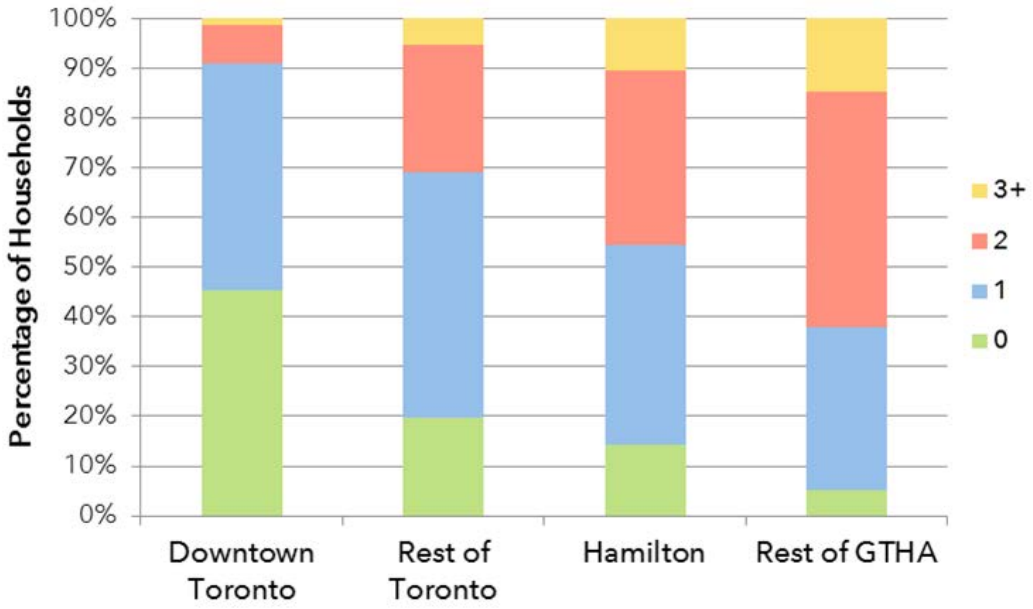
The streetcar network in Toronto in particular, along with several bus routes, plays an important role in connecting significant numbers of people to jobs, shopping, entertainment, education and other services. Many Toronto residents rely on transit for their daily travel needs. About 45% of households in downtown Toronto and 20% of households in the rest of Toronto do not have a car (see Figure 21).[46] Several TTC streetcar and bus routes carry more riders on an average day than are carried by some entire transit systems in the GTHA. Given the importance of these routes, many of which run along important east-west arteries through the centre of downtown Toronto, the largest concentration of employment in Canada, they could potentially also be considered for inclusion in the FRTN. With protection from traffic, wider spacing between stops, and traffic signal priority, they could provide a reliable and fast connection through the heart of the city for tens of thousands of daily users. The City of Toronto is currently piloting a project on King Street that would prioritize streetcars along the central portion of the route, the results of which could provide insight into the feasibility and effectiveness of implementing transit priority measures in dense urban areas.

Improve airport access by transit

Lester B. Pearson International Airport is the busiest airport in Canada, and the airport and its surrounding area has the second highest concentration of jobs in the GTHA.[47] The Union Pearson Express and improved local and regional bus services have introduced new transportation options for airport passengers, airport employees, and non-airport employees. Proposed linkages through the Eglinton West LRT and the Finch West LRT will further enhance transportation options. At this time, however, travel to the region's airport areas, in particular, Pearson International Airport and John C. Munro Hamilton International Airport, is still dominated by auto use. Changing the dominance of the car requires the development of more attractive and integrated transit services and improving connectivity by transit and active transportation. Implementing such change will require coordination with the many stakeholders responsible for these critical hubs of employment, commerce and tourism.

The GTAA has recently brought forward a plan for a new Regional Transportation Centre at Pearson Airport to support ongoing airport growth and strengthen the airport's role as a catalyst for regional economic development. As proposed, this new Regional Transportation Centre has the potential to substantially boost transit access to the airport as well as the surrounding employment area, and better connect the airport with surrounding communities and the larger region.[48]

Figure 21: Average Number of Vehicles per Household



Priority Actions for Strategy #2, Connect More of the Region with Frequent Rapid Transit

2.1 Implement a comprehensive and integrated Frequent Rapid Transit Network by 2041 that includes:

- Existing subway, transitway and BRT services
- 15-minute GO Regional Express Rail on the Lakeshore East and West, Kitchener, Stouffville and Barrie Corridors, In Delivery for 2025 (see Map 3)
- BRT and LRT projects that are In Delivery, as shown on Map 3
- Projects that are In Development (see Map 4)
- Additional transit infrastructure improvements to resolve key gaps (proposed new LRT and BRT projects, see Maps 5 and 6).
- Additional 15-minute GO Regional Express Rail services beyond 2025 (see Maps 5 and 6).
- A Priority Bus system that connects existing and planned rapid transit, LRT and BRT (see Maps 5 and 6).
- Frequent Regional Express Bus services (see maps 5, 6 and 7)

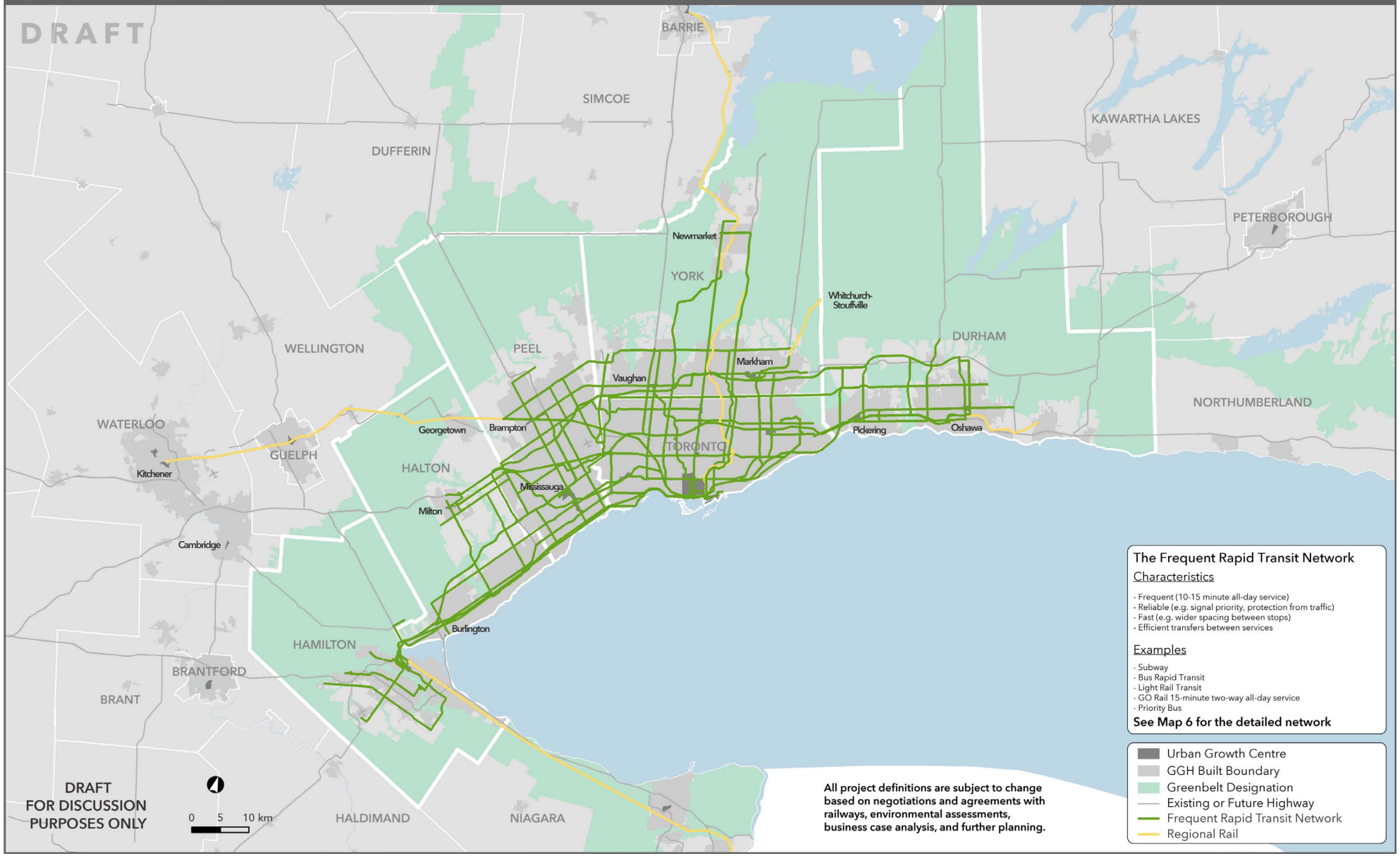
2.2 Develop complementary bus services

- Strengthen and support the ability of local transit to provide reliable service in urban areas where demand for transit is high, and to connect to the Frequent Rapid Transit Network.
- Develop and implement a regional 24-Hour Bus Network composed of strategic routes to address growing off-peak markets and destinations.
- Deliver a regional Express Bus Network to serve long-distance transit markets not served by GO Regional Express Rail (see Map 7).

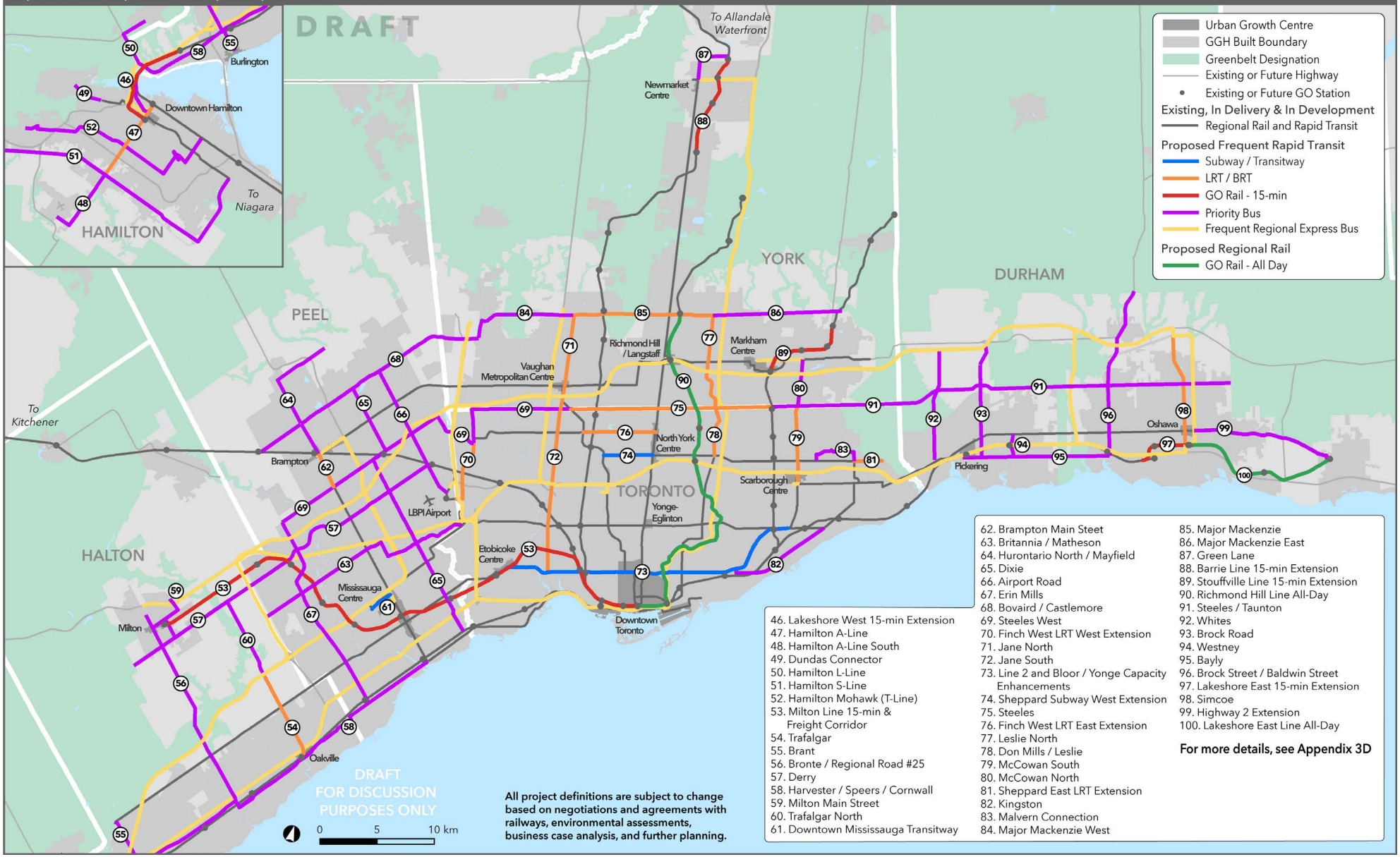
2.3 Improve access to airports, prioritizing transit for passengers and workers

- Coordinate with the Greater Toronto Airports Authority, Ports Toronto, the John C. Munro Hamilton International Airport and the federal government on ground transportation plans to the region's airports and surrounding areas.
- Support the planning and implementation of Pearson Airport's Regional Transportation Centre to facilitate enhanced transit access to the airport, and enable Pearson and the Airport Employment Area to continue to support economic growth throughout the GTHA.

Map 5 - Proposed 2041 Frequent Rapid Transit Network - DRAFT



Map 6 – Detailed Proposed 2041 Frequent Rapid Transit Network - DRAFT

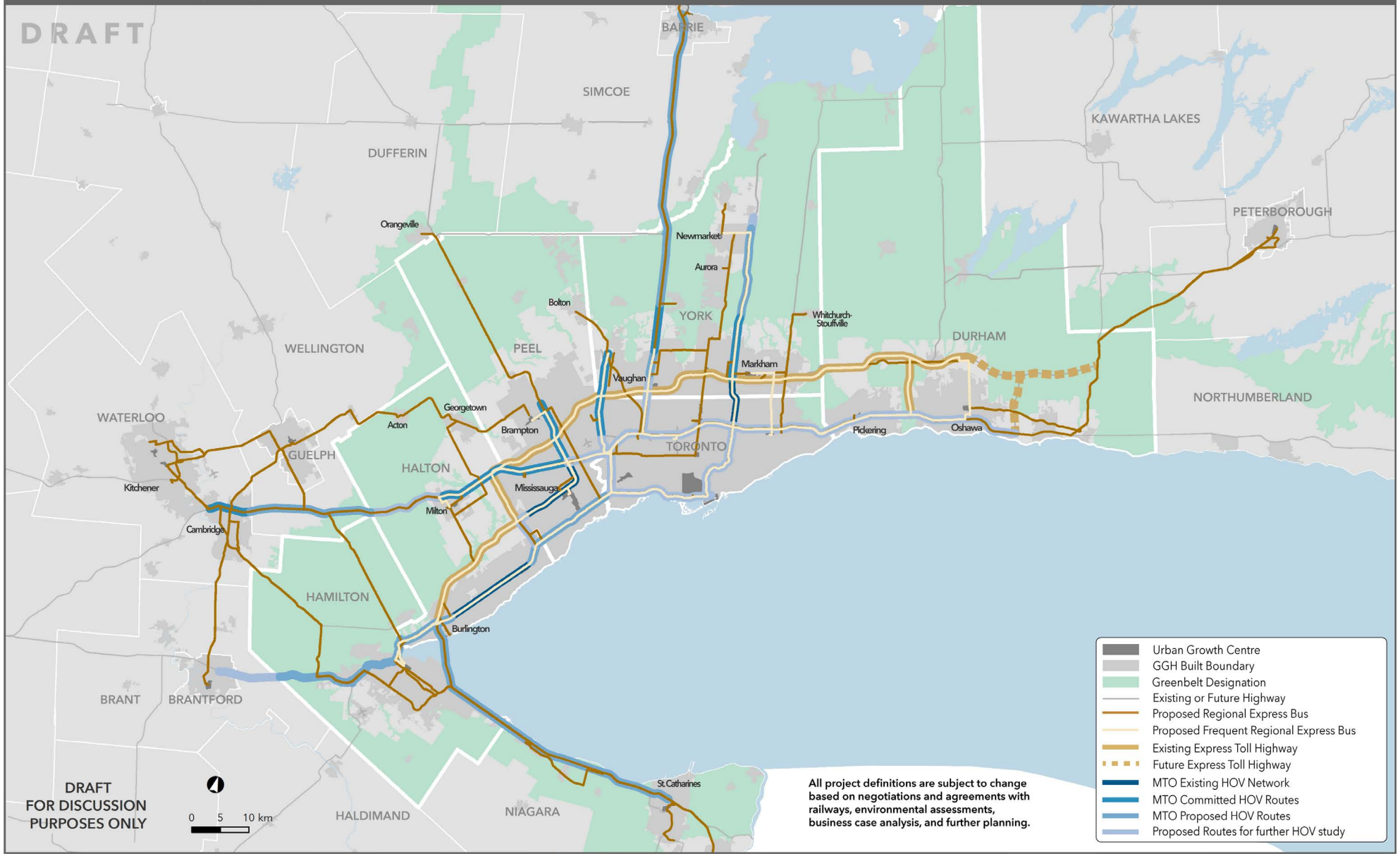


All project definitions are subject to change based on negotiations and agreements with railways, environmental assessments, business case analysis, and further planning.

46. Lakeshore West 15-min Extension
47. Hamilton A-Line
48. Hamilton A-Line South
49. Dundas Connector
50. Hamilton L-Line
51. Hamilton S-Line
52. Hamilton Mohawk (T-Line)
53. Milton Line 15-min & Freight Corridor
54. Trafalgar
55. Brant
56. Bronte / Regional Road #25
57. Derry
58. Harvester / Speers / Cornwall
59. Milton Main Street
60. Trafalgar North
61. Downtown Mississauga Transitway
62. Brampton Main Steet
63. Britannia / Matheson
64. Hurontario North / Mayfield
65. Dixie
66. Airport Road
67. Erin Mills
68. Bovaird / Castlemore
69. Steeles West
70. Finch West LRT West Extension
71. Jane North
72. Jane South
73. Line 2 and Bloor / Yonge Capacity Enhancements
74. Sheppard Subway West Extension
75. Steeles
76. Finch West LRT East Extension
77. Leslie North
78. Don Mills / Leslie
79. McCowan South
80. McCowan North
81. Sheppard East LRT Extension
82. Kingston
83. Malvern Connection
84. Major Mackenzie West
85. Major Mackenzie
86. Major Mackenzie East
87. Green Lane
88. Barrie Line 15-min Extension
89. Stouffville Line 15-min Extension
90. Richmond Hill Line All-Day
91. Steeles / Taunton
92. Whites
93. Brock Road
94. Westney
95. Bayly
96. Brock Street / Baldwin Street
97. Lakeshore East 15-min Extension
98. Simcoe
99. Highway 2 Extension
100. Lakeshore East Line All-Day

For more details, see Appendix 3D

Map 7 - Proposed 2041 HOV & Regional Express Bus Network - DRAFT



Strategy #3: Optimize the Transportation System

Optimizing the transportation system in the GTHA means making the best possible use of existing and future transportation assets. This includes integrating fares and services, planning for the first and last miles of the traveller's journey, improving the traveller experience, providing universal access, using design excellence in planning, improving safety, and using roads and highways wisely.

Integrate fares and services

The Draft 2041 RTP calls for the provision of seamless services for travellers. This means integrating fares, services, schedules, and payments. The expansion of regional rapid transit in the GTHA makes addressing fare integration a pressing issue. And even more so with the vision of the FRTN that is characterized by a fully integrated network of services that cross multiple boundaries.

To date, progress on integrating elements of transit fares (including fares, fare structure, transfers, products, concessions and payment methods) has been limited and voluntary. Transit agencies outside Toronto have been working to better integrate their services, and they typically recognize each other's transfers. With the PRESTO card, a traveller can make a seamless transfer from a transit agency outside of the City of Toronto to GO Transit.

However, there is much potential for increased cross-boundary ridership but significant barriers to operating cross-boundary services, particularly at the Toronto border. These barriers need to be addressed and Metrolinx has done extensive work in this area.

There are currently 11 different ways fares are determined in the GTHA, with each transit service provider setting its own rules and prices. There are also different co-fare arrangements when travelers move between different transit service providers. This has created complex fare rules and fare barriers that discourage transit riders from using multiple transit systems.

One major barrier is that users generally have to pay two fares when crossing into Toronto and changing between transit systems, including changing from GO to the TTC. More than 55,000 riders a day currently pay two fares for one trip. This creates a barrier that discourages transit use and leads to people driving or getting dropped off across municipal boundaries to avoid paying two fares. The cost involved can deprive residents of educational or employment opportunities. Another barrier is that there can be differing fares for services that cover the same basic route. As an example, GO base fares are significantly higher than the fares of other transit options that serve the same corridor (e.g., Kipling to Union). Also there are differences with loyalty programs and passes offered by transit agencies, each of which have their own unique ways to reward and encourage frequent ridership.

Affordability to travellers is an issue and transit fares are currently relatively high in the GTHA. Cost recovery is high as well, compared to cities in the US, Europe, Asia and Australia. In municipalities, the operating funding shortfall after revenue and their share of the provincial gas tax is mainly funded from the municipal property tax base. For Metrolinx services, the funding shortfall beyond revenue collected by Metrolinx is funded by the Province.

Investigations into transit use by income have revealed that transit is critical to the mobility of people with limited income. Equitable access and affordability of transit will need to be a key consideration of the GTHA fare strategy.

Further fare and service integration will require a new level of collaboration, decision-making and funding that balances regional coordination and local autonomy and ensures that the needs of low-income users are clearly addressed. A more formal process is needed to engage all GTHA transit operators.

Without such coordination, it will be impossible to create a completely integrated transportation system.

Plan for the first and last mile

The completion of new rapid transit projects will bring quality rapid transit closer to many more residents and jobs. Maximizing the use of these new services will require a renewed emphasis on the first and last mile of every trip.

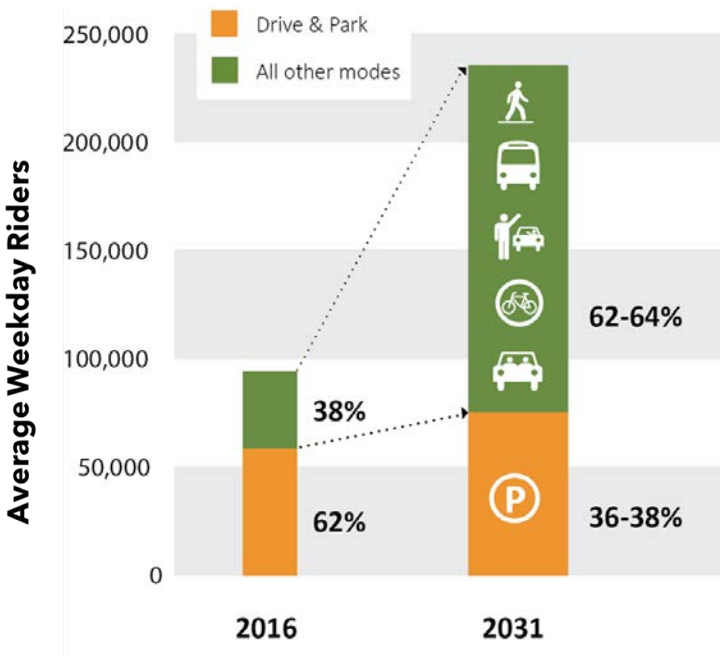
It is not sustainable to rely primarily on travellers driving to transit stations and providing them with free parking. Other solutions are needed.

The Toronto transit system is well-known for its complex system of bus and streetcar routes that connect to the subway system. Across the region, local transit routes can be connected to the FRTN.

The 2016 GO Rail Station Access Plan set targets for reducing the growth in parking requirements at GO stations. It also provides direction on access improvements to increase multi-modal connections from GO Transit stations to key destinations. This could use a range of options such as conventional and micro-transit, carpooling, walking and cycling. In the Plan, station access improvements provide direct access to the platform, not just the station, prioritizing access by transit over single occupant vehicles. Similar approaches will be needed at other rapid transit stations. A highly collaborative region-wide approach to the first and last mile is needed to provide travellers with the necessary range of options.

Figure 22 shows the anticipated increase in GO rail ridership to 2031 with the implementation of GO RER, and the substantial shift in the proportion of transit, carpooling, and active transportation (from 38 to 62%) that will be required to accommodate the increased number of trips, given limitations in parking supply.

Figure 22: Shift in GO Station access mode required to accommodate growth in GO Rail Trips to 2031



Focus on the traveller experience

More is needed to improve the transportation experience from the traveller's standpoint. Transit should be reliable and on time. Transit fares and routes should be easier to navigate. Real-time travel information as well as payment and self-serve options need to be expanded. Treating journeys as door-to-door trips that use various modes of transportation and may cross municipal boundaries will help move the region toward seamless integration. Traveller safety and convenience should remain at the centre of all decisions.

Creating a quality traveller experience is central to the Draft 2041 RTP. It recommends development of a Mobility as a Service (MaaS) system. This is a system in which travellers can access a suite of travel options (e.g., transit, car share, bike share and taxi) from different providers through a single app. The integrated mobility system could include trip planning and payment, possibly on a subscription basis. In a MaaS system, existing and non-traditional service providers can partner to address traveller priorities, tailoring them to individual needs. Metrolinx can play a leadership role in enabling or coordinating the activities of different public and private providers.

Provide universal access

Transit plays a critical role in allowing people to have affordable access to employment opportunities, health care, education, recreation, shopping and other needs. Universal and barrier-free access is a core component of an integrated regional transportation network that considers conventional and paratransit services. Emerging technologies and the quality of design for universal access are levers to optimize benefits for all travellers. The Draft 2041 RTP emphasizes universal access principles, as well as considerations for the aging population.

Embed design excellence in transportation planning

Design Excellence has not historically been a core component of the transportation or transit industry in Ontario. Metrolinx has incorporated the concepts of design excellence in architecture, urban design and landscape architecture in the development of its transit projects (such as the Eglinton Crosstown LRT), and has also integrated public art.

Integrated Design Excellence goes beyond the visual aspect to knit together all of the built fabric in a transportation system. It includes everything from a universal signage wayfinding system so travellers can find their way easily to having consistent levels for boarding from one form of transit to another, so that the traveller does have to negotiate steps or stairs.

If incorporated into planning from the outset, supported throughout and done properly, there is no cost premium to improving the look and feel of transit. Improving the quality of architecture, urban design and landscape architecture in the transportation system of the GTHA can help deliver a higher quality, seamless traveller experience that makes transit the preferred mode.

Make safety a priority

The Draft 2041 RTP aims for a transportation system that is convenient, reliable, comfortable and safe for travellers. While the GTHA transportation system remains one of the safest in the world, too many serious injuries and fatalities occur each year, especially among cyclists, pedestrians and children. These are often preventable through programs aimed at activities such as drinking and driving or texting and driving.

Ontario is a leader in road safety, developing legislation, programs and standards. Recent acts, such as *Safer School Zones Act, 2017* and *the Making Ontario's Roads Safer Act, 2015* have: increased penalties in the areas of impaired driving, distracted driving, and cyclist and pedestrian safety; helped municipalities target unsafe drivers and protect children, seniors, other pedestrians and cyclists; and given municipalities more tools to fight speeding and dangerous driving. Education of all road users is an effective strategy, as well as the provision of protected bike lanes and setting lower speed limits on roads.

Some jurisdictions have taken a systems approach to reducing injuries and fatalities from transportation through the concept of "Vision Zero". This is a multi-pronged approach that involves not only transportation planners and engineers, but public health, police services, community groups and others to work towards the goal of zero fatalities and serious injuries. It asks that stakeholders look closely at how well they are working together, and emphasizes that road design is at the core of safer streets, but safer speeds, safer vehicles and safer practices are also important (see Figure 23). Today in the GTHA, data on casualties and serious injuries from transportation are not systematically collected or analyzed at a regional level. Safety programs are typically fragmented, limiting their reach and effectiveness. Prevention of serious injuries and fatalities requires a spectrum of strategies, including changing policies and practices, educating providers, increasing collaboration and increasing individual knowledge. The Draft 2041 RTP recommends incorporating the Vision Zero framework into regional transportation. A broad, multi-stakeholder approach to transportation safety can yield significant improvements in both transportation safety and travellers' perceptions of safety.

Figure 23: Principles of Vision Zero

Vision Zero

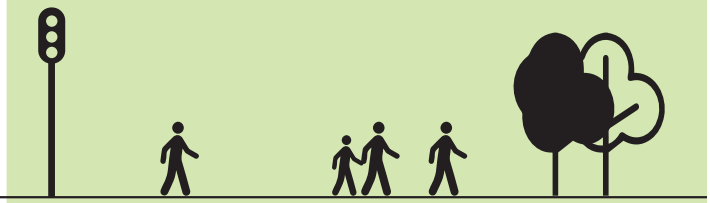
Vision Zero is a concept invented in Sweden whereby governments aim to reduce transportation fatalities to zero.

It takes a system-wide approach to address all factors that lead to fatalities by focusing on both preventing collisions through a combination of prevention programs and good design, and ensuring that any accidents that do occur are not fatal through design and regulatory standards.

Several governments at all levels have adopted Vision Zero strategies, including the City of Toronto.

Principles

- No loss of life is acceptable.
- Traffic fatalities and serious injuries are preventable.
- We all make mistakes.
- We are physically vulnerable when involved in motor vehicle collisions.
- Eliminating fatalities and serious injuries is a shared responsibility between road users and those who design and maintain our roadways.



Re-invent Transportation Demand Management

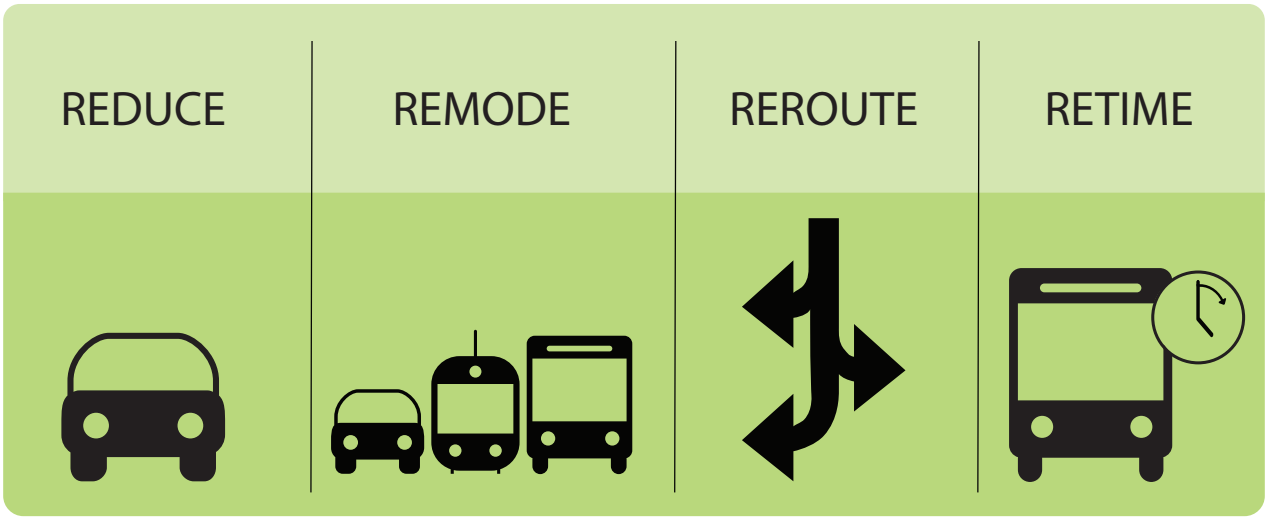
Managing and shifting demand is key to unlocking the benefits of new investments in transportation infrastructure and services. Transportation Demand Management (TDM) strategies aim to reduce and shift travel to best use the available capacity of the transportation system. It uses a variety of tools, from vanpooling to high occupancy vehicle lanes to shifting the time of travel to telecommuting and park-and-ride. TDM provides a high return on investment.

Carpooling is a well-known TDM strategy. The Metrolinx Smart Commute program which supports the use of carpooling has expanded to over 300 employers with initiatives such as carpool ride-matching, discounted travel passes and telework arrangements. TDM strategies are being incorporated into municipal policies and plans.

However, there is an opportunity to apply new approaches and technologies to TDM, and enter into innovative partnerships with third party mobility service providers and technology companies. Jurisdictions such as the San Francisco Bay Area, London and Paris have achieved significant results with tools such as differential peak/off-peak fares, parking charges, HOV lanes and mandatory TDM programs for large sites and employers. Some municipalities in the GTHA are now requiring Transportation Demand Management plans as part of the development process to ensure that new developments provide people with alternative options to driving.

The Draft 2041 RTP recommends actions to improve TDM programs and make them more attractive to travellers.

