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The Regional Municipality of Durham Report

To: Planning and Economic Development Committee
From: Commissioner of Planning and Economic Development
Report: #2019-P-41
Date: October 1, 2019

Subject:

Envision Durham – Transportation System Discussion Paper, File D12-01

Recommendation:

That the Planning and Economic Development Committee recommends to Regional Council:

- A) That a copy of report #2019-P-41 be received for information; and
 - B) That a copy of report #2019-P-41 be forwarded to Durham’s area municipalities; conservation authorities; the Ministry of Municipal Affairs and Housing; the Ministry of Transportation; Metrolinx, and the Durham Active Transportation Committee for review and comment.
-

Report:

1. Purpose

- 1.1 The purpose of this report is to present the Transportation System Discussion Paper which is the fifth paper in a series being released as part of Envision Durham, the Municipal Comprehensive Review (MCR) of the Regional Official Plan (ROP) (see Attachment #1).
- 1.2 Comments on this Discussion Paper are requested by December 30, 2019 (90-day commenting period).

2. Background

2.1 On May 2, 2018, Regional Council authorized staff to proceed with Envision Durham, as detailed in [Commissioner's Report #2018-COW-93](#).

2.2 On February 5, 2019, the Planning Division initiated the first stage ("Discover") of the public engagement program for Envision Durham by launching a project web page and public opinion survey, as detailed in [Commissioner's Report #2019-P-4](#) and [Commissioner's Report #2019-P-35](#). The Planning Division initiated the second stage ("Discuss") on March 5, 2019, wherein participants are being asked to provide input on various theme-based Discussion Papers as follows:

- a. Agriculture and Rural System ([Commissioner's Report #2019-P-12](#), released March 5, 2019);
- b. Climate Change and Sustainability ([Commissioner's Report #2019-P-26](#), released May 7, 2019);
- c. Growth Management, including but not limited to reports on:
 - The Urban System ([Commissioner's Report #2019-P-31](#), released June 4, 2019);
 - Land Needs Assessment (LNA) and related technical studies, i.e. Employment Strategy, Intensification Strategy, Designated Greenfield Area Density Analysis, etc.; and
 - Additional feasibility studies, if required based on the results of the LNA.
- d. Environment and Greenlands System ([Commissioner's Report #2019-P-36](#), released September 3, 2019);
- e. Transportation System, which is the subject of this report; and
- f. Housing.

2.3 Each Paper contains discussion questions, with a supplemental workbook, to help facilitate discussion and input.

3. Transportation System Discussion Paper

- 3.1 The Region's Transportation System is comprised of interconnected road, rail, transit and active transportation networks. These networks connect a variety of transportation-related land uses, including transit stations, airports, ports and marinas, and large generators of traffic such as logistics providers, other employment areas and commercial developments.
- 3.2 In December 2017, the Region approved the Durham Transportation Master Plan (TMP), which is a strategic planning document that defines the policies, programs and infrastructure needed to meet the Region's transportation needs to 2031 and beyond. As a first step to implement the TMP, Amendment #171 to the Regional Official Plan (ROP) was adopted by Council in June 2018 to implement key network recommendations and supporting policies made in the TMP.
- 3.3 The Envision Durham review provides the next step to implement the transportation "vision" articulated in the TMP, by reviewing specific recommendations and actions related to the ROP and other planning-related policies and guidelines that could influence ROP policy. Accordingly, this Paper:
- Provides an overview of the current provincial and Regional policy framework related to transportation planning;
 - Highlights key travel trends for Durham residents and their impacts on the Transportation System;
 - Outlines new provincial and Regional policy requirements and directions since the previous ROP review; and
 - Identifies preliminary approaches and questions for discussion and feedback.
- 3.4 The Discussion Paper is intended to serve as a starting point for stakeholder input on policy considerations for the Transportation System, and to foster discussion on how it can be better integrated with land use change and development to:
- Accommodate forecasted growth and development in the Region;
 - Address planning for new growth areas and those areas where redevelopment and intensification are targeted, based on the new Provincial Growth Plan; and
 - Establish a more focused approach to transit, active transportation and goods movement, and identify potential impacts of technological advancements on travel behaviour.

- 3.5 This Discussion Paper was prepared by Regional Planning staff in consultation with staff from the Office of the CAO, the Works Department, Durham Region Transit, Envision Durham's Area Municipal Working Group and Provincial staff from the Ministry of Municipal Affairs and Housing.
- 3.6 The Discussion Papers do not present positions on potential changes that may be part of the ROP, but rather provide information and pose questions for consideration.

4. Next Steps

- 4.1 Each of the Discussion Papers will be posted to the project web page at durham.ca/EnvisionDurham for public input. Interested parties are encouraged to subscribe for project updates and email notifications through this web page. The Discussion Papers will be announced by way of:
- a. News releases and public service announcements;
 - b. Social media platforms, including Facebook, Twitter and LinkedIn;
 - c. Email notifications;
 - d. Publications in internal and external newsletters; and
 - e. Materials published online.
- 4.2 Comments on the Transportation System Discussion Paper are requested by December 30, 2019 (90-day commenting period). Regional staff will report to Committee on the results of the Discussion Papers through future reports during the next stage of the public engagement process.
- 4.3 It is recommended that a copy of this report be forwarded to Regional Council for information and be forwarded to Durham's area municipalities, conservation authorities, relevant provincial ministries, Metrolinx and the Durham Active Transportation Committee for review and comment. In addition, other key stakeholders will be notified of this Discussion Paper's release. The Discussion Paper will also be provided to interested Indigenous communities and others who may have an interest in the Envision Durham study process.

5. Attachments

Attachment #1: Transportation System Discussion Paper

Respectfully submitted,

Original signed by

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

Recommended for Presentation to Committee

Original signed by

Elaine C. Baxter-Trahair
Chief Administrative Officer



Transportation System

Discussion Paper



October 2019
Durham Region
Planning and Economic
Development Department

This Discussion Paper is published for public and agency comment as part of Envision Durham, the Municipal Comprehensive Review of the Regional Official Plan.

Report contents, discussion questions and proposed directions, where applicable, do not necessarily represent the position of Regional Council on changes that may be considered to the Regional Official Plan.

All information reported and/or collected through this Discussion Paper will help inform and be used as part of the Municipal Comprehensive Review.

**Please provide your comments on this Transportation System Discussion Paper by
December 30, 2019.**

Transportation System

About Durham Region

Durham Region is the eastern anchor of the Greater Toronto Area, in the Greater Golden Horseshoe area of Ontario. At over 2,590 square kilometres, Durham offers a variety of landscapes and communities, with a mix of rural, urban and natural areas. The southern lakeshore communities of Pickering, Ajax, Whitby, Oshawa and Clarington provide urban areas and a diverse employment base. The northern Townships of Scugog, Uxbridge and Brock are predominantly rural, with a thriving agricultural sector. Durham Region is the home of the Mississaugas of Scugog Island First Nation and spans a portion of the territories covered by the Williams Treaties of 1923.¹

Over 80 per cent of the Region lies within the provincially-designated Greenbelt, which also contains the environmentally significant Oak Ridges Moraine. With access to ample green space and lakes, rivers and urban amenities, Durham Region offers a high quality of life for both city and rural residents.

Today, Durham is home to just under 700,000 people. By the year 2041, our population is expected to grow to 1.2 million people, with over 430,000 jobs. Our vision is to create healthy and complete, sustainable communities, shaping Durham into a great place to live, work, play, grow and invest.

¹ The Williams Treaties include traditional territories of seven First Nations, including the Chippewas of Beausoleil, Georgina Island and Rama and the

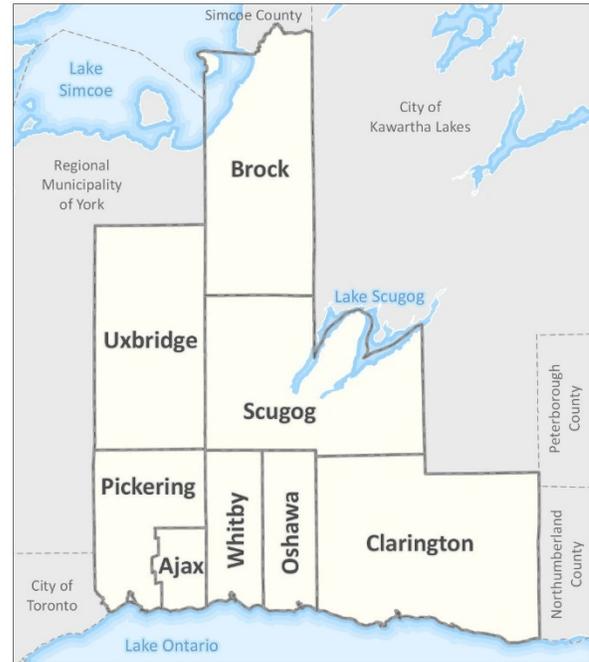


Figure 1: Map of the Region of Durham

About Envision Durham

Envision Durham, the Municipal Comprehensive Review (MCR) of the Regional Official Plan (ROP), is an opportunity to plan for fundamental change, by replacing the current ROP and establishing a progressive and forward-looking planning vision for the Region to 2041.

Over the next few years, the Region is undertaking Envision Durham to review:

- How and where our cities and towns may grow.
- How to use and protect our land and resources.

Mississaugas of Alderville, Curve Lake, Hiawatha, and Scugog Island.

- What housing types and job opportunities are needed for our residents.
- How people and goods move within, across and beyond our Region.

We're planning for an attractive place to live, work, play, grow and invest—and we're asking for your help.

Why review the Official Plan?

The ROP guides decisions on long-term growth, infrastructure investment and development—providing policies to ensure an improved quality of life—to secure the health, safety, convenience and well-being of present and future residents of Durham.

Under the Planning Act, there is a legislative requirement to review the existing ROP every five years. Since the approval of the last ROP update (January 2013), the Province of Ontario has completed several significant provincial policy initiatives, including the coordinated review and update to the following provincial plans:

- The Growth Plan for the Greater Golden Horseshoe, 2017 (Growth Plan), which was replaced by A Place to Grow: Growth Plan for the Greater Golden Horseshoe in May 2019.
- The Greenbelt Plan, 2017.
- The Oak Ridges Moraine Conservation Plan, 2017 (ORMCP).

The Planning Act requires the Region to complete a provincial plan conformity exercise to amend the ROP to ensure that it:

- Conforms with provincial plans or does not conflict with them.
- Has regard to matters of provincial interest.
- Is consistent with Provincial Policy Statements.

Envision Durham constitutes Durham's provincial plan conformity exercise and its five-year review of the ROP, satisfying these legislative requirements.

How to get involved

Public input is integral to the success of Envision Durham—we want to hear from you!

Please use this opportunity to share your vision for Durham—tell us your thoughts and opinions on the key Discussion Questions raised throughout this document (Appendix A).

Join the conversation by visiting durham.ca/EnvisionDurham to submit your comments.

To receive timely notifications on the Envision Durham process, please visit durham.ca/EnvisionDurham to subscribe for project updates

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Executive summary

The Transportation System Discussion Paper is the fifth in a series of Discussion Papers to be released as part of the Envision Durham exercise. This paper provides an overview of the Region's Transportation System as it relates to the current Regional Official Plan (ROP) policy framework, relevant changes to provincial policies, including recommended actions contained in the Durham Transportation Master Plan (TMP), 2017.

The paper highlights existing and future transportation trends within the Region and outlines preliminary approaches for updating the Transportation System that would:

- Accommodate forecasted growth and development through the provision of an integrated multi-modal transportation system.
- Shape the form and location of new development.
- Introduce emphasis on the planning and provision of higher order transit.
- Establish a more focused approach to transit, active transportation and goods movement including technological advancements on travel behaviour.

In the discussion of preliminary approaches, the paper poses a series of questions for discussion and feedback.

Durham's Transportation System is comprised of specific designations for existing and planned facilities, as follows:

- Road Network—consisting of freeways and a hierarchy of roads, currently referred to as Type A, B and C Arterials.

- Transit Priority Network—with freeway and arterial road transit corridors and commuter rail (refer to Figure 23, page 30).
- Strategic Goods Movement—including railways, airports and ports.

Growth in travel throughout Durham Region from 2006 to 2016 is attributed to an increase in the Region's population (14.7 per cent) and employment growth (8.2 per cent). Consequently, travel demand has resulted in more Durham resident weekday trips (4.8 per cent) along the road network and a substantial increase (27.7 per cent) in person-trips using public transit supported by the Durham Region Transit (DRT) bus network and GO Transit regional passenger heavy rail and bus service.

Current growth and development has resulted in increased travel demand during this period and has created adverse pressures on the Transportation System, leading to more congestion and travel time delays, particularly on the road network. There is a need to develop a more comprehensive multi-modal system that requires additional investments in transit, roads and active transportation, from both an infrastructure and operations perspective. This would provide sustainable travel options for existing and future residents and workers in the Region.

This paper is intended to serve as a backgrounder for input and discussion. Durham Region is committed to working collaboratively with all stakeholders, including the local area municipalities, conservation authorities, the Ontario Ministry of Municipal Affairs and Housing,

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the Ontario Ministry of Transportation (MTO), Metrolinx, the development community, other stakeholders and the public to develop a transportation system

and policies that not only implements provincial direction, but responds to issues in a way that is tailored to Durham's existing and emerging development context.

How to get involved

Public input is integral to the success of Envision Durham—we want to hear from you!

