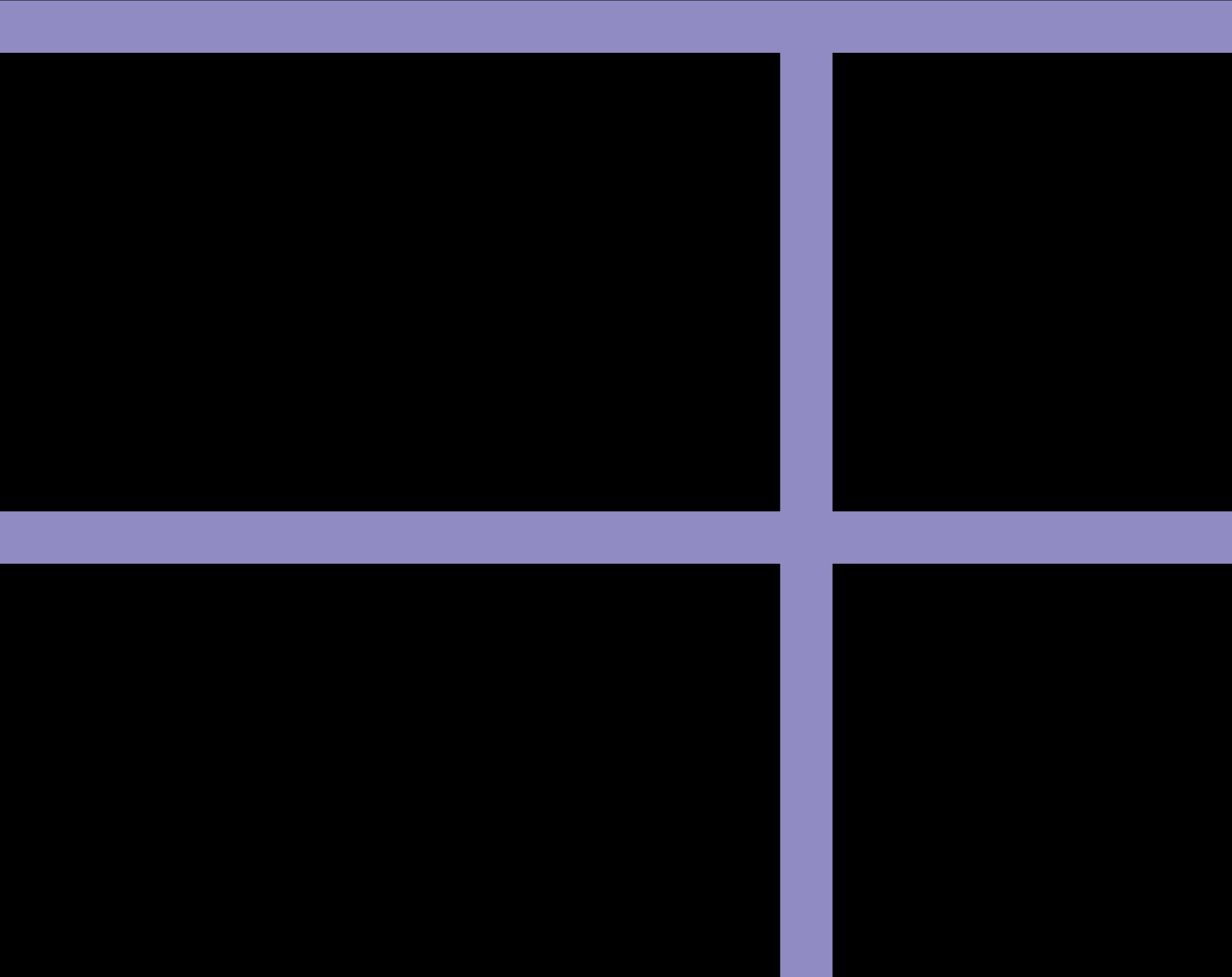