Figure 24: The Concept of Transportation Demand Management

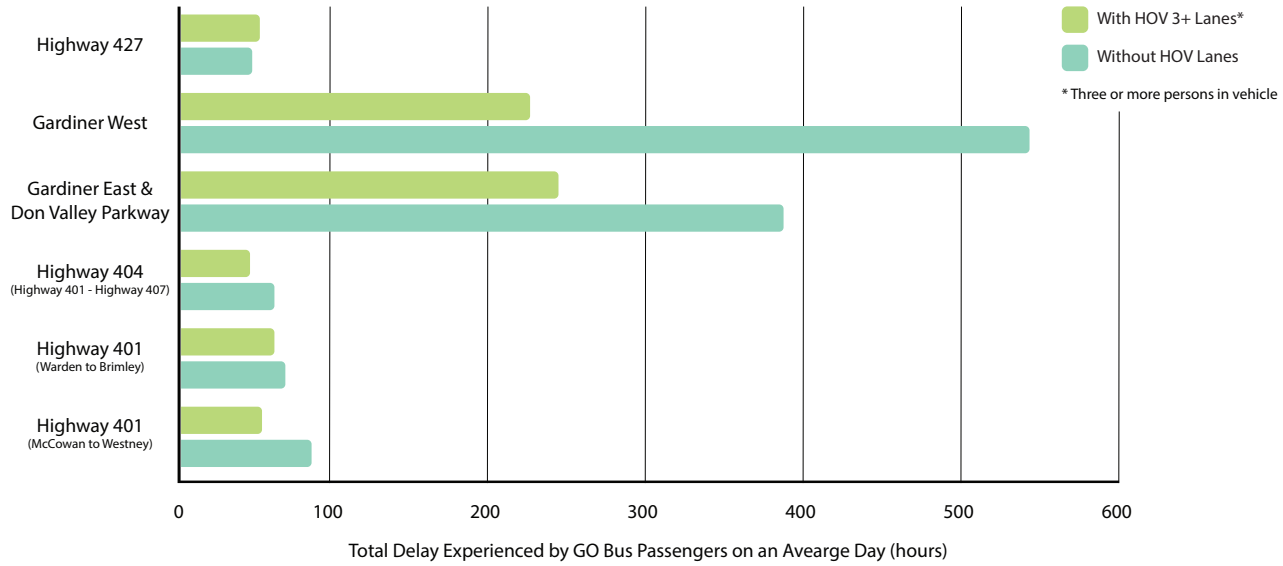


Expand the HOV Network

The Draft 2041 RTP calls for an extensive High Occupancy Vehicle (HOV) network on all the 400-series highways, as well as the Gardiner Expressway and the Don Valley Parkway, to prioritize vehicles – particularly transit vehicles – that are carrying more than one occupant. A regional approach will encourage higher-occupancy travel, support faster, more reliable bus service and help to make solo driving less attractive. The recent experience with HOV lanes during the Pan Am/Pan Parapan Games in the GTHA demonstrated a clear benefit for GO Bus riders in reducing delay associated with highway congestion, leading to more reliable and attractive transit service (see Figure 25).

HOV lanes can be built on existing highways, and do not necessarily require road widening. They are also flexible, and could be used in the future for shared shuttles or other shared services. In certain locations where residual capacity remains, it may also be appropriate to introduce High Occupancy Toll (HOT) lanes, which allow single-occupant vehicles to pay a fee for the use of a managed lane typically reserved for buses and carpoolers. Although road tolls or vehicle charges for all kilometres travelled can deliver a reduction in congestion, they remain one of the most challenging mechanisms for all decision-makers, because of their high profile, unpopularity with drivers, and questions about fairness. The Ministry of Transportation has recently initiated a High Occupancy Toll (HOT) lane pilot program on Highway 427 and the QEW.

Figure 25: GO Bus Passenger Time Savings with HOV Lanes during Pan Am Games



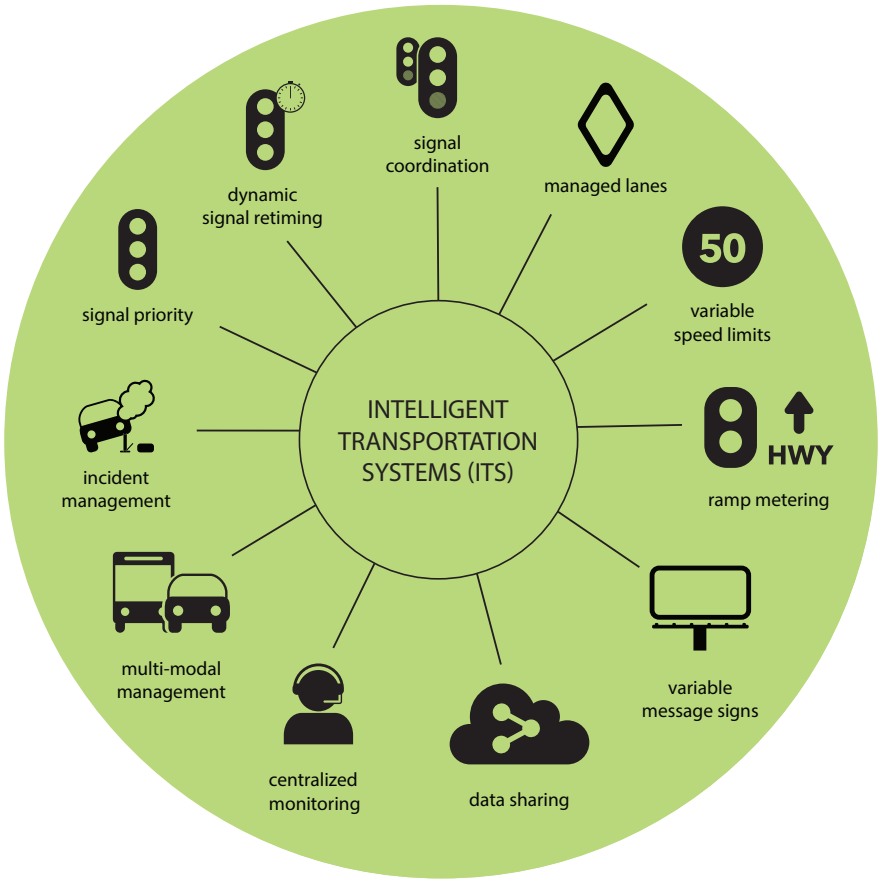
Source: GO Planning, Impact of HOV lanes during the Pan Am Games on GO buses

Manage roads and highways to support transit

The Province and municipalities in the GTHA have made progress in managing roads and highways to support transit through the expansion of the HOV network on highways and arterial roads. The reliability and speed of bus service can be further supported through Intelligent Transportation Systems (ITS) that use technology and data to manage congestion and improve transit reliability.

Currently, existing systems are fragmented and not integrated across the region. The Draft Plan presents an opportunity to strategically plan, deploy, integrate and operate ITS in the region to support the management of traffic and the implementation of the FRTN. Some of the most effective transportation corridors integrate a number of different ITS components into a "Smart Corridor." Different ITS tools could be used on BRT, LRT and Priority Bus routes to improve speed and reliability.

Figure 26: Potential ITS Tools



In general, there is considerable room for improved collaboration among provincial and municipal agencies and departments in charge of roads, signals, parking, taxis and transit to design and operate a road and highway system that is more efficient, seamless and safe and is focused on moving people, not just vehicles.

Optimize the highway and major road network for Goods Movement

The efficient movement of goods and services in the GTHA is essential to the region's economic prosperity and quality of life. This is often not recognized by the general public and not sufficiently recognized in public policy. A staggering amount – an estimated $3.5 billion worth – of goods is moved by rail and truck in the GTHA every day. Goods movement is anticipated to increase by approximately 35% between 2016 and 2041 as the region continues to grow.

In a multi-modal transportation system, it is essential to identify how to move both goods and people effectively using shared infrastructure that serves both. Optimizing the highway and major road network for goods movement will support the efficient, reliable and safe movement of goods while reducing costs and environmental impacts.

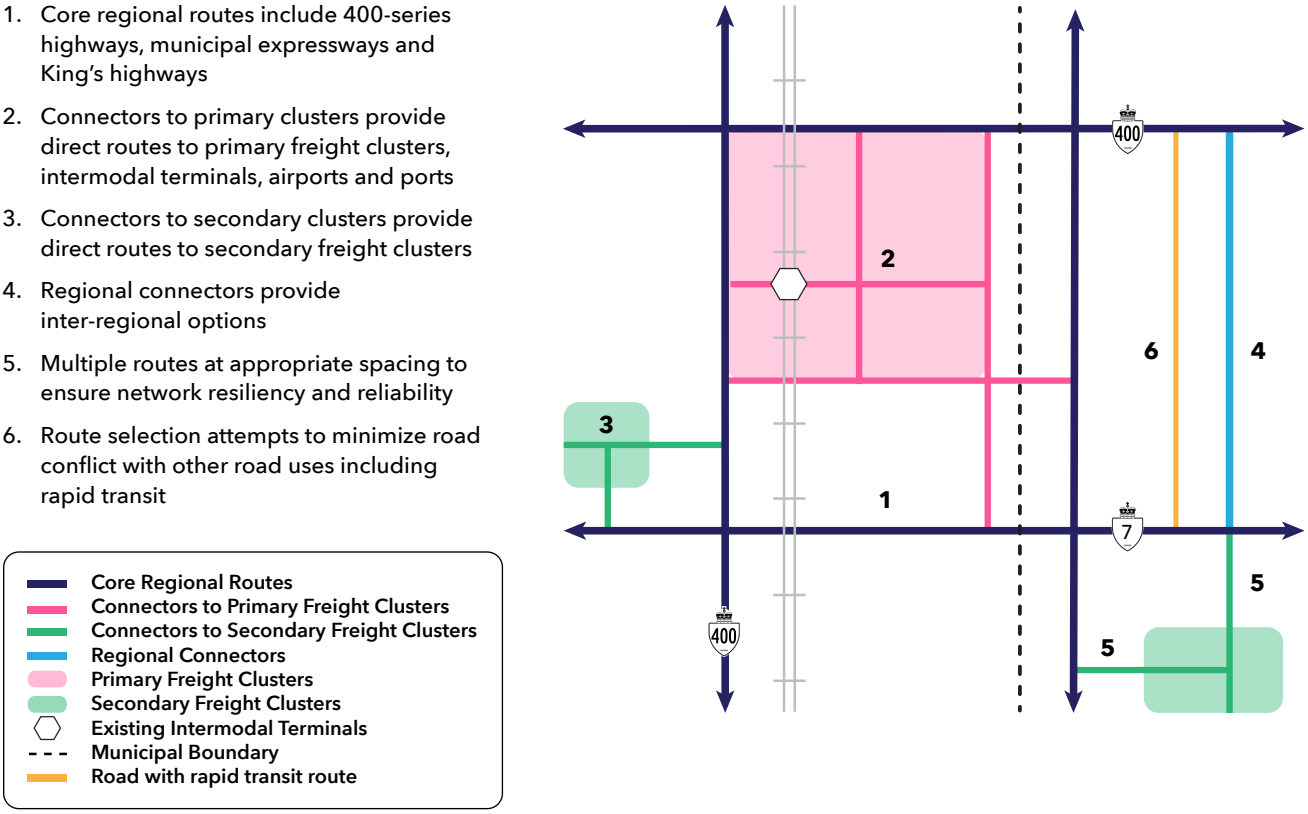
This optimization requires an understanding of where freight is being moved and the nature of goods being shipped within the region and beyond. Providing reliable connections for trucks and other modes to access important intermodal yards and freight clusters – areas with high concentrations of land uses related to logistics, warehousing and the movement of cargo – will help ensure that goods can move more efficiently throughout the region.

Innovative ways of improving freight logistics – potentially including the development of urban freight hubs and the use of transit stations as pick-up locations for small parcels – would reduce the need for door-to-door delivery in urban cores. The use of bicycle delivery where appropriate, will reduce the environmental impact of delivery vehicles. As well as moving freight outside of traditional peak travel times, this can help reduce conflicts with other vehicles while maintaining the region's economic competitiveness.

The Ministry of Transportation and several regions, notably Peel Region, have done significant work in the area of goods movement. The Draft 2041 RTP recommends collaboration between the public and private sectors to develop a Regional Strategic Goods Movement Network and other actions to enhance the movement of goods (see Figure 27 and Map 8).

Figure 27: Key Principles of the Regional Goods Movement Network

1. Core regional routes include 400-series highways, municipal expressways and King's highways
2. Connectors to primary clusters provide direct routes to primary freight clusters, intermodal terminals, airports and ports
3. Connectors to secondary clusters provide direct routes to secondary freight clusters
4. Regional connectors provide inter-regional options
5. Multiple routes at appropriate spacing to ensure network resiliency and reliability
6. Route selection attempts to minimize road conflict with other road uses including rapid transit



Priority Actions for Strategy #3, Optimize the Transportation System

3.1 Advance the integration of services and fares

- Remove barriers to creating an integrated fare system to support seamless and consistent travel for passengers across municipal boundaries.
- To ensure progress toward seamless travel and increase ridership, take a regional view of price setting and concessions for transit and the development of innovative fare products.
- Form a formal working group of all GTHA transit operators to share customer experience objectives that would become part of new regional transit investments and the regional transit network in general

3.2 Expand first and last mile choices for all transit stations

- Fully implement the GO Rail Station Access Plan (2016).
- Invest in First Mile-Last Mile (FMLM) solutions to maximize all-season access to and from all rapid transit stations, including, but not exclusive to priority transit access, pedestrian access to workplaces and destinations nearby, improved on-demand services including carpooling, taxis, and micro-transit services, on and off-site bicycle facilities, car share and bike share programs.
- Address barriers to Metrolinx funding FMLM solutions outside of stations.
- Recover the cost of parking at GO stations to help shift trips to modes that do not require parking, and allow more people to access new train services.

3.3 Set consistent high-quality standards for the traveller experience

- Focus on reliable service as a first priority for attracting customers to transit, emphasizing transit priority measures.
- Provide travellers with:
  - real-time information;
  - well-designed places including shade, shelters, paving, seating, clear sightlines and lighting;
  - consistent wayfinding across mediums;
  - all-season maintenance of sidewalks, bike lanes and paths;
  - on-demand service connectivity; and
  - concession fares.
- Ensure that design excellence in architecture, urban design and landscape architecture enhances the transportation experience
- Establish a GTHA Regional Customer Service Advisory Committee to advise the Metrolinx Board of directors on issues impacting the traveller experience
- Establish a "Let Metrolinx Know" panel, modelled after the Let GO Know Panel, comprised of a random selection of GTHA travellers who would regularly be available to participate in surveys and focus groups to advise on customer service issues

3.4 Develop and implement a Mobility as a Service (MaaS) strategy

- Continually evolve the PRESTO fare payment system to support inter-regional travel with a range of fare products and self-service options. Migration to an account based system will allow customers to access PRESTO via traditional PRESTO cards, credit cards, limited use electronic tickets and mobile wallets.
- Fully integrate regional multi-modal trip planning and fare payment into a MaaS platform, incorporating and encouraging mobility options including, but not limited to, transit, bike sharing, carpooling and ridesharing.

3.5 Place universal access at the centre of all transportation planning and designing activities

- Foster an accessible network of conventional and paratransit providers, where riders can transfer between options, easily and conveniently, even across boundaries.

- Develop an integrated regional booking platform for specialized transit trips across the region
- Ensure that on-demand services meet the needs of a diverse range of travellers.
- Provide leadership and ensure consistency in accessibility design for transportation services and facilities across the region.
- Work with regional partners to assess and address challenges to transit access, and to address unintended consequences of transit investment, such as increases to housing costs along transit corridors.
- Develop a regional framework for the universal provision of transit passes to low-income groups.

3.6 Eliminate transportation fatalities and serious injuries as part of a regional "Vision Zero" program

- Incorporate the Vision Zero framework into regional transportation planning by developing a regional approach to transportation design standards, consideration of speed, and public education with the aim of zero serious transportation-related injuries and fatalities.

3.7 Make Transportation Demand Management (TDM) a priority by:

- Advancing workplace TDM programming and encouraging private sector leadership, participation and investment with mandated participation by large employers, institutions and other venues that generate a significant number of trips.
- Developing new approaches to TDM delivery from the fields of Service Design and Behavioural Economics.
- Reinvigorating carpooling with a compelling and user-friendly regional online platform integrated to trip planning and payment tools; remove regulatory obstacles to user incentives to drive participation.
- Delivering TDM programming to support all new rapid transit services, station areas, and areas impacted by major construction and events.
- Developing incentives for off-peak travel, including transit use, to grow ridership and reduce peak demand.
- Continuing to explore how pricing of mobility (including parking, road pricing and HOT lanes and off-peak fares) could be used to shift travel behaviour.
- Removing obstacles to vanpooling

3.8 Expand the HOV network

- Complete a seamless HOV network on all regional highways in the GTHA, encouraging higher-occupancy travel and supporting faster, reliable bus service (see Map 7).
- Incentivize ridesharing using the HOV network for trips that are difficult to make by transit or active transportation.
- Continue the implementation of HOT lanes on HOV lanes where there is excess capacity.

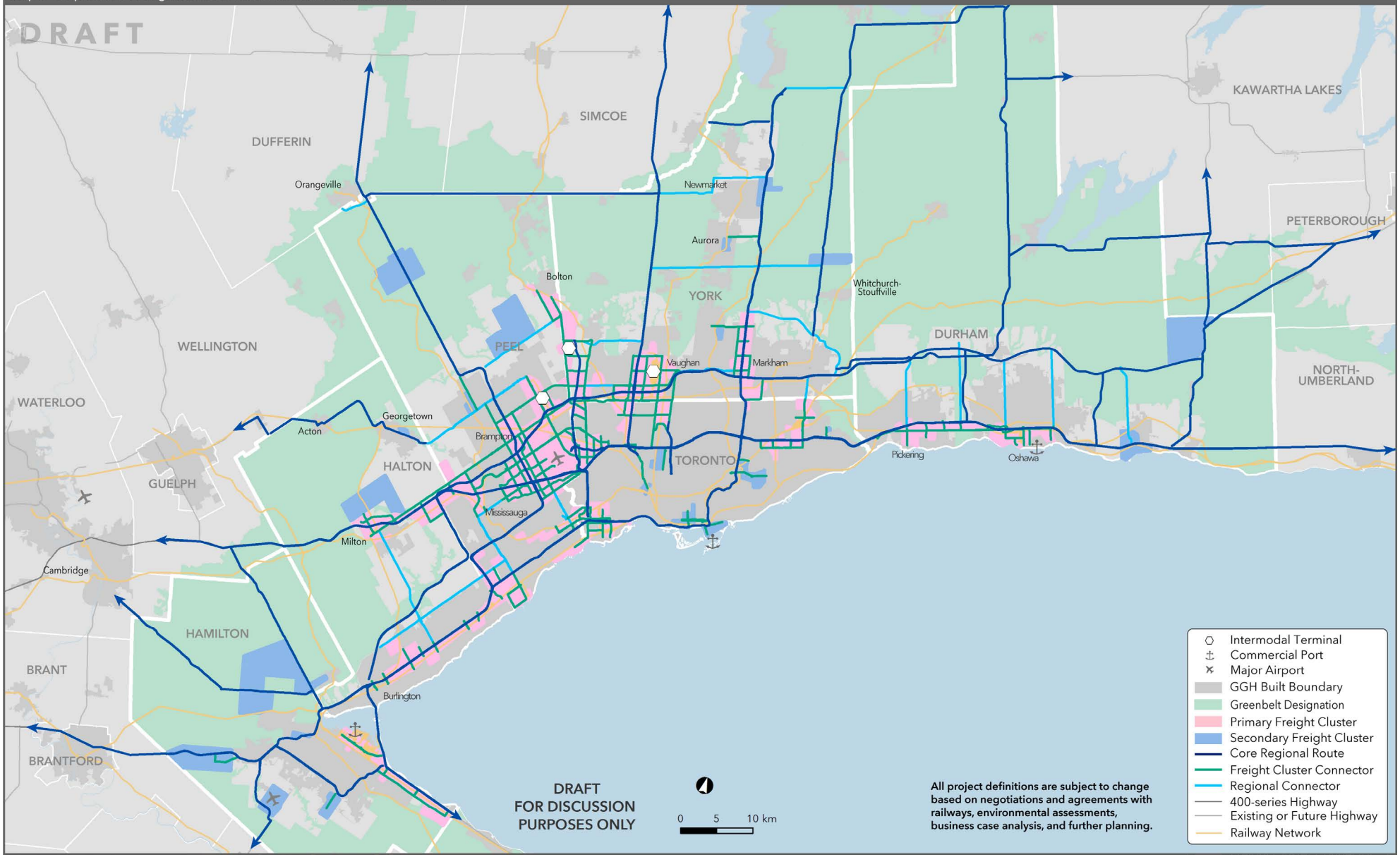
3.9 Further integrate road and transit planning and operations

- Building on early progress, invest in the regional coordination and deployment of ITS/smart corridors to support effective congestion management and transit priority operations.
- Within each municipality and where municipal and provincial roads interface, create formal task forces or groups to coordinate the planning and operations of transit, roads and parking

3.10 Further define and support a Regional Goods Movement Network

- Advance collaboration between public and private sector to support implementation of the Regional Strategic Goods Movement Network (See Map 8) to link goods-generating activity centres, intermodal terminals and regional gateways.
- Study goods movement priority features for new and existing freight corridors, including, but not exclusive to intelligent lane utilization and truck-only lanes.
- Support development of innovative freight hubs, including planning for and protecting complementary land uses near freight hubs. Consider the use of transit stations as a pick-up location for small parcels and support other innovative urban freight hubs to reduce door-to-door delivery. Explore and implement flexible freight delivery times, including off-peak delivery, where applicable.
- Establish a GTHA urban freight data collection program including monitoring of freight flows in the GTHA.
- Expand awareness and education efforts regarding goods movement planning, design and operational issues, with particular reference to the impact of e-commerce (and potential innovations in delivery, such as the use of bicycle couriers for urban deliveries) on the volume and nature of freight delivery in the region.

Map 8 - Proposed 2041 Regional Roads-based Goods Movement Network - DRAFT



Strategy #4: Integrate Land Use and Transportation

Transportation decisions have land use impacts and how we design and plan our region has an impact on transportation. As the transportation system expands, there is a great opportunity to create more complete and connected communities that are supportive of transit, walking and cycling. Many of the actions to achieve these ends will require legislative action.

Better integrate land use and transportation planning

The more than $30 billion investment in transit investment arising from *The Big Move* will deliver more rapid and frequent transit service across the region over the next 10 years. These investments provide opportunities to:

- realize the provincial Growth Plan vision for intensification and complete communities and meet Growth Plan intensification targets for major transit station areas and Urban Growth Centres;
- attract new employment, a key driver of transit ridership by investing in transit to create the conditions needed to induce new office developments nearby;
- locate new regionally significant services and public institutions near frequent transit services; and
- advance Mobility Hub development by strengthening the partnerships required through the land use planning process and the transit project development process.

Where and how transit stations are developed is key to establishing an integrated transportation system in the GTHA. In our polycentric region, transit stations link up people with jobs, schools, work and amenities. Achieving enough density around stations is necessary to ensure that there is significant two-way ridership on RER.

Integrated station development, where stations are integrated with commercial, residential or office uses, is ultimately the most desirable approach for station development or re-development. The Yonge Subway corridor includes several examples of integrated development, but this has been slow to progress elsewhere. The experience of the last decade has pointed to a need for greater integration of development into transit project planning and procurement, and clear delineation of the roles and responsibilities of all parties – public and private – in optimizing the potential of these unique locations.

The Growth Plan now sets density targets for development around stations on Priority Transit Corridors for projects In Delivery. Accordingly, these major transit station areas will need to be designed to coordinate both their transportation and intensification roles. This will ensure that the areas around major transit stations can develop to higher densities and provide options for station access options that are primarily focussed on walking, cycling and transit. Planning and development around transit stations needs to involve provincial and municipal stakeholders, along with transit agencies and the private sector.

Metrolinx currently provides occasional input to the Province's review of upper and single tier municipal official plans. Metrolinx can request to review planning applications submitted to municipalities and other planning documents (e.g., secondary plans and zoning by-law amendments), but there is no formal protocol to guide this process and ensure alignment with the RTP. The Draft 2041 RTP recommends the development of such a protocol. Currently, municipal land use decisions and the RTP are both required to conform with the Growth Plan. This is intended to ensure that development and transit investments support the provincial vision for growth. However, it is voluntary for municipalities to integrate municipal transportation plans with the RTP.

The Draft 2041 RTP recommends that the Province use existing provisions of the *Metrolinx Act* to direct municipal transportation plans. While some progress has been made through collaboration, transportation and land use decisions made by ministries, municipalities and private owners need to be better coordinated to fully achieve the Province's vision for growth for the GTHA. With true transportation and land use integration, intensification would be more consistently aligned with transit-enabled sites rather than those that are car-dependent. The *Metrolinx Act (2006)* provides for the development of a Transportation Planning Policy Statement (TPPS) that would mandate the alignment of municipal planning with the RTP.

The TPPS would provide more specific transportation policy direction than the Growth Plan. Enacting this regulation would give the directions in the RTP legislated status amongst other provincial and municipal land use plans, thus supporting closer alignment of transportation and land use plans. Its purpose is not to duplicate the Growth Plan, but rather to provide improved linkages between the Regional Transportation Plan and the land use and transportation decisions needed to support its implementation, (e.g., parking, roads, station access, transit service and mobility hub development).

The *Metrolinx Act* also contains a provision that allows the Minister of Transportation to require municipalities to develop TMPs and specify what they should consider. The development of TMPs is currently voluntary, although all municipalities in the GTHA have them.
The TPPS, through official plans, Transportation Master Plans (TMPs), secondary plans, and decisions on planning applications would help direct city-building decisions relating to mobility hub development, road and street capacity and the design of transit station areas to more fully align with where rapid transit exists and is planned, and make the movement of people priority for the development of the regions roads. The TPPS could also provide policy direction towards regional coordination in areas of common interest, such as road design for autonomous vehicles and goods movement, and parking policy.

Currently, municipal transportation master plans are not mandated by the Province, only consider and apply to their respective municipality, and have no specific status in legislation. The Draft 2041 RTP recommends creation of a TPPS and the re-examination of the legislative and regulatory status, role and design of Transportation Master Plans. Alternatively, some of the elements of the RTP could potentially be achieved through the Growth Plan, which would need to be updated to reflect additional details from the RTP. However, a TPPS would provide a stronger tie in directly to TMPs, which set directions for transit and roads.

Together with policy levers, investments in transit can be a tool to achieve desired development outcomes. In 2016, Metrolinx approved the location of 12 new stations on four corridors for GO RER and SmartTrack. Along with these recommendations, Metrolinx requested "that municipalities where these recommended new stations are located provide resolutions… demonstrating their commitment to implementing transit supportive land-uses around stations, and sustainable station access".

Advance the system of connected Mobility Hubs

First introduced in *The Big Move*, Mobility Hubs are Major Transit Station Areas of particular significance in the region because of their existing or planned frequent rapid transit service and development potential. The Growth Plan prioritizes planning of Major Transit Station Areas on Priority Transit Corridors, directing residential and employment growth to support the achievement of a more compact built form, and maximize the number of potential transit users within walking distance. Mobility Hubs are intended to integrate the various modes of transportation and accommodate an intensive concentration of places to live, work, shop or play. Mobility hubs on Priority Transit Corridors are shown on Map 3.

Since 2009, 43 of the 51 mobility hubs identified in The Big Move have experienced residential and employment growth, with the median growth rate approximately double that of the region's overall growth. However, progress toward the support of transit in the region's Mobility Hubs varies greatly in terms of density, form, function, and rapid transit phasing. With the continued expansion of the region's Frequent Rapid Transit Network, these Mobility Hubs present a vital opportunity to maximize the benefits of transit investments and establish a regional transit network that is well-connected. Metrolinx's Mobility Hub Guidelines are a tool for all parties to address the existing and anticipated opportunities and challenges of integrating transportation and development functions at these important locations.

Design to encourage walking and cycling

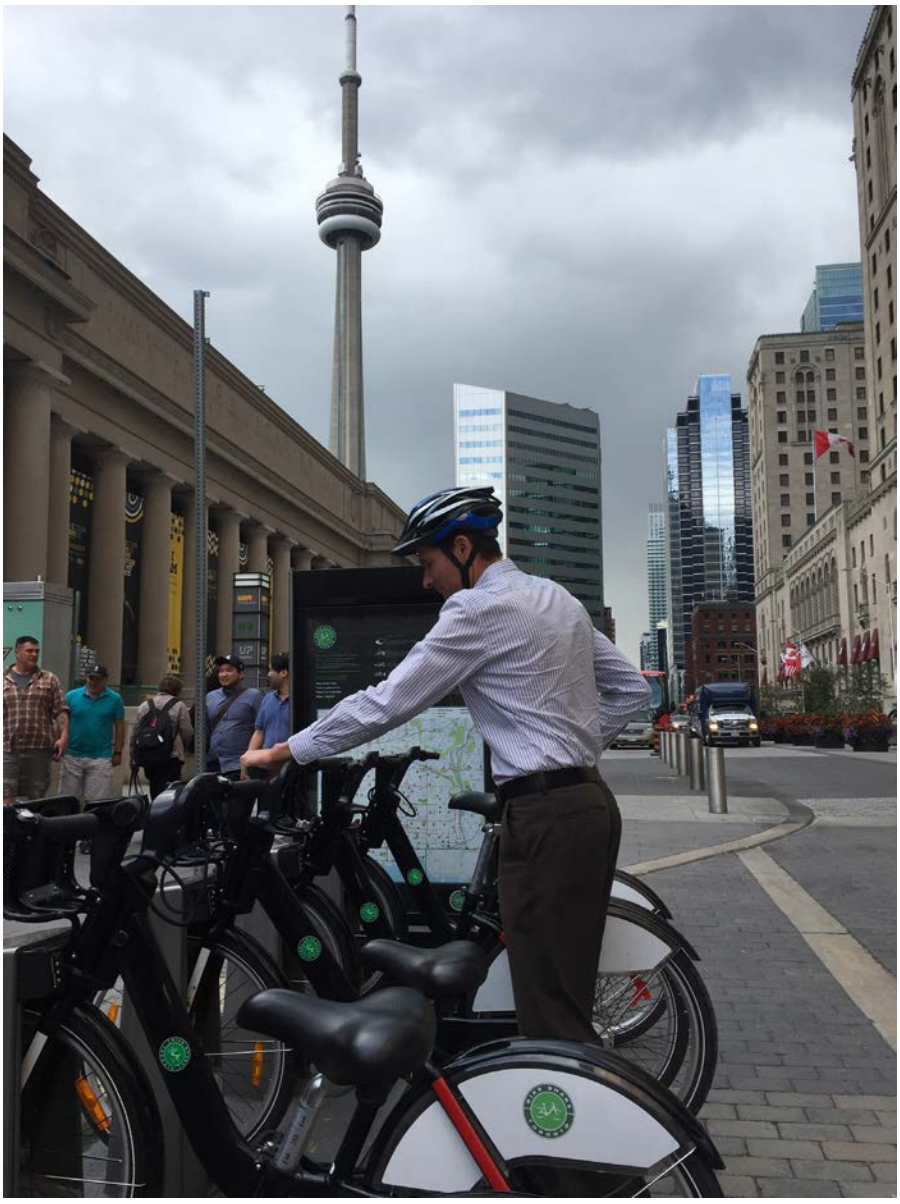
Making walking and cycling safe and accessible is a cornerstone of developing a complete community and achieving the intensification goals of the Growth Plan. On average, 22% of trips today are short enough to be made by walking, and 56% of trips are short enough to be cycled. And yet, on average only 11% of trips are made by walking and cycling in the GTHA. Walking and cycling is highly dependent on density, the built form, the local environment, and the overall perception of the attractiveness, convenience, and safety of the journey. In Toronto, for example, the share of walking and cycling trips that start and end in the downtown area is over 50%, and has grown significantly in the last decade.

Several areas in the GTHA have poor walking access, particularly in suburban employment areas and in some older post-war residential neighbourhoods. While many destinations and jobs are located within a walking distance of frequent transit, walking is deterred by a lack of well-lit and connected sidewalks. To encourage walking from transit stops, buildings need to be conveniently located, close to the road with pathways linking the road and the building entrance. An example of a neighbourhood with a street network that was reconfigured from an auto-oriented design to a more pedestrian friendly design is shown in Figure 28.

The Draft 2041 RTP includes a number of actions aimed at significantly increasing the number of walking and cycling trips made by travellers. The investment to support active transportation is relatively small compared to that needed for rapid transit and highway projects, but the impacts can be significant. For example, by improving the pedestrian environment near regional and rapid transit stations with all-season maintenance of sidewalks, the need for costly parking can be reduced as walking becomes a more viable option for those living close to a station.

The development of a TPPS would be a step towards aligning the Province's goals for land use intensification and complete streets in the Growth plan with supporting policy for the design of roads and streets to prioritize walking and cycling.

Figure 28: Street Network Before and after Pedestrian Friendly Redesign



Develop a Regional Cycling Network

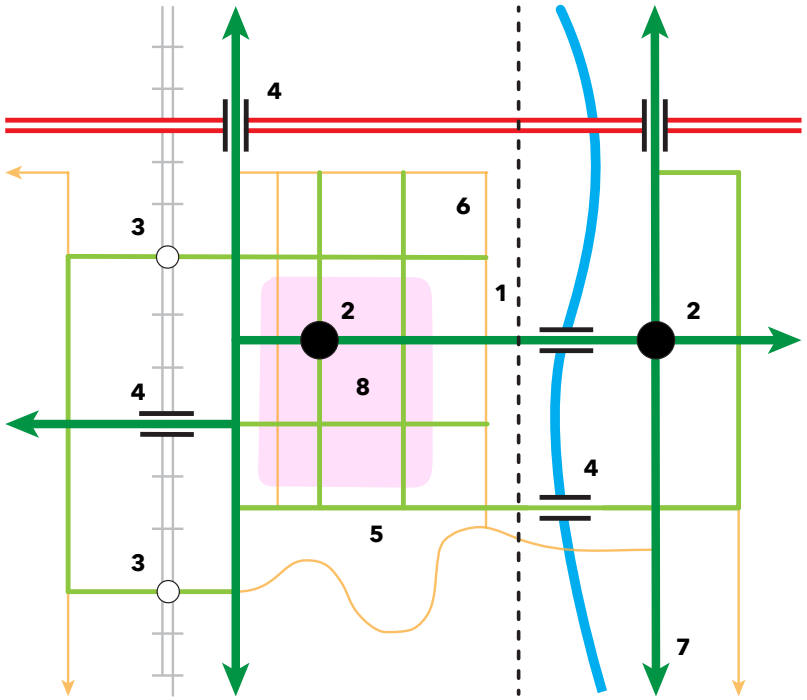
There are many barriers to increasing commuting by bicycle. These include the lack of separated bike lanes, discontinuities in existing cycling networks, barriers such as highways, and the built form in many parts of the region that is not conducive to cycling. Cycling infrastructure can be developed at a relatively low cost and can provide a high return on investment. The Draft 2041 RTP recommends the development of a Regional Cycling Network, which would provide a cohesive network of regional corridors and local routes designed to facilitate cycling commuter trips. The Network was designed in coordination with the province-wide cycling network, CycleON. The focus of the Network is to provide people with more access to protected bike lanes and paths, especially in crossing municipal boundaries. Achieving it will require the Province, municipalities and transit operators to establish common standards for design and funding.