Please use this opportunity to share your vision for Durham—tell us your thoughts and opinions on the key Discussion Questions raised throughout this document (Appendix A).

Join the conversation by visiting durham.ca/EnvisionDurham to submit your comments.

To receive timely notifications on the Envision Durham process, please visit durham.ca/EnvisionDurham to subscribe for project updates.

1.0 Introduction

A well-planned and functioning Transportation System is an integral part of creating healthy and complete, sustainable communities. The transportation system is comprised of interconnected road, rail, transit and active transportation networks. Planning for these networks to accommodate future growth in a sustainable manner is a key element of the current Durham Regional Official Plan (ROP). Transportation-related land uses such as transit stations, airports, ports and marinas are also components of the overall transportation system, which can be greatly impacted by large generators of traffic such as logistics providers, other employment areas and commercial developments. Envision Durham provides an opportunity to review transportation related policies in the ROP and identify subjects and areas that need to be addressed, updated and/or strengthened. The Guiding Principles and Strategic Directions of the Durham Transportation Master Plan (TMP), completed in December 2017, provides recommendations to the year 2031 and helps to form the basis for a long-term transportation “vision” for the Region (refer to Figure 2).

This Discussion Paper is the fifth in a series being released as part of the Envision Durham exercise. It provides a broad overview of current transportation issues affecting Durham Region, and raises questions on topics that can be addressed as part of Envision Durham. Specifically, this paper discusses the following:

- The current policy framework for transportation planning in the Region.
- Key trends in the travel behaviour of Durham residents over the last decade.
- The relationship between transportation and land use within the context of implementing actions of the TMP.
- Approaches to accommodate forecasted growth and development (to be identified as part of the upcoming Land Needs Assessment work), that supports intensification as well as new growth areas, higher levels of transit, active transportation and addressing technological change.



Figure 2: Guiding Principles and Strategic Directions from the Durham Transportation Master Plan, 2017

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2.0 Transportation trends and observations in Durham

The following identifies some of the transportation trends and observations in Durham over the last decade, which will influence transportation planning for Durham.

2.1 Growth in travel

From 2006 to 2016, Durham's population grew by 14.7 per cent, from approximately 584,000 to 670,000 residents. During this period, Durham's employment grew by 8.2 per cent, from nearly 219,000 to approximately 237,000 jobs. By comparison, the number of trips made by Durham residents during a typical weekday increased by 4.8 per cent (from 1.22 million to 1.28 million trips). During the morning peak period, the total number of trips increased by 6.3 per cent (from 281,000 to 299,000 trips), shown in Figure 3.

Typically, trips grow at a lesser rate than population or employment growth, especially with an aging population and increases in persons who work at home who, on average, take fewer trips than those who usually commute to work or school. However, the trips being made during the morning peak period represent an increasing share of daily trips made by Durham residents.

Growth in GO Transit and DRT ridership has been strong during the 2006-2016 period as well. DRT ridership grew from 6.94 million annual passengers in 2006 to 10.26 million in

2016. At the Toronto-Durham boundary, nearly 34,000 person-trips per day were made by GO train in 2016. This compares with just over 26,000 person-trips per day in 2006, or a 27.7 per cent increase during the period.²

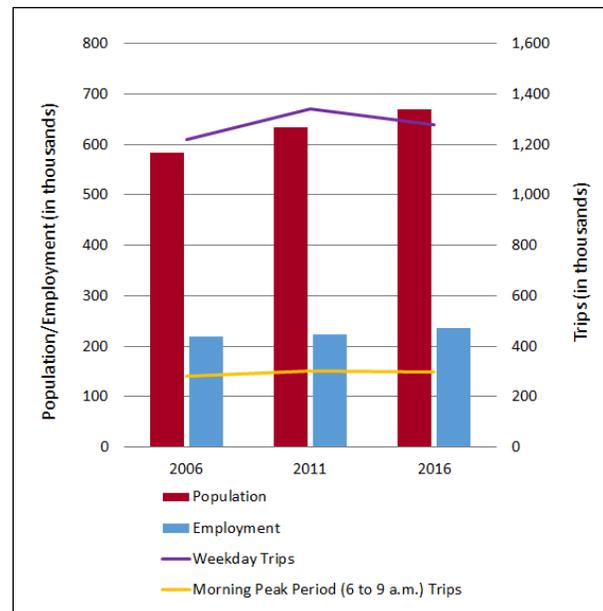


Figure 3: Durham population, employment and trips made by residents, 2006-2016 (Source: Durham Region Planning and Economic Development Department, Semi-Annual Population and Household Estimates; Statistics Canada, Census Journey to Work Data; Transportation Tomorrow Survey)

Increases in travel demand during the period, and expansion to the road and transit network, have helped facilitate growth on the transportation system. However, increased growth in travel has also contributed to more congestion and travel time delays on the network, particularly for auto trips.

² Durham Region Cordon Count Program.

2.2 Changing commuting and travel patterns

Not only is travel by Durham residents growing, but travel patterns have also changed over the last decade.

2.2.1 Commuting by Durham residents

From 2006 to 2016, “out-commuting” by Durham residents to work locations outside of the Region, and the Greater Toronto and Hamilton Area (GTHA), has increased. In 2006, 53 per cent of Durham residents with a trip to work stayed within the Region during the morning peak period (refer to Figure 4). By 2016, this figure declined to 48 per cent. This means that more than half of Durham residents are crossing the Region’s westerly boundary in the morning to get to work, mostly in Toronto and York Region. With population growth significantly outpacing employment growth in Durham Region, and job opportunities outside of Durham representing a greater share of employment for Durham residents, the level of out-commuting has increased.

Figure 6 shows where Durham residents who commute outside of the Region go to work during the morning peak period, for 2006 and 2016, and illustrates that:

- In 2006, the highest number of external work trips were from Durham to Scarborough, followed by downtown Toronto and the rest of Toronto.
- In 2016, the highest number of external work trips were from Durham to downtown Toronto, but trips to Scarborough and the rest of Toronto were almost as high.

- From 2006 to 2016, the number of trips to York and Peel regions increased substantially.

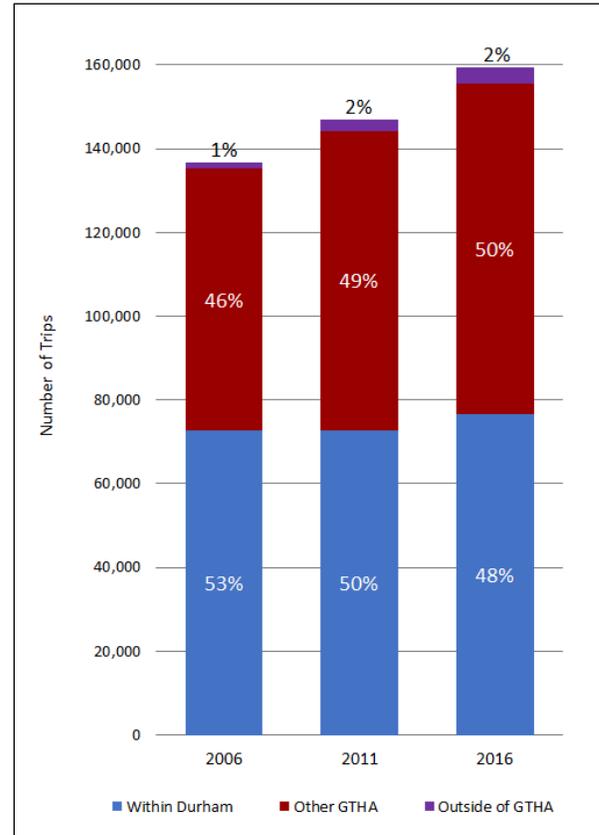


Figure 4: Work trips made by Durham residents by general destination, morning peak period (6 to 9 a.m.), 2006-2016 (Source: Transportation Tomorrow Survey)



Figure 5: GO Transit bus in downtown Newcastle (Source: Durham Region Planning and Economic Development Department)

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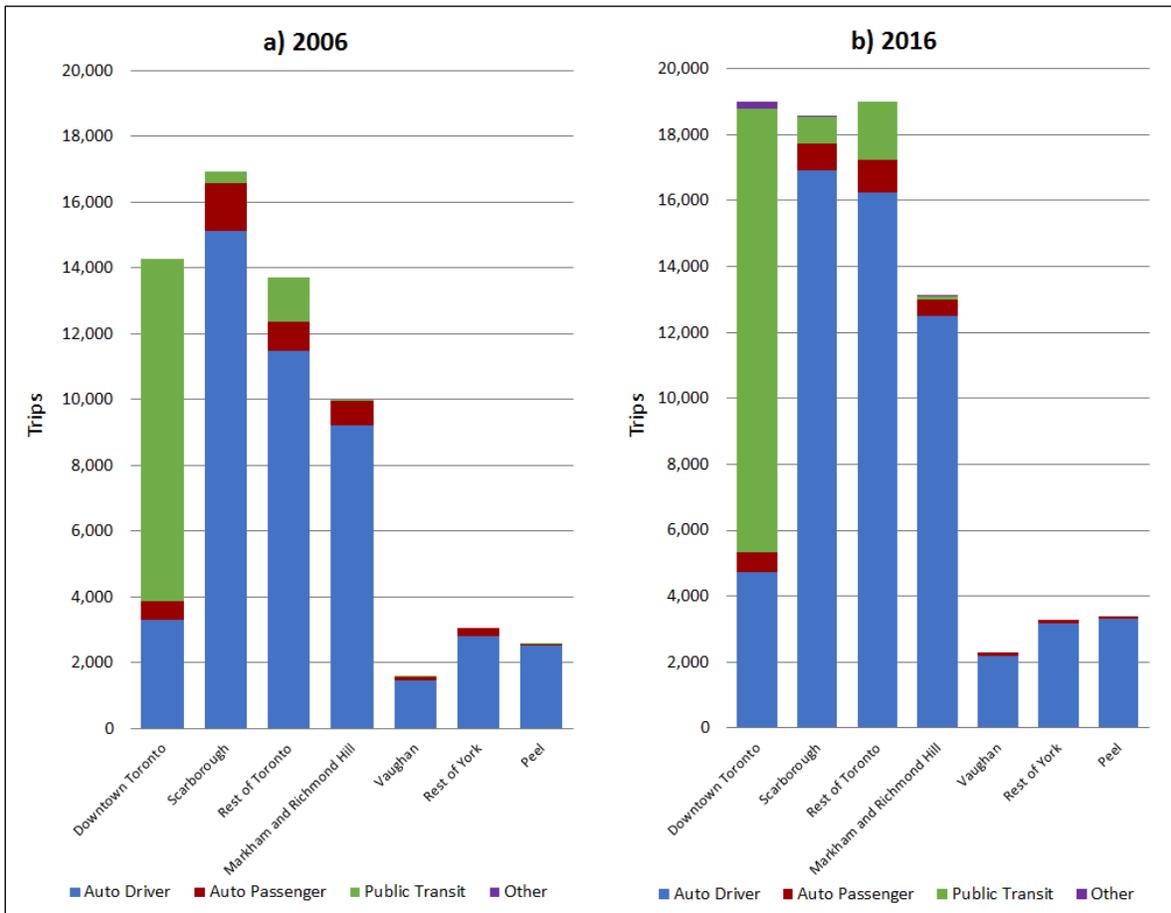


Figure 6: Work trips made by Durham residents to destinations outside Durham during the morning peak period (6 to 9 a.m.), by primary travel mode, 2006 and 2016 (Source: Transportation Tomorrow Survey)

In addition, the Journey to Work data—which was part of the 2016 Census from Statistics Canada—revealed that in 2016, Durham residents had the longest average commute at 35 minutes, compared to other upper- and single-tier municipalities in the GTHA (refer to Figure 7). For Durham residents, those who took public transit as their primary mode of travel had the longest average commute times at 62.5 minutes (largely influenced by GO train trips) while those who used active transportation averaged 14.3 minutes.

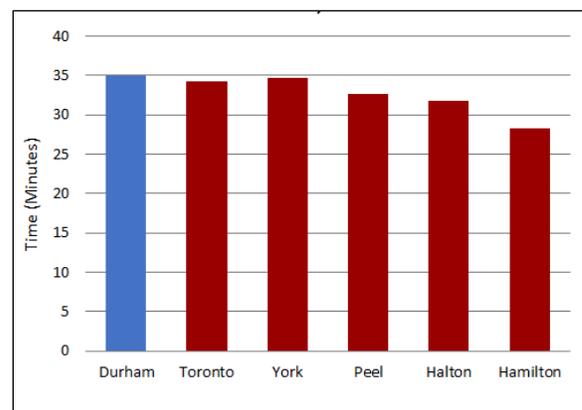


Figure 7: Average commuting duration for GTHA residents, 2016 (Source: Statistics Canada, Journey to Work data, 2016 Census)

2.2.2 Weekday trips made by Durham residents

For weekday trips overall, the proportion of trips made by residents of Durham Region that stay within the Region is higher than for work trips during the morning peak period. This is because school, shopping, and other trips tend to be more localized than work trips, especially when measured throughout the day.

Figure 8 illustrates the percentage of weekday trips made by residents that stay within the Region, for Durham as a whole and by area municipality, from 2006 to 2016. In 2016, Oshawa had the highest percentage of trips that stay within Durham at 90 per

cent, while Brock had the lowest at 49 per cent. All municipalities showed a decline in the share of trips that stayed within Durham during the 10-year period.