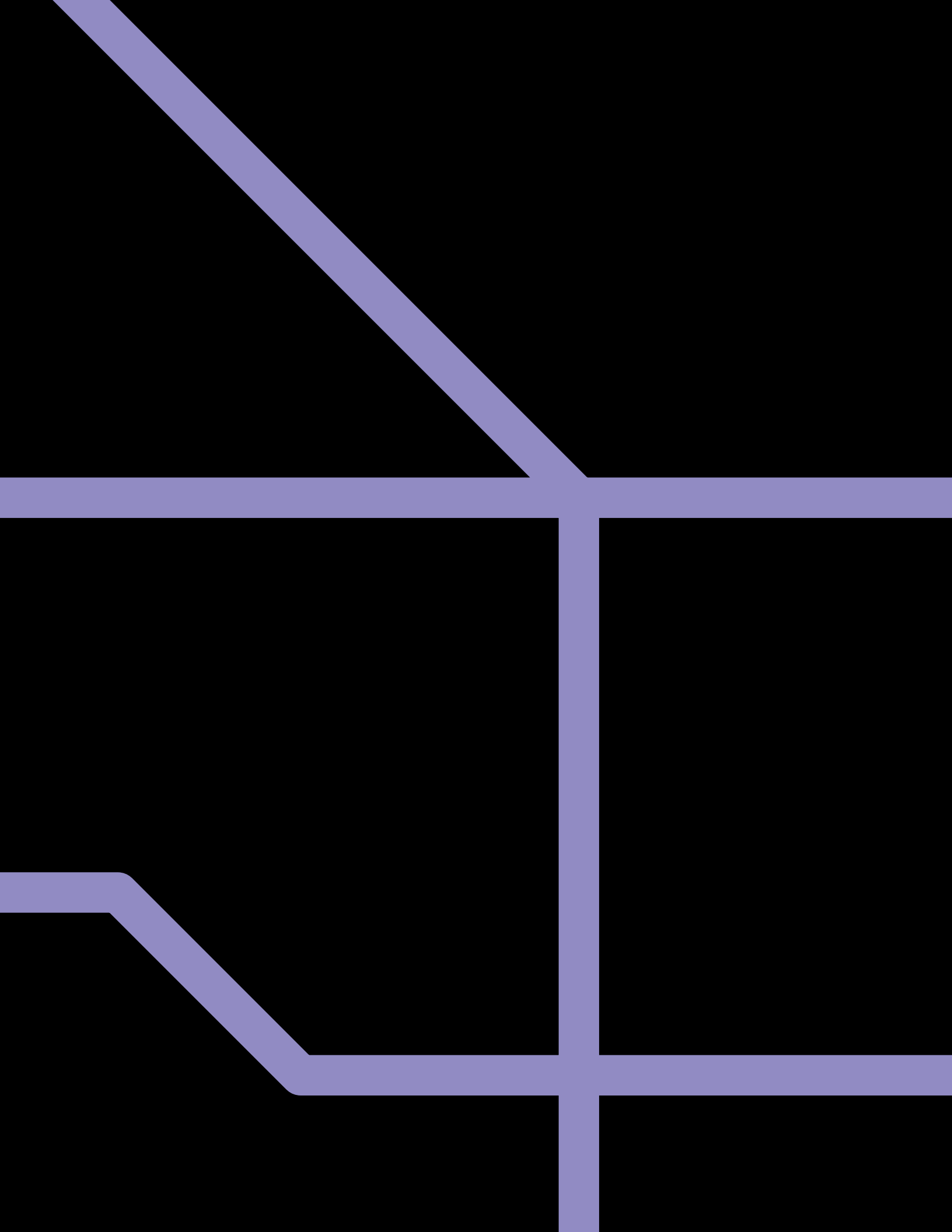