Figure 29: Key Principles of the Regional Cycling Network

1. Crosses municipal boundaries
2. Links urban growth centres
3. Connects to transit stations
4. Crosses physical barriers
5. Provides direct commuter routes
6. Connects to local routes
7. Facilitates longer trip distances
8. Aligns with high cycling potential
9. Painted cycling lanes, cycletracks or pathways *
10. Wayfinding signage & maintenance guidance *

Primary Network (3-5 km grid)
Secondary Network (1-3 km grid)
Local / Recreation Network
Municipal Boundary
Urban Growth Centre
Transit Station
Physical Barrier Crossing
Area with High Cycling Potential

* Not shown on concept diagram



Regional corridors would provide the spine that links local routes and facilities. They will:

- bring cycling facilities closer to more people;
- cross municipal boundaries;
- link Urban Growth Centres and other regional centres; and
- connect to regional and rapid transit stations.

When complete, the Regional Cycling Network will provide:

- high-quality infrastructure, including painted lanes or full separation from motor vehicle traffic where posted speeds exceed 60 km/h and a paved riding surface;
- consistent, clear wayfinding signage; and
- direct routes that cross physical barriers such as 400-series highways, waterways and other fixed landmarks.

The key principles of the Regional Cycling Network are illustrated in Figure 29 and the network is shown on Map 9.

Address Parking Demand Management in land use planning

Free or inexpensive parking encourages driving, even when there are alternatives to driving. Often too much parking is required, making development more expensive than necessary. Although *The Big Move* made recommendations for updating municipal parking and zoning by-laws, there has been inconsistent advancement of parking management across the region. A comprehensive approach to identify best practices for parking management is even more necessary today as on-demand services and autonomous vehicles will likely change how much parking is needed and how it is used. There is an opportunity to make parking management a regional priority and to develop common parking standards and guidelines to address supply forecasts, pricing and design. Parking Demand Management can also be applied to transit stations, for example, by identifying a maximum number of parking spaces that will be made available at new stations.

The land use planning process – through development applications, secondary plans or zoning – can shape parking supply by ensuring that residential and commercial site design enables more walking, cycling, car sharing and transit use. The Draft 2041 RTP recommends actions to address both parking and demand management in the land use planning process.

The RTP presents an opportunity for local and regional municipalities to make parking management a regional priority in the planning and regulating of off-street parking and to develop common parking standards and guidelines. Parking standards and guidelines need to be regionally coordinated but be location-specific (i.e., should not use a "one size fits all" approach). A variety of best practices can be introduced in order to educate the public, coordinate the provision of off-street parking with transit expansion and develop a regional Parking Charter (see the RTP Parking Policy State of Practice Review technical backgrounder).

A host of "quick wins" that could be implemented region-wide include promoting shared parking, unbundling parking from development, providing bike parking, and providing preferential parking for car-sharing, electric vehicles, and car-pools.

Encourage students to walk and cycle to school

School-related trips account for 20% of morning peak period travel by GTHA residents. Since 1986, the proportion of students being driven or driving to school has more than doubled, and active transportation to school has steadily declined, contributing to additional traffic and decreased physical activity. The Draft 2041 RTP contains actions to advance active and sustainable school travel (ASST). This will contribute to improved health, safety and the environment today, and provide impetus for turning today's children and youth into tomorrow's pedestrians, cyclists and transit users.

Priority Actions for Strategy #4, Integrate Land Use and Transportation

4.1 The Province should review the legislative and regulatory linkage between the provincial and municipal planning framework to fully achieve the objectives of the Growth Plan and the Regional Transportation Plan

- Identify all legislative, regulatory, fiscal (and other) opportunities to require integrated land use and transportation decision-making by all stakeholders in the GGH;
- Enact the regulations in the *Metrolinx Act* (2006) to create a Transportation Planning Policy Statement to provide the RTP with the legislative status it needs in order to achieve regional goals for land use and transportation integration.
- Enact the regulations in the Metrolinx Act (2006) to formalize the role and status of municipal Transportation Master Plans to align with provincial land use and transportation objectives, including the RTP.
- Develop a protocol for Metrolinx to review and provide input to secondary plans, publicly-funded development plans and large scale planning applications to ensure alignment with the regional transit investments and the RTP.

4.2 Make provincial investments for transit projects contingent on corresponding transit supportive planning by municipalities being in place

4.3 Focus development on Mobility Hubs and Major Transit Station Areas along Priority Transit Corridors by:

- Work collaboratively with the province and municipalities to create enforceable station area plans that catalyze desired land uses at stations and prevent uses that are incompatible or fail to fulfil the potential of the lands.
- Systematically co-locate publicly-funded institutions and facilities near transit with walking and cycling-supportive infrastructure.
- Integrate joint development early in rapid transit project planning and into procurement schedules, utilizing new partnerships between the public and private sector.
- Enable Metrolinx to play a leading role in development and redevelopment around stations to fulfil the objectives of the Growth Plan and the RTP.
- Enable Metrolinx to acquire land around stations for the purpose of transit-oriented development.
- Review current financial and economic incentives and disincentives to desired development and develop new tools to incent the right development in the right place.
- Update the Mobility Hub Guidelines to address emerging challenges and opportunities related to the integration of land use and transportation, and incorporate new tools and guidance for planning mobility hubs.
- Update the network of mobility hubs in conjunction with the Mobility Hub Guidelines to reflect the Frequent Rapid Transit Network, Growth Plan (2017), municipal plans and 2041 population, employment and transit ridership forecasts.

4.4 Evaluate financial and policy-based incentives and disincentives to support transit-oriented development. Work collaboratively to build on and develop regional and site-specific measures and tools to encourage development that helps meet growth management and transportation objectives

4.5 Plan and design communities including development and redevelopment sites and public rights-of-way that support and promote a shift in travel behaviours to the maximum extent that is feasible, consistent with Ontario's passenger transportation hierarchy

- Develop region-wide standards for highways, roads and streets to consistently reflect the passenger transportation hierarchy.
- Develop shared investment criteria in cycling facilities centred on cycling potential and connectivity, consistent with regional and local plans.

- Adopt a complete streets approach to infrastructure project delivery when new rail, station and transit projects are undertaken, to deliver pedestrian and cycling access as part of the infrastructure investment.
- Expand and promote bike share in locations where there is an opportunity to meet existing demand and grow cycling use.

4.6 Complete the regional commuter cycling network

- Plan, design, and construct a commuter cycling network (See Map 9) that includes both on and off-road connections across the region to create new connections in areas with high cycling potential near rapid transit stations, between Urban Growth Centres and across boundaries.

4.7 Embed Transportation Demand Management (TDM) into land use planning and development

- Require long-term sustainable TDM plans through the development process to ensure that development is designed from the outset to reflect the passenger transportation hierarchy, with realistic implementation plans.
- Leverage the development process to generate dedicated funding for TDM programming.

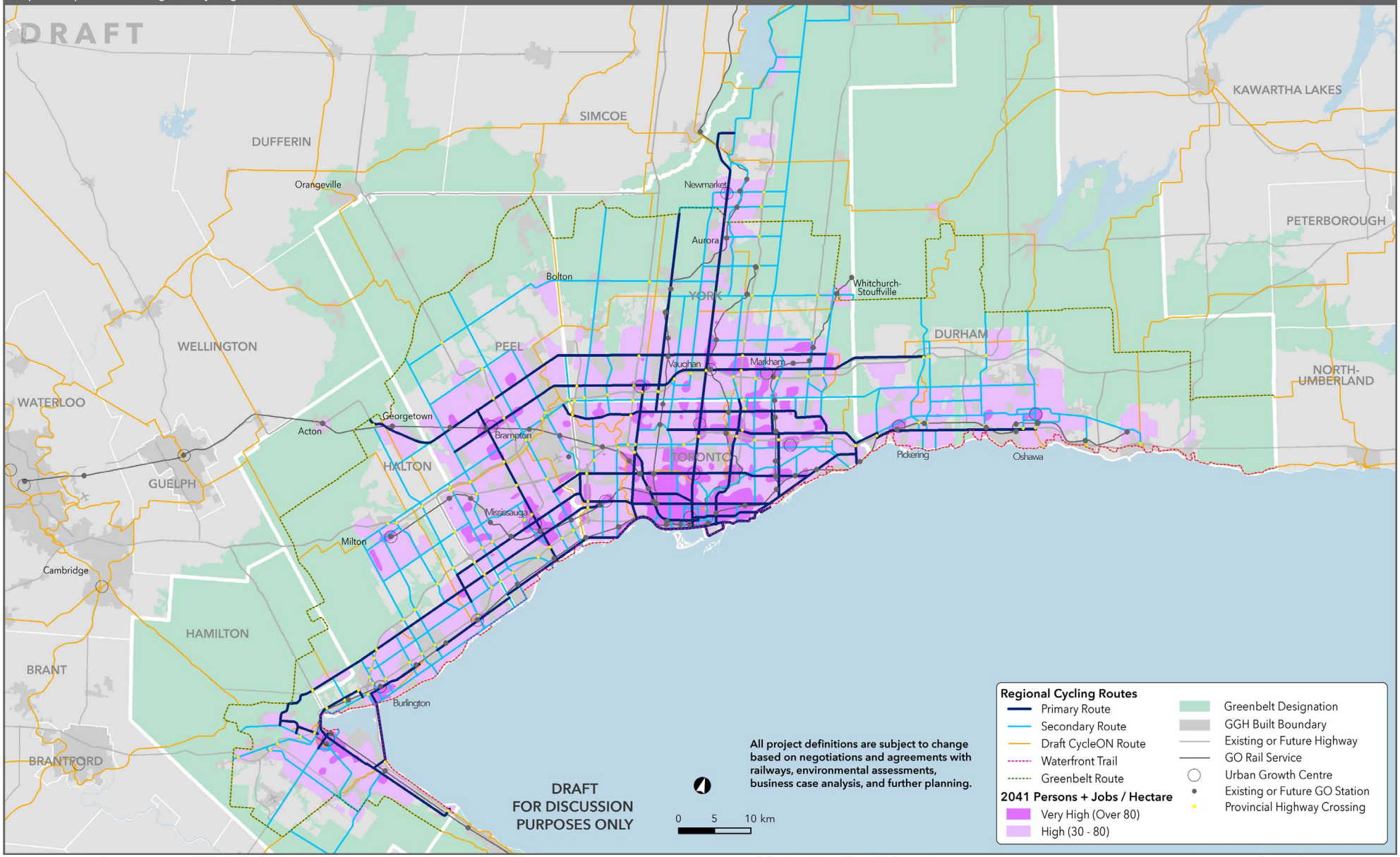
4.8 Rethink the future of parking

- Invest in public education and demonstrating the benefit of new parking practices.
- Coordinate the provision of parking with GO Transit expansion under the GO RER program.
- Coordinate the development of a region-wide Parking Charter that:
  - provide guidelines and encourage best practices in parking management, including those that are "quick wins", those that require further study in the short-term, and those that require more time, testing and consultation;
  - identifies common goals for on and off-street parking management, especially near transit stations;
  - supports shared land use and transportation objectives;
  - acknowledges the varied urban, suburban and rural contexts of the GTHA; and
  - can be leveraged for local policy making.
- Have Metrolinx lead a collaborative coordination of parking requirements with the expansion of transit infrastructure and services (e.g. amend applicable transit station area by-laws as a condition for transit station approval to support local mode share targets). Zoning standards should be reviewed, with the expectation that minimum parking requirements will be reduced, particularly in transit-supportive neighbourhoods.
- Adopt a region-wide approach to parking management for the arrival of shared mobility and autonomous vehicles.
- Research and regularly publish existing parking-related data and emerging trends to improve parking planning and management.

4.9 Work with ministries, school boards, municipalities, service providers, NGOs and other stakeholders to establish school travel programs for Kindergarten to Grade 12 to encourage the development of future generations of pedestrians and cyclists

- Continue to advance active and sustainable school travel (ASST) through regional coordination and delivery of the school travel program. Adopt approaches that are location-specific to ensure that solutions involving walking, cycling and transit are tailored to each community.
- Expand the resources and community capacity available to advance ASST within the GTHA, including to high school students.
- Develop policies, plans and standards that prioritize active and sustainable trips for children and youth within school areas and the broader community (e.g. to recreational facilities such as community sports and arts facilities).

Map 9 - Proposed 2041 Regional Cycling Network - DRAFT



Strategy #5: Prepare for an Uncertain Future

It is not enough merely to complete delivery of current regional transit projects, connect more of the region with frequent rapid transit, optimize the transportation system, and integrate land use and transportation in the GTHA. Metrolinx and its partners must prepare for an uncertain future.

Prepare for new business models and technologies

Disruption is already here. Just as cars reshaped cities, rapidly changing transportation business models and technologies will again change metropolitan areas. Business models like car sharing and ride-sourcing are already blurring the lines between public and private transportation. Municipalities already have authority to regulate private transportation companies; however, a regional approach that addresses cross-boundary travel could provide a more seamless experience. Furthermore, advancements in automation and robotics are making autonomous vehicles (AVs) – including shared mobility vehicles – a reality. Although there is uncertainty about how quickly this technology will be adopted, AVs are expected to dramatically change how people and goods are moved and impact both the transportation and land use systems.

Ontario has launched a pilot to allow for the testing of AVs on roads under certain conditions, with growing participation. While there are limits as to how well planners can predict the future, the Draft 2041 RTP was developed by considering a range of possible futures. It emphasizes strategies that are adaptive, so that adjustments can be made as these disruptive technologies become more prevalent.

New mobility systems provide more detailed data that can be used to plan and support ways of better meeting traveller needs. However, there are data privacy issues associated with these new mobility systems, particularly as the private sector increases its role in collecting transportation data. The Draft 2041 RTP addresses the need for all levels of government to work together to protect the public interest while fostering innovation and partnerships that can create new or improved services for travellers.

Be prepared for accelerated change

We live in a time of accelerated change characterized by economic and political uncertainties, climate change, generational shifts and technological advances. Governments will be challenged by these influences, and transportation systems need to be responsive and flexible to ensure they are resilient.

By addressing these challenges and harnessing the opportunities associated with new technologies, the reach and effectiveness of the transportation network can be improved. The Draft 2041 RTP addresses regional approaches that will need to be used to prepare for accelerated change.

Build resilience to climate change

As noted in section 2, the impacts of climate change are already being experienced in the GTHA. Experts predict the region will experience hotter temperatures, more intense rainfall events, and more severe and frequent storms in the future. A region that is well serviced by alternative modes of transportation will be more resilient to potential travel disruptions caused by such extreme weather events. The Draft 2041 RTP addresses how resiliency to climate change can be built into the regional transportation system by designing for the weather of the future, updating infrastructure to withstand the impacts of climate change and developing policies and protocols to respond to extreme weather events.

Reduce Greenhouse Gas emissions

As noted in section 2, transportation is the leading source of Greenhouse Gas (GHG) emissions in Ontario, being responsible for 33% of emissions (2013). Reducing GHG emissions from the transportation sector will require three strategies pursued concurrently:

- promote modal shift and reduce vehicle travel demand through land use changes, improvements to transit services and street design, new transportation demand management programs, and making it easy to shift from driving to walking, cycling and transit;
- encourage more energy efficient driving behaviour and improve the energy efficiency of vehicles; and
- reduce fuel carbon content by substituting gasoline and diesel with alternative fuels that have lower carbon content, such as biofuels, hydrogen, or low-carbon sources of electricity.

A bold strategy for low carbon transportation is needed to achieve the ambitious Provincial goal of reducing GHG emissions to 80% below 1990 levels by 2050. This will require increased collaboration with all levels of government. In the GTHA, there can be increased emphasis on making transit services more efficient and introducing low-carbon vehicles such as electric buses.

Use big data to optimize infrastructure and improve services

"Big data" is the term often used to refer to the massive volume of structured and unstructured data collected by companies and institutions today.

Typically the volume is so large that it is difficult to process using traditional database and software techniques. As the GTHA transportation system grows and changes, providers are collecting significantly more data on freight, vehicle and traveller movements through sources such as the PRESTO card, mobile phones and third party apps. However, these data are currently collected by separate agencies, companies and mobility providers. While transportation data has historically been collected by the public sector, the role of private sector firms is evolving as mobility companies and mobile phone providers increasingly collect large amounts of data. Big data presents opportunities to develop and track new metrics that support regional transportation policy objectives. However, with an increasing number and variety of data collectors, there is a risk that transportation planners will not have access to the right data at the right time. Increased cooperation between the public and private sectors would address this.

The Draft 2041 RTP recommends the development of a regional big data strategy for transportation. By identifying relevant data, bringing it together and sharing it with each other, agencies can better target resources where they are most needed, use infrastructure more efficiently and improve services for travellers. The use of big data needs to prioritize the protection of privacy and security of data.

Leverage innovation

Transportation is no longer the sole purview of government. In the GTHA and around the world, private sector firms are increasingly providing innovative services that can complement or enhance existing services provided by the public sector. The providers of new mobility services will not replace transit agencies that provide frequent, high capacity public transit. However, through strategic partnerships there may be opportunities to develop services that increase ridership and efficiency, while maintaining commitments to transparency and value. Transportation agencies around the world are finding a fresh approach to partnering with third parties and/or procuring their services is necessary to close the gap between current practices and the anticipated potential for on-demand transit,

To benefit from the innovations offered by private sector mobility companies, agencies need to break down barriers, provide for flexibility in procurement and develop processes that respond quickly to opportunities and changing conditions. It is critical for the public sector to experiment and share lessons learned. The Draft 2041 RTP identifies how partnering for innovation can be used to embrace new services, tools and business models.

Priority Actions for Strategy #5, Prepare for an Uncertain Future

5.1 Develop a regional framework for on-demand and shared mobility that complements the provincial framework

- Work collaboratively to review provincial and local regulations and policies impacting new mobility services to enable innovation while meeting the needs of people in the GTHA.
- Proactively test and evaluate new services and technologies (including micro-transit, on-demand, and shared mobility) in emerging markets where conventional transit and active transportation are not meeting demand.
- Coordinate and establish partnerships that complement existing and committed transit services.

5.2 Develop a region-wide plan for autonomous mobility

- The Province to develop a suite of regulations, policies and actions to prepare for, test and ensure the safe operation of autonomous vehicle (AV) technologies.
- Update transportation and building standards to anticipate for AVs (e.g. parking design).

5.3 Coordinate across the region to address climate resiliency of the transportation system

- Coordinate across the region to:
  - Plan and build a transportation system that can continue to operate in extreme weather events brought by climate change.
  - Design infrastructure and strengthen existing infrastructure to resist extreme weather.
  - Ensure that the management of existing infrastructure assets, and the design and construction of future assets, are climate resilient.
  - Adopt policies and procedures coordinated among all transportation stakeholders (e.g. roads, transit, emergency management) to respond to extreme weather events.

5.4 Proactively prepare for a future with low-carbon mobility options.

- Address transportation climate mitigation by aligning regional and local efforts with international, federal, provincial efforts to meet the Paris Climate Change Accord and meet Ontario's goal of reducing GHG emissions to 80% below 1990 levels by 2050.
- Continue supporting compact and mixed-use development, complete streets and other measures that help reduce travel distances.
- Deploy infrastructure to support electric vehicle use throughout the public and private transportation systems of the region.
- Invest in the transition to low-carbon public and private vehicle fleets, including transit vehicles.
- Further collaborate among governments to enhance fuel efficiency and increase availability of low-carbon fuels.

5.5 Develop a regional transportation big data strategy

- Create a regional transportation big data portal, providing consistent and transparent data collection, management and reporting.
- Establish regional transportation data sources, format, privacy, security, ownership and reporting standards.
- Identify and acquire new transportation data for planning and operations (e.g. crowdsourced traffic data).
- Advance coordination and standardization of transportation forecasting, modelling and business case methodologies to support decision-making and evaluation.

5.6 Partner for innovation

- Drive innovation in mobility, focusing on new services, tools and business models. Develop outcome-based approaches beyond traditional procurement and formal partnerships by:
  - Identifying and leveraging companies with innovative products and services that can benefit travellers or improve operations
  - Removing barriers to partnerships, e.g. overly rigid procurement rules
  - Piloting, testing and minimizing the risk associated with new ideas, products and approaches
  - Exploring innovative funding and financing options including loans and loan guarantees

How Will The Plan Make a Difference?

The strategies and actions in the Draft 2041 RTP provide a blueprint for achieving the vision and goals for the GTHA in 2041. What will happen if we don't implement the projects, programs and policies contained in the Plan? As population and employment grow, travel demand will increase significantly, adding pressure to an already strained transportation system. Without new transit initiatives that can attract new users, congestion will get much worse.

What will the Draft 2041 RTP achieve if implemented? To understand this Metrolinx compared the impacts of the following scenarios:

- the 2011 base year;
- a 2041 "do minimum" option in which only the projects that are currently under construction are completed; and
- full implementation of the Draft 2041 RTP.

Full implementation of the Draft 2041 RTP will increase the length of the Frequent Rapid Transit Network by more than 20 times, introduce a regional cycling network that will double the length of dedicated cycling facilities in the GTHA, and add over 900 lane-kilometres of HOV lanes to the region's highway network.

As illustrated in Table 1, full implementation of the RTP will provide significant benefits to people living in the GTHA. It will increase the reach of frequent rapid transit service to many more residents of the GTHA and provide greatly improved access to jobs and other services that people rely on throughout the region.

Delivery of the Plan will provide the average GTHA resident with access to 290,000 more job opportunities within 1 hour by transit. The percentage of people that live within walking distance of Frequent Rapid Transit will increase by three and a half times, and the percentage of jobs that are within walking distance of Frequent Rapid Transit will double (see Figure 30).

Implementation of the Plan will result in 700,000 more transit trips in the GTHA during the

Table 1: Draft 2041 RTP Deliverables and Outcomes

THEME	INDICATOR	DESCRIPTION	SCENARIO RESULTS			IMPROVEMENT (2011 BASE VS. PLAN)
			2011 BASE	DO MINIMUM	2041 PLAN	
PLAN DELIVERABLES						
	Frequent Rapid Transit Routes	Length of the Frequent Rapid Transit Network will **increase by more than 20 times**	68 km	109 km	1,623 km	+1,555 km
	Cycling Routes	Length of Regional Cycling Network will **double** [1]	990 km	990 km	1,995 km	+1,005 km
	HOV / HOT Lanes	Total length of HOV or HOT lanes will **increase by over 1,000 lane-km**	73 lane-km	110 lane-km	1,130 lane-km	+1057 km
PLAN OUTCOMES						
TRANSIT ACCESS	People Near Transit	The fraction of people that live within walking distance of frequent rapid transit will **increase by 3.5 times** [1]	9%	11%	36%	3.8x
	Jobs Near Transit	The fraction of all jobs that are within walking distance of frequent rapid transit will **double** [1]	21%	21%	46%	2.2x
	Jobs Accessible within 60 minutes By Transit	The average GTHA resident will have access to **290,000 more jobs** within 1 hour by transit [3]	740,000	620,000	1,030,000	290,000
	% of GTHA Jobs Accessible within 60 minutes By Transit	The average GTHA resident will have access to about the same proportion of GTHA jobs but would be 9 percentage points lower in the Do Minimum scenario [3]	22%	13%	21%	stable
MODE OF TRANSPORTATION	Transit Trips	There will be about **700,000 more transit trips** during the daily peak periods [2]	1.2 million	1.6 million	1.9 million	+700,000
	Transit Mode Share	Transit mode share will **increase slightly**, but would decrease by 2 percentage points in the Do Minimum scenario [2]	14.2%	12.2%	14.7%	+0.5 pts
	Active Trips	The number of walking and cycling trips will **double** in the morning peak period [3]	740,000	1,020,000	1,380,000	+640,000
	Active Mode Share	Active mode share will **increase 2.1 percentage points** during the peak periods [2]	8.5%	7.8%	10.6%	+2.1 pts
QUALITY OF LIFE	Transit Travel Time	Average transit travel time in the GTHA will **decrease slightly**, while the region sees significant growth [3]	41 minutes	46 minutes	39 minutes	-2 min
	Congested Driving	Congested vehicle kilometres travelled will **decrease by 3 million** kilometres compared to the Do Minimum scenario [4]	3.7 million	11.1 million	8.2 million	+4.5 million
	Environmental Impact	Greenhouse gas emissions per capita from auto driver trips will **decrease by 40%**	2.7 tonnes	1.6 tonnes	1.5 tonnes	-1.2 tonnes
PLAN ASPIRATIONS						
	Active School Trips	Percentage of school trips made by walking and cycling will **increase to 60%** [5]	38%	n/a	60%	1.6x
	Low-Emission Vehicles	**All transit vehicles** will be low-emission [6]	36%	36%	100%	2.8x

NOTES:

[1] Walking Distance is 400 m from Priority Bus, BRT and LRT, and 800 m from Subway and Frequent Regional Rail.

[2] Represents trips in the morning and afternoon peak periods (6:00 - 9:00 a.m. and 3:00 - 7:00 p.m.).

[3] Represents trips made between 6:45 a.m. - 8:45 a.m.

[4] Represents trips made in the morning peak hour.

[5] Trips to and from school by students age 11-17 (2011).

[6] Low-emission transit vehicles currently in service in the GTHA include natural gas and hybrid-diesel buses, and electric heavy rail, and streetcars (2015).

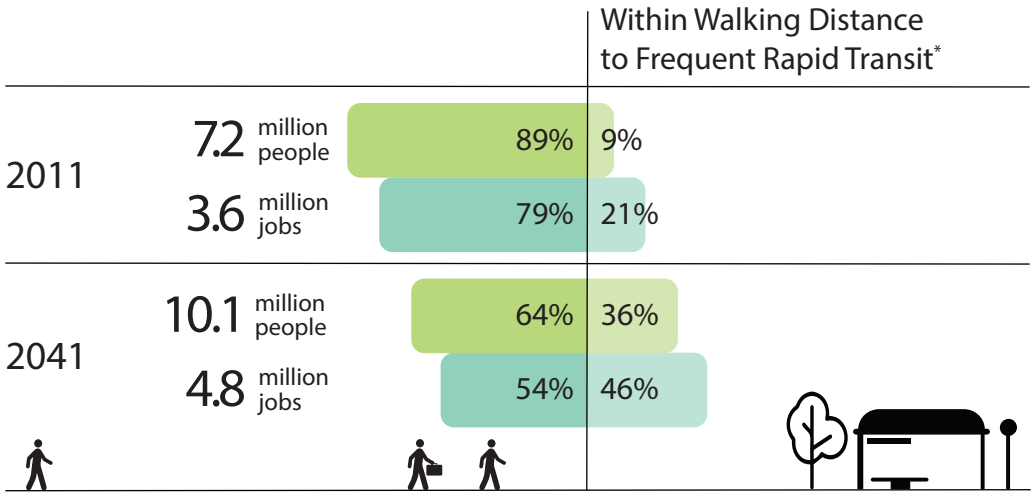
peak periods, which represents a 55% increase over 2011. As shown in Figure 31, this growth ranges between a 39% increase in Toronto where transit is already strong, to a 137% increase for trips between GTHA municipalities outside of Toronto, where more potential for new ridership exists.

Full implementation of the 2041 plan will result in significant ridership growth. As shown in Figure 32, the percentage of travel mode share for active transportation and transit will increase across all travel markets. By integrating transit services with population and employment growth, even more significant gains in transit mode share can be realised. Significant increases in mode share are forecasted for Urban Growth Centres, for example.

With implementation of the 2041 RTP, average transit time will also decrease despite the increase in population (Figure 33). In the "do minimum" scenario, transit travel times will be worse, especially outside of Toronto where transit mode shares are lower.

The Plan will have a significant impact on congestion in comparison to the "do minimum" scenario, resulting in 3 million fewer vehicle kilometers travelled (VKT) in congested conditions by 2041. This congestion reduction and improvements in automobile fuel efficiency will contribute to a 40% decrease in per capita GHG emissions from automobile trips. Achieving the goal of making all transit vehicles low emission will result in even greater overall emissions reductions.

Figure 30: Residents and Jobs within Walking Distance of Frequent Rapid Transit



*Walking Distance is 400 m from Priority Bus, BRT and LRT lines, and 800 m from Subway and 15-minute GO stations

Implementation of the Plan will also support an increase in active travel, with walking and cycling trips doubling from 2011.

For individual travellers, implementation of the integrated transportation system will increase access to rapid transit and improve reliability. These mobility benefits are particularly important for elderly, low income, and other socio-demographic groups that heavily rely on public transportation.

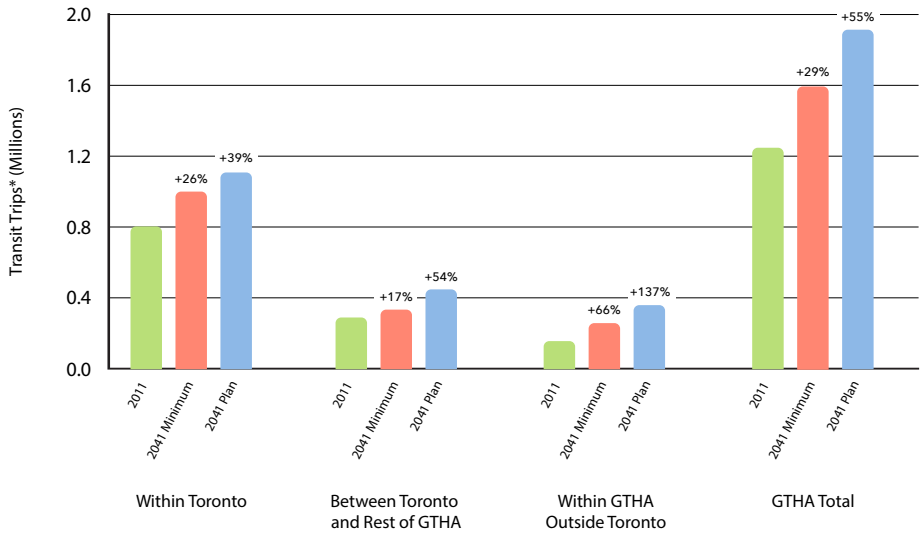
In terms of the regional economy, implementation of the integrated transportation system will improve the GTHA's competitiveness and productivity by:

- connecting workers to employers and allowing for specialization of skills; and
- accessing more markets and facilitating connections between suppliers and purchasers.

Additional economic benefits will come from the construction of transit infrastructure and its operations, which support jobs in construction, supply chain, and service industries.

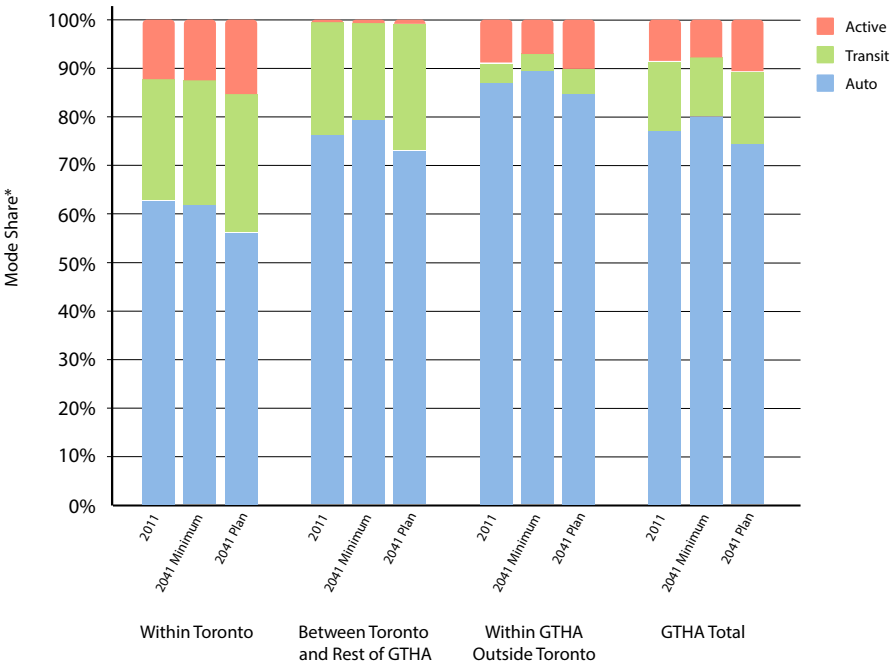
Cumulatively, these are far-reaching and highly beneficial outcomes for the GTHA. Metrolinx will modify and refine its analysis throughout the summer and fall while the Plan is in draft form before finalizing the RTP.

Figure 31: Increase in Transit Trips by Travel Market



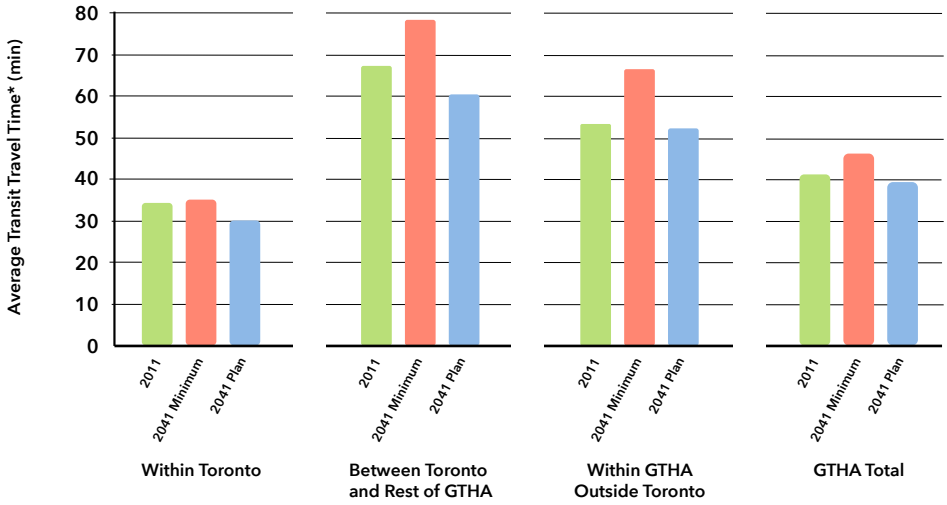
***6:00 - 9:00 a.m. and 3:00 - 7:00 p.m**

Figure 32: Travel Mode Share by Travel Market



***6:00 - 9:00 a.m. and 3:00 - 7:00 p.m**

Figure 33: Average Transit Travel Time by Travel Market



***6:45 - 8:45 a.m.**

Making it Happen

Regional Decision-Making

The Greater Toronto and Hamilton Region, with its growing population and booming economy is becoming one of the world's great urban areas. It is already noted for its liveability, dynamic business environment, world-class universities, diverse cultural institutions and healthy environment. But the scale of growth that is expected by 2041 – a 41% increase in population over 2016 – and the location of much of that growth in greenfield areas poses enormous challenges. Many people will need to move long distances and because of the changing nature of work, commuters will be moving in all directions at different times of the day. Continued growth demands a maturation of the region with respect to structure (built form, open space and infrastructure) and social systems (schools, hospitals and libraries). It also requires new ways of decision-making (regional collaboration on prioritization, integration and planning) and new ways of ensuring financial sustainability (financing, funding and revenue-generating models).