The median trip length also increased for all modes of travel: Auto Driver, Auto Passenger, DRT and GO Bus, and GO Train, as shown in Figure 9. Increased transit trip lengths may also be viewed as a positive statistic, as longer trips are being better served by DRT (or a combination of DRT and GO bus service) rather than auto trips. However, increased median trip distances mean that trips to work, school and other destinations are, overall, getting both longer and further dispersed than they previously were for Durham residents.

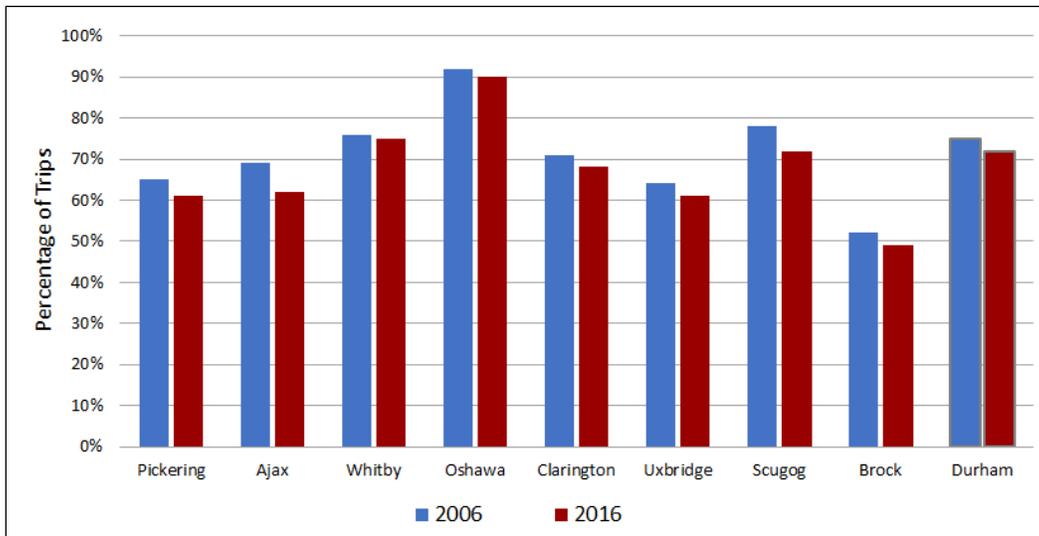


Figure 8: Weekday trips made within Durham by area municipality and Durham Region as a whole, 2006-2016 (Source: Transportation Tomorrow Survey)

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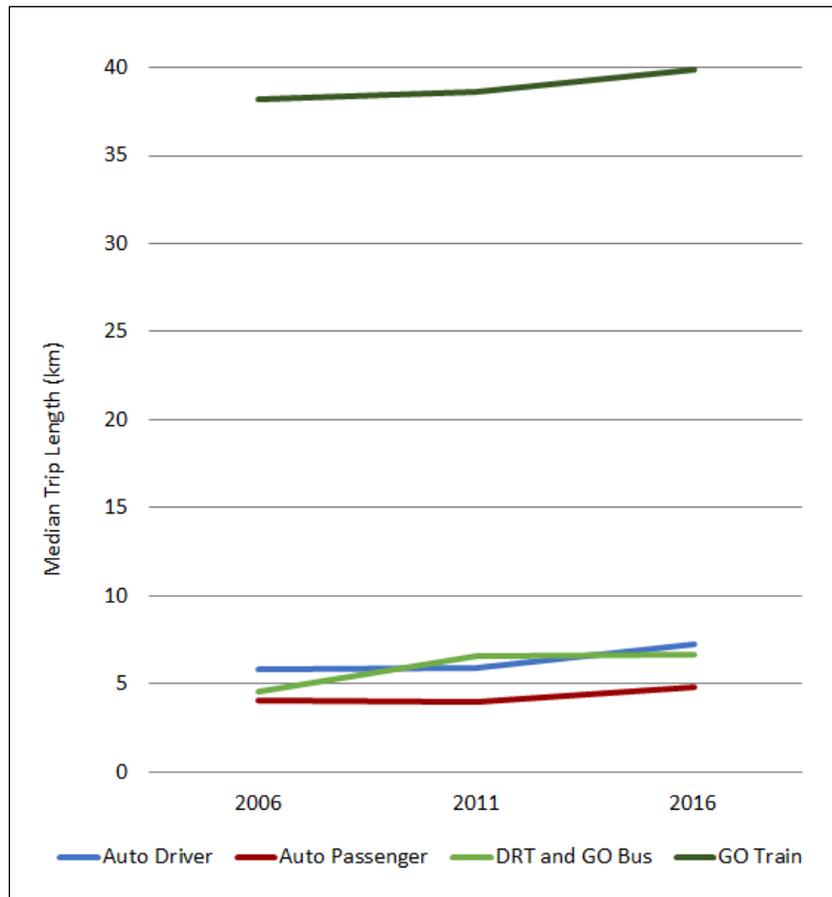


Figure 9: Weekday median trip length by primary travel mode for Durham residents, 2006-2016 (Source: Transportation Tomorrow Survey)

For elementary and secondary student travel, active modes and transit access to school are declining while auto trips are increasing. For example, in 2006, 42.4 per cent of Durham students ages 11 to 13 walked to school. By 2016, this declined to 36.5 per cent. For Durham students ages 14-17, a smaller decline was experienced (from 31.4 per cent to 30.9 per cent). Durham students cycling or taking transit to school has also decreased in terms of share of overall trips in the period. In contrast, auto trips to school for Durham students ages 11 to 13 increased from 24.4

per cent to almost 28.6 per cent, and declined slightly from 36.5 per cent to 35.8 per cent for those students ages 14 to 17. This is consistent with trends across the GTHA, except that the auto share elsewhere in the GTHA for students ages 14 to 17 has increased.³

2.2.3 Use of public transit and non-auto modes

Not only has ridership grown for GO Transit and DRT since 2006, public transit's share of

³ School Travel in Durham Region, Metrolinx, 2018.

overall trip making has increased slightly for work trips.

Public transit represented about 11 per cent of morning peak period work trips made by Durham residents (both within and outside Durham) in 2016, compared to 10 per cent in 2006 (refer to Figure 10). Looking forward to 2031,⁴ transit is forecasted to represent 20 per cent of morning peak period work trips—double the share from 2006.

The percentage of Durham residents staying in Durham to work is expected to rebound from 48 per cent in 2016 to 58 per cent in 2031, reversing the downward trend for the 2006-2016 period as previously identified in Figure 4.

As demonstrated through the analysis of travel trends contained in the Durham TMP, an increased share of Durham residents staying in the Region to work potentially increases the number of shorter trips made, creating greater opportunity for these trips to be made using DRT or active transportation rather than cars. If the Region does not meet its population and employment forecasts, or if elements of the TMP Preferred Network are not realized, then the share of transit (and active transportation) trips would likely be reduced at the expense of a greater share of auto trips. This would potentially lead not only to more congestion on our roads, but would create greater impacts on the environment.



Figure 10: Work trips made by Durham residents by mode, morning peak period (6 to 9 a.m.), 2006-2031 (Source: Transportation Tomorrow Survey; *2031 data derived from the Durham Region Transportation Planning Model)

Road transportation produces 47 per cent of Ontario’s carbon pollution. A large proportion of greenhouse gas (GHG) emissions are caused by personal vehicles (Source: Durham Community Energy Plan Baseline Energy Study for 2015, Final Report, May 2017).

⁴ Based on the Durham Region Transportation Planning Model, using the TMP Preferred Network. The TMP Preferred Network includes several minor

refinements to the transit and road networks, as applied through the 2018 Region-wide Development Charge Background Study.

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How DRT or GO Transit users access existing GO Train service in Durham Region is an important consideration for transit planning. Figure 11 compares the primary mode of travel used during a typical weekday using data collected by Metrolinx in 2016.

The Ajax GO Station has the highest share of transit use, at 19 per cent, and the Oshawa GO Station has the lowest share at four per cent. While passenger pick up/drop off and walking was relatively consistent between the stations, active transportation varied considerably. Pickering had the highest share of travellers arriving to the GO station by walking or cycling, at eight per cent combined, while Oshawa had the lowest share at one per cent, with no walk trips surveyed.

The location of the station, transit routes and frequency, and availability of parking are key contributors to reducing the auto driver share to and from GO stations. Consequently, planning for improved access to GO stations by transit is an area of focus of the Durham TMP and DRT’s Five-Year Service Strategy, along with Metrolinx’s GO Station Access Study, 2016.

2.3 Tracking infrastructure expansion and performance

2.3.1 Provincial highway network

Since 2006, progress has been made by the Province of Ontario, the Region and the local area municipalities to expand the road network. With respect to provincial highway infrastructure, Table 1 lists key projects that have been constructed by year of substantial completion in Durham.

The most significant additions to the provincial highway network have been Highways 407 and 412. Phase 1 consisted of the extension of the highway from Brock Road in Pickering easterly to Harmony Road in Oshawa, and the construction of Highway 412 in Whitby. This phase also included the partial construction of the Lake Ridge Road interchange at Highway 401. Phase 1 opened to traffic in June 2016, with the Highway 401/Lake Ridge Road interchange opening in December 2016.

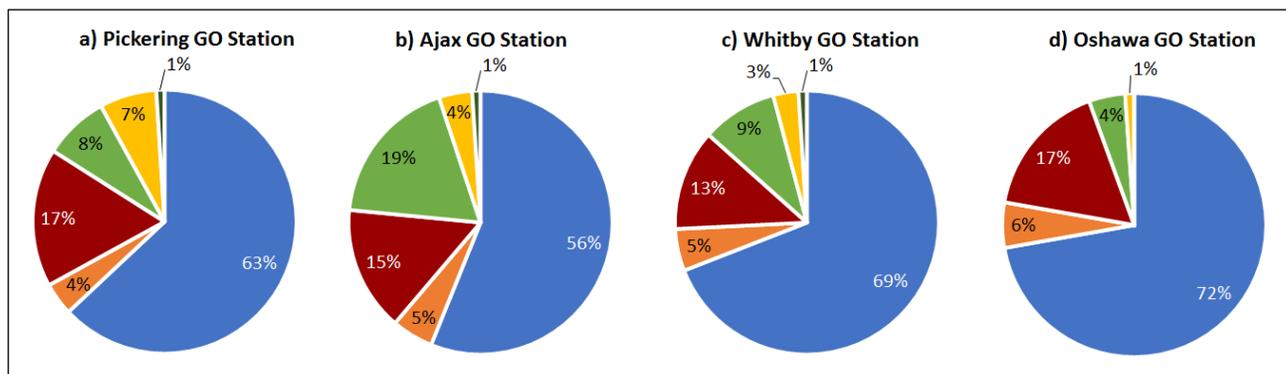


Figure 11: Travel mode used to access GO stations in Durham during a typical weekday, 2016 (Source: Metrolinx, GO Station Access Study, 2016)



Figure 12: Highway 407, Phase 2 construction, looking southwest from the Bowmanville Avenue interchange (Source: Blackbird Infrastructure Group, August 2018)

Table 1: Key provincial highway infrastructure projects, 2006 to present

Year	Project Description
2006	Highway 7/12 reconstruction and new passing lanes
2007	Highway 401 widening to 10 lanes (Westney Road to Salem Road)
2009	Highway 401 interchange at Stevenson Road (and closure of Park Road interchange) completed
2013	Highway 7 widening to 4 lanes (Brock Road to Baldwin Street) completed
2015	Highway 401 interchange reconstruction at Holt Road completed
2016	Highway 407 East Phase 1 Extension to Harmony Road, including Highway 412, opened (without tolls to January 2017)
2018	Highway 407 East Phase 2A Extension to Taunton Road opened

Phase 2A extended the highway to Taunton Road, using a portion of future Highway 418. This phase opened in January 2018. Currently, Phase 2B is under construction, which will further extend the highway easterly to Highway 35/115, and complete Highway 418 southerly to Highway 401. Phase 2B is targeted for completion in 2020.

2.3.2 Regional road and cycling networks



Figure 13: Brock Street widening construction, Whitby (Source: Region of Durham Planning and Economic Development Department)

Between 2006 and 2016, the size of the Regional road network actually decreased in terms of overall length, from 832 kilometres (km) to 826 km, resulting from the transfer of Harwood Avenue and a section of Church Street to the Town of Ajax, and the Region assuming a section of Salem Road. However, in terms of overall lane-km (which is the length of Regional roads, multiplied by the number of lanes by section), there was an increase from 2,087 lane-km in 2006 to 2,165 lane-km in 2016. The increase in lane-km is a result of several large road widening projects

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undertaken in the period, including sections of Brock Road in Pickering; Taunton Road in Ajax, Whitby and Oshawa; Westney Road in Ajax; and Bayly and Victoria Streets in Ajax and Whitby, respectively.

Regional cycling infrastructure has also increased over the last several years. In 2012, there was about 18.7 km of cycling facilities on the Regional road network, comprised mostly of boulevard Multi-use Paths (MUPs) and paved shoulder bike lanes. In 2016, this increased to 39.1 km. In 2018, there was approximately 50 km of cycling facilities on Regional road rights-of-way. Additional boulevard MUPs and paved shoulder bike lanes were added during the period, as well as buffered bike lanes on sections of Kingston Road in Pickering and Ajax, as part of the initial phasing of Highway 2 Bus Rapid Transit (see description below).