4

Next Steps – Making it Happen







The GTHA, with its growing population and booming economy, is becoming one of the world's great urban areas. It is widely recognized for its liveability, dynamic business environment, world-class universities, diverse cultural institutions and healthy environment. But enormous challenges are posed by the scale of the GTHA's expected growth – a 41% increase in population from 2016 to 2041—and the fact that much of that growth will occur in greenfield areas. Many people will need to travel long distances, and the changing nature of work will result in more commuters moving in all directions throughout the day.

Successfully managing the impacts of continued growth will demand a maturation of the region with respect to its structure (e.g., built form, open space, infrastructure) and social infrastructure and services (e.g., schools, hospitals, libraries). It will also demand new ways of making decisions through regional collaboration (e.g., on prioritization, integration, planning and monitoring) and ensuring financial sustainability (e.g., financing, funding and revenue-generation).

Building a comprehensive, integrated multimodal transportation system over the next 25 years is a vital part of ensuring that the region can prosper through future growth. But the complex transportation system of the future cannot be built without new approaches to regional decision making. Roles and responsibilities need to be more clearly defined, and projects prioritized and phased effectively. To ensure success, meet the goals of the Growth Plan and ensure that money is spent wisely, it is imperative that we re-think how regional transportation decisions are made and how the transportation system is financed.

Over the last ten years, while we have developed new processes and tools for analysis and collaboration, we have learned that new improved approaches are needed to realize the full potential of the regional transportation system. To begin advancing towards the fully integrated transportation system of the future that is envisaged in this plan, we will need to establish new processes for projects and programs in the 2041 RTP to advance from planning to design and delivery, irrespective of who funds, operates and owns the infrastructure.

As a regional transportation agency with a legislated mandate to plan the multimodal transportation system in the GTHA, Metrolinx is in a unique position to catalyze action by:

- providing technical expertise and guidance;
- coordinating regional initiatives;
- convening stakeholders; and
- providing a regional perspective on projects, programs and policies.

However, Metrolinx cannot undertake this work alone. The task at hand is complex. Success of the 2041 RTP will require that all stakeholders responsible for different aspects of the transportation system work together to make it work seamlessly. Implementing its Strategies and Priority Actions will require us to collaborate, and to be innovative in how we approach our regional goals for transportation.

List of Figures

Figure	Title
1	2041 Regional Transportation Plan timeline
2	Key facts about the GTHA's transportation system
3	In Delivery transit projects
4	Projects from <i>The Big Move</i> that support investments in transit infrastructure
5	GTHA population and employment growth, 2006-2041
6	Population growth by upper and single-tier municipality, 2016-2041
7	Growth in office employment, 2006-2041
8	Total peak period travel demand by travel market, 2011 and 2041
9	Peak period mode shares, 2011
10	Proportion of GTHA population by age group, 2016-2041
11	Mobility as a service concept
12	Losses in Canada due to catastrophic weather events
13	Greenhouse gas emissions by economic sector in Ontario
14	GO RER program to 2025
15	In Development rapid transit projects
16	Key principles of the Frequent Rapid Transit Network
17	Components of the Frequent Rapid Transit Network
18	Typical features of Priority Bus
19	Key characteristics of Priority Bus and BRT
20	Example of bus operations in Priority Bus and BRT corridors
21	Examples of enhanced bus systems in the United States and Australia with features of Priority Bus
22	Average household vehicle ownership in the GTHA, 2016
23	Shift in GO station access mode required to accommodate growth in GO rail trips to 2031
24	Vision Zero principles
25	The concept of TDM
26	GO bus passenger time savings from HOV lanes during 2015 Pan Am Games
27	Potential ITS tools
28	Key principles of the regional Strategic Goods Movement Network
29	Street network before and after pedestrian-friendly redesign
30	Key principles of the Regional Cycling Network
31	2041 RTP proposed deliverables and outcomes
32	Residents and jobs within walking distance of frequent rapid transit
33	Increase in transit trips by travel market
34	Travel mode share by travel market
35	Average transit travel time by travel market

List of Maps

Map	Title
1	The GTHA and GO Transit service area
2	2008 Regional rail and rapid transit network
3	Existing and In Delivery regional rail and rapid transit projects
4	In Development rapid transit projects
5	2041 Frequent Rapid Transit Network
6	Complete 2041 Frequent Rapid Transit Network
7	Proposed 2041 HOV and Regional Express Bus Network
8	Regional Goods Movement Network for roads and highways
9	2041 Regional Cycling Network