Building a comprehensive and integrated multi-modal transportation system is a vital part of ensuring that the region can effectively deal with future growth and continue to prosper. But the complex transportation system of the future can't be built without addressing some hard facts. The current way of making decisions on transportation in the region is fragmented and inconsistent. The funding of transportation systems is unpredictable, uncoordinated and without a plan for sustainability. To ensure success and ensure that money is spent wisely, it is imperative to re-think how decisions about regional transportation are made and how the transportation system is financed. In short, we need the right structures and tools to achieve effective regional action on transportation.

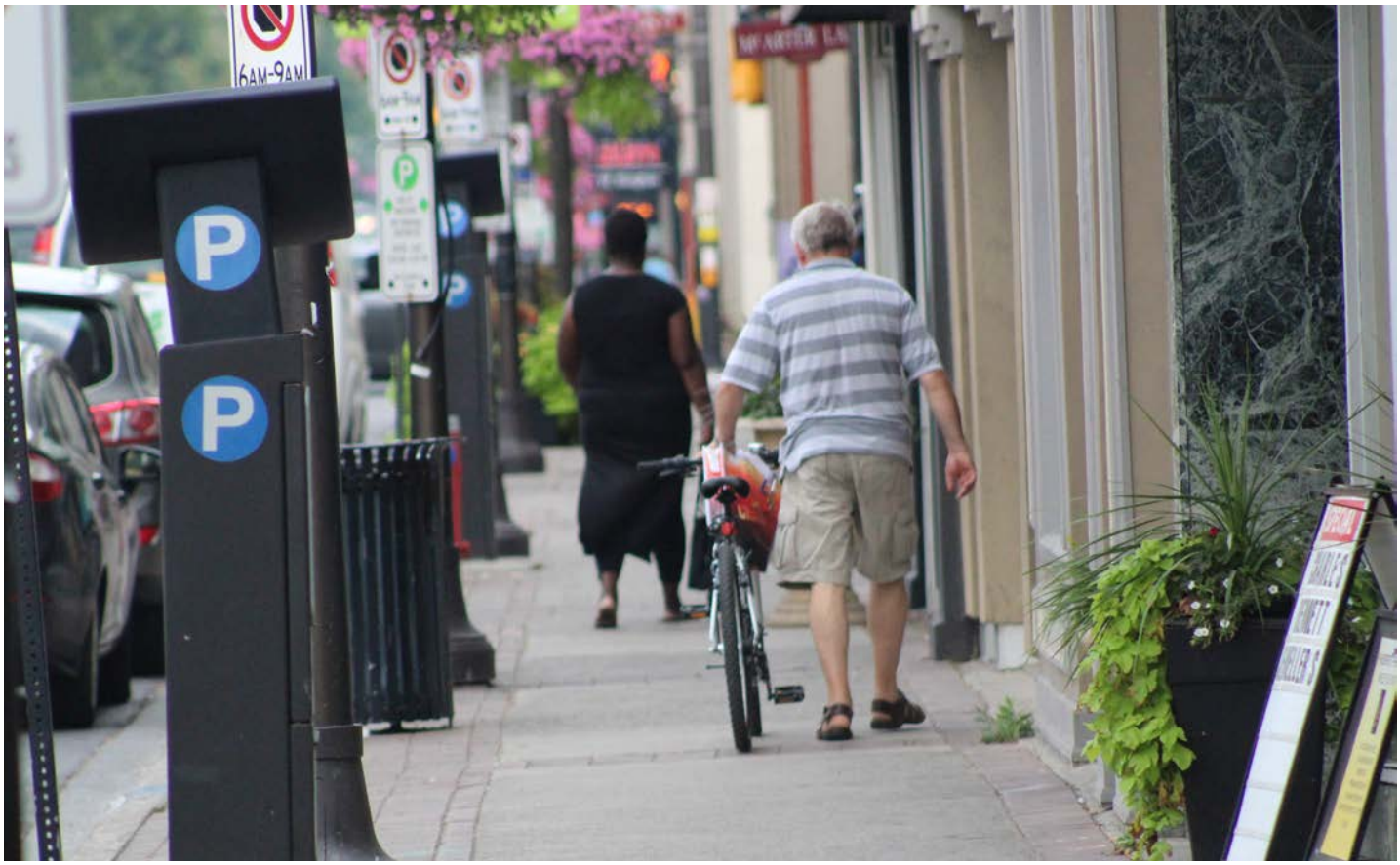
A Complex Stakeholder Landscape

Metrolinx is the only agency in the GTHA with a regional mandate to address transportation issues. While Metrolinx is responsible for developing the RTP, other stakeholders play a major a role in determining whether the Plan is successful. It is only through the complementary policies, actions and investments of others that the vision for the transportation system in 2041 can be achieved.

Success in the Draft 2041 RTP broadly defined. It extends beyond traditional operational measures to include economic measures, benefits to people, congestion management and positive environmental outcomes.

Metrolinx and its partners have made significant progress working together to plan, design and implement projects. But we are moving to a much more complex, integrated regional transportation system. Accordingly, it is necessary to deal with tough issues, like how to integrate fares and services and how to benefit from new technologies and business models. This requires a new level of regional collaboration and coordination. Other cities and regions facing similar challenges can provide ideas on how to knit a polycentric region together in a way that recognizes local interests and contributes to regional goals.

Great strides can be made by formalizing voluntary processes and improving coordination among provincial and municipal planning and transportation departments, transit agencies and Metrolinx. This will improve decision-making, the efficiency of implementation and the



provision of traveller-centric service. Summaries of reports on funding and governance in the GTHA can be found in Appendix 4A, and examples of case studies outlining approaches taken by other jurisdictions can be found in Appendix 4B.

Reviewing Coordination

Regional agreement on approaches to decision-making will help accelerate the development of transportation infrastructure projects and remove duplication. More consistency in decision-making could be achieved by working together to:

- clearly identify roles and responsibilities on who plans, designs and approves various aspects of transportation projects and services;
- establish agreed upon standards of evidence, methods of forecasting, and publication of methods for project evaluation to guide discussions among provincial and municipal stakeholders; and
- identify clear stage gates (or decision points) to advance major projects from inception to realization.

Currently, there is no formal gathering of elected municipal and provincial officials on matters of transportation or land use in the region. Periodic meetings of planning officials would help implement the 2041 RTP vision and provide direction to agencies and departments involved in land use and transportation in the region.

Changes to existing decision-making processes and structures will need to be implemented with the full support of the Province and municipal partners. Certain types of changes, such as those involving changes to Provincial legislation.

Planning Area

The Metrolinx planning area was established by the Province to increase coordination and integration on transportation matters among Hamilton, Halton, Peel, York, Toronto and Durham. The GO Transit service area defines a larger region in which Metrolinx provides regional transit services. The Greater Golden Horseshoe is an even larger region for which the province sets growth management policies. Today, these overlapping areas function as a single regional economy with regional natural systems that also function at the scale of the broader region.

These differing geographic areas makes coordination between plans difficult. Metrolinx has heard from some municipalities outside the RTP planning area that they would like Metrolinx to expand its planning role to their communities, and Metrolinx recommends that the province consider this as the region continues growing.

Organizational Capacity

As the GTHA continues to grow and the transportation system of the region becomes more complex and more interconnected, it will be important to ensure that transit agencies and municipalities across the region have the organizational capacity to deal with planning, building, maintaining and operating a system that is increasingly complex and inter-connected. Organizational capacity refers to having the right people, with the right skills, doing the right things along with the right processes, systems, tools and infrastructure aligned with the right goal. Metrolinx has already taken steps to expand its capacity to do this through recent reviews of organizational functions including operations, capital projects, marketing, customer experience, and planning. Changes to the mandate of Metrolinx required to implement actions in this plan, such as enabling Metrolinx to play a leading role in the redevelopment around stations (Priority Action 4.3) would require provincial approval and would need to address organizational capacity and risk management.

Monitoring and Reporting

Even the best of plans need to be revisited periodically so that progress can be assessed, outcomes can be monitored, and strategies can be adapted as needed. In a time of rapid change it is even more important to do this. The Draft 2041 RTP includes a recommendation for periodic reporting and review.

Priority Actions for Regional Decision-Making

6.1 Review regional transportation decision-making processes to best ensure that elected municipal leaders contribute effectively to decision-making related to the interface between region-wide transportation and land use, and fare and service integration

6.2 Establish a formalized mechanism that convenes provincial and municipal land use and transportation planning officials with a goal to identify opportunities and make recommendations to improve the integration of land use and transportation

6.3 Establish a formalized mechanism that convenes the appropriate provincial and municipal officials to identify regional wide policies, standards and tools to attain excellence in the provision of the traveller experience, including fare and service integration

6.4 Align the Metrolinx planning area, the GO Transit Service Area and the Growth Plan Area to the Greater Golden Horseshoe

6.5 In consultation with partners, stakeholders and the general public report on progress on implementing the RTP and review the RTP every five years; technical updates can be done in the intervening years if necessary

Funding the Plan

Funding Transportation in a Maturing Region

As noted earlier, more than $30 billion has already been committed by the Province for 16 regional transit projects that are In Delivery and are shown on Map 3, "Existing and In Delivery Transit Network".

The complex, integrated regional transportation system envisioned in the Draft 2041 RTP contains dozens of new transit projects – some big and some small. The preliminary estimate of the capital costs for these projects is $45 billion over 25 years. Note that these are order of magnitude costs. This $45 billion represents the next generation of investment and is in addition to the more than $30 billion that has already been committed. It is needed to fund:

- projects In Development that are currently in the planning and design stage (estimated at $20 billion);
- investments in other rapid transit infrastructure (estimated at $23 billion); and
- other infrastructure, e.g., walking and cycling infrastructure including station access infrastructure (estimated at $2 billion).

In addition to the above capital costs, successful implementation will also require operating funding for transit services, fare and service integration and active transportation programs. The preliminary net operating funding requirement for the Draft Plan (over and above what is needed to operate existing services and the In Delivery projects) is estimated to be approximately $1 billion annually. This represents the necessary subsidy, above and beyond fares paid by transit users, to fund routine infrastructure maintenance, but not the replacement of vehicles or major rail rehabilitation. Full costing of projects – a component of subsequent business case analyses – will need to also consider the operating, maintenance and financing costs associated with each project.

Principles for a Long-Term Funding Strategy

With its commitment of more than $30 billion in significant new transportation funding, the Province has put the region in a strong position for the near- to medium-term. Implementation of the new RTP and operation of the transportation system to 2041 will require continued funding support from all levels of governments – federal, provincial and municipal. Governments need to continue to collaborate to make this long-term commitment.

Regardless of form or source, best practices suggest that transportation funding needs to:

- be sufficient;
- be sustainable (i.e., consistent, predictable and reliable over time);
- be transparent;
- be accountable;
- be easy to implement and administer;
- be fair across the region and among income groups and sectors;
- encourage less reliance on the automobile;
- align with available revenue tools at each level;
- be coordinated across transportation modes;
- be linked to projects, programs and policies that change behavior in a positive way;
- minimize economic impacts and distortions; and
- reinforce provincial and municipal transportation and land use policies and plans.

These principles reflect the key criteria identified in the Metrolinx Investment Strategy in 2013 and the 2013 GTHA Transit Investment Advisory Panel which continue to be relevant looking out to 2041(see Appendix 4A for more details).

At present, municipalities have limited tools for funding transit. As the transit system in the GTHA expands and changes, it is necessary to look at additional funding approaches.

As examples of such approaches, the Draft 2041 RTP proposes the use of strategies to reduce the demand for parking and the creation of an extensive HOV network that gives priority to transit vehicles and vehicles carrying additional passengers. One strategy to reduce demand for parking is to charge for it at transit stations where it is currently free. Revenues generated from parking at transit stations and revenues from HOT lanes, if used could be reinvested in transportation infrastructure to support the transit system. This is a case where funding is linked to policies that change behavior in a way that is positive for the environment and which are supportive of transit.

Evidence-Based Planning

Metrolinx has championed the use of evidence-based decision making through business cases, such as those done for the Eglinton Crosstown Light Rail Transit, GO Regional Express Rail, Scarborough Rapid Transit and the Yonge North Subway Extension. Business case results are one of the key inputs for decision-making. Each business case looks at high-level options to address a specific need or opportunity and considers a range of factors, such as travel time, convenience and other passenger benefits; capital and operating costs; environmental, economic, social and community impacts; and alignment with current policy goals.

Metrolinx has also prioritized the development of a business case framework, including guidance documents and training, to support progress on evidence based decision making across Metrolinx. This guidance will enhance the development of robust business cases to help decision makers ensure that major investments are a good use of public funds and consistent with transit priorities. This represents a model for the evaluation of transportation projects across the Region.

Metrolinx uses a standardized Prioritization Framework in order to inform its advice to government on the order of investment in projects from the Regional Transportation Plan. The framework includes each project's relative costs and benefits as well as implementation consideration and project interdependencies.

The evaluation criteria used in the analysis is guided by the three lenses of sustainability including: a high quality of life; a thriving and protected environment; and a strong, prosperous and competitive economy.

Information from relevant Business Case Analysis work is used wherever available as an important input to this process. Outcomes of the prioritization criteria and Business Case Analysis are then evaluated against an implementation screen to reflect funding, existing level of design and active transportation and urban design considerations. The technical analysis of each project is then grouped into implementation scenarios to study interdependencies, phasing and fiscal timelines. These implementation scenarios are then considered for strategic fit by the Metrolinx Board in its advice to the Government.

Metrolinx is committed to maintaining best practices its analysis and regularly reviews the Prioritization Framework to improve its outcomes and incorporate emerging data sources. The framework was originally approved by the Metrolinx Board in November 2010 and was comprehensively reviewed and updated in August 2014. In addition, Metrolinx also consistently updates its Business Case Guidance to reflect new research and data availability. Business case analysis and prioritization will be a key focus of implementation planning that will occur following the finalization of the RTP.

Priority Actions for Funding the Plan

6.6 Ensure that funding for the development and long-term maintenance and operation of an integrated transportation system is in place over the duration of the RTP, based on sound principles of governance and public finance, balancing regional coordination and local autonomy:

- Update the Metrolinx Investment Strategy to identify sustainable and sufficient funding for transportation capital and operations over the life of the plan
- Align transportation funding in the region with the RTP to ensure consistency with regional objectives
- Earmark specific funding for collaborative initiatives that enhance seamlessness

6.7 Establish agreed upon standards of evidence, methods of forecasting, and publication of methods for project evaluation to guide discussions among provincial and municipal stakeholders

6.8 Use rigorous business case analysis to support decisions on the implementation of the RTP projects, including consideration of long term operating, maintenance and financing costs

6.9 Review Metrolinx's ability to fund initiatives that support implementation of the RTP, such as off-property station access improvements and regional first-mile last-mile initiatives

Next Steps

Public Posting

Upon approval by the Metrolinx Board of Directors in September 2017, the Draft 2041 RTP will be posted on www.metrolinx.com/the plan.

Consultation and Engagement

The publication of the Draft 2041 RTP will mark the beginning of a consultation period that will extend through late fall of this year. The Draft 2041 RTP will be posted as an information item on the Province's Environmental Registry.
During the consultation period, Metrolinx will be reaching out through our website, social media, public roundtables, and events across the region. In addition, the Draft 2041 RTP will be the focus of a regional transportation symposium in fall 2017.

Finalizing the Plan

A final draft of the Regional Transportation Plan will be informed by refined technical work and feedback from municipal partners, stakeholders and the public. It will be presented to the Metrolinx Board of Directors at its December 2017 meeting.

Once approved by the Metrolinx Board Directors, the final Regional Transportation Plan will serve as the Board's advice to the Province and will complete Metrolinx's legislative requirements under the *Metrolinx Act, 2006*. The work of developing a detailed Implementation Plan to support the strategies and priority actions in the final Transportation Plan will be on-going. This work will begin in late 2017 and will identify processes, roles and responsibilities, phasing and funding considerations.

It's Your Plan

The Regional Transportation Plan belongs to all residents of the GTHA. Metrolinx will be engaging with residents, businesses, civic organizations, partners and stakeholders across the region who have a role to play in realizing the transportation vision for the region.

Find out more about the background research and technical analysis behind the Plan: www.metrolinx.com/theplan.

Comments can also be sent via email: ***theplan@metrolinx.com****.*

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Glossary

Active Transportation: As defined in the Provincial Policy Statement (2014) human-powered travel, including but not limited to, walking, cycling, inline skating and travel with the use of mobility aids, including motorized wheelchairs and other power-assisted devices moving at a comparable speed.

Autonomous Vehicles (AVs): Vehicles including cars and buses using an assortment of on-vehicle sensors and connected technology to take over some or all aspects of the task of driving. Partially automated vehicle features include parking, lane-change assistance, and collision avoidance. Fully automated vehicles operate all driving functions without the intervention of a human driver. May be personally-owned (PAVs) or shared (SAVs). Can include driverless taxis. See **Connected Vehicles.**

Big data: Large datasets that support predictive and user behaviour analytics, including geo-referencing of data about individual travel patterns. Big data can inform transportation research and analysis, and provide personalized products and services.

Bike Lane: A bike lane on an urban roadway that is delineated by a lane line on pavement and with signage; typically operates one-way for exclusive use by cyclists, regulated by local by-law and the Highway Traffic Act. "Bike lane" is an alternative to the variety of terms used by GTHA municipalities including "bicycle lane", "Class 11 pathway", and "delineated cycle lane". See **Separated Bike Lane**.

Bike-Sharing: A type of Shared Mobility that refers to the shared use of a bicycle or fleet of bicycles by multiple users that are available on-demand and allow for flexible rental periods and payment structures (e.g. single-use or as part of a subscription). Typically, users access bikes through a network of tech-enabled stations which are often located in higher density areas or near transit stations. See **Shared Mobility** and **First Mile-Last Mile**.

Bus Rapid Transit (BRT): Transit infrastructure and service with buses running in their own exclusive right-of-way, fully separated from traffic, with signal priority measures in place and longer spacing between stops than conventional bus routes (typically 500 metres – 1 kilometre) to maintain higher average speeds and ensure reliability of the service. See **Regional Express Bus**, **Priority Bus** and **Priority Transit Corridor.**

Car-Sharing: A type of Shared Mobility that provides members with 24-hour access to a fleet of vehicles that are available on-demand and allow for flexible rental periods and payment structures (e.g. single-use or as part of a subscription). Services can be two-way, requiring customers to borrow and return the vehicle to the same location, or one-way, allowing customers to pick up and drop off vehicles at different locations within a designated service area. See **Shared Mobility.**

Connected Vehicles: Vehicles that are enabled to communicate with other vehicles, mobile electronic devices, and connected road infrastructure (e.g., traffic signals). Many vehicles already use some connected technology, such as GPS-enabled navigation systems. See **Autonomous Vehicles**, **Intelligent Transportation Systems**, and **Transportation Systems Management**.

Complete Communities: As in the Growth Plan for the Greater Golden Horseshoe (2017), places such as mixed-use neighbourhoods or other areas within cities, towns, and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores, and services, a full range of housing, transportation options and public service facilities. Complete communities are age-friendly and may take different shapes and forms appropriate to their contexts.

Complete Streets: As in the Growth Plan for the Greater Golden Horseshoe (2017), streets planned to balance the needs of all road users, including pedestrians, cyclists, transit-users, and motorists. A complete streets approach also involves design, operation, and maintenance of roadways to enable safe, convenient, and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.

Design Excellence: A strategy to deliver seamless delivery of integrated transportation systems to the traveler. It is inclusive of architecture, urban design, landscape architecture, signage and wayfinding, and art integration. Design Excellence encompasses all of the touch points of the traveller including delivery of: universal access and accessibility, fare integration, safety and comfort, trip planning and integrated technology.

First Mile-Last Mile (FMLM): Describes the challenge of getting people to and from transit stations, mobility hubs, and fixed-route transit services to and from their home or workplace without the use of a private automobile. Alternatives to car trips include a variety of options such as improved sidewalks and cycling infrastructure, car-sharing, bike sharing, shuttle buses, taxis and on-demand services.

Freight Cluster: As per Ontario's Freight-Supportive Guidelines (2016), groupings of similar uses intended to minimize potential conflicts along freight routes, corridors, and the type of on-coming traffic that transport trucks may encounter when exiting or entering a site.

Frequent Rapid Transit Network (FRTN): A seamless and reliable network of transit services running at least every 10-15 minutes all-day, every day. The FRTN will consist of transit routes and corridors that ensure fast and reliable service through the use of dedicated infrastructure, design elements, and other supporting investments as required (e.g., full grade separation, exclusive right-of-way, wider stop spacing than conventional transit routes, signal priority, or other transportation systems management measures). The FRTN proposed for the GTHA will allow transit users to make efficient transfers between routes on the network, which includes subways, transitways, Bus Rapid Transit, Light Rail Transit, Regional Express Rail, and Priority Bus corridors.

> **Frequent Rapid Transit Network** updates the term "Regional Rapid Transit" used in *The Big Move* (2008) Regional Transportation Plan.

Greater Golden Horseshoe (GGH): As in the Growth Plan for the Greater Golden Horseshoe (2017), the geographic area identified as the Greater Golden Horseshoe Growth Plan area in Ontario Regulation 416/05 under the Places to Grow Act, 2005.

Growth Plan for the Greater Golden Horseshoe: A long-term provincial plan that works together with the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan to manage growth, build complete communities, curb sprawl and protect the natural environment.

High Occupancy Toll (HOT) Lane: A High Occupancy Vehicle (HOV) lane that single occupant vehicles are also permitted to use by paying a toll. See **High Occupancy Vehicle Lane**.

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

Integrated Mobility: A practice that describes the unification of different transportation modes and mobility providers into a network connecting travelers from their trip origin to their final destination through seamless connections supported by the use of barrier-free planning, design, infrastructure and technology solutions (e.g. integrated payment, Mobility as a Service, real-time information and trip planning across multiple modes). See **Mobility as a Service** and **New Mobility**.

Intelligent Transportation System (ITS): A form of Transportation Systems Management that uses real-time information technology to provide traffic-responsive, area-wide traffic control and information that allows transportation providers to optimize system operations and enables travellers to use the system more efficiently, effectively, and conveniently. ITS includes planning, deployment, integration and operations to provide a cohesive, end-to-end solution for all transportation users, including traveller information and electronic payment. See **Transit Priority Measures** and **Transportation Systems Management**.

Intermodal Facilities: As in Ontario's Freight-Supportive Guidelines (2016), a location where transfers between modes can be made as part of a single journey. For example, a typical freight intermodal facility is a rail yard where containers are transferred between trucks and trains.

Light Rail Transit (LRT): Transit infrastructure and services consisting of light rail vehicles running in an exclusive right-of-way, fully separated from traffic, with signal priority measures in place and longer spacing between stops than conventional transit routes (typically 500 metres – 1 kilometre) to maintain higher average speeds and ensure reliability of the service. See **Priority Transit Corridor**.

Local Transit: A passenger transit system that is operated principally within an upper-tier, lower-tier or single-tier municipality.

> Public transit in the GTHA is provided by Burlington Transit, Brampton Transit, Durham Region Transit, GO Transit, Hamilton Street Railway, Milton Transit, MiWay (Mississauga Transit), Oakville Transit, the Toronto Transit Commission and York Region Transit/VIVA.

Low-Carbon: In the transportation sector, refers to vehicles that produce minimal greenhouse gas emissions through improved efficiency and adoption of electric and alternative-fuel vehicle technologies. Reducing Greenhouse Gas emissions from the transportation sector typically focusses on minimizing travel and shifting to more environmentally sustainable modes, technologies, and fuels.

Mobility as a Service: A New Mobility technology that describes the integration of various transport services including public transit, bike or car-sharing, taxis, ride-sourcing and other forms of Shared Mobility that are bundled together and consumed on a subscription basis to meet the particular needs of individuals. See **New Mobility** and **Shared Mobility.**

Major Transit Station Area: As in the Growth Plan for the GGH (2017), the area including and around any existing or planned higher order transit station or stop within a settlement area; or the area including and around a major bus depot in an urban core. Major transit station areas generally are defined as the area within an approximate 500 m radius of a transit station, representing about a 10-minute walk. See **Mobility Hubs**.

Micro-transit: A type of Shared Mobility that refers to small scale, flexible transportation services, using shuttles or vans, to provide rides that are often ordered on-demand with a mobile app or website with dynamically-generated, rather than fixed, routes. Multiple passengers share trips with others who have similar routes or destinations. See **Shared Mobility** and **On-Demand Mobility**.

Mobility Hubs: Major Transit Station Areas where multiple modes of transportation meet and have a high-density mix of land uses that encourages and supports transit use and active transportation. Mobility hubs are at the intersection of two or more Frequent Rapid Transit Network routes, are designed to support a high number of transit boardings and alightings, and facilitate seamless, efficient transfers between modes. They have a high concentration of jobs, residences, public services, and other transit-supportive land uses, or the potential to develop into areas with a high-density of mixed land uses. See **Major Transit Station Area**.

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

Multi-modal: More than one mode of transportation used for a trip, such as cycling or driving to a transit station.

New Mobility: A term to describe the suite of emerging transportation services and that are enabled through the development and convergence of technologies (e.g. smartphones, real-time data, autonomous and connected vehicles) and business models (e.g. Shared Mobility and Mobility-as-a-Service). See **Autonomous Vehicles**, **Connected Vehicles**, **Mobility-as-a-Service**, and **Shared Mobility**.

On-Demand Mobility: Shared mobility services that are provided to the user within a short time period upon request, either by telephone or mobile electronic device. See **Shared Mobility**.

Priority Bus: Bus transit service running fully or partially in a semi-exclusive right-of-way, providing some protection from mixed-traffic, and using transit priority measures and other design elements to ensure reliability and maintain higher than average speeds (e.g. signal priority, queue jump lanes, HOV lanes and wider spacing between stops). Service operates reliably and frequently (at least every 15 minutes) all-day without the need for dedicated infrastructure. See **Bus Rapid Transit**, **Regional Express Bus**, **Frequent Rapid Transit Network**, and **Priority Transit Corridor**.

Priority Transit Corridor: As in the Growth Plan for the Greater Golden Horseshoe (2017), Schedule 5, or as further identified by the Province for the purpose of implementing the Growth Plan. Also see Growth Plan Policy 2.24 "Transit Corridors and Station Areas".

Rail Facilities: Rail corridors, rail sidings, train stations, intermodal facilities, rail yards and associated uses, and designated lands for future rail facilities. See **Intermodal Facilities**.

Regional Cycling Network: A network of commuter-oriented cycling routes and dedicated infrastructure that supports longer-distance trips (typically greater than 5 km), supports cycling trips across municipal boundaries and between Urban Growth Centres, and provides connections to rapid transit stations. Infrastructure may include bike lanes, cycle tracks, and multi-use trails.

Regional Express Bus: Transit service consisting of buses running primarily along highways and typically connecting two or more significant destinations separated by longer distances than would normally be travelled on a conventional transit route. Operating speeds are typically significantly higher than conventional transit, with limited stops or wider stop spacing (typically 2-8 km). Significant destinations include urban centres, transportation hubs and large institutions. Express buses may also run along heavily travelled corridors to provide faster service over long distances. See **Bus Rapid Transit**, **Priority Bus** and **Priority Transit Corridors**.

Regional Express Rail (RER): The ten-year (to 2024) GO Regional Express Rail (RER) program is a suite of infrastructure and service improvements that will transform GO rail from a largely commuter system to a comprehensive regional rapid transit service. Infrastructure expansion, including new tracks, bridges, signals and rolling stock, will provide for increased peak period service on all existing GO rail routes and the addition electric train service running every 15-minutes or better in both directions throughout the day on five of seven corridors. By 2024, peak period train service will double and off-peak train service will quadruple.

Regional Transportation System: As in the Provincial Policy Statement, 2014, the multi-modal transportation system, including all of the municipalities of the Greater Toronto and Hamilton Area and the broader GO Transit service area, consisting of services and infrastructure such as, "facilities, corridors and rights-of-way for the movement of people and goods, and associated transportation facilities including transit stops and stations, sidewalks, cycle lanes, bus lanes, high occupancy vehicle lanes, rail facilities, parking facilities, park-and-ride lots, service centres, rest stops, vehicle inspection stations, inter-modal facilities, harbours, airports, marine facilities, ferries, canals and associated facilities such as storage and maintenance".

Ride-sourcing: A type of Shared Mobility that refers to service providers that use an online or app-based platform to connect passengers with drivers of personal, non-commercial vehicles. Operators can also be known as Transportation Network Companies or Private Transportation Companies. See **Shared Mobility** and **On-Demand Mobility**.

Ride-sharing: A type of Shared Mobility that refers to both traditional carpooling and dynamic carpooling where passengers with a common destination share a vehicle and the costs of a trip. Traditional carpool drivers provide a pre-organized ride for a passenger based on having a common final destination, such as a shared workplace. Dynamic carpooling relies on real-time connectivity between drivers and passengers to book trips on-demand based on the passenger having an origin and destination that aligns with a driver's pre-determined route. See **Shared Mobility** and **On-Demand Mobility**.

Separated Bike Lane: A bike lane that is protected from general-purpose travel lanes on a roadway by a partial or full barrier. Separated bike lanes are often describe as "dedicated" or "protected" bike lanes or "cycle tracks". See **Bike Lane**.

Shared Mobility: A type of New Mobility that refers to a broad set of transportation services and business models that are shared among users, such as Bike-Sharing, Car-Sharing, Micro-Transit, Ride-Sourcing, and Ride-Sharing. See **New Mobility**.

Transit Priority Measures: Techniques designed to minimize delays for buses or rail vehicles at intersections and along congested roads to provide a faster, more reliable trip. Transit priority measures include HOV lanes, bus-only lanes, signal priority and queue jump lanes. See **Intelligent Transportation Systems**, **Priority Transit Corridor** and **Transportation Systems Management**.

Transit-Supportive Development: Land uses and urban form designed to make transit more viable and attractive. It often refers to compact, mixed-use development that has a high level of employment and residential density.

Transportation Demand Management (TDM): As in the Provincial Policy Statement (2014), a set of strategies that result in more efficient use of the *transportation system* by influencing travel behaviour by mode, time of day, frequency, trip length, regulation, route, or cost. Examples include: carpooling, vanpooling, and shuttle buses; parking management; site design and on-site facilities that support transit and walking; bicycle facilities and programs; pricing (road tolls and/or transit discounts); flexible working hours and telecommuting; high occupancy vehicle lanes; park-and-ride; incentives for ride-sharing, using transit, walking and cycling initiatives to discourage drive-alone trips.

Transportation Systems Management (TSM): A set of operational strategies that improve the safety, performance and efficiency of the existing transportation network and infrastructure through the management and operation of integrated, intermodal surface transportation systems, including technology, services, and processes. Intelligent Transportation Systems (ITS) is considered a specific form of TSM. See **Intelligent Transportation Systems**.

Urban Growth Centres (UGCs): As in the Growth Plan for the Greater Golden Horseshoe (2017), Schedule 4, twenty-five downtown areas that are intended to be mixed-use, high-density, and transit-supportive focal points for residential and employment growth and intensification in a municipality.

Vision Zero: Vision Zero aims to achieve transportation systems with no fatalities or serious injuries using a variety of interventions. These include engineering for safer street design, enforcing laws such as speeding or impairment that have a significant correlation to fatalities or major injuries, and educating drivers, cyclists and pedestrians on safety measures and the impacts of law-breaking.

Vehicle Kilometres Travelled (VKT): A measure of roadway use, commonly used in estimating congestion, that reflects the distance that an individual drives, or, more typically, the cumulative distance driven by all vehicles in an urban region during a specified period of time. VKT can reflect the link between land use and transportation. Land uses that are further away from each other result in longer trip lengths, more traffic on roadways and more vehicle kilometres travelled, for example.

Wayfinding: An orientation system consisting of signage, mapping, and the provision of other information that enables travellers to choose a preferred route, monitor their journey and recognize when they have arrived. Wayfinding systems may be designed to guide people through a complex built environment such as a transportation hub or as an aid to navigate a transit or cycling network.

End Notes

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Appendices

APPENDIX 1:
Metrolinx Technical Reports & RTP Academic Background Research

The review and update of the Regional Transportation Plan was informed by extensive technical analysis, as well as independent research conducted through partnerships with Canadian universities. Studies and research papers are published at www.metrolinx.com/theplan.

Appendix 1A: Metrolinx Technical Studies

Completed

Active Transportation Background Paper. Prepared by Steer Davies Gleave. 2015.

The Big Move Priority Actions and Supporting Policy Review. Metrolinx. 2016.

Context Paper on the Regional Economy, Demographic Outlook and Land Use. Prepared by IBI Group and Hemson Consulting Ltd. 2016.

New Mobility Background Paper. Prepared by WSP. 2016.

A Shared Vision: Updating the Vision, Goals and Objectives. Metrolinx. 2016.

Transit Needs and Opportunities Study. Prepared by IBI Group. 2016.

Transportation Demand Management Background Paper. Prepared by Steer Davies Gleave. 2015.

Urban Goods Movement Background Paper. Prepared by CPCS and David Kriger Consultants. 2016.

In Progress

GTHA Strategic Goods Movement Network Study. Prepared by CPCS and David Kriger. 2017.

Navigating Uncertainty: Exploration of Alternative Futures for the Greater Toronto and Hamilton Area. Prepared by WSP. 2017.

Regional Parking Policy Study – Phases 1-3; State of Practice Review; Pricing Review; Policy Implications.

Regional Road Network Background Study.

Regional Transportation Plan Cycling Network Study.

Transit Network Planning Study.

Transportation Systems Management: Regional Transportation Plan Background Paper.