2.3.3 Major public transit infrastructure and expansion

Table 2 lists key transit service expansion and infrastructure initiatives since 2006. Service expansion along the GO Lakeshore East rail line has allowed a growing number of commuters from Durham Region to take advantage of strong job growth in downtown Toronto.

In addition to the launch of the PULSE 900 Highway 2 service in June 2013, the Region implemented 10 km of Bus Rapid Transit

(BRT) lanes along Kingston Road in Pickering and Ajax, along with passenger amenities, buffered cycling lanes and maintenance depot upgrades. As of year-end 2018, annual ridership on the 900 PULSE Highway 2 service was almost three million passengers.

The Durham-Scarborough BRT Transit Project Assessment Process (TPAP) Environmental Assessment (EA) study was initiated by Metrolinx in May 2019 as a preliminary design and business case for the corridor from Scarborough City Centre to downtown Oshawa.



Figure 14: Highway 2 BRT construction east of Brock Road, Pickering (Source: Durham Region Works Department)

Key transit service expansions include the GO bus extension to Peterborough, increased GO bus service along the Highway 7/407 East corridor, and enhancements to service frequency and duration along DRT Frequent Transit routes.

Table 2: Key transit expansion and infrastructure initiatives, 2006 to present

Year	Project Description
2006	Amalgamation of local transit agencies into Durham Region Transit (DRT)
2010	Opening of Whitby GO Station parking garage
2013	Launch of PULSE 900 Highway 2 service by DRT
2013	Midday, evening and weekend GO Train service is increased from every hour to every half-hour on the GO Lakeshore East rail line
2013	Opening of Ajax GO Station parking garage
2014	Opening of Pickering GO Station parking garage
2014	Highway 2 BRT lanes opened (Harwood Avenue to Salem Road)
2015	Expansion of Oshawa GO Station parking (West Lot)
2016	Highway 407/Brock Road Park-and-Ride carpool lot completed
2016	Highway 2 BRT lanes opened (west of Liverpool Road to Glenanna Road)
2016	DRT launches Frequent Transit network
2018	Highway 412/Dundas Street Park-and-Ride carpool lot completed
2018	Introduction of 15-minute midday GO Train service on GO Lakeshore East rail line
2018	Highway 2 BRT lanes opened (through Whites Road, Brock Road and Westney Road intersections)
2018	DRT Frequent Transit network expansion (Whites)
2018	Rural Transit On-Demand launched in Townships of Scugog and Uxbridge
2019	Oshawa and Courtice Park-and-Ride carpool lots opened
2019	DRT Frequent Transit network expansion (Harwood, Ritson, Wilson)
2019	Expansion of Rural Transit On-Demand to Township of Brock; service now available seven days a week

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3.0 Provincial policies for transportation planning

Several provincial policies and guidelines are being considered in the Envision Durham review of the Transportation System. As an upper-tier municipality, the Region’s focus is on transportation issues that generally apply to broader geographic areas, as well as areas of Regional interest and jurisdiction. However, Regional interests can apply to smaller or even site-specific areas.

The ROP provides land use and transportation policies, both implementing the requirements of provincial land use plans under the Planning Act, while providing broader policies for implementation in area municipal official plans (refer to Figure 15).

There is also a hierarchy of provincial and Regional transportation-related plans and guidelines that further articulate and implement planning from a Durham perspective (refer to Figure 16). This section will focus on the provincial policies and guidelines relevant to transportation planning.

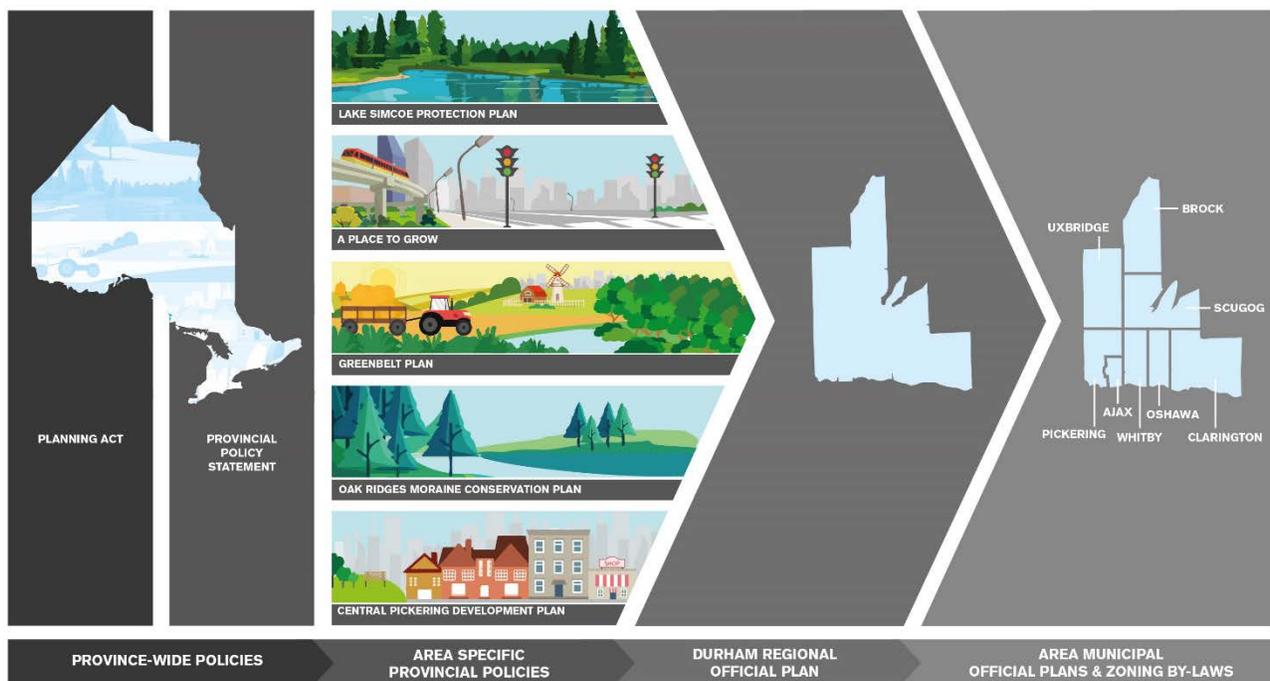


Figure 15: Ontario’s land use planning hierarchy

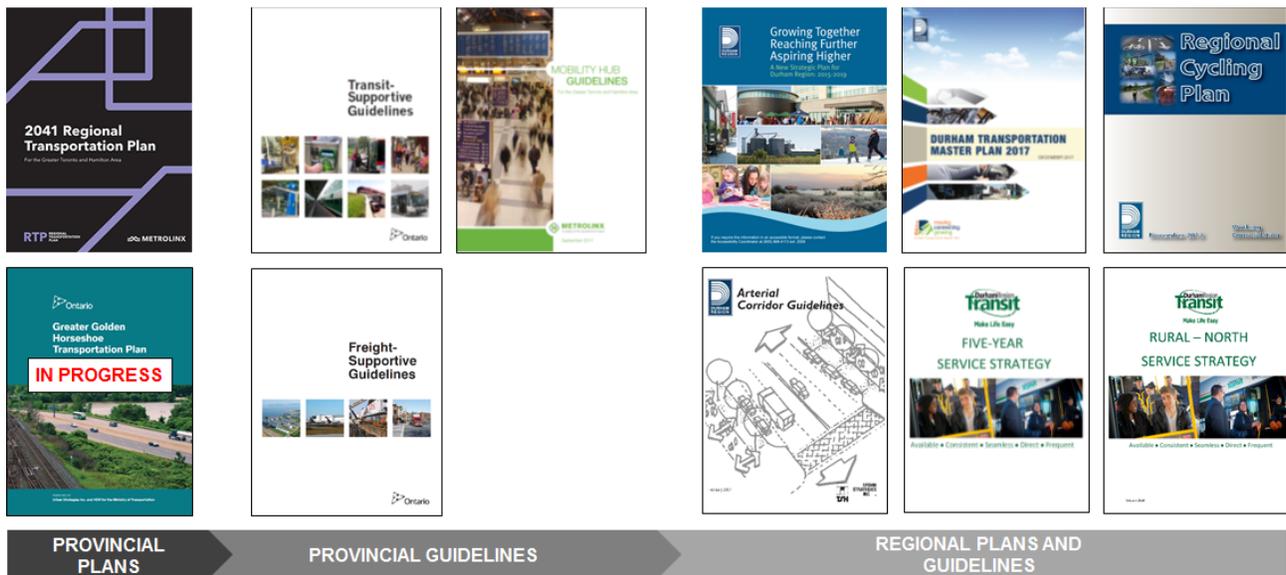


Figure 16: Key transportation plans and guidelines for Durham Region

3.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) sets the policy foundation for land use planning across Ontario. While the PPS provides policy direction for municipalities on planning matters supporting the efficient use and management of land and infrastructure, it also includes policies to ensure that necessary transportation, water, sewer and other infrastructure is available to accommodate current and future needs.

The PPS recognizes that planning for future transportation infrastructure is critical, not only for moving both people and goods, but also to support planned growth and development.

To effectively manage growth, the PPS supports land use patterns with appropriate densities and a mix of land uses, which promote transportation choices that increase the use of active transportation and transit

before other modes of travel. The PPS also supports:

- Developments which are transit-supportive (where transit is planned, exists or may be developed).
- Developments which are freight-supportive (particularly within and between employment areas).
- Connectivity between transportation systems, including across municipal boundaries.
- Planning and protecting for transportation corridors and rights-of-way to meet current and future needs, which may extend beyond a 25-year time horizon.

In July 2019, changes to the 2014 PPS were proposed by the Province of Ontario, with the consultation period on the changes ending in October 2019. Through Envision Durham, the ROP will be updated to address the policies of the new PPS once finalized.

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3.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe

Durham Region is part of the Greater Golden Horseshoe (GGH), which is one of the fastest growing regions in North America. The GGH is forecast to grow from over 9.5 million people and almost 4.6 million jobs (as of 2016), to 13.5 million people and 6.3 million jobs, by 2041. In order to accommodate this growth, A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019 (Growth Plan) provides a long-term plan to build healthy and balanced communities, while maintaining and improving our quality of life. The Growth Plan came into effect in May 2019.

Part of the solution to address anticipated growth in the GGH lies in the transportation system, which should provide convenient access to “complete communities” with an appropriate mix of jobs, local services, public service facilities, and a full range of housing types within short travel distances. In supporting complete communities, the transportation system should reduce the need for long distance commuting and support climate change mitigation by increasing the modal share for transit and active transportation.

In this regard, the Growth Plan recognizes transit as a first priority for major transportation investment, and seeks to align transit infrastructure with growth by

directing growth to Major Transit Station Areas (MTSAs) and other Strategic Growth Areas (SGAs). MTSAs are defined within an approximate 500 to 800 metre walk of a major transit station (the station building or platform itself) along a Priority Transit Corridor, and have specific density targets depending on the type of transit corridor. In Durham, the existing GO Lakeshore East rail line is designated as a Priority Transit Corridor in the Growth Plan.⁵ SGAs include areas that are identified by municipalities to be the focus of intensification, such as corridors and downtowns with major opportunities for infill and redevelopment. It also recognizes infrastructure to support active transportation, and a coordinated goods movement network linking areas of significant commercial activity to the provincial highway network.

The long-term protection of planned transportation corridors, including rapid transit, is also an important policy in the Growth Plan for municipalities to consider, echoing the PPS with specific references to transit and goods movement.

3.3 Metrolinx Regional Transportation Plan

The Metrolinx 2041 Regional Transportation Plan (RTP) is the GTHA’s plan for an integrated, multi-modal transportation system to serve the needs of residents, businesses and institutions to 2041. The RTP

existing GO Lakeshore East rail line is identified as a Priority Transit Corridor, and the extension to Bowmanville is identified as a Committed GO Transit Rail Extension.

⁵ In the Urban System Discussion Paper, MTSAs were identified as locations in proximity to existing GO stations along the GO Lakeshore East rail line and planned stations along the GO Lakeshore East Extension to Bowmanville. In the Growth Plan, the

builds upon the first RTP, entitled The Big Move (2008), and explores current and future trends that will influence transportation over the next 25 years, such as growth patterns, changing demographics, housing demand and climate change.

The RTP supports policies in the Growth Plan by setting priority actions around the completion of key transit projects currently in progress, connecting more of the region with frequent rapid transit, optimizing use of the transportation system, linking transportation and land use, and preparing for changing technologies and conditions such as climate change.

Metrolinx 2041 Regional Transportation Plan: Vision

“The GTHA will have a sustainable transportation system that is aligned with land use, and supports healthy and complete communities. The system will provide safe, convenient and reliable connections, and support a high quality of life, a prosperous and competitive economy and a protected environment.”

The RTP recognizes the complex nature of transportation planning in a large and diverse region such as the GTHA. It identifies challenges and impediments to achieving higher levels of public transit and active transportation, including the need to:

- Integrate land use and transportation planning, decision-making and investments.
- Focus more on moving people, not just vehicles.

- Address traveller needs at the beginning and end of the journey (the “first mile” and “last mile” experience).
- Integrate fares and service across the GTHA and beyond.
- Achieve more formal co-ordination of transportation decision-making amongst different levels of government and transit agencies.
- Provide sustainable and long-term funding tied directly to the RTP.

First mile–last mile 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 (Source: Metrolinx, 2041 Regional Transportation Plan, Engage: www.metrolinxengage.com).