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- Durham Region Transit
- IBI Group
- Marc Bruxelles
- Metrolinx
- MiWay
- Steer Davies Gleave
- Toronto Transit Commission
- WSP
- York Region Rapid Transit Corporation

List of Acronyms

- **AV:** Autonomous vehicles
- **BRT:** Bus rapid transit
- **GDP:** Gross domestic product
- **GGH:** Greater Golden Horseshoe
- **GHG:** Greenhouse gas
- **GTHA:** Greater Toronto and Hamilton Area
- **HOV:** High-occupancy vehicle
- **ITS:** Intelligent transportation systems
- **LBPIA:** Lester B. Pearson International Airport
- **LRT:** Light rail transit
- **MaaS:** Mobility as a service
- **MTO:** Ontario Ministry of Transportation
- **OP:** Official Plan
- **PPS:** Provincial Policy Statement
- **RER:** Regional Express Rail
- **RTP:** Regional Transportation Plan
- **SGMN:** Strategic Goods Movement Network
- **TDM:** Transportation demand management
- **TMP:** Transportation master plan
- **TPPS:** Transportation Planning Policy Statement
- **TTC:** Toronto Transit Commission
- **YRT:** York Region Transit

Glossary

A

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: 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 autonomous vehicles employ automated features such as parking and lane-change assistance, and collision avoidance. Fully autonomous vehicles operate all driving functions without the intervention of a human driver. May be personally owned or shared. Can include driverless taxis. See *connected vehicles*.

B

Big data: Large sets of structured or unstructured data, typically much larger than traditional survey data (e.g., internet clickstream data, social media content, email text, mobile-phone call records or location data, machine data captured by sensors), that don't fit well in traditional databases. Big data can be used to support predictive and user-behaviour analytics, including geo-referencing of data about travel patterns. Big data can inform transportation research and analysis, and provide personalized products and services.

Bicycle lane: A bicycle lane is a portion of a roadway which has been designated by pavement markings and signage for the exclusive use of cyclists. See *separated bike lane and cycle track*.

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. "Dockless" bike-share systems allow bikes to be left anywhere within a predefined service zone. See *shared mobility and first- and last-mile*.

Bus rapid transit (BRT): Transit infrastructure and service with buses running in their own exclusive right-of-way, fully separated from traffic, typically with signal priority measures in place and longer spacing between stops than conventional bus routes (typically 500 metres to 1 kilometre) to maintain higher average speeds and ensure reliability of the service. May include additional features to improve operational efficiency and enhance the customer experience, such as off-board fare collection, platform-level boarding, and real-time passenger information. See *Regional Express Bus and Priority Bus corridor*.

C

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 and intelligent transportation systems*.

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.

Cycle track: A cycle track is a cycling facility adjacent to and physically separated from motor vehicle travel lanes by a curb, bollards or other form of barrier. A raised cycle track is elevated above the road surface. A cycle track may be designed for one-way or two-way travel, and is designated for the exclusive use by cyclists and is distinct from the sidewalk. See *separated bike lane and bicycle lane*.

D

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

F

First- and last-mile: This describes the challenge of moving people between transit stations, mobility hubs, or fixed-route transit services and their home, workplace or other major destination. The concept applies broadly to making improvements in transit access for all people trying to reach transit regardless if they live within one mile of a transit station or mobility hub. Alternatives to driving and parking a car can be advanced with, for example, programs that support carpooling; well-maintained infrastructure that facilitates walking and cycling, prioritizes transit access; and initiatives that support new mobility, like on-demand shuttle services. It can also describe moving goods between major intermodal hubs, such as rail yards and airports, and their final destination, such as retail stores, restaurants or even customers' homes.