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Walks, Alan. *Assessing and Measuring the Factors Affecting Mobility, Transportation, Accessibility, and Social Need: Barriers to Travel among Those with Low Income and Other Vulnerable Groups.* 2015.

APPENDIX 2:
Developing the Draft 2041 RTP

Appendix 2A: Scenario Development

While the 2041 Draft Plan has been developed in alignment with 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 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.

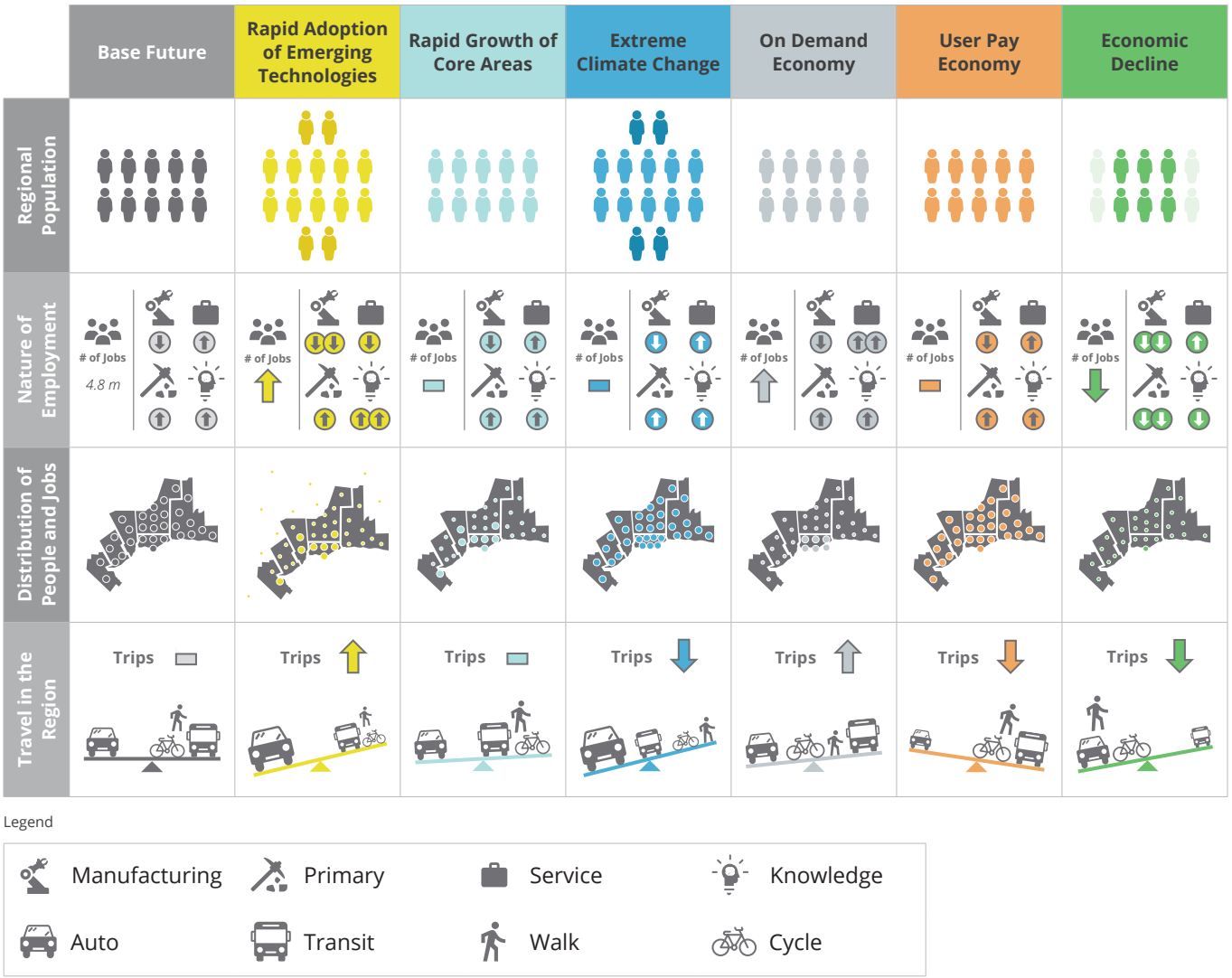
Resiliency Assessment
The six scenarios were considered as part of a resiliency assessment of the potential strategies for the Draft 2041RTP. Each scenario changed the assumptions compared to a future base "business as usual" case for the distribution and growth of population and employment across the region, the nature of employment (i.e. job types), and the amount and modes of travel in the region (see Figure 2A-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).

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

These changes led to different predicted travel demand. The scenarios were not intended to be mutually exclusive; they recognized 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 were to be amplified.

Figure 2A-1: Variables Considered in Resiliency Assessment



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 focussed on investing resources into distinct areas of emphasis:

- Infrastructure
- Transit operations
- Active transportation
- Pricing / transportation demand management
- Targeted pricing with equity considerations
- Land-use

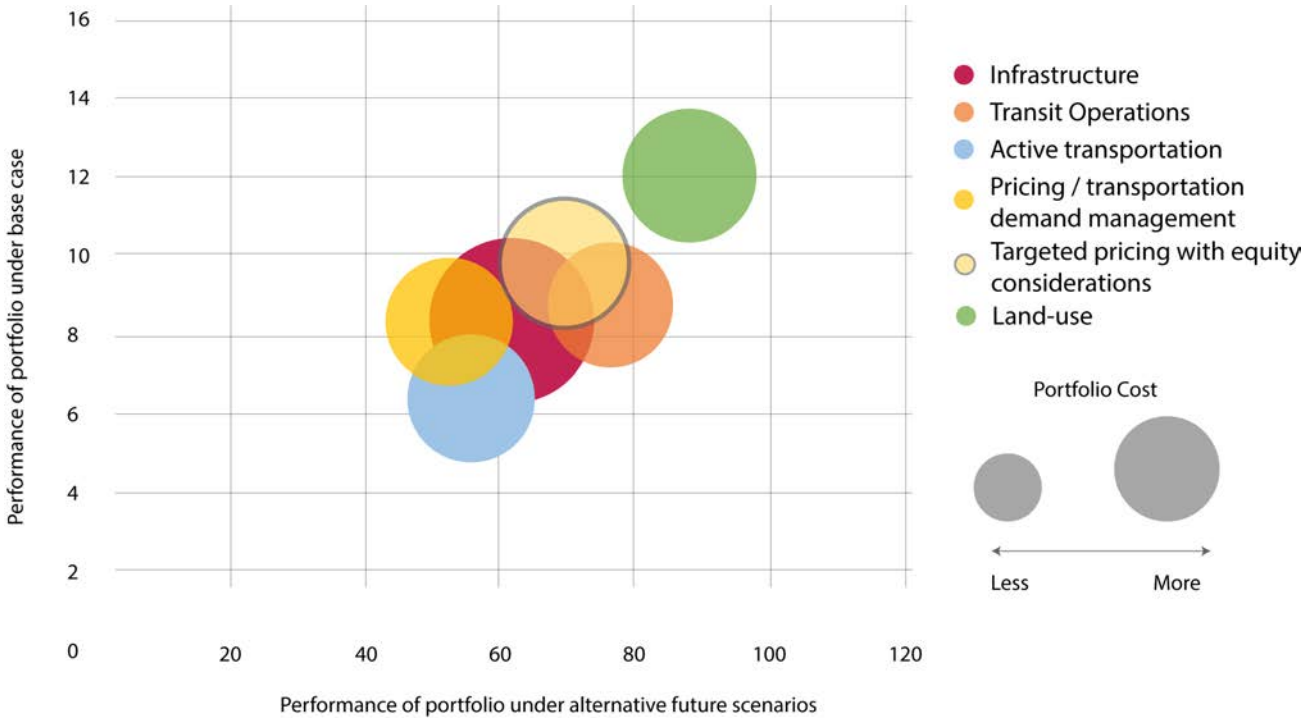
The strategies were evaluated under different future scenarios and given a composite score based on how well they performed against seven criteria:

- 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 2A-2, compared to the score each strategy received under the base future scenario. 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.

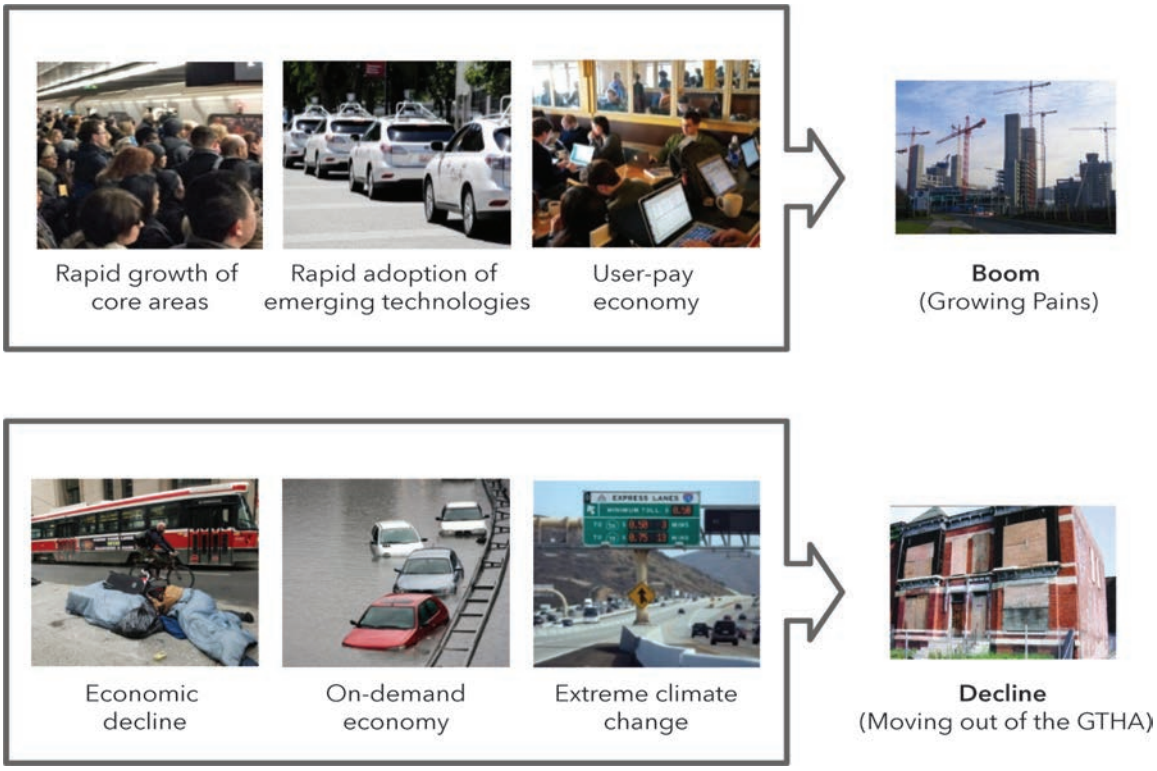
Figure 2A-2: Resiliency Analysis of Strategic Directions for the Plan against Future Scenarios



Modelling the Scenarios

In addition to the more qualitative resiliency assessment shown in Figure 2A-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 RTP. These two contrasting scenarios effectively represent a high- and a low-demand scenario that bracket the base future scenario, in which travel costs were stable and the population and employment in 2041 were those of the Growth Plan. 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 2A-3).

Figure 2A-3: 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, and
- 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.
  - The Boom scenario assumed a 5% reduction in auto operating costs to reflect the impact of a high penetration of automated vehicles.

In the Decline scenario:

- Employment was 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 base Draft 2041 RTP in Table 2A-4.

In order to fully test the resiliency of the Draft Plan, additional land use scenarios will be developed and modelled including scenarios that use an optimized land use scenario where most employment growth is in urban growth centres and the region becomes more truly multi-nucleated, one where almost all growth occurs outside Toronto and a significant portion is beyond the Greenbelt, and one where Toronto is emptied out. If the Draft 2041 RTP performs adequately under these scenarios, particularly the last one, it can be said to be truly resilient.

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 RTP included over 1100 lane-km of HOV/HOT lanes.

Table 2A-1: Model Outcomes of Various Land Use Scenarios on the Draft 2041 Plan

THEME	INDICATOR	DESCRIPTION		SCENARIO RESULTS		
			2041 PLAN	2041 MARKET	2041 DECLINE	2041 BOOM
LAND USE ASSUMPTIONS						
	GTHA Population	In the decline scenario the population of the GTHA is similar to what it was in 2011, but percentage of seniors increases	10.1 million	10.1 million	6.5 million	11.5 million
	GTHA Employment	In the decline scenario, employment in the GTHA is similar to what it was in 2011	4.8 million	4.8 million	2.6 million	5.3 million
	Concentration of population in Toronto	In the decline scenario, a significantly higher proportion of the popultion live 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%
OUTCOMES						
TRANSIT ACCESS	People Near Transit	The fraction of people that live within walking distance of frequent rapid transit is comparable across all three scenarios [1]	36%	35%	36%	37%
	Jobs Near Transit	The fraction of all jobs that are within walking distance of frequent rapid transit follows the concentration of employment in downtown	46%	47%	50%	48%
	Jobs Accessible within 60 minutes By Transit	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	1,030,000	1,040,000	880,000	1,130,000
	% of GTHA Jobs Accessible within 60 minutes By Transit	The average GTHA resident will have access to much greater proportion of all jobs available in the GTHA in the decline scenario	21%	22%	34%	21%
MODE OF TRANSPORTATION	Transit Trips	The number of transit trips in the region generally follows regional population and employment [2]	1.9 million	2.0 million	1.4 million	2.2 million
	Transit Mode Share	Transit mode share improves the most in the decline scenario, largely because driving costs (aside from those associated with congestion) are	14.7%	15.5%	16.4%	14.9%
	Active Trips	The number of active trips in the region generally follows regional population and employment [3]	1,380,000	1,370,000	975,000	1,540,000
	Active Mode Share	The decline scenario has the highest proportion of walking and cycling trips [2]	10.6%	10.6%	11.8%	10.5%
QUALITY OF LIFE	Transit Travel Time	Rail travel times are comparable in all three scenarios, but bus travel is faster in the decline scenario, as there is less highway congestion [3]	39 minutes	40 minutes	36 minutes	40 minutes
	Congested Driving	Congested vehicle kilometres travelled are far lower in the decline scenario, since all travel, including driving, is reduced [4]	8.2 million	8.3 million	1.9 million	9.9 million
	Environmental Impact	Greenhouse gas emissions per capita from auto driver trips are slight lower in the decline scenario and lowest in the boom scenario	1.54 tonnes	1.54 tonnes	1.50 tonnes	1.46 tonnes

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

Appendix 2B:
Report of the Residents' Reference Panel

In spring 2017, Metrolinx convened a Resident's Reference Panel made up of residents from across the GTHA to provide input into the Draft 2041 RTP. Thousands of invitations were sent out to GTHA residents, and final participants were randomly selected from the respondents to reflect the diversity of the region. Over the course of five full-day sessions, the Panel's task was to learn about regional transportation, services and policies, consider different perspectives, weigh different priorities, and recommend a course of action.

Panelists worked through their values, issues, and priorities to present a set of recommendations to Metrolinx. The Panel made recommendations in seven key areas.

The report and video of the Residents' Reference Panel will be available in fall 2017 at www.metrolinx.com/theplan.

Recommendations of the Residents' Reference Panel

1) Connectivity, Convenience and Integration

Today, disconnected transportation services lead to longer, more frustrating commutes that discourage the use of transit.

In the next five years, Metrolinx and its partners should:

- Actively coordinate routes and schedules among all 11 GTHA transit agencies;
- Integrate all intermodal information into the Triplinx app to help solve the first- and last-mile issue. This should include fares, real-time service and traffic updates, parking availability, bike-share services, cycling facilities, and potential on-demand micro-transit services;
- Make PRESTO more convenient. Possible improvements could include more machines, the ability to purchase and load cards anywhere and on the mobile app with no 24-hour delay, and the ability to pre-load monthly passes; and
- Integrate transit fares across the system. The panel endorsed a fare-by-distance structure with four conditions:
  - A low-cost flat fare within a "virtual zone" within a certain radius from the start of every trip;
  - Discounts for trips made during off-peak hours; and
  - Maintaining existing discounts for students, seniors, and families travelling together, and
  - applying monthly passes or fare caps through the PRESTO card.

In the long term, Metrolinx and its partners should:

- Pursue amendments to legislation such as the City of Toronto Act in order to remove barriers to service integration; and
- Create direct connections between regional hubs so that passengers do not always have to connect at Union Station.

2) Equity and Accessibility

Today, consistency of accessible infrastructure across the transportation system is lacking, and the system faces increasing pressure with changing demographics, including an aging population and non-English-speaking newcomers.

In the next five years, Metrolinx and its partners should:

- Improve all facets of the transportation journey to ensure barrier-free access for all populations. This includes support for active transportation users, families with children, non-English speakers, and differently-abled individuals.

In the long term, Metrolinx and its partners should:

- Implement new discounts or subsidies for low-income residents in a simple yet discreet manner through the universal PRESTO fare card.

3) Health, Comfort and Safety

Today, transportation options in the GTHA are not as comfortable or as safe as they could be for all users.

In the next five years, Metrolinx and its partners should:

- Improve infrastructure for active transportation, including an expanded network of protected bike lanes, particularly to key transit hubs;
- Improve lighting in parking lots and at crosswalks; and
- Increase the availability of washrooms and potable water at transit stations.

In the long term, Metrolinx and its partners should:

- Install emergency buttons and/or bus shelters at bus stops where safety is of particular concern; and
- Anticipate the possible need to increase the visibility of security at subway entry points.

4) A Well-Planned Region

Today, our regionally fragmented transportation-planning structure appears to delay decision-making and cause bottlenecks that impede implementation. This frustrates residents who want to see quicker, evidence-based decision-making and action.

In the next five years, Metrolinx and its partners should:

- Strengthen the regional transportation governance model in order to promote greater alignment between municipal, regional, and provincial priorities, reinforce the need for greater cooperation and coordination between operators, and expedite the delivery of major transportation projects.

In the long term, Metrolinx and its partners should:

- Prioritize transit expansion in areas of high employment and residential density, keeping economic viability in mind.

5) Exemplary Environmental Footprint

Today, it is important for everyone to help meet and exceed emissions reduction targets in accordance with our national goals, in a manner that enhances current and future residents' quality of life without negatively impacting the environment or deterring investment.

In the next five years, Metrolinx and its partners should:

- Encourage the use of public transit and active transportation by whatever means are found to be the most effective, including rewards programs, monthly fare caps, and subsidized discounts; and
- Improve air quality inside and around stations and corridors through the increased use of greenery, enhanced ventilation and filtration, and better maintenance of vehicles and stations.

In the long term, Metrolinx and its partners should:

- Increase procurement from suppliers with environmental certifications.

6) Prosperity and Competitiveness

Today, congestion is a barrier to prosperity and growth. Transportation plans are not fully aligned with economic development outside downtown Toronto. As a result, they fail to leverage the economic activity in these areas.

In the next five years, Metrolinx and its partners should:

- Identify regional nodes where expanded transit services and a mix of other land uses can be developed, considering partnerships with existing businesses and leasing space to retailers.

In the long term, Metrolinx and its partners should:

- Utilize emerging technologies (such as autonomous vehicles) to make the system more efficient where possible; and
- Facilitate the efficient movement of goods and people by better utilizing existing road infrastructure (such as dedicated transit lanes).

7) Public Awareness and Communication

Today, most residents do not understand why they should get out of their cars to use public transit, walk or cycle. Residents are insufficiently informed about ongoing or future projects and strategies as well as associated benefits. As a result, those critical of transit have disproportionately shaped public opinion.

In the next five years, Metrolinx and its partners should:

- Enhance the profile of regional transportation planning by promoting user benefits associated with ongoing projects, new investments, and behaviour change;
- "Own its space" and use existing transit and real estate assets to communicate to current users; and
- Launch an annual or biannual update about transit expansion that can be distributed to all GTHA residents.

In the long term, Metrolinx and its partners should:

- Create specialized campaigns to promote any new services or plans, including fare integration;
- Raise the profile of transit options outside of Toronto; and
- Elevate the status of transportation policy to that of health and education, making it the third pillar in a successful, healthy, and prosperous society.

In the long term, Metrolinx and its partners should:

- Create specialized campaigns to promote any new services or plans, including fare integration;
- Raise the profile of transit options outside of Toronto; and
- Elevate the status of transportation policy to that of health and education, making it the third pillar in a successful, healthy, and prosperous society.

Appendix 2C: Regional Personas: Profiles

To better understand travel behaviours and attitudes toward transportation in the Greater Toronto and Hamilton Area, Metrolinx worked with Northstar Research Partners to conduct a survey of over 8,500 people and hold numerous focus groups across the region. Feedback was used to develop six regional traveller personas – a typology that can provide insight into the travel behaviour and preferences of GTHA residents, and a lens through which the strategies of the Draft 2041 RTP could be viewed.

Summary Profiles of the Six Regional Personas

Generally, across the GTHA, residents' perceptions of safety, convenience, comfort, predictability, cost and speed of travel determine the mode they choose – whether to drive, walk, cycle or take transit. While most travellers are generally satisfied with travel in the region, they often find it to be slow, stressful and not well-integrated. Transit is often viewed negatively compared to driving, and not viewed as a first choice for getting around. More detailed descriptions of the behaviour and preferences of the six personas are found in Figure 2-C.

1. Time and Balance Seekers

TBS are hard-working and family-oriented, and rely primarily on the car. They are open to non-auto options, but have concerns about the safety and cleanliness of public transit, and want to enjoy the trip and arrive quickly at their destination in order to have more time for themselves and their family. TBS are receptive to GO rail transit, particularly for commuting and going into Toronto for fun. TBS want travel in the GTHA to be quick, safe, convenient, and enjoyable. Ultimately, it should give them freedom, time for themselves, and more time for friends and family.

2. Traditional Suburban Travellers

Suburban and car-dedicated, TST are the least likely to consider other modes. The car is convenient and comfortable, and provides freedom and control. Their interest is in car-friendly approaches that reduce the stress and frustrations they experience while driving for most of their activities. TST are the most challenging to motivate to change their current travel behaviour, given their dependence on, and loyalty to, their cars.

3. Frustrated Solution Seekers

FSS are educated, affluent suburban drivers who would like to use other modes, but prefer the convenience and reliability of a car. FSS are typically female, and travel into Toronto for work. When it comes to getting around, FSS mostly drive, as it is seen as quick, door-to-door, and gives them their own space but is often stressful. They are looking for a "first and last mile" solution that fits their needs and schedules. They are open to the GO train, but do not find the current transit system to be seamless or integrated. FSS want to take public transit and walk, but right now, see driving as the only option for getting where they need to be, when they need to be there.

4. Connected Optimizing Urbanites

COU are young, active, city-dwelling professionals who frequently travel around the region. They take a variety of modes but are looking for quick, convenient and direct connections. They are seeking an integrated transportation system that uses technology. Most often male, COU take transit but do not really enjoy it, and seek alternatives like ride-sourcing, which provides the 24/7 door-to-door service and connectivity they seek. These are mostly likely to be the early adopters of new transportation technologies, including autonomous vehicles.

5. Satisfied Mature Urbanite

SMU are older, Toronto-dwelling residents who do not travel very far outside their community. They feel that they have many transportation options and are largely satisfied. They are often female and most likely retired, although many still work in the city. SMU have a relatively small transportation footprint. They are environmentalists and prefer walking or taking public transit. For the most part, they are very satisfied with transportation in the region, feeling that they are well-served by the wide array of options. They are less interested in new technological innovations (although they do anticipate that technology will help improve travel) and are reticent about the introduction of autonomous vehicles for themselves. They want travel in the GTHA to always be getting better, easier, and more reliable.

6. Aspiring Young Traveller

AYT are young, active, and loving life in the city. While they have many positive associations with car travel, they look to public transit, rides with others, and active transportation to get where they need to go. AYT are likely to continue using these modes. While price is a barrier to transit, AYT are looking for better system integration and technologies that make travel more predictable, easier, and faster.

Figure 2C-1 Regional Personas

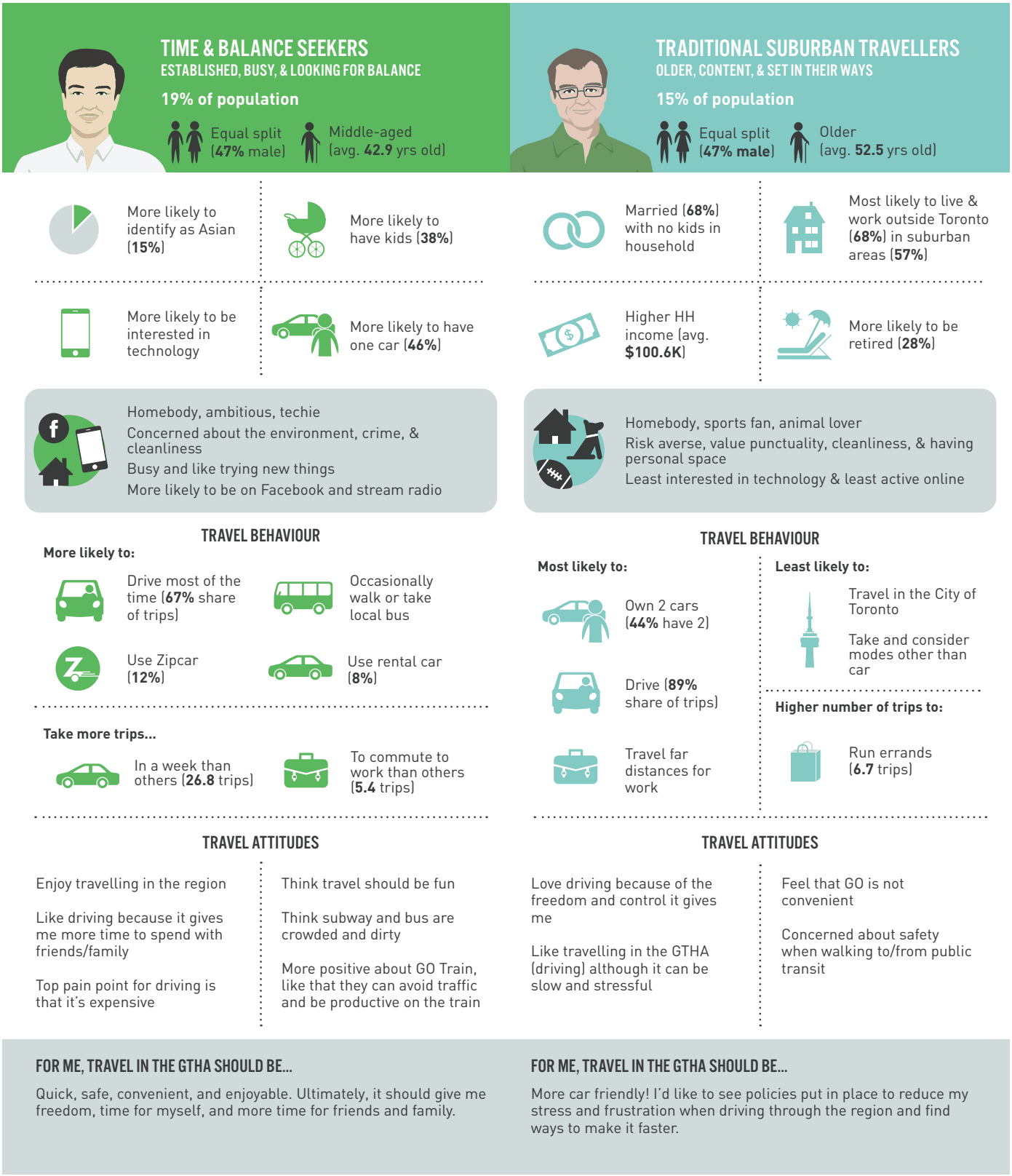


Figure 2C-1 Regional Personas

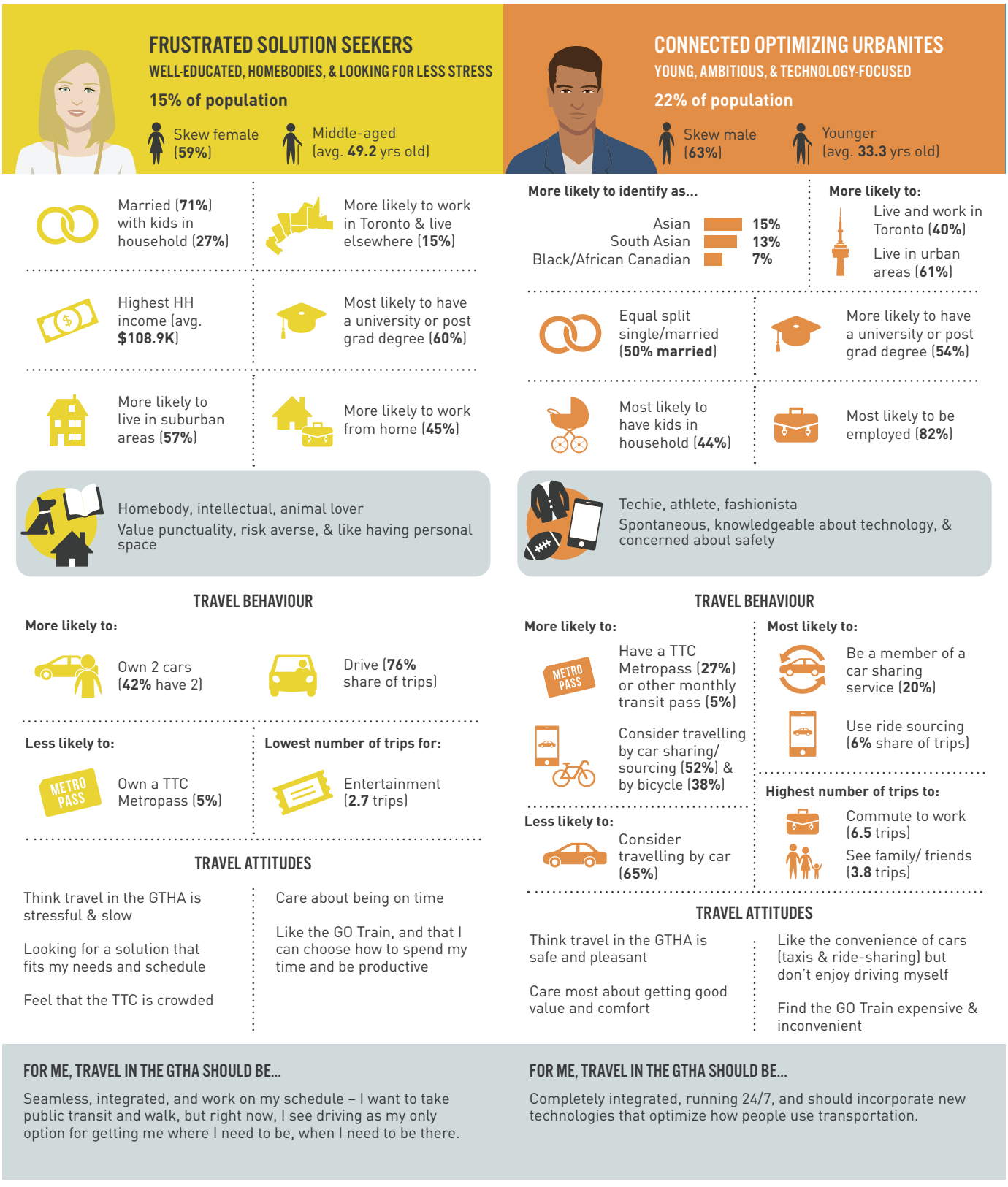
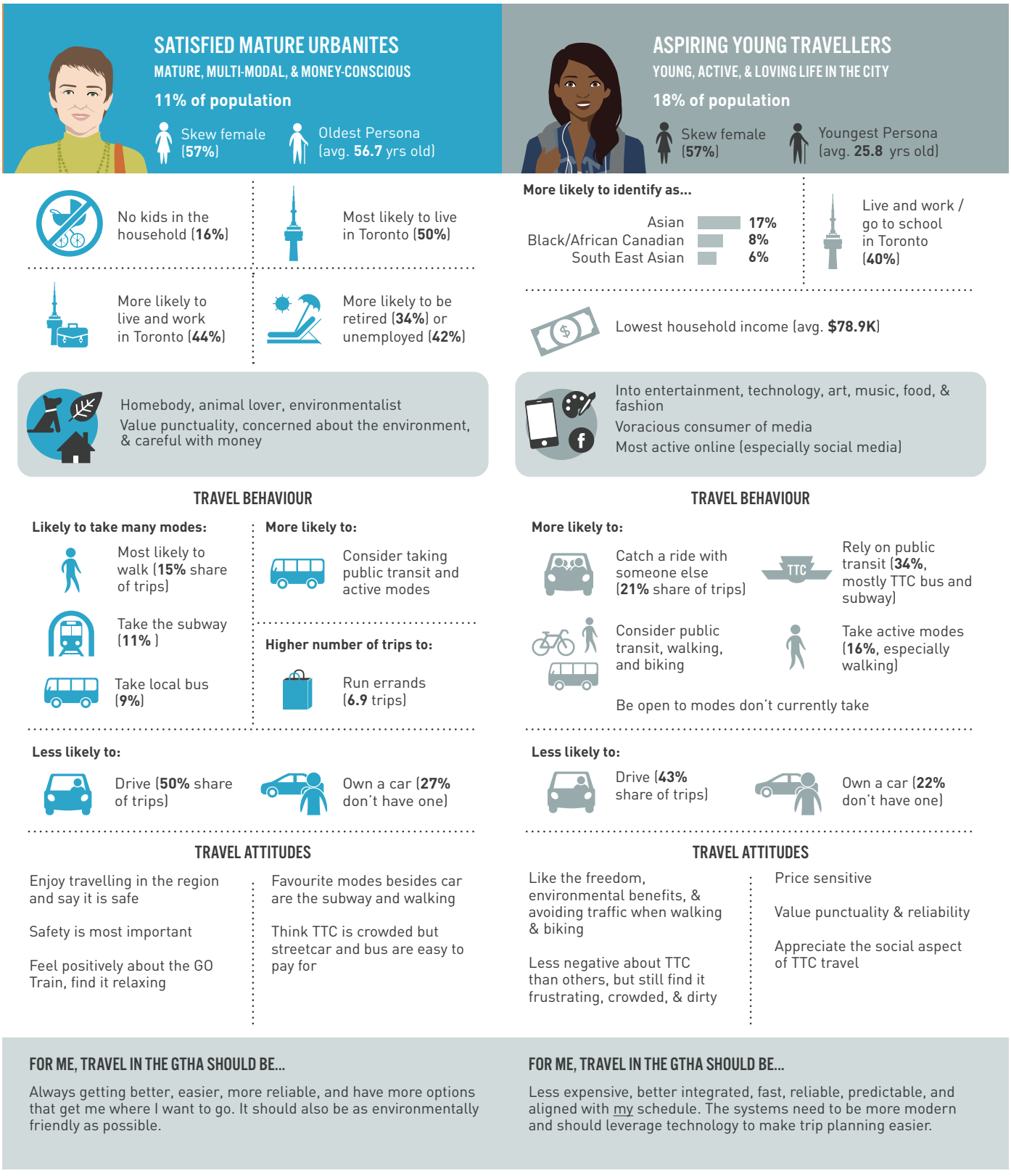


Figure 2C-1 Regional Personas



APPENDIX 3:
List of Transit Projects

Appendix 3A: Projects Completed 2008-2017 (Map 3)

Map #	Project Name
1	Kitchener GO Extension (Georgetown GO – Kitchener GO)
2	Barrie GO Extension (Barrie South GO – Allandale GO)
3	West Harbour GO Extension (Aldershot GO – West Harbour GO)
4	Mississauga Transitway (Winston Churchill Blvd. – Orbitor Dr.)
5	Highway 7 East BRT (Yonge St.– Unionville GO)
6	Davis Drive BRT (Yonge St. – Newmarket GO)
7	UP Express (Union Station – Toronto Pearson International Airport)
8	Gormley GO Extension (Richmond Hill GO – Gormley GO)

Appendix 3B: Projects In Delivery (Map 3)

Map #	Project Name
9	Toronto-York Spadina Subway Extension (Sheppard Ave. – Highway 7)
10	Mississauga Transitway (Orbitor Dr. – Renforth Dr.)
11	Eglinton Crosstown LRT (Weston Rd. – Kennedy Station)
12	Sheppard East LRT (Don Mills Station – Morningside Ave.)
13	Finch West LRT (Finch West Station – Humber College)
14	Scarborough Subway (Kennedy Station – Scarborough Town Centre)
15	Hamilton B-Line LRT (McMaster University – Eastgate Mall)
16	Highway 7 West BRT (Helen St. – Yonge St.)
17	Hurontario LRT (Port Credit GO – Steeles Ave.)
18	Yonge BRT (North) (Mulock Dr. – Davis Dr.)
19	Yonge BRT (South) (Highway 7 – 19th Ave.)
20	Bloomington GO Extension (Gormley GO – Bloomington GO)
21	Bowmanville GO Extension (Oshawa GO – Martin Rd.)
22	Confederation GO Extension (West Harbour GO – Confederation GO)
23	Niagara GO Service (Confederation GO – Niagara Falls GO)
24	Lakeshore West All-Day GO Service (Aldershot GO – Hamilton GO)
25	Barrie All-Day GO Service (Aurora GO – Allandale Waterfront GO)
26	Kitchener All-Day GO Service (Mount Pleasant GO – Kitchener GO)
27	Stouffville All-Day GO Service (Unionville GO – Mt. Joy GO)
28	Kitchener 15-min GO Service (Union Station – Mount Pleasant GO)
29	Barrie 15-min GO Service (Union Station – Aurora GO)
30	Stouffville 15-min GO Service (Union Station – Unionville GO)
31	Lakeshore West 15-min GO Service (Union Station – Aldershot GO)
32	Lakeshore East 15-min GO Service (Union Station – Oshawa GO)

Appendix 3C: Projects In Development (Map 4)

Map #	Project Name
33	Dundas West Priority Bus (Bronte Rd. – Brant St.)
34	Dundas BRT (Kipling Station – Bronte Rd.)
35	Brampton Queen St. BRT (Main St. – Highway 50)
36	Eglinton West LRT (Weston Rd. – Toronto Pearson International Airport)
37	Highway 7 West BRT Extension (Highway 50 – Helen St.)
38	Waterfront West LRT (Union Station – Port Credit GO)
39	Waterfront East LRT (Union Station – Coxwell Ave.)
40	Relief Line Subway (Sheppard Ave. – Osgoode Station)
41	Yonge North Subway Extension (Finch Station – Highway 7)
42	Yonge BRT (Richmond Hill, Aurora, Newmarket) (19th Ave. – Mulock Dr.)
43	Eglinton East LRT (Kennedy Station – Sheppard Ave.)
44	Highway 7 East BRT Extension (Unionville GO – Donald Cousens Pkwy.)
45	Durham-Scarborough BRT (Scarborough Centre – Simcoe St.)