The RTP has identified a Frequent Rapid Transit Network (FRTN) across the GTHA and extending to Barrie, Guelph, Kitchener and Niagara Falls. FRTN is described by Metrolinx as transit service running every 10-15 minutes all-day, every day. The FRTN will be supported by design elements that enhance transit, such as grade separations, separated lanes and signal priority. These routes include bus rapid transit, light rail transit, GO rail, and priority bus corridors and aim to connect regionally significant destinations such as Urban Growth Centres, and areas with high population or employment.

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In Durham Region, FRTN projects are shown in Figure 17. These include two “In Delivery” projects, namely the GO Rail 15-minute Two-Way All-Day service along the Lakeshore East GO line to Oshawa, and the Lakeshore East GO Rail extension to Bowmanville.⁶ Also included is one “In Development” project, the Durham-Scarborough BRT, with the Initial Business Case completed in spring 2018 and the preliminary design and TPAP work formally launched in May 2019. Other FRTN projects in Durham and across the GTHA are currently being assessed by Metrolinx to prioritize the projects and develop appropriate timelines for further study, construction and funding.

Envision Durham will align with the Metrolinx RTP to help achieve its vision for transit and other modes to 2041. Ongoing work by Metrolinx to prioritize FRTN projects is also be reviewed to ensure that its assessment aligns with Durham’s priorities for future transit projects.

Discussion Question:

Beyond “In Delivery” and “In Development” transit projects, which projects do you feel will have the greatest benefit to increase transit use and promote transit supportive development in Durham?

3.4 Greater Golden Horseshoe Transportation Plan

The Greater Golden Horseshoe (GGH) Transportation Plan is being led by the Ontario Ministry of Transportation (MTO), with the aim to develop a long-term transportation strategy of the GGH region to 2051. While still in progress, work to date undertaken as part of the GGH Transportation Plan has included socio-economic, transportation and environmental profiles to identify key issues and emerging trends across the GGH. By the end of 2019, it is expected that a 2051 optimal network will be identified, along with a series of policies and priorities, including a vision for beyond 2071.

MTO has indicated that the GGH Transportation Plan will incorporate planned transit and other transportation networks included in the Metrolinx RTP. With respect to important provincial highway and other MTO projects in Durham, the GGH Transportation Plan should provide a long-term vision for the future beyond the four-year forecast contained in the annual Southern Highways Program.

⁶ Although this project is identified as In Delivery; the alignments and station locations for the GO Lakeshore East extension are being revisited by Metrolinx. More

information on the current status of the GO Lakeshore East Extension is included in the Public Transit discussion (Section 5.2.2).

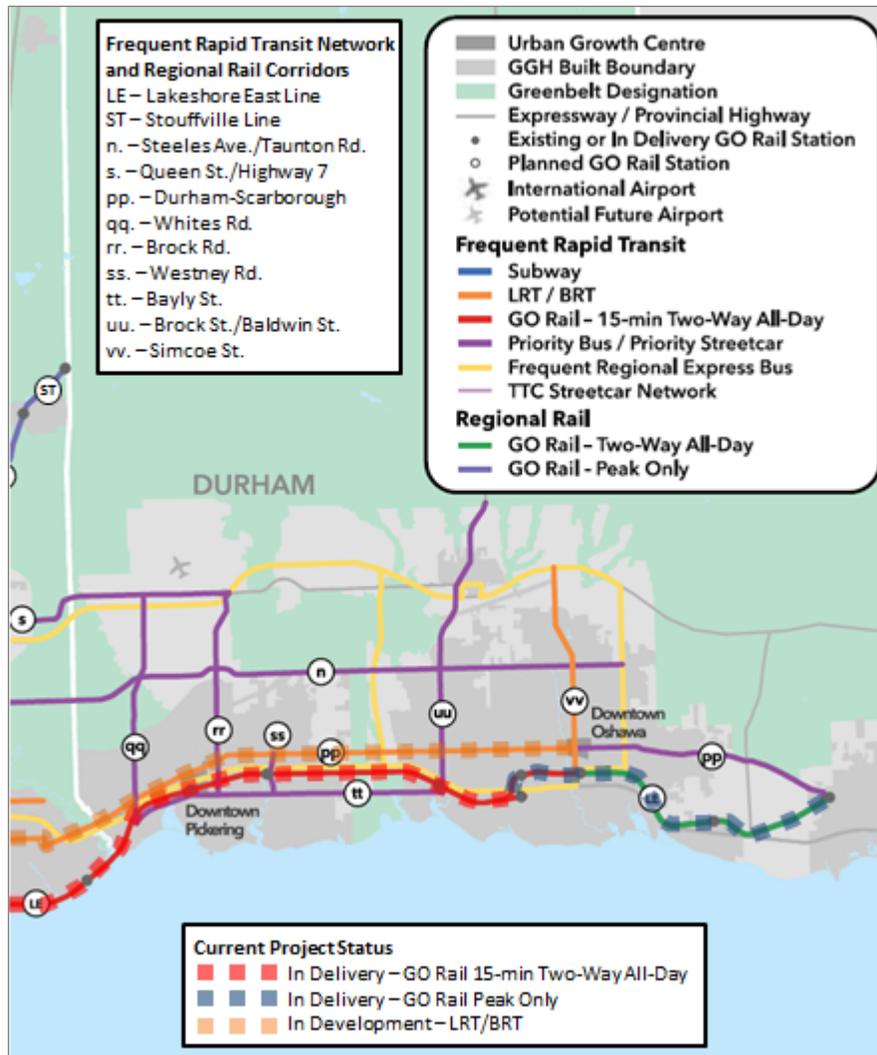


Figure 17: Frequent Rapid Transit Network in Durham Region highlighting projects In Delivery and In Development (Source: Adapted from 2041 Regional Transportation Plan, Metrolinx, Map 6)

3.5 Provincial guidelines

3.5.1 MTO Transit-Supportive Guidelines

In 2012, MTO released its Transit-Supportive Guidelines to assist municipalities and developers in creating transit-supportive places. It updated guidelines released by MTO (originally entitled the “Transit-Supportive Land Use Planning Guidelines”) in

1992. These guidelines can be applied at a regional, area municipal, neighbourhood or site-specific scale.

Overall, the guidelines provide a range of tools to set out how to plan for pedestrian environments and connectivity that encourage people to walk and take transit. For example, the design and landscaping of pedestrian routes, and the quality and

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placement of adjacent buildings can play a key role in creating walkable and functional spaces necessary to support pedestrian travel and in turn, opportunities for accommodating higher order transit service.

The guidelines include best practice approaches for designing transit stops and associated amenities to support better transit experiences. The guidelines also provide approaches to measure the impacts of improvements on transit service changes to monitor their effectiveness.

The 2012 guidelines helped to “move the yardstick” in terms of recognizing the integration of land use planning with planning for transit facilities, infrastructure and service, and by prioritizing transit as a viable transportation option for both existing and new urban areas. It also recognized the strong linkage between active transportation and transit, and the importance of improving the first mile–last mile transit user experience.

3.5.2 Metrolinx Mobility Hub Guidelines

In 2011, Metrolinx developed “Mobility Hub Guidelines” which provides developers, municipalities, transit operators and other key stakeholders with best practices for planning around 51 key transit station locations in the GTHA, identified in The Big Move (2008). Mobility Hubs act as key destinations for existing or planned offices, retail, government services and/or educational facilities. The Mobility Hubs are locations approximately 800 metres around existing or planned transit stations, where important connections with other transit

services and active transportation connections can be provided.

The guidelines focus on all modes of transportation and how they all connect to transit, such as transit customer amenities, urban design, land use mix, parking management and station design.

Within Durham, four Mobility Hubs were identified in the Mobility Hub Guidelines:

- Downtown Pickering Urban Growth Centre (UGC).
- Seaton (at the terminus of the planned Seaton GO Line).
- Oshawa GO (at the current terminus of the Lakeshore East GO Line).
- Downtown Oshawa (at the planned Central Oshawa GO Station, immediately south of the downtown Oshawa UGC).

Although the 2041 RTP identifies Mobility Hubs, it has only identified them on Priority Transit Corridors designated in the Growth Plan. Accordingly, the only Mobility Hub now identified in Durham is downtown Pickering, as the remaining Mobility Hubs are not on a Priority Transit Corridor.

3.5.3 MTO Freight-Supportive Guidelines

In 2016, MTO released Freight-Supportive Guidelines to help planners, engineers, developers and other community builders better plan for the needs of goods movement. Understanding how to minimize the negative impacts of freight movement on transportation networks, particularly in existing and growing communities, is vital to maintain an efficient transportation system and thriving economy.

Goods movement can be by road, air, rail, water and pipeline. The Freight-Supportive Guidelines are useful in assisting with integrating transportation and land use, through site and network design, to improve efficiency, safety and reduce conflicts. Providing for and sustaining efficient supply chains is an important factor for logistics providers and other firms in their decision on where to locate. When supply chains become compromised by traffic congestion or too many competing interests on arterial road corridors, it can cause financial burden to existing firms and detract from future investments. With the increasing level of globalization where goods, services and raw materials come from all corners of the globe, it is important that the ever-changing demands of goods movement on the transportation system are supported.



Figure 18: Oshawa Executive Airport (Source: Durham Region Planning and Economic Development Department)

provincial and international trade. The Region also has the Port of Oshawa and St. Marys Cement as public and private commercial ports, respectively, and the Oshawa Executive Airport, as important goods movement facilities (see Section 5.6).

Creating communities that support all modes of transportation is an important component of the current ROP. The movement of freight is vital for Durham Region's economy and high quality of life. The provincial highway system, Canadian National (CN) and Canadian Pacific (CP) railways, are important goods movement corridors in Durham, linking inter-

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4.0 Durham Region transportation policy context

4.1 Durham Region Strategic Plan

Durham's current Strategic Plan, 2015-2019 recognizes the importance of transportation planning in supporting and fulfilling the vision for growth and development in various communities across the Region. The goals and strategies most relevant to the transportation planning function are identified in Figure 19.

The process for developing a new strategic plan is currently underway. Directions arising out of the new strategic plan will be considered and incorporated into the ROP as appropriate through Envision Durham.

B. Population Health and Quality of Life <i>Maintain and improve the health of our community and build a Regional community that is inclusive, cohesive and welcoming.</i>
B.1: Support and encourage active living and healthy lifestyles to enhance the connectivity between our communities.
C. Healthy Environment and Sustainable Communities <i>Protect, enhance and restore the natural environment and build resilient, safe communities that are supported by reliable, affordable transportation systems and services.</i>
C.3: Ensure that Regional transportation infrastructure is functional, integrated, reliable and barrier-free to support the movement of residents to work, school, and local services.
C.5: Work more closely with local municipalities and other partners to manage growth through effective, progressive and integrated long-term planning.
D. Organizational Health and Service Excellence <i>Deliver exceptional municipal services through strategic, compassionate and innovative leadership.</i>
D.3: Improve communications and collaboration across the Region and in particular with local municipalities.

Figure 19: Durham Region Strategic Plan, 2015-2019, transportation-related Goals and Strategies

4.2 Durham Transportation Master Plan

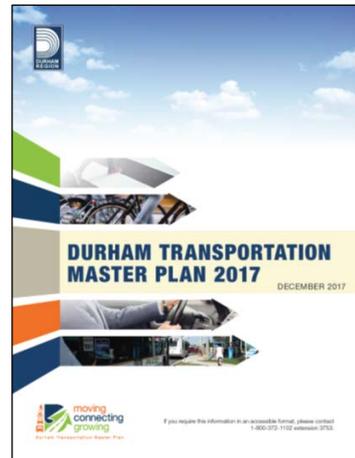


Figure 20: Durham Transportation Master Plan, 2017

The Durham TMP was approved by Regional Council in December 2017. It is a strategic planning document identifying policies, programs and infrastructure needs for the Region to 2031, while protecting certain corridors for future transportation needs beyond 2031. The TMP supports planned growth and development consistent with the current ROP, and contains a multi-modal approach in its recommendations and actions, including walking, cycling, public transit, road networks and goods movement.

The TMP provides a foundation for the Envision Durham review of the Transportation System, through its Guiding Principles and Strategic Directions, as noted in the Introduction (Section 1). For each Strategic Direction, a series of goals are outlined, which in turn organize specific actions to implement the TMP (refer to Figure 21).