Freight cluster: As per *Ontario's Freight-Supportive Guidelines (2016)*, groupings of similar uses that generate freight. Identifying and planning for these clusters is 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:

A seamless and reliable network of transit services running at least every 10-15 minutes all-day, every day. The Frequent Rapid Transit Network 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, HOV lanes, queue jump lanes, wider stop spacing than conventional transit routes, signal priority, or other transportation systems management measures). The Frequent Rapid Transit Network proposed will allow transit users to make efficient transfers between routes on the network, which includes subways, bus rapid transit, light rail transit, frequent (15-minute) two-way all-day GO rail, Priority Bus corridors, and Frequent Regional Express Bus. This updates the term "Regional Rapid Transit" used in *The Big Move (2008) Regional Transportation Plan*. See *Priority Bus corridor, bus rapid transit, light rail transit and Regional Express Bus*.

G

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.

H

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 or transit vehicles. May also be used to support Priority Bus routes.

I

In Delivery projects: Transit projects in the GTHA that are either under construction or in the engineering design stage.

In Development projects: Transit projects in the GTHA that are in advanced stages of planning and design.

Integrated mobility: A practice that describes the unification of different transportation modes and mobility providers into a network connecting travellers 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 systems

(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.*

L

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

to improve operational efficiency and enhance the customer experience, such as off-board fare collection, platform-level boarding, and real-time passenger information.

Local transit: A passenger transit system that is operated principally within an upper-tier, lower-tier or single-tier municipality, with routes that serve generally short to medium distance trips. Parts of local transit routes may overlap with parts of the Frequent Rapid Transit Network and share the infrastructure and transit priority features. Local transit routes will also play an important role in connecting people to the Frequent Rapid Transit Network for longer distance trips. Local transit in the GTHA is provided by Burlington Transit, Brampton Transit, Durham Region 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 the adoption of electric and alternative-fuel vehicle technologies. Reducing greenhouse gas emissions from the transportation sector typically focuses on minimizing travel and shifting to more environmentally sustainable modes, technologies and fuels.

M

Major Transit Station Area: As in the *Growth Plan for the Greater Golden Horseshoe 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-metre radius of a transit station, representing about a ten-minute walk. *See Mobility Hubs.*

Managed lanes: Lanes on highways or arterial roads that have measures in place to restrict the number of single occupant vehicles and prioritize high-occupancy vehicles or transit. *See high-occupancy vehicle lane and high-occupancy toll lane.*

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

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, car-sharing, ride-sourcing and shared mobility.*

Mobility Hubs: Mobility Hubs are Major Transit Station Areas at the intersection of two or more Frequent Rapid Transit Network routes, designed to support a high number of transit boardings and alightings, and facilitate seamless, efficient transfers between modes. They have and/or are planned to have a high density mix of jobs, residences, public services, and other land uses that encourage and support transit use and active transportation, or the potential to develop into areas with a high-density mix of 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. This term is derived from that provided by the *Growth Plan for the Greater Golden Horseshoe, 2017* for “modal share”.

Multimodal: Relating to the availability or use of more than one form of transportation for a single trip, such as automobiles, walking, cycling, buses, rapid transit, rail (such as commuter and freight), trucks, air, and marine (e.g., cycling or driving to a transit station). This term is derived from that provided by the *Growth Plan for the Greater Golden Horseshoe, 2017*, for “multimodal”. *See mode share.*

N

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.*

O

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.*

Outer ring: The geographic area consisting of the Cities of Barrie, Brantford, Guelph, Kawartha Lakes, Orillia, and Peterborough; the Counties of Brant, Dufferin, Haldimand, Northumberland, Peterborough, Simcoe, and Wellington; and the Regions of Niagara and Waterloo. This term is derived from that provided by the *Growth Plan for the Greater Golden Horseshoe, 2017*.

P

Priority Bus corridor: Transit corridor allowing buses to operate quickly and reliably without the need for a dedicated right-of-way by providing protection from mixed traffic (e.g., HOV lanes on arterial roads, turn prohibitions or other traffic restrictions) and using other transit priority measures such as queue jump lanes and signal priority at intersections. Priority Bus routes operating in Priority Bus corridors typically have wider spacing between stops (e.g., every 300 to 800 metres) to improve travel times over long distances. Features such as all-door boarding and safe, comfortable stations can further improve service and enhance the customer experience. As part of the Frequent Rapid Transit Network, buses running in Priority Bus corridors will operate at least every 15 minutes, all-day. The same concepts may be applied to light rail vehicles or streetcars, which can operate as Priority Streetcar corridors in the absence of a dedicated right-of-way. *See bus rapid transit, Regional Express Bus and Frequent Rapid Transit Network.*

Priority Transit Corridor: Transit corridors identified 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 2.2.4 "Transit Corridors and Station Areas".