Appendix 3D: Other Projects Proposed in the Draft 2041 RTP (Map 6)

GO Rail

Map #	Project Name
46	Lakeshore West 15-min GO Service Extension (Aldershot GO – Hamilton GO)
53	Milton 15-min GO Service (Union Station – Milton GO)
88	Barrie 15-min GO Service Extension (Aurora GO – East Gwillimbury GO)
89	Stouffville 15-min GO Service Extension (Unionville GO – Mt. Joy GO)
90	Richmond Hill All-Day GO Service (Union Station – Richmond Hill GO)
97	Lakeshore East 15-min GO Service Extension (to Downtown Oshawa GO)
100	Lakeshore East All-Day GO Service (Downtown Oshawa GO - Martin Rd.)

Subway

Map #	Project Name
73	Line 2 Subway and Bloor-Yonge Station Capacity Enhancements
74	Sheppard Subway West Extension (Sheppard Station – Sheppard West Station)

BRT / LRT

Map #	Project Name
47	Hamilton A-Line BRT (West Harbour GO – Rymal Rd.)
54	Trafalgar BRT/LRT (Oakville GO – Highway 407)
61	Downtown Mississauga Transitway & Terminal (Mavis Rd. – Hurontario St.)
62	Brampton Main BRT/LRT (Steeles Ave. – Brampton GO)
70	Finch West LRT West Extension (Humber College – Toronto Pearson International Airport)
71	Jane North BRT/LRT (Highway 7 – Major MacKenzie Dr.)
72	Jane South BRT/LRT (Bloor St. – Steeles Ave.)
75	Steeles BRT/LRT (Pioneer Village Station – Milliken GO)
76	Finch West LRT East Extension (Finch West Station – Finch Station)
77	Leslie North BRT/LRT (Highway 7 – Major MacKenzie Dr.)
78	Don Mills/Leslie BRT/LRT (Sheppard Ave. – Highway 7)
79	McCowan South BRT/LRT (Ellesmere Rd. – Steeles Ave.)
81	Sheppard East LRT Extension (Morningside Ave. – Meadowvale Rd.)
83	Malvern Connection LRT (Sheppard Ave. & Morningside Ave. – Markham Rd. via McLevin Ave.)
85	Major MacKenzie BRT/LRT (Jane St. – Leslie St.)
98	Simcoe BRT/LRT (Downtown Oshawa GO – Highway 407)

Priority Bus

Map #	Project Name
48	Hamilton A-Line South Priority Bus (Rymal Rd. – Hamilton Munro International Airport)
49	Dundas Connector Priority Bus (McMaster University – Downtown Dundas)
50	Hamilton L-Line Priority Bus (Downtown Hamilton - Waterdown)
51	Hamilton S-Line Priority Bus (Ancaster Business Park – Confederation GO)
52	Hamilton Mohawk T-Line Priority Bus (Centre Mall – Meadowlands Terminal)
55	Brant Priority Bus (Lakeshore Rd. – Dundas St.)
56	Bronte/Regional Road #25 Priority Bus (Bronte GO – Steeles Ave.)
57	Derry Priority Bus (Airport Rd. – Highway 407)
58	Harvester/Speers/Cornwall Priority Bus (Waterdown Rd. – Port Credit GO)
59	Milton Main Priority Bus (Ontario St. – Steeles Ave.)
60	Trafalgar North Priority Bus (Highway 407 – Milton GO)
63	Britannia-Matheson Priority Bus (Highway 407 – Renforth Dr.)
64	Hurontario North/Mayfield Priority Bus (Brampton GO – Dixie Rd.)
65	Dixie Priority Bus (Lakeshore Rd. – Steeles Ave.)
66	Airport Road Priority Bus (Castlemore Ave. – Toronto Pearson International Airport)
67	Erin Mills Priority Bus (Clarkson GO – Steeles Ave.)
68	Bovaird/Castlemore Priority Bus (Mount Pleasant GO – Highway 427)
69	Steeles West Priority Bus (Mississauga Rd. – Humber College)
80	McCowan North Priority Bus (Steeles Ave. – Highway 7)
82	Kingston Priority Bus (Victoria Park Station – Eglinton Ave.)
84	Major MacKenzie West Priority Bus (Leslie St. – Donald Cousens Pkwy.)
86	Major MacKenzie East Priority Bus (Highway 427 – Jane St.)
87	Green Lane Priority Bus (Davis Dr. – East Gwillimbury GO)
91	Steeles/Taunton Priority Bus (Milliken GO – Townline Rd.)
92	Whites Priority Bus (Highway 407 – Pickering GO)
93	Brock Rd. Priority Bus (Bayly St.– Highway 7)
94	Westney Priority Bus (Bayly St. – Highway 2)
95	Bayly Priority Bus (Pickering GO – Whitby GO)
96	Brock St./Baldwin Priority Bus (Whitby GO – Brawley Rd.)
99	Highway 2 Priority Bus (Simcoe St. – Martin Rd.)

Appendix 3E: Projects beyond 2041

Project Name
Bolton rail service (Union Station – Bolton)
Dundas West – Summerhill rail service
Havelock rail service (Union/Summerhill – Locust Hill)
Seaton rail service (Union/Summerhill – Seaton)
Richmond Hill 15-minute GO Service
Highway 407 Transitway
Relief Line Subway West Extension (Osgoode – Bloor West)

All project definitions are subject to change based on negotiations and agreements with railways, environmental assessments, business case analysis, and further planning.

APPENDIX 4:
Transportation Funding & Governance

Appendix 4A:
Reports on Funding and Governance in the GTHA

Funding Principles:

Investment Strategy (Metrolinx, 2013)

The 2013 Metrolinx Investment Strategy identified the following principles for new revenue:

- **Dedication of revenues to specific outcomes:** At all times the public should be able to see exactly what they are paying for and have an assurance that funds are not diverted to other priorities.
- **Fairness:** The costs and benefits of the Investment Strategy should be distributed fairly across all population groups in all parts of the GTHA. Tools should be selected so that no one group pays too much or benefits too little.
- **Equity across the region:** All parts of the region should benefit from the investment in transit and transportation infrastructure. No community should be left behind.
- **Accountability and transparency:** When implementing the Investment Strategy, tools and project delivery progress should be visible and the results publicly reported on a regular basis, including how funds are being collected, managed and spent.

Making the Move (The GTHA Transit Investment Strategy Advisory Panel, 2013)

The Advisory Panel report that followed the Metrolinx Investment Strategy proposed the following criteria:

- **Sufficient and sustainable revenue:** Building more than $50 billion in new transit investment and keeping those projects operational once complete is expensive. New revenue tools must be introduced to generate sufficient funds to support transit projects over the entire useable life of an asset, typically ranging from 25 to 50 years.
- **Fairness across regions and among income groups and sectors:** No region should be unfairly impacted by the choice of new revenue tools, nor should any one sector or income group. Options should aim to strike a fair balance where all sectors that benefit from transit contribute. The Province has already committed to ensuring that parts of the province outside of the GTHA will not have to pay for transit expansion within the GTHA.
- **Easy to implement and administer:** The Panel recognizes that the government has a responsibility to collect funds in the most cost-effective manner and to keep the costs of compliance as low as possible. Selection of a new revenue source with high administration and implementation costs would be counter-productive.
- **Provides choice and encourages less reliance on the automobile:** The Panel favoured revenue sources that contribute to reduced congestion and greater choice and encourage alternatives to the car. Some revenue tools have the ability to affect travel behaviour and, by extension, the performance of the GTHA's transportation network. Selected revenue tools should send price signals that encourage efficient travel choices.
- **Minimizes economic impacts and distortions:** The tools must not act as significant disincentives to business investment or reduce the region's ability to attract human capital in today's global economy. Any significant change in revenue tools should be phased-in to allow time for the economy to adjust.
- **Ensures accountability and transparency:** All of the research, stakeholder submissions, and public consultations demonstrate that new revenue raised for transit and transportation-related activities must be dedicated in a transparent manner. The ability to monitor spending and track the progress of individual projects against plan is essential.

Governance Models:

Build Regional Transportation Now - Discussion Paper on Governance (Toronto Board of Trade, 2014)

- **Improved Status Quo Model**: An enhanced status quo scenario would maintain existing transit authorities, but would seek to enhance regional integration and planning along with improved transit decision-making through a number of changes and reforms to existing system.
- **Provincial Agency Model**: Upload all policy and planning, infrastructure expansion and project management, and transit operations and maintenance responsibilities now undertaken by multiple bodies to a single agency. Potentially this could mean amalgamation of GO Transit, TTC and other local transit authorities under an expanded Metrolinx or other provincial ministry, department or agency. The agency would be politically accountable to a minister (e.g. Minister of Transportation).
- **Municipal Special Purpose Body Models**: Consolidation of all policy and planning, infrastructure expansion and project management and transit operations and maintenance to a single agency. Potentially this could mean amalgamation of Metrolinx, GO Transit, TTC and all local transit authorities under one municipally appointed special purpose body. Such a body could be accountable to a board of directors comprised of the regional chairs (Durham, Halton, Peel, and York) and the mayors of Hamilton and Toronto, which would have responsibility for approving all major policy decisions such as overall strategy, finance, etc.

Appendix 4B: Jurisdictional Scan - Governance Models

Canada and the United States:

Vancouver - TransLink

TransLink is Metro Vancouver's regional transportation authority, and the first North American transportation authority responsible for planning, financing and managing all public transit, major regional roads, and bridges. Together with partners, stakeholders and its operating companies, TransLink plans and manages the region's transportation system as a whole. It is governed by the Mayors' Council on Regional Transportation and its own board of directors, which includes the provincial minister responsible for TransLink, representatives of the Mayors' Council, the Vancouver Board of Trade, and others appointed by the Mayors' Council.

Metro Vancouver is a political body and corporate entity operating under provincial legislation as a regional district with four "greater boards" that deliver regional services, policy and political leadership on behalf of 23 members. The federation of 21 municipalities, one electoral area and one Treaty First Nation collaboratively plans for and delivers regional-scale services, including public transit and planning for urban growth. The regional district is itself governed by a Board of Directors of elected officials from each local authority.

Created in 1999, Translink shares responsibility for major roads, bridges and regional cycling with municipalities in Metro Vancouver, and also provides services through agreements with other municipalities.

TransLink's services are funded by taxation revenue (property, fuel and parking taxes), a hydro levy, and user fees (transit fares and bridge tolls).

Montreal - Autorité régionale de transport

The Autorité Régionale de Transport Métropolitain (ARTM) or Metropolitan Regional Transportation Authority, is an umbrella organization that manages and integrates roads and public transportation in Greater Montreal. The organization was created by the Government of Quebec on June 1, 2017, along with the Réseau de Transport Métropolitain (RMT), its operating branch, which replaced the Agence Métropolitaine de Transport (AMT). The two new organizations represent a regional transit authority responsible of administering service contracts for the entire region, and an entity in charge of operating the metropolitan transit network.

Under the new governance structure, the number of parties responsible for planning and providing fixed-route and paratransit services has been reduced to four operators to support coherent service planning across the region, and to provide accessible, reliable and efficient services. The region now has an authority that can act on multiple transport modes and propose integrated mobility solutions.

The new model clarifies the role of each level of governance. At the political level, the Communauté Métropolitaine de Montréal (CMM) approves capital programs, strategic plans and policies on transit funding. The ARTM plans, finances and organizes the transit services that will be delivered by the operators under contract. The ARTM will also develop carpooling and active transportation, and propose standards regarding the management of the metropolitan arterial network. Its Board of Directors will consist primarily of independent transit experts.

Funding for public transit in the Montreal region primarily comes from the provincial Land Transportation Network Fund, which mainly includes revenues from a fuel tax, driver's licence and vehicle registration fees, municipal contributions, a portion of revenues from Québec's greenhouse gas emissions cap-and-trade system; and user fees in the form of transit fares.

Chicago – Regional Transportation Authority

The Regional Transportation Authority (RTA) provides transit planning and oversees local transportation operators in the Chicago metropolitan area, including the Chicago Transit Authority (CTA), Metra (the suburban rail system) and Pace (the suburban bus system). The RTA has transportation authority for six counties, including the City of Chicago. It also implements projects, administers grant programs and develops plans aimed at growing ridership and improving mobility. The RTA also provides technical and analytical expertise to municipalities and transportation agencies across the region in support of local public transit initiatives.

The RTA Board consists of 16 directors, five of which are appointed by the Mayor of the City of Chicago, and ten of which are representatives from the surrounding counties. The Board Chair, its 16th member, is elected by the Board.

The RTA operating budget is funded from different sources: fares and other operating revenue, the RTA sales tax imposed in the region, a Public Transportation Fund comprised of the state matching a percentage of RTA sales tax dollars collected, a real estate transfer tax and state funding for paratransit, and additional assistance from the State of Illinois.

About half of capital funding is provided by the federal government, while a CTA Transit Tax Increment Financing funds account, RTA bond proceeds and service funds make up the remainder.

It is important to note that the RTA is not the Metropolitan Planning Organization (MPO) for the Chicago metropolitan area.

The Chicago Metropolitan Agency for Planning (CMAP) is the MPO. As the MPO, CMAP is responsible for developing the long-range transportation plan for the region, and in order to be eligible for federal funding, major capital projects, including transit projects, must be included in this fiscally-constrained long-range transportation plan.

England and Germany:

London – Transport for London

Transport for London (TfL) is a local government body responsible for the transport system in Greater London, comprising 33 local government districts. TfL has responsibility for London's main road routes, rail networks, trams, buses, taxis, cycling network, and river services. The services are provided by a combination of wholly owned subsidiary companies (principally London Underground), private sector franchisees (the remaining rail services, trams and most buses) and licensees (some buses, taxis and river services). TfL is also responsible, jointly with the national Department for Transport (DfT), for commissioning the construction of the new Crossrail line, and will be responsible for franchising its operation once completed.

TfL is controlled by a board whose members are appointed by the Mayor of London. The body is organised into corporate services and three main directorates, each with responsibility for different aspects and modes of transport. TfL is funded from four main sources: fares (the largest source); grant funding from the DfT and Greater London Authority (GLA), borrowing, and other income, including advertising, property rental and congestion charging.

Berlin - Verkehrsverbund Berlin-Brandenburg

The Verkehrsverbund Berlin-Brandenburg (VBB) is a transport association run by public transport providers in the German states of Berlin and Brandenburg. It is a private limited company owned jointly by the states of Berlin and Brandenburg, and the 18 counties and cities of Brandenburg. It coordinates the services of 40 public transport companies, the introduction and

development of a common fare system and the improvement and quality control of services.

It also assists with planning, tendering and managing regional railways.

A Verkehrsverbund is a regional governance model common in German and Swiss planning organizations. Similar to Metropolitan Planning Organizations in the United States, they provide capital and some operating funding to local transit operators, and are able to coordinate and integrate fares and schedules so that transfers between different operators are as seamless as possible. Local entities maintain control over details of the implementation of policies. Routes, schedules and fares are ultimately regional responsibilities. They also support a structure that combines efficiencies of a single regional transit provider with elements of local control.

Australia:

Sydney - Transport for New South Wales

Transport for New South Wales (NSW) was established in November 2011 as the lead agency for integrating the transport system, and improving the quality of transport services in NSW. Transport for NSW is an important component of the NSW Government's whole-of-government reform to restore economic growth, improve service delivery, renovate infrastructure, strengthen communities, and restore accountability to government. It reports to the Minister of Transportation and an Advisory Board.

Transport for NSW promotes the integration of all transport modes and coordination across all stages of transport planning and decision-making. It is intended that the operating agencies will become increasingly engaged as part of a fully integrated transport system that offers a quality, seamless travel experience to customers. Responsibilities include strategy, planning, policy, regulation, funding allocation and other non-service delivery functions for all modes of transport in the Region including road, rail, ferry, light rail, point to point, regional air, cycling and walking.

In recent years the organization has brought together the planning and decision-making functions within Transport for NSW from operating agencies, designed new structures to enable collaboration, and consolidated the transport budget as part of Transport for NSW. It also created the Long Term Transport Master Plan, which provides the opportunity to adopt governance arrangements for long term planning that will further reinforce the strengths of customer-focused and integrated transport planning, operation and delivery.

APPENDIX 5: Additional Resources

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APPENDIX 6:
Draft 2041 RTP Strategies & Actions

Priority Actions for Strategy #1
Complete the Delivery of Current Regional Transit Projects

1.1 Complete the building of projects In Delivery, as shown on Map 3, including the GO Regional Express Rail program, the Hurontario, Eglinton, Hamilton and Finch LRTs, and the York VIVA BRTs, ensuring delivery by 2025

1.2 Advance the transit projects that are In Development, as shown on Map 4.

1.3 Strengthen Union Station's capacity as the centre of GO Regional Express Rail to accommodate the growth of GO RER beyond 2025

- In consultation with the City of Toronto, the provincial and federal governments develop a plan to address rail service capacity at Union Station to accommodate the growth of GO RER beyond 2025.
- Ensure that all decisions regarding improvements to Union Station and adjacent areas are consistent with and protect for the long term plan.

1.4 Coordinate with the Province's High Speed Rail plan

- Coordinate with the Province on the optimization of shared resources such as Union Station and rail corridors, and integrate services for a seamless experience.

Priority Actions for Strategy #2
Connect more of the Region with Frequent Rapid Transit

2.1 Implement a comprehensive and integrated Frequent Rapid Transit Network by 2041 that includes:

- Existing subway, transitway and BRT services
- 15-minute GO Regional Express Rail on the Lakeshore East and West, Kitchener, Stouffville and Barrie Corridors, In Delivery for 2025 (see Map 3)
- BRT and LRT projects that are In Delivery, as shown on Map 3
- Projects that are In Development (see Map 4)
- Additional transit infrastructure improvements to resolve key gaps (proposed new LRT and BRT projects, see Maps 5 and 6).
- Additional 15-minute GO Regional Express Rail services beyond 2025 (see Maps 5 and 6).
- A Priority Bus system that connects existing and planned rapid transit, LRT and BRT (see Maps 5 and 6).
- Frequent Regional Express Bus services (see maps 5, 6 and 7)
- 2.2 Develop complementary bus services
- Strengthen and support the ability of local transit to provide reliable service in urban areas where demand for transit is high, and to connect to the Frequent Rapid Transit Network.
- Develop and implement a regional 24-Hour Bus Network composed of strategic routes to address growing off-peak markets and destinations.
- Deliver a regional Express Bus Network to serve long-distance transit markets not served by GO Regional Express Rail (see Map 7).

2.3 Improve access to airports, prioritizing transit for passengers and workers

- Coordinate with the Greater Toronto Airports Authority, Ports Toronto, the John C. Munro Hamilton International Airport and the federal government on ground transportation plans to the region's airports and surrounding areas.
- Support the planning and implementation of Pearson Airport's Regional Transportation Centre to facilitate enhanced transit access to the airport, and enable Pearson and the Airport Employment Area to continue to support economic growth throughout the GTHA.

Priority Actions for Strategy #3: Optimize the Transportation System

3.1 Advance the integration of services and fares

- Remove barriers to creating an integrated fare system to support seamless and consistent travel for passengers across municipal boundaries.
- To ensure progress toward seamless travel and increase ridership, take a regional view of price setting and concessions for transit and the development of innovative fare products.
- Form a formal working group of all GTHA transit operators to share customer experience objectives that would become part of new regional transit investments and the regional transit network in general

3.2 Expand first and last mile choices for all transit stations

- Fully implement the GO Rail Station Access Plan (2016).
- Invest in First Mile-Last Mile (FMLM) solutions to maximize all-season access to and from all rapid transit stations, including, but not exclusive to priority transit access, pedestrian access to workplaces and destinations nearby, improved on-demand services including carpooling, taxis, and micro-transit services, on and off-site bicycle facilities, car share and bike share programs.
- Address barriers to Metrolinx funding FMLM solutions outside of stations.
- Recover the cost of parking at GO stations to help shift trips to modes that do not require parking, and allow more people to access new train services.

3.3 Set consistent high-quality standards for the traveller experience

- Focus on reliable service as a first priority for attracting customers to transit, emphasizing transit priority measures.
- Provide travellers with:
  - real-time information;
  - well-designed places including shade, shelters, paving, seating, clear sightlines and lighting;
  - consistent wayfinding across mediums;
  - all-season maintenance of sidewalks, bike lanes and paths;
  - on-demand service connectivity; and
  - concession fares.
- Ensure that design excellence in architecture, urban design and landscape architecture enhances the transportation experienceEstablish a GTHA Regional Customer Service Advisory Committee to advise the Metrolinx Board of directors on issues impacting the traveller experience

- Establish a "Let Metrolinx Know" panel, modelled after the Let GO Know Panel, comprised of a random selection of GTHA travellers who would regularly be available to participate in surveys and focus groups to advise on customer service issues

3.4 Develop and implement a Mobility as a Service (MaaS) strategy

- Continually evolve the PRESTO fare payment system to support inter-regional travel with a range of fare products and self-service options. Migration to an account based system will allow customers to access PRESTO via traditional PRESTO cards, credit cards, limited use electronic tickets and mobile wallets.
- Fully integrate regional multi-modal trip planning and fare payment into a MaaS platform, incorporating and encouraging mobility options including, but not limited to, transit, bike sharing, carpooling and ridesharing.

3.5 Place universal access at the centre of all transportation planning and designing activities

- Foster an accessible network of conventional and paratransit providers, where riders can transfer between options, easily and conveniently, even across boundaries.
- Develop an integrated regional booking platform for specialized transit trips across the region
- Ensure that on-demand services meet the needs of a diverse range of travellers.
- Provide leadership and ensure consistency in accessibility design for transportation services and facilities across the region.
- Work with regional partners to assess and address challenges to transit access, and to address unintended consequences of transit investment, such as increases to housing costs along transit corridors.
- Develop a regional framework for the universal provision of transit passes to low-income groups.

3.6 Eliminate transportation fatalities and serious injuries as part of a regional "Vision Zero" program

- Incorporate the Vision Zero framework into regional transportation planning by developing a regional approach to transportation design standards, consideration of speed, and public education with the aim of zero serious transportation-related injuries and fatalities.

3.7 Make Transportation Demand Management (TDM) a priority by:

- Advancing workplace TDM programming and encouraging private sector leadership, participation and investment with mandated participation by large employers, institutions and other venues that generate a significant number of trips.
- Developing new approaches to TDM delivery from the fields of Service Design and Behavioural Economics.
- Reinvigorating carpooling with a compelling and user-friendly regional online platform integrated to trip planning and payment tools; remove regulatory obstacles to user incentives to drive participation.

- Delivering TDM programming to support all new rapid transit services, station areas, and areas impacted by major construction and events.
- Developing incentives for off-peak travel, including transit use, to grow ridership and reduce peak demand.
- Continuing to explore how pricing of mobility (including parking, road pricing and HOT lanes and off-peak fares) could be used to shift travel behaviour.
- Removing obstacles to vanpooling

3.8 Expand the HOV network

- Complete a seamless HOV network on all regional highways in the GTHA, encouraging higher-occupancy travel and supporting faster, reliable bus service (see Map 7).
- Incentivize ridesharing using the HOV network for trips that are difficult to make by transit or active transportation.
- Continue the implementation of HOT lanes on HOV lanes where there is excess capacity.

3.9 Further integrate road and transit planning and operations

- Building on early progress, invest in the regional coordination and deployment of ITS/smart corridors to support effective congestion management and transit priority operations.
- Within each municipality and where municipal and provincial roads interface, create formal task forces or groups to coordinate the planning and operations of transit, roads and parking

3.10 Further define and support a Regional Goods Movement Network

- Advance collaboration between public and private sector to support implementation of the Regional Strategic Goods Movement Network (See Map 8) to link goods-generating activity centres, intermodal terminals and regional gateways.
- Study goods movement priority features for new and existing freight corridors, including, but not exclusive to intelligent lane utilization and truck-only lanes.
- Support development of innovative freight hubs, including planning for and protecting complementary land uses near freight hubs. Consider the use of transit stations as a pick-up location for small parcels and support other innovative urban freight hubs to reduce door-to-door delivery. Explore and implement flexible freight delivery times, including off-peak delivery, where applicable.
- Establish a GTHA urban freight data collection program including monitoring of freight flows in the GTHA.
- Expand awareness and education efforts regarding goods movement planning, design and operational issues, with particular reference to the impact of e-commerce (and potential innovations in delivery, such as the use of bicycle couriers for urban deliveries) on the volume and nature of freight delivery in the region.

Priority Actions for Strategy #4
Integrate Land Use and Transportation

4.1 The Province should review the legislative and regulatory linkage between the provincial and municipal planning framework to fully achieve the objectives of the Growth Plan and the Regional Transportation Plan

- Identify all legislative, regulatory, fiscal (and other) opportunities to require integrated land use and transportation decision-making by all stakeholders in the GGH;
- Enact the regulations in the Metrolinx Act (2006) to create a Transportation Planning Policy Statement to provide the RTP with the legislative status it needs in order to achieve regional goals for land use and transportation integration.
- Enact the regulations in the Metrolinx Act (2006) to formalize the role and status of municipal Transportation Master Plans to align with provincial land use and transportation objectives, including the RTP.
- Develop a protocol for Metrolinx to review and provide input to secondary plans, publicly-funded development plans and large scale planning applications to ensure alignment with the regional transit investments and the RTP.

4.2 Make provincial investments for transit projects contingent on corresponding transit supportive planning by municipalities being in place

4.3 Focus development on Mobility Hubs and Major Transit Station Areas along Priority Transit Corridors by:

- Work collaboratively with the province and municipalities to create enforceable station area plans that catalyze desired land uses at stations and prevent uses that are incompatible or fail to fulfil the potential of the lands.
- Systematically co-locate publicly-funded institutions and facilities near transit with walking and cycling-supportive infrastructure.
- Integrate joint development early in rapid transit project planning and into procurement schedules, utilizing new partnerships between the public and private sector.
- Enable Metrolinx to play a leading role in development and redevelopment around stations to fulfil the objectives of the Growth Plan and the RTP.
- Enable Metrolinx to acquire land around stations for the purpose of transit-oriented development.
- Review current financial and economic incentives and disincentives to desired development and develop new tools to incent the right development in the right place.
- Update the Mobility Hub Guidelines to address emerging challenges and opportunities related to the integration of land use and transportation, and incorporate new tools and guidance for planning mobility hubs.

- Update the network of mobility hubs in conjunction with the Mobility Hub Guidelines to reflect the Frequent Rapid Transit Network, Growth Plan (2017), municipal plans and 2041 population, employment and transit ridership forecasts.

4.4 Evaluate financial and policy-based incentives and disincentives to support transit-oriented development. Work collaboratively to build on and develop regional and site-specific measures and tools to encourage development that helps meet growth management and transportation objectives

4.5 Plan and design communities including development and redevelopment sites and public rights-of-way that support and promote a shift in travel behaviours to the maximum extent that is feasible, consistent with Ontario's passenger transportation hierarchy

- Develop region-wide standards for highways, roads and streets to consistently reflect the passenger transportation hierarchy.
- Develop shared investment criteria in cycling facilities centred on cycling potential and connectivity, consistent with regional and local plans.
- Adopt a complete streets approach to infrastructure project delivery when new rail, station and transit projects are undertaken, to deliver pedestrian and cycling access as part of the infrastructure investment.
- Expand and promote bike share in locations where there is an opportunity to meet existing demand and grow cycling use.

4.6 Complete the regional commuter cycling network

- Plan, design, and construct a commuter cycling network (See Map 9) that includes both on and off-road connections across the region to create new connections in areas with high cycling potential near rapid transit stations, between Urban Growth Centres and across boundaries.

4.7 Embed Transportation Demand Management (TDM) into land use planning and development

- Require long-term sustainable TDM plans through the development process to ensure that development is designed from the outset to reflect the passenger transportation hierarchy, with realistic implementation plans.
- Leverage the development process to generate dedicated funding for TDM programming.

4.8 Rethink the future of parking

- Invest in public education and demonstrating the benefit of new parking practices.
- Coordinate the provision of parking with GO Transit expansion under the GO RER program.
- Coordinate the development of a region-wide Parking Charter that:
  - provide guidelines and encourage best practices in parking management, including those that are "quick wins", those that require further study in the short-term, and those that require more time, testing and consultation;

  - identifies common goals for on and off-street parking management, especially near transit stations;
  - supports shared land use and transportation objectives;
  - acknowledges the varied urban, suburban and rural contexts of the GTHA; and
  - can be leveraged for local policy making.

- Have Metrolinx lead a collaborative coordination of parking requirements with the expansion of transit infrastructure and services (e.g. amend applicable transit station area by-laws as a condition for transit station approval to support local mode share targets). Zoning standards should be reviewed, with the expectation that minimum parking requirements will be reduced, particularly in transit-supportive neighbourhoods.
- Adopt a region-wide approach to parking management for the arrival of shared mobility and autonomous vehicles.
- Research and regularly publish existing parking-related data and emerging trends to improve parking planning and management.

4.9 Work with ministries, school boards, municipalities, service providers, NGOs and other stakeholders to establish school travel programs for Kindergarten to Grade 12 to encourage the development of future generations of pedestrians and cyclists

- Continue to advance active and sustainable school travel (ASST) through regional coordination and delivery of the school travel program. Adopt approaches that are location-specific to ensure that solutions involving walking, cycling and transit are tailored to each community.
- Expand the resources and community capacity available to advance ASST within the GTHA, including to high school students.
- Develop policies, plans and standards that prioritize active and sustainable trips for children and youth within school areas and the broader community (e.g. to recreational facilities such as community sports and arts facilities).