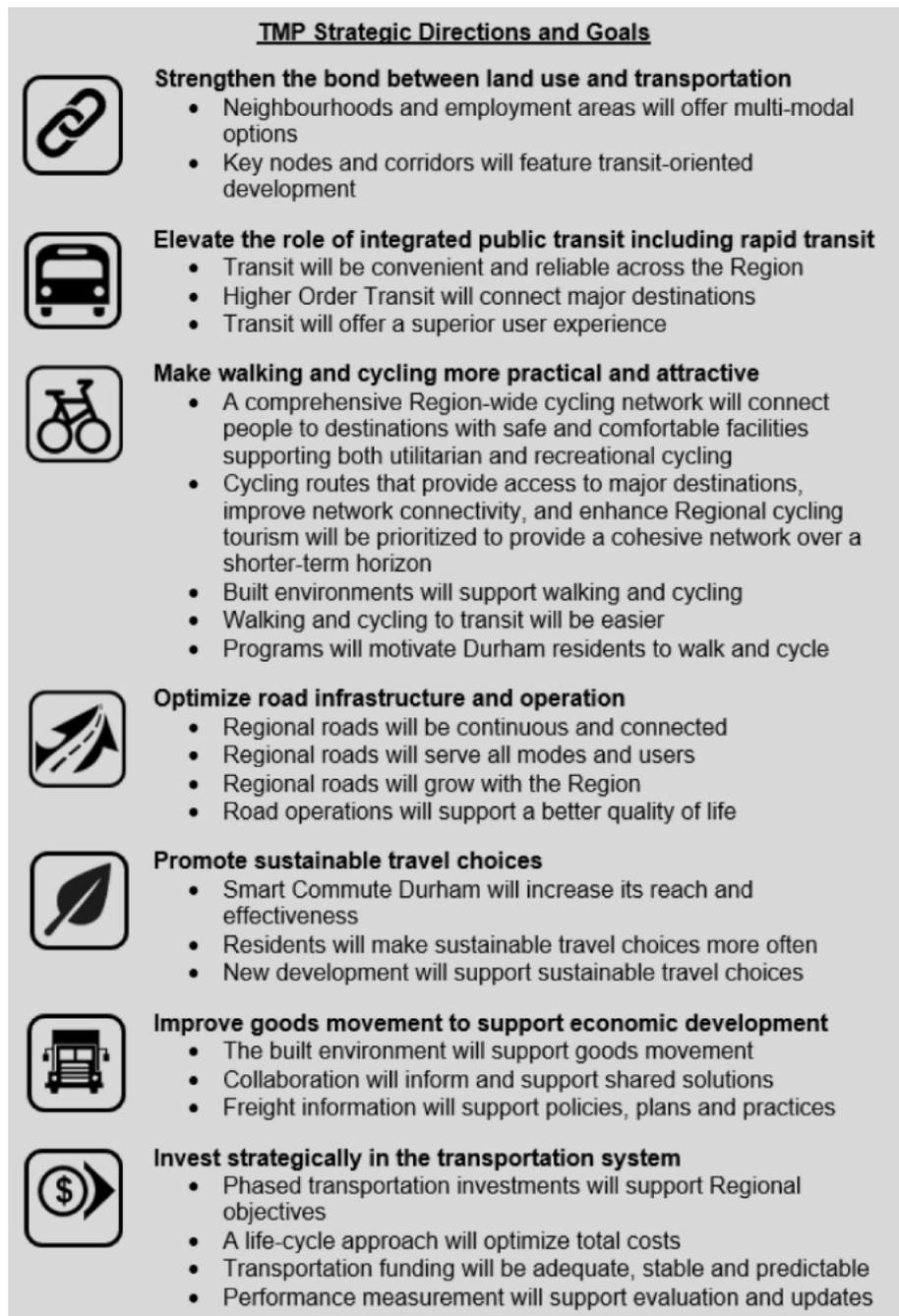


Figure 21: Transportation Master Plan, 2017, Summary of Strategic Directions and Goals

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4.3 Durham Regional Official Plan

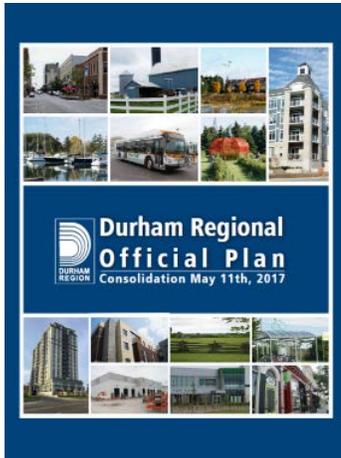


Figure 22: The Durham Regional Official Plan

The Transportation System comprises one of the primary components of the ROP, with the Urban System, Greenlands System and Rural System being the other three.

The Transportation System contains specific designations for existing and planned facilities, including:

- Road Network, consisting of freeways and a hierarchy of arterial roads, referred to as Type A, B and C.
- Transit Priority Network, with freeway and arterial road transit corridors, and commuter rail.
- Strategic Goods Movement Network including roads, railways, airports and ports.

These designations are shown in a series of maps in Schedule 'C' of the ROP. Supporting policies for these network elements, and policies for active transportation related to pedestrian connectivity, cycling facilities and trails are also contained in the ROP. Most transportation related policies are in Section

11–Transportation System, but there are other transportation related policies supporting the development of healthy and complete communities, and the various components of the Urban System.

4.3.1 Amendment #171 to the Regional Official Plan

One of the first actions implemented from the Durham TMP was an update to the ROP to include recommended network changes, and new criteria for arterial roads where Rapid Transit or High Frequency Bus in High Occupancy Vehicle (HOV) lanes are proposed (Actions #46 and #47). This was achieved through Amendment #171, which was adopted by Regional Council in June 2018 and has been in effect since July 5, 2018. In summary, the amendment made the following changes to the ROP:

- Approximately 70 additions, changes or deletions to the designations of specific arterial road sections on the Road Network maps.
- Updates to the Transit Priority Network map.
- Updates to the Strategic Goods Movement Network map.
- Several changes to policies in the Transportation System section and in the Arterial Road Criteria (Schedule 'E').

Building upon Amendment #171, Envision Durham will focus on the actions and recommendations in the Durham TMP that have broader implications on other aspects of the ROP, particularly through the Growth Management Study work and additional

review of the Transportation System. For reference, the Transit Priority Network in the southern portion of the Region, as amended through Amendment #171, is shown in Figure 23.

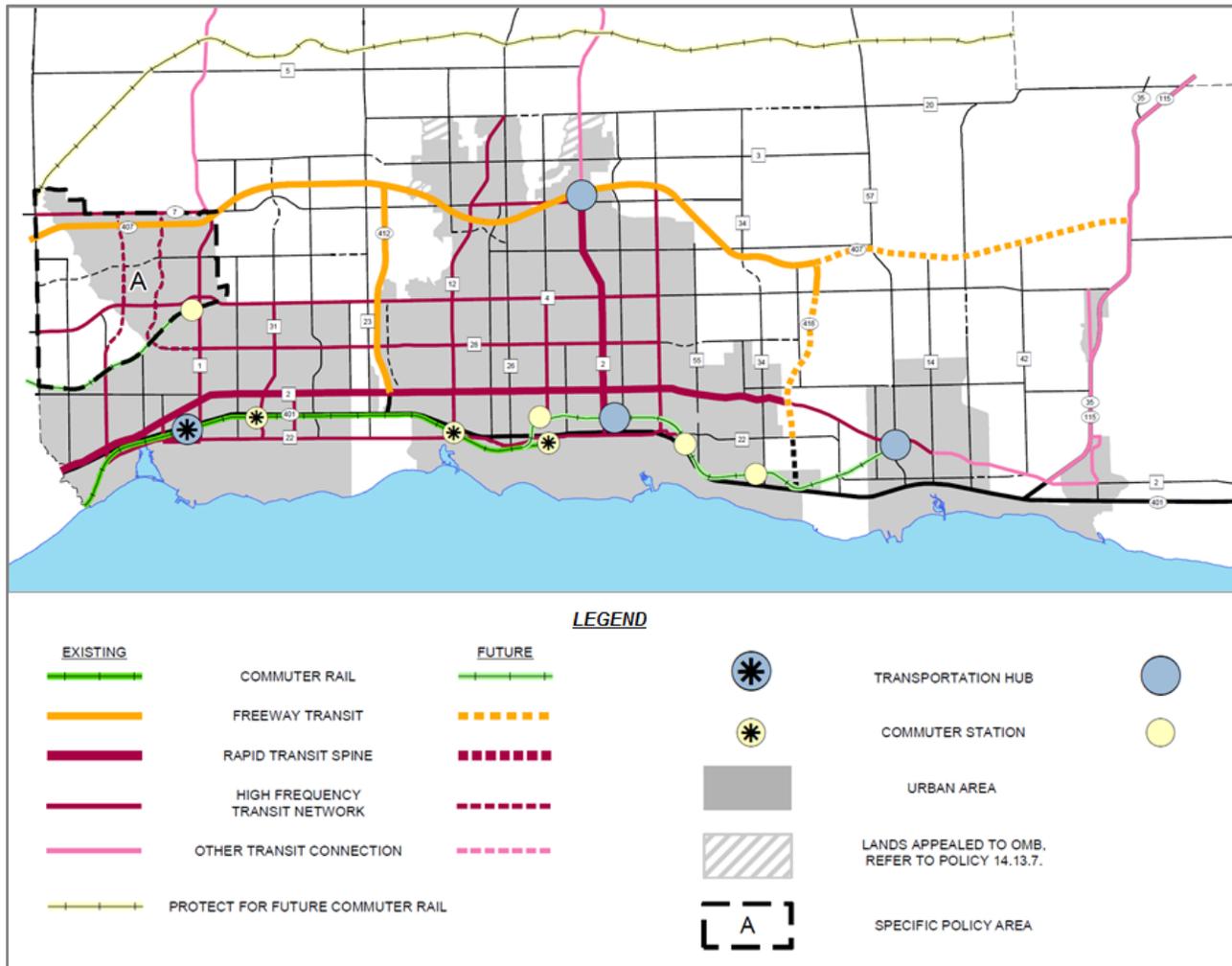


Figure 23: Excerpt of the Regional Official Plan Transit Priority Network for the Lake Ontario shoreline municipalities

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4.4 Regional Cycling Plan and Regional Trail Network

The Regional Cycling Plan (RCP), as revised and approved by Regional Council in 2012, provides direction for a Region-wide cycling network that includes recommendations for planning, design and implementation. The focus of the 2012 update was on the implementation of a Primary Cycling Network (PCN) and the communications plan. The PCN is comprised of existing and planned cycling facilities that connect major centres, destinations, GO Stations and other transit hubs, and external municipalities (City of Toronto and Northumberland County) on arterial roads under provincial, Regional and area municipal jurisdiction. The RCP also recommended a communications and promotion plan, which is being implemented through the Cycle Durham program.

Over 84 per cent of survey respondents think that providing a Transportation System that is integrated and reliable for all users and modes is “very” to “extremely important.”

(Based on the Envision Durham public opinion survey results, 391 respondents).

The RCP recognizes a Regional Trail Network (RTN), and local routes defined by area municipal active transportation plans or within TMPs, as collectively forming the broader cycling network. The RTN also identifies existing off-road public trails for walking, hiking and/or cycling throughout Durham. These trails include existing inter-regional routes such as the Waterfront Trail and The Great Trail (formerly the Trans Canada Trail), longer connections within and

between area municipalities, and proposed or desired linkages. In rural areas, some of these proposed linkages are on rights-of-way of local roads.

The **Share the Road Cycling Coalition** is a provincial cycling advocacy organization working to build a bicycle-friendly Ontario. It works in partnership with municipal, provincial and federal governments, the business community, road safety organizations and other non-profit groups.

The **Bicycle Friendly Communities** program was launched in Ontario in 2010 by Share the Road Cycling Coalition with support from the Canadian Automobile Association, South Central Ontario. The program provides incentives, hands-on assistance and award recognition for communities that actively support bicycling. Municipalities are judged in five categories often referred to as the Five “E’s” of being bicycle friendly: Engineering, Education, Enforcement, Encouragement and Evaluation & Planning. A community must demonstrate achievements in each of the five categories to be considered for an award. The Award categories are: Bronze, Silver, Gold, Platinum and Diamond.

(Share the Road Cycling Coalition, 2019, www.sharetheroad.ca)

An update to the RCP is planned to begin in fall 2019 as a separate yet complementary process (Action #32, Durham TMP), which will review the PCN in the context of area municipal and other plans, the province-wide Cycling Network Study (2018) and Metrolinx RTP Cycling Network for the GTHA (2018). The RCP update will identify emerging trends

in cycling facility design, community values, public interest, funding and partnerships between different levels of government. It will also review and refine the phasing approach for constructing bike facilities and address gaps impeding the creation of Region-wide cycling routes and longer-term bike facilities.

Many of the Region's area municipalities have developed (or are in the process of developing) their own active transportation plans, or active transportation components as part of their TMPs. At a local level, both infrastructure as well as programming and outreach has been implemented, with Ajax currently recognized with a Silver designation, and Whitby and Oshawa with Bronze designations, by Share the Road Cycling Coalition under the Bicycle Friendly Communities program.



Figure 24: Cross ride at the Victoria Street/Henry Street intersection, looking south, Whitby (Source: Durham Region Planning and Economic Development Department)

4.5 Arterial Corridor Guidelines

Durham's Arterial Corridor Guidelines were approved by Regional Council in 2007 as a toolbox of potential strategies and common reference points to be applied when planning and designing arterial roads in the Region. The guidelines provide design criteria for arterial rights-of-way to help balance mobility and access with liveability objectives, including:

- How arterial roads should evolve over time.
- Principles to guide the planning of street networks and street elements, such as sidewalks, landscaping, medians, street furniture and signage.
- A range of cross-sections illustrating a variety of street types, building upon the Type A, B and C Arterial designations and showing the diversity of street types that can be achieved.
- An outline of the processes under which they can be applied.

The Durham TMP recommends an update to the Arterial Corridor Guidelines to reflect more recent road design standards and guidelines, including cycling and transit facilities (Action #53). Further, an update to the guidelines would aim to contemporize the criteria to reflect "complete streets" principles.

Through Envision Durham, updates to the Arterial Road Criteria and policies in the ROP will be considered to support the implementation of complete streets.

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Complete Streets are streets that are designed to be safe for everyone: people who walk, bicycle, take transit, or drive, and people of all ages and abilities. A complete streets policy ensures that transportation planners and engineers consistently design and operate the entire street network for all road users, not only motorists. Complete streets offer wide-ranging benefits. They are cost-effective, sustainable, and safe (Source: Complete Streets for Canada, The Centre for Active Transportation, 2019).