Q

Queue jump lanes: Short, dedicated transit lanes that allow transit vehicles to bypass queues at intersections and, in combination with transit signal priority, allow buses to easily enter traffic flow in a priority position. Applied thoughtfully, queue jump treatments can reduce delay considerably, resulting in run-time savings and increased reliability. *See transit signal priority.*

R

Regional Cycling Network: A network of commuter-oriented cycling routes and dedicated infrastructure that supports longer-distance trips (typically greater than five kilometres), 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 can be significantly higher than conventional transit, with limited stops or wider stop spacing (typically two to eight kilometres). Significant destinations include urban centres, transportation hubs and large institutions. Frequent Regional Express Buses operate every 15 minutes or better all-day and are part of the Frequent Rapid Transit Network. *See bus rapid transit and Priority Bus.*

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 allow for increased peak period service on all existing GO rail routes and the addition of 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 multimodal 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 vehicle-for-hire shared mobility that refers to service providers that use an online or app-based platform to connect passengers with drivers of personal vehicles. Operators are known as transportation network companies or private transportation companies. *See shared mobility and on-demand mobility.*

Ridesharing: 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 route or 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. A fare, not exceeding the cost of operating the vehicle on a non-profit basis (as defined under the *Public Vehicles Act*), is typically paid for this service. *See shared mobility and on-demand mobility.*

Ridematching: The process whereby passengers with a common destination, often a shared workplace, are matched in order to share a vehicle and the costs of a trip (e.g. using the Smart Commute tool). *See ridesharing.*

S

Separated bike lane: A separated bicycle lane is a portion of a roadway which has been designated by special pavement markings or a physical barrier and signage for the exclusive use of cyclists. This facility type provides additional spatial or physical separation between motorists and cyclists. *See bicycle lane and cycle track.*

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 ridesharing. *See new mobility.*

Specialized transit: Also referred to as "paratransit" or "custom transit", specialized transit provides door-to-door service to eligible individuals with disabilities and seniors who are not able to use conventional transit for all or part of their travels. Specialized transit works with conventional transit service providers to form a broader accessible transit network. It is usually funded and delivered by a municipality.

T

Telework: A transportation demand management strategy that allows employees to work from home by connecting to their employer's computer system. The employee's work files and e-mail are usually available ensuring that they are never out of the corporate loop. Meetings can also be conducted remotely through conference calls and web conferencing. *See transportation demand management.*

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 high-occupancy vehicle lanes, bus-only lanes, transit signal priority, turning restrictions for automobiles, and queue jump lanes. *See intelligent transportation systems, transportation systems management, transit signal priority and queue jump lanes.*

Transit signal priority: Transit signal priority tools modify traffic signal timing or phasing when transit vehicles are present to prioritize the movement of transit vehicles over automobiles, either conditionally when the transit vehicle is behind schedule or unconditionally for all arriving transit. Transit signal priority can be a powerful tool to improve both reliability and travel time, especially on corridor streets with long signal cycles and distances between signals. In urban contexts, benefits are significantly amplified when implemented alongside other strategies like dedicated transit lanes or queue jump lanes. *See intelligent transportation systems.*

Transit-supportive: Urban planning and design that focusses on making transit more viable and attractive, including compact, mixed-use development that has a high level of employment and residential density and an urban form that supports walking and cycling.

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 telework; high-occupancy vehicle lanes; park-and-ride; incentives for ridesharing, 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*.

U

Urban Growth Centres: Existing or emerging downtown areas shown in Schedule 4 in the *Growth Plan for the Greater Golden Horseshoe, 2017*, and as further identified by the Minister (of Municipal Affairs) on April 2, 2008. They represent 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.

V

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:

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. Vehicle-kilometres travelled 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.

W

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.

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