Priority Actions for Strategy #5
Prepare for an Uncertain Future

5.1 Develop a regional framework for on-demand and shared mobility that complements the provincial framework

- Work collaboratively to review provincial and local regulations and policies impacting new mobility services to enable innovation while meeting the needs of people in the GTHA.
- Proactively test and evaluate new services and technologies (including micro-transit, on-demand, and shared mobility) in emerging markets where conventional transit and active transportation are not meeting demand.
- Coordinate and establish partnerships that complement existing and committed transit services.

5.2 Develop a region-wide plan for autonomous mobility

- The Province to develop a suite of regulations, policies and actions to prepare for, test and ensure the safe operation of autonomous vehicle (AV) technologies.
- Update transportation and building standards to anticipate for AVs (e.g. parking design).

5.3 Coordinate across the region to address climate resiliency of the transportation system

- Coordinate across the region to:
  - Plan and build a transportation system that can continue to operate in extreme weather events brought by climate change.
  - Design infrastructure and strengthen existing infrastructure to resist extreme weather.
  - Ensure that the management of existing infrastructure assets, and the design and construction of future assets, are climate resilient.
  - Adopt policies and procedures coordinated among all transportation stakeholders (e.g. roads, transit, emergency management) to respond to extreme weather events.

5.4 Proactively prepare for a future with low-carbon mobility options.

- Address transportation climate mitigation by aligning regional and local efforts with international, federal, provincial efforts to meet the Paris Climate Change Accord and meet Ontario's goal of reducing GHG emissions to 80% below 1990 levels by 2050.
- Continue supporting compact and mixed-use development, complete streets and other measures that help reduce travel distances.
- Deploy infrastructure to support electric vehicle use throughout the public and private transportation systems of the region.
- Invest in the transition to low-carbon public and private vehicle fleets, including transit vehicles.
- Further collaborate among governments to enhance fuel efficiency and increase availability of low-carbon fuels.

5.5 Develop a regional transportation big data strategy

- Create a regional transportation big data portal, providing consistent and transparent data collection, management and reporting.
- Establish regional transportation data sources, format, privacy, security, ownership and reporting standards.
- Identify and acquire new transportation data for planning and operations (e.g. crowdsourced traffic data).
- Advance coordination and standardization of transportation forecasting, modelling and business case methodologies to support decision-making and evaluation.

5.6 Partner for innovation

- Drive innovation in mobility, focusing on new services, tools and business models. Develop outcome-based approaches beyond traditional procurement and formal partnerships by:
  - Identifying and leveraging companies with innovative products and services that can benefit travellers or improve operations
  - Removing barriers to partnerships, e.g. overly rigid procurement rules
  - Piloting, testing and minimizing the risk associated with new ideas, products and approaches
  - Exploring innovative funding and financing options including loans and loan guarantees

METROLINX

Final Report and Recommendations of the

Residents' Reference Panel on the Regional Transportation Plan

"Among us are students, retirees, cyclists, motorists, transit riders, pedestrians, urbanites, and suburbanites... We volunteered because we are proud and concerned residents of the Greater Toronto and Hamilton Area who see the potential to make a positive impact on public policy regarding transportation within the region."

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Panelists receive certificates of public service following the completion of their draft report and recommendations.


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During their first meeting, panelists discuss values that should guide the development of the regional transportation system.

Chair's Note

I am pleased to provide Metrolinx with the final report of the Residents' Reference Panel on the Regional Transportation Plan. This document represents the culmination of some 1,400 hours of volunteer time provided by the 36 randomly selected members of the reference panel.

This Panel was created to provide Metrolinx with a diverse and representative perspective —a truly regional voice— from which to better understand the experiences and concerns of residents living throughout the Greater Toronto and Hamilton Area (GTHA).

In their report, you will find recommendations concerning fare integration, enhanced communications, and the need to create a more seamless service between and among area transit systems, among other topics.

Importantly, the panelists recognize that progress is being made and that viable transportation options for many residents are gradually increasing. Nevertheless, they also know there is still much more to be done and they look forward to the deployment of faster and more frequent GO services, new busways, and new Light Rail Transit routes.

While strongly endorsing the need for sustained infrastructure investment, the panelists took care to focus on ideas that they believe are overdue and would enhance the experience of all travellers. In this regard, I believe they capture the concerns of many GTHA residents who are frustrated with poor coordination between transit services, the lack of fare integration across systems, and incomplete or inaccurate trip planning tools.

The panelists implicitly challenge everyone to think and act like a region and to recognize how changes to where people live and work are rapidly overtaking the traditional urban-suburban divide.

In this way, the panelists' deliberations are striking and perhaps indicative of changing public sentiments across the region. The struggle between cars and transit may be ebbing as residents begin to routinely access new transportation options, including services such as Uber and car-sharing, and live in denser neighbourhoods with better access to high-frequency transit. In this environment, seamless and careful integration between different modes of transportation is highly prized.

I hope their recommendations will be useful in your work.

Respectfully,

Peter MacLeod
Chair, Residents' Reference Panel
on the Regional Transportation Plan

What policy makers should know

The Residents' Reference Panel is the third long-form deliberative panel commissioned by Metrolinx over the past six years to support the agency's efforts to understand the transportation needs and perspectives of GTHA residents.

This panel is one of a series of initiatives intended to involve stakeholders and members of the public in the development of the next 25-year Regional Transportation Plan.

The members of the Reference Panel authored their section of this report. This overview provides six observations regarding the panelists' recommendations which may be of interest to policy makers and others who are keen to understand the sensibility and priorities of GTHA residents today.

1. Transportation is getting better… but too slowly. Panelists were strongly supportive of existing investments in roads and public transit and were broadly aware that major projects like the Eglinton Crosstown, improved VIVA and MiWay services, the expansion of Union Station, and the roll-out of the PRESTO payment system were all underway. However, they also lamented the pace of construction and what they perceived as endless changes to plans that delay improvements and erode public confidence.

2. Seamless service should be the goal. As one panelist observed, crossing between transit services should be as easy as using a phone and switching cell towers; when the technology works, it's imperceptible. Instead, the panelists reported that they face a range of barriers when travelling across municipal boundaries. These include ill-timed or considered schedules, costly fare structures, and poor data integration. Panelists were incredulous that legislative barriers currently prevent municipal operators from efficiently running services into neighbouring jurisdictions when this could greatly improve convenience for passengers. The panelists believe the province should insist that all transit operators take a traveller-centred view of their operations, and remove the barriers that prevent enhanced service coordination.

3. Fare integration is overdue and equity matters. The panelists were unanimous that fares should be integrated across the region — especially given the roll-out of the PRESTO fare system. They were quick to endorse a fare-by-distance model that would set a low flat fee for short local trips that might be below current fares, and which would increase with distance. They envision a fare structure that preserves existing discounts for children, families, and seniors, but which also introduces discounts for low-income residents. The panelists are concerned that low-income earners often travel further for employment and so would spend

more on public transit. They believe a means-tested discount, applied discreetly through the PRESTO card, could support greater equity.

4. The first and last mile remain a major barrier. The panelists acknowledge that outside of the City of Toronto, getting to and from public transit services remains an enormous barrier to transit use. They discussed the incentives of private or publicly subsidized ride-hailing and sharing services as well as better cycling and walking routes, and denser urban planning to address this concern.

5. Transit should always be cheaper — but still a quality experience. Panelists believed that while transit should be affordable, this should not come at the expense of a comfortable and enjoyable commute. They valued good design in all aspects of the regional transit system, including aesthetically pleasing stations and clean, well-maintained vehicles. The panelists recommend investing in services that are not only more efficient, but also more friendly.

6. The message isn't getting out. The panelists recognize that residents of the GTHA are still reluctant to leave their cars at home and that this is not sustainable if the region is to grow by 110,000 residents every year. They supported a much more comprehensive communications plan that clearly outlines new transit services becoming available, and unashamedly advocates the benefits of public and active transportation to quality of life. The panelists proposed a transportation update to all GTHA residents, released at regular intervals, that would build trust and confidence with even the most skeptical motorists.

Nubia Baltodano (Caledon) agrees with a fellow panelist's remarks during a presentation of their work.

About the Residents' Reference Panel

The Residents' Reference Panel on the Regional Transportation Plan was an important exercise in local democracy that provided residents with the opportunity to help develop a regional transportation system that responds to the needs of all travellers in the Greater Toronto and Hamilton Area (GTHA). Thirty-six residents from across the region served on the Panel, which met over five days between March and May 2017.

CONTEXT

Between now and 2041, the GTHA is expected to grow by more than three million people. Managing this growth will require careful planning as well as significant investment in the region's road network, transit services, sidewalks, and cycling infrastructure.

In 2006, the provincial government created Metrolinx, an agency responsible for coordinating and integrating all modes of transportation in the GTHA. In 2008, Metrolinx released the first Regional Transportation Plan (RTP) titled *The Big Move*, which laid out a vision for transportation and infrastructure priorities over 25 years. These priorities now shape how the region develops and the transportation options and services available to residents.

Among other things, *The Big Move* led to the expansion of the PRESTO fare card system; increases in GO train service, including all-day, two-way service on the Lakeshore corridor; construction on the Eglinton Crosstown line; new Bus Rapid Transit service in York Region; the opening of the Union Pearson Express train; and the launch of the regional trip planning tool Triplinx.

Now, almost 10 years later, a review of *The Big Move* is underway. This review provides an opportunity to reconnect with stakeholders, bring the latest thinking and advances in transportation into a new RTP, and clarify policies while continuing to push ahead with previously approved projects. In preparation for drafting the next RTP, Metrolinx has reached out to municipalities and residents across the GTHA to ensure that the updated priorities in the plan will respond to the needs of all users of the transportation system.

MANDATE

The Residents' Reference Panel on the Regional Transportation Plan was a deliberative process intended to provide GTHA residents with an opportunity to become better informed, to actively participate in the review of the existing Regional Transportation Plan, and to advise Metrolinx on the development of the next RTP. The Panel was designed as an impartial, voluntary advisory body that

worked to represent all GTHA residents and exemplify high standards of transparency, accountability, and civic participation. The Panel was tasked by Metrolinx to learn about the region, its residents, and its future growth; consider the impacts of the ongoing expansion of the region's rapid transit system; and ultimately develop recommendations concerning public priorities for the the next 25 years of the regional transportation system.

MEMBERSHIP ON THE PANEL

The members of the Residents' Reference Panel on the Regional Transportation Plan were selected by civic lottery. In January 2017, 10,000 GTHA households were randomly mailed an invitation to volunteer. Over 280 people responded to the invitation, either volunteering to be a part of the Panel or requesting to be kept informed about the process. Elected municipal, provincial, and federal representatives as well as employees of Metrolinx and other public transit or urban planning agencies were not eligible to volunteer. From the pool of 165 eligible volunteers, 36 panelists were randomly selected to ensure gender parity and broadly represent the population and regions that make up the GTHA — namely, Durham, Halton, Hamilton, Peel, Toronto, and York. The panelists each generously agreed to spend nearly 40 hours serving on the Panel. While their transportation expenses were reimbursed, they did not receive an honorarium or any other compensation.

THE CHAIR AND PANEL TEAM

The Panel was chaired by Peter MacLeod, principal of public engagement firm MASS LBP. This firm won the contract to lead the Panel process following a public tender and is internationally recognized for its work leading deliberative policy processes. The chair was responsible for developing the Panel program and process, leading the facilitation team, and serving as the spokesperson for the Panel. He did not have a vote and was expected to remain neutral throughout the Panel's deliberations.

PROCESS

Members of the Panel met five times between March and May 2017, including once for a tour of transportation facilities important to the regional network. Over the course of these five meetings, the Panel heard from a range of transportation experts about the opportunities and challenges related to transportation planning in the GTHA. The panelists drafted a report outlining their recommendations in their own words, which will be presented to the Board of Directors of Metrolinx. This report will help Metrolinx draft the next Regional Transportation Plan. The draft RTP will then be presented during a series of roundtable meetings hosted in communities across the GTHA this autumn. After incorporating feedback from these community roundtable meetings and other consultations with partners and planners from the GTHA municipalities, the draft final RTP will be released in late 2017, followed by an implementation plan in 2018/2019.

PRESENTERS AND GUESTS

The Panel benefited from numerous presentations, which represented a range of perspectives and interests. Generally, these presentations lasted approximately 15 minutes and were followed by vigorous question-and-answer sessions. Many presenters participated in thematic discussions with their counterparts from similar organizations.

Welcome and Introduction	Leslie Woo	Chief Planning Officer, Metrolinx
Understanding the Greater Toronto and Hamilton Area	Pamela Robinson	Associate Dean, Graduate Studies and Special Projects, Faculty of Community Services; Associate Professor, School of Urban and Regional Planning, Ryerson University
Metrolinx: Past, Present, Future	Lisa Salsberg	Director (Acting), Regional Planning, Metrolinx
The *Growth Plan for the Greater Golden Horseshoe*: Planning for Ontario's Future	Larry Clay	Assistant Deputy Minister of Ontario Growth Secretariat, Ministry of Municipal Affairs and Housing
The Next Regional Transportation Plan	Lisa Salsberg	Director (Acting), Regional Planning, Metrolinx
	Peter Paz	Manager, Regional Partnerships, Planning and Policy, Metrolinx
Civic Perspectives Panel	Richard Joy	Executive Director, Urban Land Institute Toronto
	Gillian Smith	Chief Marketing Officer, Toronto Region Board of Trade
Planners' Perspectives Panel	James Perttula	Director, Transit and Transportation Planning, City Planning Division, City of Toronto
	Jason Thorne	General Manager, Planning and Economic Development, City of Hamilton
	Mary-Frances Turner	President, York Region Transit Corporation
	Leslie Woo	Chief Planning Officer, Metrolinx
Scenario Planning	Daniel Haufschild	Vice President, Urban Mobility, WSP
GTHA Traveller Personas	Matthew Denomme *and* Jennifer Yellin	Senior Vice Presidents, Northstar
Mobility Perspectives Panel	Teresa Di Felice	Director, Government & Community Relations, CAA South Central Ontario
	Nancy Smith Lea	Director, Toronto Centre for Active Transportation (TCAT), Clean Air Partnership
	Christopher Norris	Manager, Customer Service Planning, Durham Region Transit Commission
Fare Integration	Chris Spiering	Senior Advisor, Planning & Policy, Metrolinx
Wayfinding	Helen Kerr *and* Nigel Smith	Co-Presidents, KerrSmith Design
Appreciation and Next Steps	Judy Pfeifer	Chief Communications & Public Affairs Officer, Metrolinx

Charlene Gallardo (Toronto) works with fellow panelists to refine their recommendations.

Meet the Panelists

Adriano Marcoccia, Toronto
I grew up in North York and have called the GTHA home for the past 27 years. I have immersed myself in public policy issues with the hope of attending law school. I am currently working in the transportation industry and joined the Panel to expand my knowledge of transportation systems. I would like to contribute towards improving the future of regional and local transportation for residents all across the GTHA.

Aldo Di Felice, Toronto
I am a foreign-born Canadian and have lived in Toronto for over 50 years. Over that time, certain policies have fuelled my interest in transportation issues. I believe there is potential for improvement, particularly in regard to the downtown-focused thinking of Toronto City Council, and the over 40-year delay to expand the TTC subway north beyond Finch station. I joined the Panel to learn more about how transit works in Toronto and the future developments planned across the GTHA.

An Kuye, Mississauga
I grew up in Thunder Bay and moved to Toronto when I got married. Since then, I have had three beautiful and talented children and two cherished grandsons. After taking an early retirement from the Ministry of Education, I have focused on my hobbies of painting, gardening, and travelling. I promote public transit in my community and am pleased to see how much it has improved over the years. By joining the Panel, I hope to help expand and improve the travel experience for my family and our community.

Annette Wagner, Toronto
I have experienced the full spectrum of daily commuting: driving for one to two hours, taking the GO train, riding the subway and connecting buses, and walking. Since I use public transportation frequently, it is a privilege to get a behind-the-scenes look at transportation planning. It has been a pleasure working with the team at Metrolinx, and I hope that my input reflects the needs of those in my community.

Buelah Adams-Farrell, Oakville
I live in Oakville, Ontario, which is about a 40-minute GO train ride from downtown Toronto. I've worked in the human-rights field in various capacities for over 40 years and currently work as a mediator with a federal government agency. I joined the Panel because I wanted to contribute my ideas and be part of a productive conversation on how we can improve the Regional Transportation Plan.

Charlene Gallardo, Toronto
I am a 21-year-old student at York University studying economics and French with the hope of working within government. I immigrated to Canada from the Philippines at the age of five and have lived in Scarborough ever since. I commute to and from school every day and rely on public transportation. I hope that by joining this Panel, I can use my voice to not only represent the seven million people here today but also those that will live here in the future.

Courtney Winter, Toronto
I grew up in Toronto and recently moved back to the city after completing my undergraduate degree in urban planning at the University of Waterloo. Over the past five years, various jobs have taken me across the GTHA, and I have often had to rely on public transit. Being part of this Panel allowed me to speak up on behalf of those who, like myself, rely on transit every day. I truly believe improvements to our transportation infrastructure are long overdue.

Danielle Lenarcic Biss, Toronto

I was born and raised in Toronto though I have also lived in Ottawa and the small town of Sackville, New Brunswick. Currently, I am back in Toronto working as a researcher at the Higher Education Quality Council of Ontario. I joined the Panel to be more civically engaged and to help shape the GTHA's transportation system that I (and my children!) will inherit.

Darren Perera, Toronto

I have always lived in the Upper Beaches area of Toronto. Transportation is essential to me because I am constantly running between school, work, church, sports activities, and jam sessions with my friends around the city. Having completed three years studying business at York University, I am also interested in helping to plan and find new revenue streams for the transit systems in and around my city.

Fabrizio Calvise, Hamilton

I was born in the City of Hamilton and am still a resident there today. After high school, I attended Centennial College, where I completed a diploma in recreation and leisure services, and Brock University, where I completed a BA in recreation and leisure studies. For the past 18 years, I have worked for the Hamilton Catholic School Board as an educational assistant. Living across the GTHA has made me interested in transit integration, and I wanted to learn more about this through my participation in the Panel.

Heather Pierce, Pickering

I grew up in Niagara Falls but moved to Pickering 33 years ago after living for some time in the United States. As a smaller community just on the edge of Toronto, Pickering provides easy access to the city. I have worked in IT my entire career, which has kept me interested in change and innovation. This interest in innovation led me to join the Panel and contribute to current and future plans for transportation and growth in the GTHA.

Helen Murtagh, Toronto

I am a 72-year-old, fifth-generation Torontonian and I have had the privilege of watching Toronto grow, change, and diversify to become the vibrant place that it is today. I spent my entire working career in the insurance and banking industries downtown, so I am a veteran of streetcars, subways, and the GO transit system. Now that I am retired, my car is my preferred method of getting around, though I am careful to stay off the roads during rush hour. The commuters don't need me adding to the congestion! Participating in this Panel was important to me because Toronto is my home and I love it. Learning about the plans and ideas in the works reassures me that the region is in good hands and will continue to be the best place on the planet to live and work.

Ingrid Allan, Oshawa

I grew up in Whitby and currently live in Oshawa. I recently changed jobs, which has meant commuting to downtown Toronto by GO train. Public transit is a huge consideration for those of us who find work outside of the community in which we live, so when the opportunity arose to have some input on the transportation plan for the GTHA, I volunteered immediately. I was also curious about plans for the Lakeshore East service that I use. The plus side to my daily commute on the GO train was meeting my current husband a few years ago — he even managed to find a way to propose on the train!

Janice MacInnis, Toronto

I am a strategic thinker who looks to optimize results by improving planning and execution today to find opportunities for tomorrow. I have worked at Procter & Gamble, Coca-Cola, and Novartis, initially in operations and logistics and now in marketing and sales. This unique perspective motivates me to collaborate to create plans that work for everyone. Participating on the Panel offered me the opportunity to learn more about the public sector. I also wanted to work with new friends, offer my diverse experience to improve productivity for businesses, and enhance the quality of life for individuals in Ontario.

Jignesh Patel, Mississauga

I grew up in India and have lived in Peel Region for the last 13 years. For the last 14 years, I have worked as a business consultant. As a consultant, I enjoy analyzing data and coming up with business process recommendations. I joined the Panel to give something back to the community and to be a part of the GTHA's ongoing development journey.

Jove Chan, Markham

I grew up in Hong Kong and immigrated to Toronto in 1997. In 2000, my family and I settled in Thornhill while I worked as a property manager in Mississauga. As a property manager, I have had the opportunity to identify and incorporate the needs of individuals into large-scale projects. As Metrolinx plans to develop the future of transportation over the next 25 years, I want to have a say with the long-term interests and quality of life of my family in mind.

Kelley Prendergast, Dundas

I grew up in Dundas, Ontario, and moved to Toronto eight years ago to study at the University of Toronto. I recently completed coursework towards a Master of Public Policy degree with a focus on urban and environmental policy. Not surprisingly, I am fascinated by the role of transportation policy and infrastructure. I volunteered for this Panel so that I could continue to learn about these policies and about public perceptions of transportation in general.

Koober Nuckchedee, Pickering

I have always been an active listener and engaged in everything I do. In various management roles during my career, I have enjoyed recognizing others' abilities and helping them to succeed. I lived and worked for many years in Ottawa, where I commuted using the OC Transpo bus. A few years ago, I moved to Pickering and now take the GO train often, which I enjoy for its smooth ride and great customer service. I joined the Panel hoping to make suggestions for how to improve transit rides within the GTHA.

Kristy Kastelic, Hamilton

I grew up in Hamilton and recently graduated from Western University with a B.Sc. in geographic information science. After graduation, I lived and worked in Switzerland, where I enjoyed daily use of one of the most efficient transportation systems in the world. I joined the Panel because I am passionate about transportation and believe that small changes to a transit system can lead to increased efficiencies for all users.

Manav Bajaj, Markham

I have lived in Markham, "Canada's High-Tech Capital," for 14 years. I am an engineer by profession, but I am currently working in the automotive industry as a program manager. I joined this Panel to gain insight into the relationships among the various organizations involved in *The Big Move* and in transportation planning more generally, a topic I am deeply interested in. Personally, I strive to share out-of-the-box ideas and provide solutions to improve residents' overall quality of life.

Marianne Clark, Toronto

I am a true-blue senior Torontonian, and I have lived in Toronto all my life. I taught business and cooperative education at the secondary-school level for the Peel Board of Education. From both a driver's and a pedestrian's point of view, I have seen the traffic get worse over the years. I am interested in learning about the different ways Toronto can get traffic moving again so that it cuts down on the frustration that cyclists, drivers, transit riders, and pedestrians all experience.

Melanie Liu, Toronto

I was born and raised in Scarborough, where I continue to reside. I am an avid sports fan, so in my spare time you can catch me at a live sporting event or at a restaurant watching the game.

I currently work in Yorkville, which is typically a commute (barring any delays) of around an hour, split equally by TTC bus and subway. I joined this Residents' Reference Panel out of curiosity, but I also relished the opportunity to provide constructive input to help shape the next Regional Transportation Plan.

Panelists introduce themselves and share their motivations for joining the Panel.


Danielle
Savka
An

Michael Cochrane, Toronto

I have lived in the GTHA, in the same house in Lawrence Park, for the last 40 years. I am currently retired, but I used to work in finance and so would drive to downtown Toronto. Now that I am retired, I always take public transportation, whether the subway or the bus. It is easy for me to say that I joined this Panel because I have the time, but I am also very interested in the subject matter. When I received the notice in the mail, I knew this was my opportunity to learn more about public transportation and to help assist with the region's future growth.

Michael McInnis, Burlington

I was born, raised, and educated on the West Coast. I graduated from the University of British Columbia with a B.Comm. (transportation and utilities) and an MBA from the University of California, Berkeley. Between my studies, I spent two-and-a-half years working as an economist with CNR's R&D department in Montreal. After completing my MBA in California, I entered the brewing industry as a brand manager with Carling Breweries in Calgary and then Toronto. After 20 years with Labatt, in different cities, I left to become Vice President of Sales and Marketing for Canada Malting Limited in Etobicoke. I then shifted into semi-retirement as a consultant to Sleeman until I became their Director of Purchasing. I have been officially retired since 2007, and glad I can spend my time learning about transportation planning in the GTHA.

Nubia Baltodano, Caledon

I grew up in Etobicoke, lived in Mississauga as a teenager, and now live in Caledon with my family. I am a recent graduate in human resources management and I am commencing my professional career. I volunteered for the Panel because I rely on public transit to get to the places I need to be, and currently the closest bus stop to my house is a 45-minute walk away. I wanted to learn why this was the case, and how I could possibly influence change through our recommendations.

Paul Bozzo, Toronto

I am from Hamilton, but I moved to Toronto nine years ago and have lived here ever since. I work as a mediator for the Ontario Labour Relations Board and teach negotiation at Osgoode Hall Law School. I've done it all — from commuting an hour on the GO train and subway to walking to work — and I'm passionate about public policy issues in Ontario. I'm thrilled to contribute my ideas to the next Regional Transportation Plan.

Perci McFarlane, Toronto

I was born in Cochrane, Ontario, and lived there until my family moved "down south" to Toronto, where I grew up. I later moved to *la belle province*, where I studied and then worked as a translator for 30 years, before returning to Toronto for family reasons. What I especially appreciate about Toronto is that its dense neighbourhoods allow it to be walk-friendly. I find travelling on foot to local businesses and services to be very practical and satisfying, and I wish that more GTHA residents could benefit from this type of lifestyle. By joining the Panel, I hoped to learn about the challenges faced by decision-makers when attempting to discourage car use and promote walking and cycling.

Ramesh Sharma, Richmond Hill

I have been a resident of Richmond Hill for over 30 years. I have also been a public servant of the Province of Ontario for over 23 years, working at the Ministry of Transportation, the Management Board Secretariat, and the Financial Services Commission. While in these different roles, I have relied on various transit systems, including the YRT, TTC, and GO. I volunteered for the Panel because I have a keen interest in learning how taxpayers' funds are used. Given that transit investments require extremely high capital expenditures, I believe we should all strive for a system that is reliable and economical. It should also provide taxpayers with value for money and reflect public sector commitments to transparency and accountability.

Randall Davis, Milton

I have lived in Milton for the past seven years and currently work in eastern Mississauga as a Director of Project Management Office and Business Solutions. My commute to work takes 35 minutes by personal car. The alternative would be three bus changes, three fares, and crossing one city boundary, which would have a total duration of two hours. Though I relied heavily on GO transit while attending school, and enjoyed the convenience, the schedules and fares now dictate my transportation choices. In my downtime, I enjoy travelling to new places, learning about the environment, and listening to smooth jazz. On weekends, I usually travel to downtown Toronto by GO bus or train. I believe that Ontario is a great place to live with very progressive and bold policies. I saw participating in the Panel as a great privilege. It was an opportunity to learn about Metrolinx, completed and current transportation projects, and how customer needs analyses help drive regional transportation planning. I believe that efficient transportation can support many economic sectors, improve living standards, and help protect the environment.

Ranjeet Bhangu, Brampton

Living in Peel Region, I use different modes of transportation to get around. Though I am a long-time resident of Peel Region, I used to live in downtown Toronto and commute to Scarborough, so I have had many different transportation experiences. As a frequent transit user with many suggestions, I joined this Panel to try to be a proactive voice for change.

Richard Wise, Richmond Hill

I have been a resident of Toronto and the GTHA for almost nine decades. I studied at the University of Toronto School of Architecture (now the John H. Daniels Faculty of Architecture) and am currently a partner at Zeidler Partnership Architects. I have had a lifelong interest in Toronto and the GTHA, and the invitation to join the Panel seemed like an opportunity for me to learn more about transportation in the region. I also joined the Panel so that I could lend my professional planning and building experience to discussions about the latest regional transportation planning projects.

Saishang Jiang, Stouffville

I immigrated to Canada in 2009. Since then, I have studied and worked in many cities throughout Ontario. Currently, I live in Stouffville with my family and commute daily to Markham for work. I usually drive to work. When I need to travel to downtown Toronto, I take the GO train so I don't have to worry about traffic and parking. I was interested in joining the Panel because I believe that transit can be more convenient and accessible to those in more rural areas.

Savka Stojanoska, Mississauga

I grew up in the former Yugoslavia and immigrated to Canada with my two children and husband in 2004. Since then, we have lived in different parts of the GTHA and we have used different modes of transportation, including public transit, bicycles, and our own cars. From my experience, it was much easier and more convenient to travel by public transit in Europe (including the former Yugoslavia) than it is in Canada. I have always wondered about what can be done to improve public transit in the GTHA. When the opportunity to participate in the Residents' Reference Panel arrived in the mail, I was happy to join in. I have learned that a lot of work has been done to improve all modes of transportation, including public transit. However, there is still a lot of room for improvement, especially regarding 24/7 connectivity among different municipalities and affordable, integrated fares.

Stanley Ngwaba, Mississauga

I am a self-employed Project Manager and Business Analyst with extensive experience in banking, finance, and the public sector. I have managed complex projects that align people, process, and technology with business strategies. I have been happily married for 21 years and I am a proud father of four children. When I am not reading or discussing politics, I love going on

road trips. My family and I have seen a great deal of the stunning Canadian landscape, largely by rail and car. I volunteered to be a panelist to meet the 35 other panelists, to listen to and understand their perspectives on mass transit, and to learn from their experiences. I am also passionate about the behind-the-scenes operations that ensure efficiency for massive organizations such as Metrolinx, so listening to the operators share their stories was both revealing and educational, and, overall, it was a very rewarding experience.

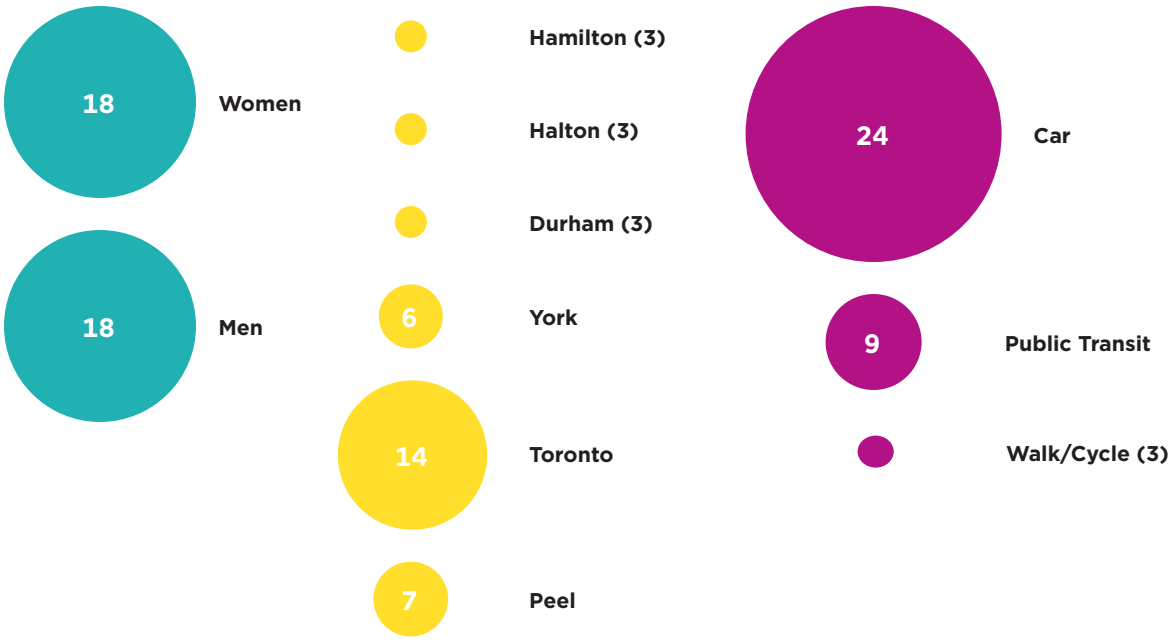
Vince Cerullo, Mississauga

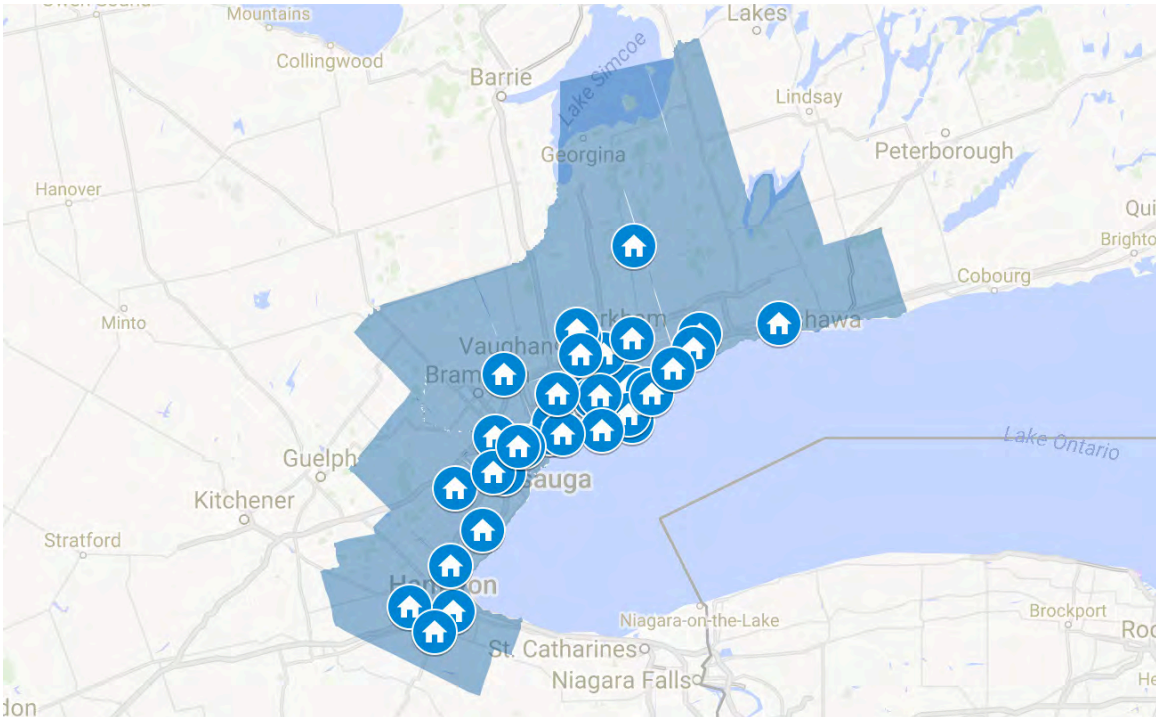
I was born, raised, and went to school in Toronto. Currently, I live with my wife and two daughters in Mississauga, though I work in downtown Toronto as an analyst for a major insurance company. My daily commute involves driving to the Kipling subway station, parking there, and taking the Bloor-Danforth subway to the city core. I joined the Panel to do my part to improve the transportation system in the GTHA.