4.6 Durham Region Transit strategies

4.6.1 Five-Year Service Strategy

Durham Region Transit (DRT) completed a Five-Year Service Strategy in 2016, to increase its ability to improve its market share of travel by growing ridership throughout Durham. The cornerstone of this strategy is to provide Durham residents with service that is “available, consistent, direct, frequent and seamless,” helping to position public transit as a preferred option for Durham residents. To achieve this goal, the strategy proposed targeted service improvements to coincide with new neighbourhoods and developments. These service improvements are aimed to satisfy travel demand and address changing travel patterns by actively targeting new riders as Durham Region’s population grows.

The strategy focused on five service features:

- **Route Alignment**—making transit routes direct to improve travel time.
- **Servicing New Growth Areas**—making transit services available as early as possible to capture new riders and curtail auto demand.
- **Service Hours**—to make transit available to more users by increasing the duration of service.
- **Service Frequency**—implementing a minimum 30-minute service in the urban area, with 20-minute service in selected grid routes.⁷
- **A High Frequency Network**—core transit routes offering frequent service of 20 minutes or better at all times.

The strategy’s High Frequency Network, and terminals and stations, set the stage for further service and infrastructure investments to move towards the Transit Priority Network in the ROP.

The strategy’s High Frequency Network, now referred to as the Frequent Network, can be accessed by 70 per cent of dwellings within an 800 metre (10 minute) walk. It accounts for over 60 per cent of passenger boardings across the network. These routes are commonly easier to access, and are closer to denser residential areas, employment and commercial areas, and schools including post-secondary institutions. These characteristics enable DRT to offer frequent service over longer periods of time, while being sustainable to operate. The routes currently forming the Frequent Network are illustrated in Figure 25.

⁷ Based on weekday daytime service but can have greater frequency during the morning and afternoon peak periods.

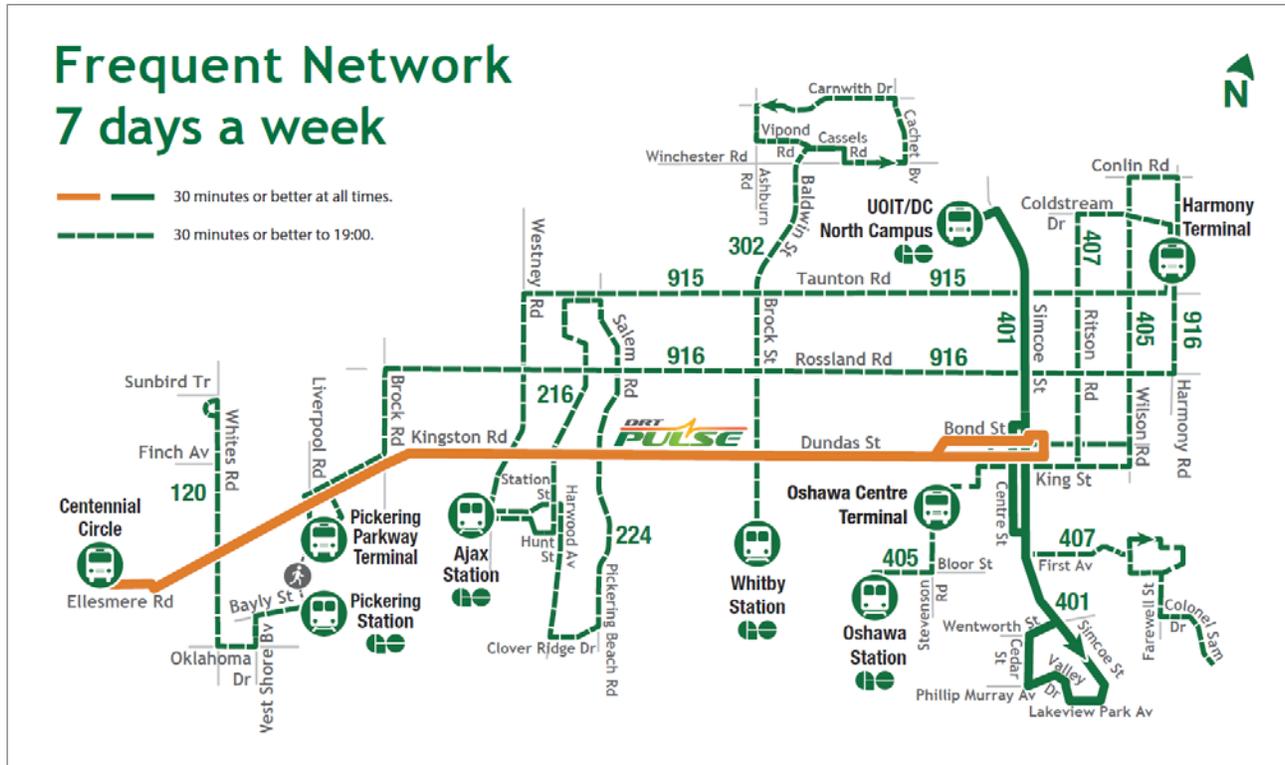


Figure 25: Durham Region Transit Frequent Network, 2019

The PULSE 900 Highway 2 and 401 Simcoe routes provide frequent service of 10 minutes along their busiest sections, and operate, at minimum, every 30 minutes elsewhere on these routes. The PULSE 900 Highway 2 service, launched in June 2013, is the base for the future Durham-Scarborough BRT between Scarborough City Centre and downtown Oshawa. Route 401 Simcoe, with plans to upgrade to a PULSE brand in 2020, services the future Rapid Transit Spine between the planned Central Oshawa GO Station and Highway 407.

The Five-Year Service Strategy includes terminals and stations as supporting infrastructure for buses and passengers where numerous routes meet, or where DRT connects with GO Transit rail or bus services. Currently, there are 11 terminals and

stations, with an additional four identified for future implementation. These terminals and stations are also included in the Durham TMP and will be considered further as part of the Transit Priority Network review in Section 5.2.



Figure 26: PULSE 900 Highway 2 bus stop, Whitby (Source: DRT)

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The strategy's High Frequency Network, and terminals and stations, set the stage for further service and infrastructure investments to move towards the Higher Order Transit Network identified in the TMP. An update to the Five-Year Service Strategy should launch in late-2019/early 2020.

4.6.2 Rural-North Service Strategy

The Rural-North Service Strategy, 2016 identified transit solutions for the Region's northern municipalities (Uxbridge, Brock and Scugog). Providing attractive and efficient scheduled transit to these areas is challenged by longer trip distances between urban areas and lower population densities overall.



Figure 27: Queen Street, downtown Port Perry (Source: Durham Region Planning and Economic Development Department)

The strategy takes a three-pronged approach when serving the Region's large rural area by offering regular service to the urban areas and hamlets in Durham's north; connector service to neighbouring urban centres such as Newmarket, Orillia and Lindsay; and a "demand responsive" service where customers can book their trips ahead of time by calling a central reservation number in a specific geographical area. The regular

service transit routes provide connections to GO Transit bus service, with connections to the Lincolnville GO Station, as well as a direct DRT connection to the Pickering GO Station.

For the Transportation System review, the strategy demonstrates that providing effective transit services in Durham Region's rural areas is important in the development of a Region-wide system that can be accessed by all residents.

Currently, the 2019 Review for Rural Areas is being developed, which will update the Rural-North Service Strategy.

5.0 Policy considerations

The following is a framework for the Transportation System review as part of Envision Durham. These themes incorporate provincial policies and guidelines as well as current ROP policies in their analysis.

5.1 Land use and transportation

The current ROP contains a suite of policies that support the integration of land use and transportation as part of the Regional Structure. Strengthening these policies to better integrate the land use and transportation relationship were also addressed in the Urban System Discussion Paper (released June 2019), and are elaborated upon in the following sections.

5.1.1 Transportation planning considerations for Strategic Growth Areas

Urban Growth Centres (UGC), Regional Centres, Regional Corridors and Waterfront Places that are currently designated in the ROP prescribe minimum density targets. These areas are to be easily accessed by public transit and to have an extensive pedestrian network.

The Growth Plan requires the identification of SGAs in the ROP, as places where intensification and higher-density mixed uses are to be the focus for accommodating intensification. Both MTSAs and UGCs are noted as components of SGAs in the Growth Plan. Since these areas are designated for higher-density mixed uses, they must have specific boundaries outlined in the ROP. As described in the Growth Management—Urban System Discussion Paper, the Regional

Centre, Regional Corridor and Waterfront Place designations are being considered as areas that meet the definition of SGAs.

Figure 28 shows the Transit Priority Network designations in the ROP on arterial roads, superimposed on the Regional Centre, Regional Corridor, Waterfront Place and proposed MTSA designations.

Transit Priority Network on Arterial Roads in the current Regional Official Plan

Rapid Transit Spines provide dedicated transit lanes in most arterial road sections and intersect with local transit services.

High Frequency Transit Network consists of buses in planned High Occupancy Vehicle (HOV) lanes, or buses in mixed traffic, with transit signal priority at major intersections and other measures to ensure fast and reliable transit service. Planned HOV lanes may be converted to dedicated bus lanes as growth in ridership warrants.

Other Transit Connection facilitates longer-distance trips, providing direct links to Transportation Hubs and Commuter Stations from smaller urban and rural areas.

The ROP designates the Highway 2 corridor (from the Pickering/Toronto boundary to Highway 418 in Courtice) and Simcoe Street (from Highway 407 to Olive Avenue) as Rapid Transit Spines. These Rapid Transit Spines are planned to include dedicated transit lanes through large sections, which can be achieved through the future widening or the conversion of existing general-purpose lanes for exclusive transit use.

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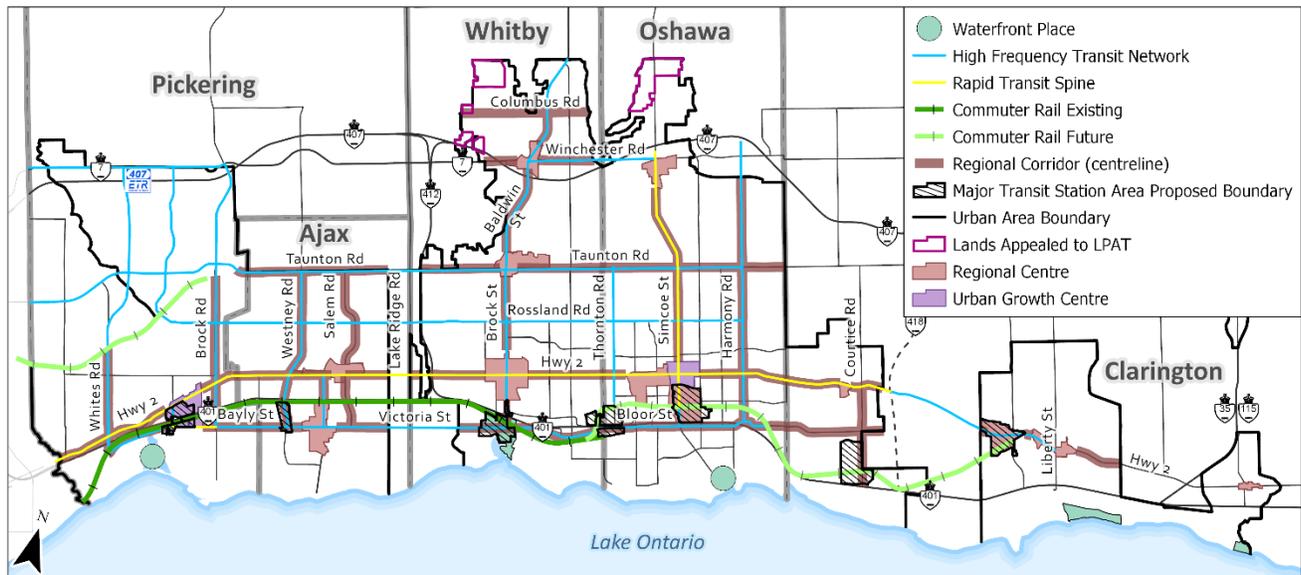


Figure 28: The Rapid Transit Spine, High Frequency Transit Network and Commuter Rail designations for the Transportation System with current boundaries for Urban Growth Centres, Regional Centres, Regional Corridors, Waterfront Places and proposed Major Transit Station Areas

Highway 2 and Simcoe Street, along with the GO Lakeshore East rail corridor and the planned GO Lakeshore East extension, form the backbone of the Region’s Transit Priority Network in the ROP.

Providing for higher densities along Regional Corridors and especially Rapid Transit Spines would bring more residents and jobs next to existing or planned frequent transit routes. However, there are also Regional Corridors that are currently designated in the ROP that do not correspond to any components of the Transit Priority Network. As noted in the Urban System Discussion Paper, these sections of Regional Corridor may not need to be designated in the ROP, as they do not support a Higher Order Transit function, but lands within them could be identified in local official plans as local centres or corridors.

Discussion Question:

Should the Region only designate Regional Corridors adjacent to the High Frequency Transit Network?

5.1.2 Transit Oriented Development

Transit Oriented Development (TOD) is the clustering of high-density, compact development in proximity to transit infrastructure. The design of TOD places includes a mix of residential, community use, retail and other pedestrian amenities that support transit ridership, along with good quality active transportation connections. TOD stresses the importance of pedestrian-oriented streets, places and buildings while minimizing parking needs.