Zackary Fridlyand, Vaughan

I grew up in North York and currently live in Vaughan. I used to live in Ottawa for school, where I studied policy at Carleton University (Go Ravens!). Living and working in the 905, Toronto, and Ottawa may have given me an intimate understanding of the challenges of regional transit, but it has also revealed just how quickly improvements can be made. I am always looking for ways to get involved in the community.

Panel Snapshot






WELCOME
Residents' Reference Panel on the Regional Transportation Plan
METROLINX


BIENVENUE
Le groupe consultatif de résidents portant sur le plan de transport régional
METROLINX

Ingrid Allan (Oshawa) provides feedback to a fellow panelist during a plenary discussion.

Panel Proceedings

MEETING 1: MARCH 11, 2017

On Saturday, March 11, the 36 members of the Residents' Reference Panel on the Regional Transportation Plan gathered for the first time. The chair of the Panel, Peter MacLeod, welcomed everyone and invited the Chief Planning Officer of Metrolinx, Leslie Woo, to formally greet the panelists. Woo thanked the panelists for volunteering their time, and explained the RTP review process and why she looked forward to receiving the Panel's report.

Woo explained how the first RTP, *The Big Move*, had focused on increasing GO train service, building the Eglinton Crosstown LRT line, launching new Bus Rapid Transit services, opening the Union Pearson Express train, and expanding the PRESTO fare system. Now ten years later, she shared that it is time to take stock, review the RTP's progress and identify new priorities.

Next, the chair clarified the Panel's mandate: "to learn about the region, its residents, and future growth; to consider the impact of the largest rapid transit expansion in the region's history currently underway; and ultimately to develop recommendations concerning transportation priorities for the next 25 years, in order to help advise Metrolinx on the development of the next Regional Transportation Plan."

MacLeod explained why panelists had to think beyond their own experience and work to understand the needs and priorities of their neighbours and communities. As a group, they were responsible for representing the different perspectives and concerns of all GTHA residents.

Members then introduced themselves and explained the reasons why they had volunteered to serve on the Panel. Many were motivated by a sense of civic duty. With so many projects in discussion or under development, others wanted to learn about the process of transportation planning. Still others explained they were simply keen to meet new people and hoped they could give something back to their community.

After a short break, the Panel began its learning phase with a presentation by Pamela Robinson, an Associate Professor in the School of Urban and Regional Planning and Associate Dean at Ryerson University.

Robinson shared and explained data that demonstrated the importance of thinking regionally. She explained that, while downtown Toronto has the highest concentration of jobs in the country, there are a handful of other very dense clusters of economic activity in the region, which span across multiple municipalities. Examples include the employment zone around Pearson Airport, Vaughan Metropolitan Centre, and Richmond Hill-Markham, as well as neighbouring regions outside

the GTHA in Kitchener, Waterloo, and Guelph. Robinson also highlighted some important differences in how municipalities develop land. For example, new housing developments in the City of Toronto are primarily dense, multi-story dwellings and towers. Elsewhere in the GTHA, single and semi-detached housing still predominates. Robinson encouraged the Panel to consider these trends in employment and housing, and the impact of transportation options on residents' quality of life.

Next, Lisa Salsberg, Acting Director of Regional Planning at Metrolinx, introduced regional transportation planning and Metrolinx's role, beginning with the history of GO Transit, which was initially a pilot project during Canada's Centennial in 1967. She explained how the Province of Ontario created Metrolinx in 2006 to be the regional transportation agency for the GTHA, with a mandate to plan, build, operate and connect all aspects of the regional transportation system. The agency also absorbed existing GO Transit operations. Salsberg then reviewed the current regional transportation system, including how Metrolinx relies on nine other transit agencies to plan and deliver services.

She outlined some useful statistics that the Panel would often return to, including:

- One in every four trips made in the GTHA crosses a regional boundary;
- There are 3.46 million cars owned in the GTHA;
- The GTHA welcomes 110,000 new residents every year;
- 79 percent of trips made in the GTHA are made by car; and
- Over $30 billion is being invested in the rapid transit network, which will result in 23 new stations, 74 km of new Light Rail Transit (LRT) and 68 km of new Bus Rapid Transit (BRT) service, among other improvements.

After lunch, the Panel heard about the provincial policy context for the RTP from Larry Clay, an Assistant Deputy Minister with the Ontario Growth Secretariat in the Ministry of Municipal Affairs and Housing. Clay reiterated some of Robinson's points about the need to plan from a regional perspective. He also spoke about how the GTHA is growing and continues to draw the highest proportion of new immigrants to Canada. Clay then focused on two pieces of provincial legislation that guide land-use decisions in the context of growth. First, he presented the *Greenbelt Plan*, which protects environmentally sensitive land and farmlands from new urban developments in an area encircling the GTHA. Second, he presented the *Growth Plan for the Greater Golden Horseshoe*, which lays out targets for the location and scale of new urban developments. The *Growth Plan* directs growth to certain areas in order to grow denser, complete communities, preserve existing employment lands, and revitalize downtown areas. The Plan also requires minimum density targets for residential and commercial development around major transit stations.

The Panel then spent an hour in small groups drafting two lists: a list of questions about transportation planning in the GTHA that they hoped to have answered over the course of the Panel process, and a list of things they would most like to change about local or regional transportation. These lists were shared in plenary and helped panelists understand their learning objectives and the variety of transportation issues facing residents across the region.

Panelists spent the remaining hour of the first day discussing what they valued in a regional transportation system, again in small groups. They would continue this discussion in their second meeting.

Before adjourning, the chair gave panelists one piece of homework: for each panelist to talk to three friends, neighbours and colleagues about how they use transportation in their daily lives, and to arrive ready to share some of their conversations at the next meeting.

MEETING 2: MARCH 25, 2017

To begin the Panel's second meeting, the chair welcomed everyone back and invited panelists to share highlights of conversations they had with their friends, neighbours, and colleagues during the previous two weeks. The chair then presented highlights from the previous meeting's guest presentations.

Then Lisa Salsberg returned to the Panel, this time joined by Peter Paz, Manager of Regional Partnerships, Planning and Policy at Metrolinx. They spoke in greater detail about the existing 25-year RTP, titled *The Big Move*, and Metrolinx's mandate to evaluate and update the RTP every 10 years in tandem with the review of Ontario's *Growth Plan for the Greater Golden Horseshoe*. Salsberg discussed ongoing technical work being done to forecast the needs of the GTHA over the next 25 years. She shared data regarding the expected increases in the general and senior populations, as well as in employment and residential density anticipated primarily in Halton, Durham, and York Regions. In addition, Salsberg mentioned that they were consulting with transportation and land-use planners in each of the GTHA municipalities as part of the RTP review.

Salsberg and Paz shared their efforts to simplify the vision, goals, and objectives from *The Big Move*, distilling the original 13 goals to 6 as outlined in the *Discussion Paper for the next Regional Transportation Plan*. The Panel would revisit these six goals in their future meetings.

Next, the Panel heard from the first of three "guest perspective panels" — a "Civic Perspectives Panel" featuring Richard Joy, Executive Director of the Urban Land Institute Toronto, and Gillian Smith, Chief Marketing Officer of the Toronto Region Board of Trade. Each presenter delivered five minutes of remarks before together fielding nearly fifty minutes of questions from the Panel. Joy spoke primarily about the relationship between land use and the location of transportation options, while Smith reminded the Panel to consider the movement of goods in addition to passengers. They both agreed that there is good progress being made across the system, but emphasized that more is needed.

After a break, the Panel heard from a "Planners Perspectives' Panel."
Leslie Woo returned to participate in this session, along with three planners from around the region: Mary-Frances Turner, President of the York Region Transit Corporation; Jason Thorne, General Manager of Planning and Economic Devel

opment at the City of Hamilton; and James Perttula, Director of Transit and Transportation Planning in the City Planning Division at the City of Toronto.

The planners shared their perspectives on the strengths and weaknesses of regional transportation planning over the past decade, as well as the major needs and principles that guide their respective approaches to transportation planning in their own jurisdictions. They shared examples of their efforts to improve the frequency and efficiency of transit services, and to align new residential and commercial growth with transportation infrastructure. They spoke about efforts to better integrate public transit services across municipal boundaries, acknowledging that this often relies on the initiative of individual planners. During the long question-and-answer session that followed, the Panel asked the planners what they hoped to accomplish in the short term and what they hoped to see in the next RTP.

After lunch, the Panel heard from two consultant teams working with Metrolinx to help them prepare for the next RTP.

First, Daniel Haufschild, Vice President of Urban Mobility at WSP, presented his team's work around scenario planning — a method that considers a wide range of trends that could affect the GTHA, in order to develop more resilient plans. He identified a number of potential scenarios including high and low population growth in core areas, the emergence of new technologies, potential changes in commuter and consumer behaviour, and extreme climate change. He also discussed some of the potential impacts of these scenarios on future mobility, however likely or unlikely each scenario might be.

Second, the Panel heard from Matthew Denomme and Jennifer Yellin from Northstar about their research into the "personas" of typical travellers in the GTHA. These personas are intended to be helpful when thinking about the needs and motivations of different commuters. The Panel considered their own needs in relation to these personas, noting that most felt aligned with more than one persona.

After a break, the Panel spent the remainder of the afternoon revisiting the long list of values developed during the previous meeting. First they narrowed this long list to 13 values they believed were most important. After further discussion, the Panel agreed on seven core values: Convenience; Safety; Affordability and Cost-Effectiveness; Reliability and Dependability; Environmental Sustainability; Comfort and Good Design; and Supportive of Economic Growth and Long-Term Planning.

Panelists split into seven small working groups to define each of these values. Each group shared their work with the rest, and received feedback that helped them refine their value statements. In plenary they decided to combine the values of *Convenience* and *Reliability and Dependability* into simply *Convenience and Reliability*. Panelists returned to their small working groups to continue refining these value statements before one final round of feedback.

MEETING 3: APRIL 8, 2017

On April 8, the Panel reconvened for a half-day tour of some facilities that are important to the regional transportation system. As well as providing further detail about current projects, the tour gave the Panel an opportunity to explore issues related to the current and future growth of the GTHA.

The Panel met in the Great Hall of Toronto's Union Station, where they began the day with a guided tour of the Union Station Revitalization project. They saw the current state of construction scheduled to be completed in 2018, including improvements to signalling systems and the trainshed roof. They also explored the new retail areas and York GO Concourse.

The Panel discussed how Union Station could facilitate not just transfers, but also inter-modal connections through infrastructure such as bicycle parking. They were interested in how travellers currently use these facilities as they move through the station and downtown Toronto more generally.

The Panel also considered the role of Union Station in facilitating the introduction of GO Regional Express Rail service across the GTHA. Several panelists remarked that despite the increased capacity at Union Station, regional growth would require other stations to make complementary enhancements. The Panel began to discuss how the inclusion of retail and other services at Union Station could be a model for other key stations, and how these stations could become more integrated into residents' daily lives.

The tour then continued at the GO Transit Control Centre. This gave the Panel an opportunity to see some of the software used to coordinate vehicle routes and schedules. Panelists also spoke to the Control Centre staff, and got a greater sense of how staff mitigate issues in real time by relying on a range of contractors and suppliers.

Next, the Panel took a bus from the Union GO Bus Terminal to the Streetsville GO Bus Depot in Mississauga, where they toured the maintenance facility. The bus ride gave the Panel a chance to reflect on the morning. In particular, they discussed the issues of governance and ownership of transportation facilities. The Control Centre relies on so many different suppliers and contractors, each of whom plays a role in solving problems that arise. Similarly, the panelists learned that Union Station is used by different organizations, including the City of Toronto, TTC, and GO Transit. These entities work together but own and manage different parts of the actual building infrastructure.

At the Mississauga Streetsville GO Bus Depot, the Panel learned what was involved in procuring new buses, including the rigorous procedure new buses undergo to ensure they are road-ready. Then, the Panel toured the maintenance hall and learned about maintenance schedules, procedures, and costs. Many panelists were surprised to learn that buses are typically refurbished after only five years and retired after ten years.

After a quick ride through the bus wash facility, the Panel had some time over lunch to explore and suggest improvements to the regional trip-planning app, Triplinx.

The Panel returned to Union Station via the Union Pearson Express. While on the train, they discussed its role as both an airport service and a regional connector. Again, the ride provided an opportunity to reflect on the day. Many panelists commented on the scale and scope of the operations they had toured, noting the complexity of public transit. They also felt both tours clarified some of the major costs to providing mass transit, namely the vehicles and the stations. This prompted a discussion about the relative cost and ridership of buses and trains and the continued role of bus service in regional areas.

MEETING 4: APRIL 29, 2017

The chair began the meeting with a short recap of the three previous sessions. He invited panelists to share some reflections and key learnings from the tour. Several panelists reiterated that they were surprised by the complex governance structure and the general scale of the operations.

The Panel then heard from three guests who formed a "Mobility Perspectives Panel": Nancy Smith Lea, Director of the Toronto Centre for Active Transportation (TCAT), Teresa Di Felice, Director of Government & Community Relations at CAA South Central Ontario, and Christopher Norris, Manager of Customer Service Planning at the Durham Region Transit Commission. Though the guest presenters brought three different perspectives to the discussion, they agreed the RTP should recognize that many residents rely on multiple modes of transportation and often make inter-modal connections.

Next, the panelists spent an hour drafting a 'to-do list' for Metrolinx. The chair reminded the Panel of the six goals proposed in the *Discussion Paper for the next Regional Transportation Plan*: Connectivity; Convenience and Integration; A Well-Planned Region; Exemplary Environmental Footprint; Health, Comfort, and Safety; Prosperity and Competitiveness; and Equity and Accessibility.

At small tables, panelists suggested actions and categorized them according to the six goals, noting any actions that didn't fit well in any of the six. They also identified which actions should be taken in the short term, i.e. in the next five years, and those that were intended for the long term.

Then, Chris Spiering, a Senior Advisor in Planning & Policy at Metrolinx, presented about opportunities for better fare integration across the regional transportation system. He noted that "creating an integrated travel experience in the region through fare integration" was specifically mentioned in the Minister of Transportation's September 2016 mandate letter to Metrolinx. Spiering reminded the Panel that each transit service provider in the GTHA sets its own fares and rules, resulting in eleven different ways that fares are calculated. While some providers already coordinate their fares through "transfer rules," there are notable exceptions, such as the transfer between GO and TTC services. Spiering then presented some of

the different fare structure concepts that could be applied in the GTHA, including: modifying the existing system of "flat fares" by improving transfer rules across municipal boundaries; introducing fare "zones;" implementing a "fare by distance" system which charges travellers an amount directly related to distance travelled; or developing a hybrid system that employs fare-by-distance concepts on higher-order transit and flat fares on lower-order transit such as buses.

The Panel asked several questions about the current fare system and the potential benefits and drawbacks of each alternative system, including the ease of implementation and the impacts on different types of trips.

After a lunch break, the Panel discussed the potential approaches to fare integration by answering the following three questions:

1. Broadly speaking, how satisfied are you with how fares are collected on the transit system you use as well as across the region?
2. How would you improve how fares are collected on the transit system you use as well as across the region?
3. Which approach to fare integration would you endorse? Why?

After some discussion in small groups, panelists shared their responses and discussed their preferred fare system. A large majority of the panelists endorsed a fare-by-distance system as their preferred choice. The chair invited others to discuss their preferred fare structure and primary considerations. Panelists generally agreed that the current system of flat fares penalizes short trips and creates unnecessary barriers to integration at municipal borders. They agreed that the use of fare zones could lead to boundaries equally as arbitrary as the existing municipal and regional boundaries. The Panel did not endorse a hybrid system because they did not want to encourage the use of lower-order transit through pricing. Specifically, panelists were concerned that a two-tier system of fares might divide residents into different classes: those who can afford higher-priced services and those who cannot.

After further deliberation, the Panel supported a fare-by-distance fare structure, with three conditions:

- A low-cost flat fare within a "virtual zone" for a certain radius from the start of every trip;
- Discounts for trips made during off-peak hours; and
- Subsidies for low-income residents, students, seniors, and families travelling together, applied discreetly through the PRESTO card.

The Panel spent the remainder of the day continuing to work on their to-do lists for Metrolinx. Panelists were randomly organized into six groups, with each group focused on developing actions under one of the six goals. They considered the full list of proposed actions and worked towards a short-list of actions for Metrolinx as well as its partners to pursue. These short-lists were

Annette Wagner (Toronto) and Michael McInnis (Burlington) discuss recommendations in their working group.

organized in two categories: actions to pursue in the next five years, and actions to pursue in the long term. The Panel as a whole then heard from each working group and provided feedback on the to-do lists before adjourning for the day.

MEETING 5: MAY 13, 2017

The Panel met for its final meeting two weeks after drafting their tentative to-do lists for the Regional Transportation Plan. The chair asked panelists to sit in the same groups from the previous meeting so that they could return to developing the same lists together.

The chair then explained that in the time since the previous meeting, the facilitators had typed up each tables' to-do lists and made some suggestions. In a few instances, they noticed actions that were repeated at multiple tables, and made suggestions about which goal these actions should fit under. The facilitators also suggested that many actions centred on public education, and that these actions could be included under a new, seventh goal. After some discussion in plenary, panelists largely agreed this was an important seventh goal to add, and recommended the goal be titled Public Awareness and Communication.

Panelists then received printed copies of all the tables' to-do lists, including the list for the new seventh goal. They spent the next hour reviewing, discussing, and commenting in detail on all seven to-do lists. Panelists considered whether these items would or would not serve the needs of the GTHA as a whole, whether they needed to be clearer, and what wording would help improve them.

After a short break, each table collected all comments about the to-do list they were responsible for developing and began considering and incorporating the feedback the rest of the panel had provided. Some panelists volunteered to join a new, seventh group to work on refining the actions under the goal of Public Awareness and Communications.

Over the next hour and a half, the groups continued refining their to-do-lists under each goal. During this time, the chair asked each group to also draft text that would help explain the rationale behind their recommendations. The working groups each wrote statements explaining the current experiences of residents, as well as the state of the regional transportation system, in relation to each goal. These statements also identified the potential outcomes of taking the recommended actions.

After lunch, the Panel reconvened to listen to each group read their full set of prioritized recommendations and rationale. After each group read out their recommendations and rationale, the Panel asked clarifying questions, discussed amongst themselves, and provided a final round of feedback to each working group. This back-and-forth editing process continued for the next hour and a half to help ensure that all panelists were comfortable with the recommendations, and that key ideas were preserved during the editing process.

One recommended action sparked a long discussion amongst panelists. Under the goal of an Exemplary Environmental Footprint, panelists discussed at length

whether to recommend both incentives and disincentives that could encourage the use of active and public transportation. The chair asked the Panel to spend 20 minutes specifically discussing this issue.

The Panel recognized the eventual need for disincentives to meet the growing demand in the region, but they suggested that public transit and active transportation modes were not sufficiently available or reliable for them to support disincentives such as fees or tolls. However, the Panel did generally welcome targeted pilots to demonstrate and evaluate the effectiveness of disincentive tools such as High-Occupancy Toll (HOT) lanes.

The working groups continued work on their list of recommendations. During this time, the chair asked two volunteers to draft a preamble for the report that would help future readers understand the Panel and its work. This final round of report writing continued up until 3 p.m.

With the draft of the report complete and a sense of accomplishment building in the room, the Panel enjoyed a short distraction from the core work of their mandate. Helen Kerr and Nigel Smith from KerrSmith Design gave the Panel a sneak peek at some of the preliminary designs for a regional transit wayfinding strategy and a simple, unifying symbol for the regional transportation system. Sharing successful examples from around the world, they emphasized that though a single symbol could help connect the different transit agencies in the GTHA, it should not take over any of their individual identities. The Panel discussed the preliminary design concepts and shared their preferences with the design team. The Panel did not include specific recommendations about wayfinding in their report, though their feedback helped inform the design direction for this symbol. Several panelists also suggested this symbol would serve to better integrate services.

Shortly after, Judy Pfeifer, Chief Communications & Public Affairs Officer for Metrolinx, arrived to hear a reading of the Panel's draft report. The chair thanked her for coming and reminded everyone of the extensive Panel process and volunteer commitment. Then, different panelists took turns reading out various sections of the report. Pfeifer shared her appreciation for the Panel's thoughtful recommendations and their commitment to deliberating on behalf of all GTHA residents. She repeated that the Panel's report would be delivered to the Board of Metrolinx at an upcoming meeting, and that the report would be a great help to Metrolinx during the development of the next Regional Transportation Plan.

The chair invited panelists to share reflections about the Panel process and key considerations for Metrolinx staff to remember. A few panelists expressed their optimism about the future of the regional transportation system and reiterated the need to strengthen communications to the public about work already underway.

The chair reminded the panelists that over the next two weeks, they would have the opportunity to edit the entirety of their report and, should they choose, provide a personal minority report. Finally, the chair asked Judy Pfeifer to present each panelist with a Certificate of Public Service to mark the completion of the Panel's work together.

Residents' Reference Panel on the Regional Transportation Plan Panelists' Report

PREAMBLE

We are 36 individuals selected from different communities in the Greater Toronto and Hamilton Area (GTHA). We are representative of the communities in which we live, and a true reflection of today's GTHA. Among us are students, retirees, cyclists, motorists, transit riders, pedestrians, urbanites, and suburbanites.

We were randomly selected from among almost two hundred volunteers who replied to an invitation to serve on this Residents' Reference Panel, a special body created to advise Metrolinx on the development of the next Regional Transportation Plan.

We volunteered because we are proud and concerned residents of the GTHA who see the potential to make a positive impact on public policy regarding transportation within the region.

We met for five full Saturdays over three months and heard from a range of planners, stakeholders, and advocates who helped us to understand the opportunities and challenges related to our regional transportation system.

WHAT WE LEARNED

- The GTHA attracts over 100,000 new residents every year, mostly through immigration;
- Transportation planning is complicated and there are no easy solutions;
- Metrolinx cannot do it alone; partnerships with municipal, provincial, and federal governments, as well as private and non-profit entities, are essential to creating and implementing a successful transportation plan;
- A Growth Plan exists for the Greater Golden Horseshoe area, which aims to facilitate the development of healthy and sustainable communities;
- The Regional Transportation Plan must align with and support this Growth Plan; and
- The Greenbelt protects nearly two million acres of land against urban sprawl and development while the Whitebelt includes land available for future generations.

Stanley Ngwaba (Mississauga) reads a draft of the Panel's recommendations pertaining to Public Awareness and Communication.

WHAT SURPRISED US

- The governance structures currently in place, and the provision of services by 11 different transit agencies, can make it difficult to plan and implement projects and to undertake new initiatives; and
- Everyone has an opinion on transportation. It is difficult to strike the right balance between the various, and often, competing interests.

Our Values

During our first two meetings, we identified six values that we believe should guide the development of the region's transportation system.

CONVENIENCE AND RELIABILITY

A convenient, efficient, and reliable transportation system moves people and goods from point A to point B in a predictable amount of time; ensures first- and last-mile options are available with minimal wait times at transfer points; integrates travel among various providers and modes of service seamlessly; and includes user-friendly and customizable trip-planning technology that is easily accessible.

SAFETY

A safe regional transportation system takes a comprehensive approach to safety: people are safe, goods are secure, and equipment is well-maintained. Safety also means that everybody can trust, access, and use the system without feeling vulnerable.

AFFORDABILITY AND COST-EFFECTIVENESS

Affordable transportation enables all users to move around the region. Public transportation is priced low enough to attract and retain new users.

ENVIRONMENTAL SUSTAINABILITY

An environmentally sustainable regional transportation system is designed to reduce our reliance on fossil fuels and minimize air and noise pollution. It maximizes the use of technological innovations and sustainable materials to increase durability and efficiency, and reduce waste.

COMFORT AND GOOD DESIGN

A comfortable and well-designed regional transportation system is one that ensures a positive user experience. The latter is achieved by providing a high level of cleanliness, showing respect for personal space, and meeting the different physical needs of its users. A well-designed system is comfortable in all seasons and aesthetically pleasing.

LONG-TERM PLANNING AND ECONOMIC GROWTH

An achievable regional transportation plan is affordable to build and maintain. It should be consistent with the broader regional vision for growth, anticipating the future location of services and residents as well as the movement of goods, but flexible enough to adapt to environmental and economic changes. The plan must also be consistently communicated to stakeholders and constituents.

Recommendations

Our recommendations are organized according to the six goals proposed by Metrolinx in the Discussion Paper for the next Regional Transportation Plan. In addition, we identified and made recommendations under a seventh goal: Public Awareness and Communication.

A. CONNECTIVITY, CONVENIENCE, AND INTEGRATION

Today, disconnected transportation services lead to longer, more frustrating commutes that discourage the use of transit.

In the next five years, Metrolinx and its partners should:

- Actively coordinate routes and schedules among all 11 GTHA transit agencies;
- Integrate all intermodal information into the Triplinx app to help solve the first- and last-mile issue. This should include fares, real-time service and traffic updates, parking availability, bike-share services, cycling facilities, and potential on-demand micro-transit services;
- Make PRESTO more convenient. Possible improvements could include more machines, the ability to purchase and load cards anywhere and on the mobile app with no 24-hour delay, and the ability to pre-load monthly passes; and
- Integrate transit fares across the system. We endorse using a fare-by-distance structure with three conditions:
    1. A low-cost flat fare within a "virtual zone" for a certain radius from the start of every trip;
    2. Discounts for trips made during off-peak hours; and
    3. Maintaining existing discounts for students, seniors, and families travelling together, and applying monthly passes or fare caps through the PRESTO card.

In the long term, Metrolinx and its partners should:

- Pursue amendments to legislation such as the City of Toronto Act in order to remove barriers to service integration; and
- Create direct connections between regional hubs so that passengers do not always have to connect at Union Station.

In the future, a seamless travel experience throughout the GTHA, supported by technology like PRESTO and Triplinx, will promote transit as a viable and sensible alternative to driving.

Saishang Jiang (Stouffville) considers a fellow panelist's comments during a working group discussion.

B. EQUITY AND ACCESSIBILITY

Today, consistency of accessible infrastructure across the transportation system is lacking, and the system faces increasing pressure with changing demographics, including an aging population and non-English-speaking newcomers.

In the next five years, Metrolinx and its partners should:

- Improve all facets of the transportation journey to ensure barrier-free access for all populations. This includes support for active transportation users, families with children, non-English speakers, and differently-abled individuals.

In the long term, Metrolinx and its partners should:

- Implement new discounts or subsidies for low-income residents in a simple yet discreet manner through the universal PRESTO fare card.

In the future, the regional transportation system will enable barrier-free access for all and meet increased and changing demands.

C. HEALTH, COMFORT, AND SAFETY

Today, transportation options in the GTHA are not as comfortable or as safe as they could be for all users.

In the next five years, Metrolinx and its partners should:

- Improve infrastructure for active transportation, including an expanded network of protected bike lanes, particularly to key transit hubs;
- Improve lighting in parking lots and at crosswalks; and
- Increase the availability of washrooms and potable water at transit stations.

In the long term, Metrolinx and its partners should:

- Install emergency buttons and/or bus shelters at bus stops where safety is of particular concern; and
- Anticipate the possible need to increase the visibility of security at subway entry points.

In the future, public transit will be more comfortable, more enjoyable, and safer for all users and employees. Active transportation will be encouraged, contributing to healthier lifestyles.

D. A WELL-PLANNED REGION

Today, our regionally fragmented transportation-planning structure appears to delay decision-making and cause bottlenecks that impede implementation. This frustrates residents who want to see quicker, evidence-based decision-making and action.

In the next five years, Metrolinx and its partners should:

- Strengthen the regional transportation governance model in order to promote greater alignment between municipal, regional, and provincial prior-

ities, reinforce the need for greater cooperation and coordination between operators, and expedite the delivery of major transportation projects.

In the long term, Metrolinx and its partners should:

- Prioritize transit expansion in areas of high employment and residential density, keeping economic viability in mind.

In the future, the transportation-planning structure will ensure regional coordination through appropriate political and apolitical representation, and allow for stronger, data-driven consensus.

E. EXEMPLARY ENVIRONMENTAL FOOTPRINT

Today, it is important for everyone to help meet and exceed emissions reduction targets in accordance with our national goals, and in a manner that enhances current and future residents' quality of life without negatively impacting the environment or deterring investment.

In the next five years, Metrolinx and its partners should:

- Encourage the use of public transit and active transportation by whatever means are found to be the most effective, including rewards programs, monthly fare caps, and subsidized discounts; and
- Improve air quality inside and around stations and corridors through the increased use of greenery, enhanced ventilation and filtration, and better maintenance of vehicles and stations.

In the long term, Metrolinx and its partners should:

- Increase procurement from suppliers with environmental certifications.

In the future, we will keep our planet healthy and contribute to the well-being of current and future generations.

F. PROSPERITY AND COMPETITIVENESS

Today, congestion is a barrier to prosperity and growth. Transportation plans are not fully aligned with economic development outside downtown Toronto. As a result, they fail to leverage the economic activity in these areas.

In the next five years, Metrolinx and its partners should:

- Identify regional nodes where expanded transit services and a mix of other land uses can be developed, considering partnerships with existing businesses and leasing space to retailers.

In the long term, Metrolinx and its partners should:

- Utilize emerging technologies (such as autonomous vehicles) to make the system more efficient where possible; and
- Facilitate the efficient movement of goods and people by better utilizing existing road infrastructure, such as dedicated transit lanes.

In the future, the transportation system will allow for more efficient movement of people and goods within the GTHA.

G. PUBLIC AWARENESS AND COMMUNICATION

Today, most residents do not understand why they should get out of their cars to use public or active transportation. Residents are insufficiently informed about ongoing or future projects and strategies as well as associated benefits. As a result, those critical of transit have disproportionately shaped public opinion.

In the next five years, Metrolinx and its partners should:

- Enhance the profile of regional transportation planning by promoting user benefits associated with ongoing projects, new investments, and behaviour change;
- "Own its space" and use existing transit and real estate assets to communicate to current users; and
- Launch an annual or biannual update about transit expansion that can be distributed to all GTHA residents.

In the long term, Metrolinx and its partners should:

- Create specialized campaigns to promote any new services or plans including fare integration;
- Raise the profile of transit options outside of Toronto; and
- Elevate the status of transportation policy to that of health and education, making it the third pillar in a successful, healthy, and prosperous society.

In the future, improved communication will build trust and confidence among the public. Communications will be coordinated across all agencies in the region and based on two-way, ongoing engagement, with continuous measurement. Ultimately, the user will be at the centre of this communications strategy.

Appendix

MINORITY REPORTS

Ramesh Sharma: The issue of "A Well-Planned Region" is rooted in a Governance Structure that does not support fully integrated transit. The problem is that regional transportation and transit services are severely fragmented. What is required is a mechanism that would enable policy, planning, and decision-making regarding transit across the GTHA, other regions, and the 27 or so municipalities. The premise is not so different to other regions, and so we have frequently suggested governance structures like those in London, Vienna, and Stockholm, where responsibility and accountability are clearly defined. I do not believe that the recommendations in the report are explicit and unambiguous in this area. I would like to suggest something along the following lines:

In the next five years, a task group should be established with appropriate personnel from Metrolinx and the various GTHA regions and municipalities to:

1. Develop a governance structure comprised of a Board of Directors whose responsibility would include policy, planning, and the stewardship of a single transit authority, such as exists in London, England. Metrolinx would retain responsibility for operationalizing the policy and plans approved by this Board; and
2. Prepare a legal framework that would facilitate the legislative and regulatory changes required for this new governance structure.

I also believe it is crucial to develop a Comprehensive Risk Management Plan, like the one we discussed in our first group discussion but did not revisit. I suggest that in the next five years, a Comprehensive Risk Management Plan should be developed that addresses the impact on the delivery of transit services of major climatic and environmental changes, major failures due to technical and engineering malfunctions, and catastrophic failure of computer systems, including cyber-attacks. In addition, the plan must address financial impacts as well as failure to achieve planned construction programs.

To ensure public accountability, I also suggest the establishment of an audit committee that is comprised of entirely external members. This committee would have the independence to investigate all matters to ensure integrity in financial transactions, procurement procedures and practices, acquisition of consulting services, etc. The committee would operate independently with the authority to hire external counsel, and it would report to the Board of Directors on an annual basis or as necessary.

In the long term, I suggest that Metrolinx should continuously examine ways and means to leverage its assets with a view to achieving efficiency and effectiveness.

Zackary Fridlyand: Throughout the process of drafting this report as a Panel, I noticed several themes seemed important to the implementation of our value-based recommendations. These themes related to the increase and improvement of active transportation infrastructure, transit accessibility (both to it and on it), connectivity between regional hubs, communication with stakeholders, promoting and educating the public about the work of Metrolinx, and integrating transit with the most innovative technology of the digital age.

During our discussions, many ideas were brought forward in the hopes of broadening the current scope of transit infrastructure. Some solutions focused on re-purposing existing infrastructure (e.g. establishing high occupancy toll lanes) while others sought to make use of emerging technology to incentivize certain practices (e.g. digital reward programs, among other initiatives, to promote public or active transit).

One idea that gained significant support amongst some Panelists was the development of micro-transit services that would take commuters from their homes to the nearest transit hub. Micro-transit services could either be developed by transit authorities themselves or through partnerships with private sector ride-sharing entities. This service would improve transit accessibility, solve the first-mile/last-mile issue, increase ridership and revenue, reduce congestion, and promote more environmentally-friendly commuting practices.

PROGRAM DEVELOPMENT AND FACILITATION

The Residents' Reference Panel on the Regional Transportation Plan was designed and facilitated by MASS LBP. MASS is Canada's leader in the use of long-form deliberative and participatory processes to shape public policy.

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Panelists depart after their first meeting together.


Annette

METROLINX

Final Report and Recommendations of the

Residents' Reference Panel on the Regional Transportation Plan