In order to support TOD in SGAs, particularly Regional Centres and Regional Corridors

along Rapid Transit Spines, the TMP recommended the development of TOD guidelines and a corresponding strategy with enabling policies in the ROP (Actions #3 and #4). The formulation and application of TOD guidelines would form an important tool for ensuring that SGAs develop in a manner to support transit use in the near and long-term as TOD places.

In 2010, as part of the Durham Long Term Transit Strategy Study (LTTS), a TOD Strategy was drafted to support the Higher Order Transit network recommended through the study, which included a set of potential guidelines for 39 TOD places identified across the Region. Although the TOD Strategy was not officially endorsed or approved by Regional Council, it has been used as a resource when reviewing development applications and other projects.

The **Long Term Transit Strategy (LTTS)**, 2010, described a vision for public transit in Durham Region. It presented a comprehensive long-range vision of the Region's rapid transit network and identified major transit corridors and service levels for higher order service throughout Durham Region. The LTTS provided valuable input to the development of the 2031 transit network proposed in [the] TMP (Source: Durham Transportation Master Plan, 2017).

Through Envision Durham, an update to the TOD Strategy is being considered to articulate transit-oriented principles, policies and practices for new development.

Discussion Question:

Should Transit Oriented Development policies and guidelines for Strategic Growth Areas be tailored to the planned level of transit service?

5.1.3 Supporting development in Major Transit Station Areas

The Growth Plan requires MTSAs to be planned as places that will achieve a higher density mix of uses (where appropriate) within an approximate 500 to 800 metre radius of the transit station itself, representing a 10-minute walk. MTSAs are intended to become areas where transit, active transportation and vehicular access is in high demand due to the transit station, but can become distinct TOD places and destinations themselves. As such, supporting development of MTSAs will require a review of current approaches for planning new intersections, accesses and active transportation connections to these areas.



Figure 29: San Francisco by the Bay condominium development, Pickering (Source: Durham Region Planning and Economic Development Department)

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Discussion Question:

Do you support Major Transit Station Areas having specific transportation-related policies to support their development as Transit Oriented Development places, similar to those already applied to Regional Centres?

5.1.4 Transit-supportive development

The ROP contains policies that are consistent with transit-supportive development for urban areas. While TOD and transit-supportive development are similar concepts, the latter is generally applied to areas outside of SGAs that are not planned as areas of significant intensification. Pedestrian connectivity within and between neighbourhoods, a grid system of roads and restricting reverse-lot frontage (where the backyards and rear fences of properties face the arterial road) are examples of design measures that support access to any type of transit route. These measures help increase the potential “walkshed” or geographical area from which transit users can walk or bike to the nearest bus stop within five to 10 minutes, making transit service more accessible to residents.

Where High Frequency Transit Routes exist or are planned, additional ROP policies for transit-supportive development in local centres or corridors identified in area municipal Official Plans would benefit overall transit use. For these areas, as well as areas along arterials that are not High Frequency Transit Routes, transit-supportive development could incorporate provisions between transit stops and adjacent

development, to ensure convenient pedestrian access and supporting infrastructure is specifically addressed as part of the development review process. This can include the provision of public walkways, or easements over common element areas in condominiums for public-use walkways, to provide access between the arterial road and the adjacent neighbourhood.



Figure 30: Walkway connection between a park and an arterial road within a condominium townhouse development, Whitby (Source: Durham Region Planning and Economic Development Department)

Discussion Question:

What up-front considerations should the Regional Official Plan provide with respect to encouraging transit-supportive development outside of Strategic Growth Areas?

5.2 Public transit

The ROP provides a strong policy foundation for the designation of the Transit Priority Network. Through Envision Durham, strengthening the transportation and land use relationship can be achieved, with public transit being critically important in supporting intensification in SGAs and supporting transit use.

5.2.1 Other Transit Hubs

The current ROP designates Transportation Hubs and Commuter Stations (refer to Figure 23).

In addition to MTSAs, there are other locations in the Region that are transit focal points. The Harmony terminal at Taunton Road, Oshawa Centre terminal and Ontario Tech University/Durham College North Campus terminals are notable examples.

The Durham TMP and DRT Five-Year Service Strategy identify 11 existing and proposed transit station and terminal locations. The TMP recommends protecting for transit station and terminal needs early in the planning process (Action #13). These locations facilitate transfers between different transit routes and/or services and could support complementary TOD in certain locations. Such a designation could also be supported by policies emphasizing good active transportation connectivity, passenger amenities and prioritization for buses to and from these sites, encouraging use and enhancing the first mile–last mile experience for transit users.

Discussion Question:

Do you support a new Transit Hub designation and policies as part of the Regional Official Plan?

5.2.2 GO Lakeshore East Extension

In June 2016, the easterly extension of GO Train service to Bowmanville was announced by the provincial government for completion in fall 2024. The announcement indicated that four new stations would be constructed (Thornton's Corners–B1, Central Oshawa/Ritson Road–B2, Courtice–B3 and Bowmanville–B4).

In May 2019, Metrolinx announced that it is considering four alignment options, as follows (refer to Figure 31):

- Option 1 reflects the preferred alignment from the EA study, with the planned station locations on the CP Rail line (that is, north of Highway 401).
- Option 2 resembles Option 1, except that the CN to CP Rail connection across Highway 401 uses the existing General Motors spur line.
- Option 3 uses the existing CN Rail alignment south of Highway 401, without any connection to the CP Rail line.
- Option 4 uses the existing CN Rail alignment through Oshawa, connecting across Highway 401 to the CP Rail line near the Oshawa/Clarington boundary.

Following the Metrolinx announcement, Regional Council and Whitby, Oshawa and Clarington all endorsed Option 1.

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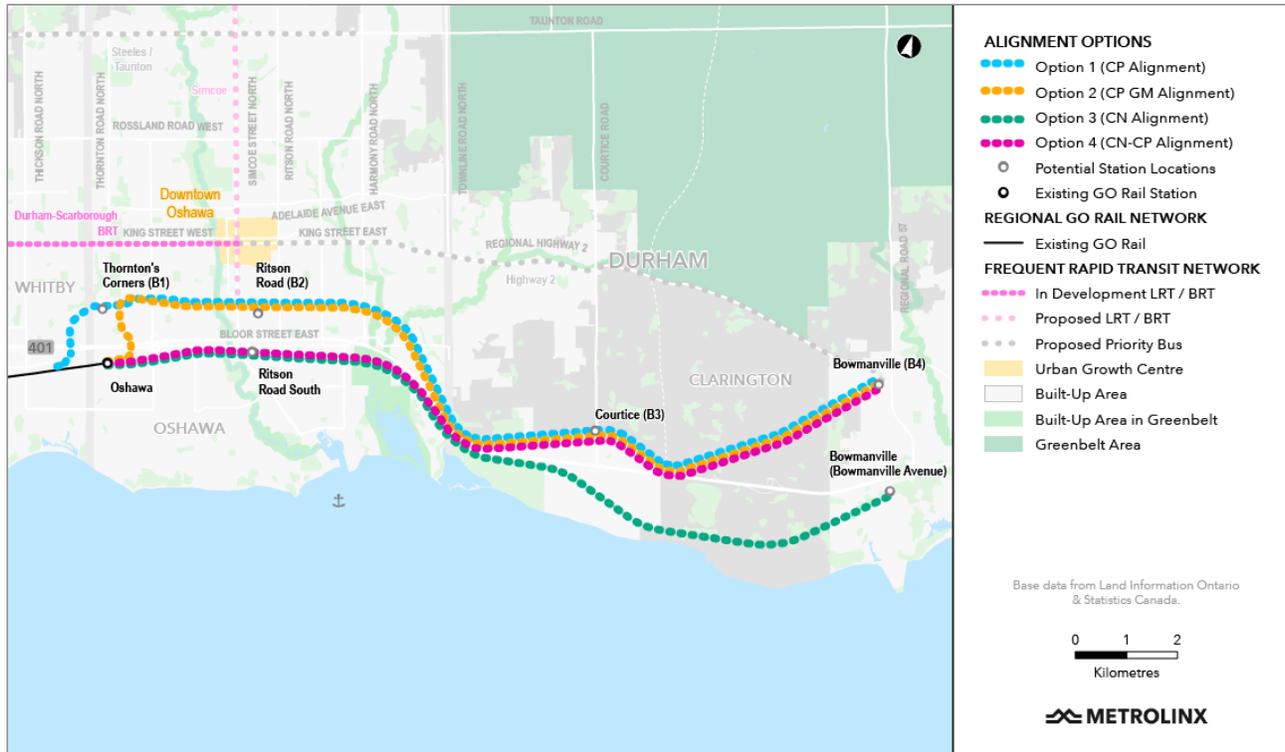


Figure 31: GO Lakeshore East Extension, showing the four alignment options being reviewed by Metrolinx (Source: Metrolinx, May 2019)

A revision to the approved alignment of the GO Lakeshore East Extension would undermine the Region’s planned land use structure and ability to fulfill intensification requirements as set out in the Growth Plan. It also has broad implications for connectivity of the future stations to the Transportation System.

Based on the TMP and the Region’s capital budget, Regional road infrastructure improvements have occurred and are being planned in anticipation of the committed 2024 delivery of Option 1. A change from Option 1 would result in fewer and more isolated transit stations, making station connectivity for transit and active transportation more challenging, with relatively few redevelopment and community improvement opportunities. Detailed

planning and land acquisition has already occurred at certain locations along the Option 1 route.

Downtown Oshawa is designated as an UGC in the Growth Plan, and the proposed MTSA for the Central Oshawa GO Station is adjacent to the UGC. The MTSA also coincides with part of the Downtown Oshawa Regional Centre. Connectivity and proximity to Higher Order Transit, as well as opportunities to redevelop existing underutilized areas, advances provincial planning policy for TOD in this location.

For Bowmanville, the proposed station as the eastern terminus of the extension is within the Bowmanville West Regional Centre. Existing plans and policies in this area includes a high degree of intensification,

mixed-use development and place-making consistent with a MTSA.

The proposed stations at Thornton's Corners and Courtice also provide significant opportunities for higher density mixed-use development, with larger development sites and few constraints to develop as MTSA's.



Figure 32: Planned GO train station in Bowmanville (Source: Durham Region Planning and Economic Development Department)

Metrolinx is currently preparing an initial business case, which will recommend the preferred option that will be advanced for further EA study and design.

Given the land use and transportation planning implications for any changes to the alignment and station locations, work being conducted by Metrolinx on the initial business case is being closely monitored by the Region, including for Envision Durham.

5.2.3 407 Transitway in Durham

The 407 Transitway is a planned high-speed public transit facility on a separate right-of-way within the Highway 407 corridor that

would stretch across the GTHA. MTO has been planning for and protecting the required land for the 407 Transitway over the last 30 years. The protection for the 407 Transitway was included as part of the Highway 407 East Individual EA and Preliminary Design Study in 2009 (Highway 407 East EA study), which also included protection for the sections of Highways 412 and 418. A concept design for the 407 Transitway was included as part of the EA study, including future station locations and extents.

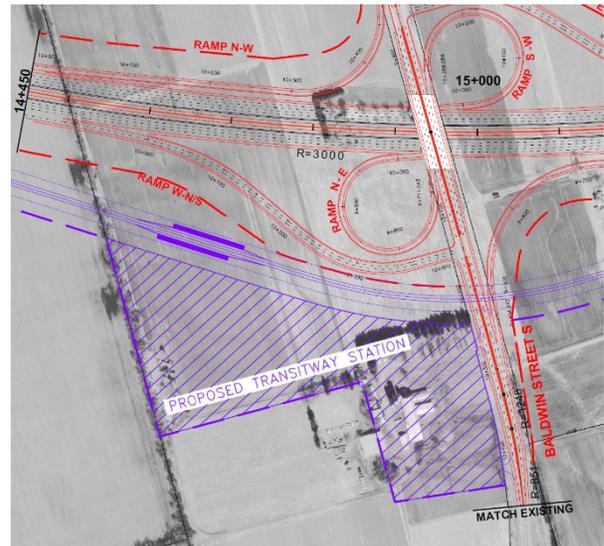


Figure 33: Excerpt of preliminary design drawing showing the proposed 407 Transitway station at Baldwin Street (Source: 407 East Individual Environmental Assessment and Preliminary Design Study, 2009, Appendix D—Recommended Design Plates)

In December 2016, MTO completed the 407 Transitway-Kennedy Road to Brock Road TPAP EA Study. Two other EA studies were also conducted for the central and western portions of the 407 Transitway. The EA study identified a preliminary design for a BRT facility on its own right-of-way (separate road within the Highway 407 corridor). The EA study also included station locations adjacent

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to specific highway interchanges, accommodating transfer facilities with GO Transit bus routes, other transit agencies such as DRT and commuter parking areas.

Protection for possible conversion to Light Rail Transit (LRT) was considered as part of the EA study. A phased approach for implementing the 407 Transitway was also outlined in the study, including buses in mixed traffic on Highway 407 with strategic commuter station locations at interchanges, before a dedicated transitway facility is constructed.

The ROP currently contemplates the implementation of the 407 Transitway. Highways 407, 412 and 418 are designated in the ROP as Freeway Transit routes in the Transit Priority Network schedule.

Existing GO Transit bus service on the Highway 7/407 corridor (the 407 East bus) connects Durham residents to Markham, Richmond Hill, the Highway 407 bus terminal and beyond to the Spadina Subway extension. The Greater Toronto Airports Authority (GTAA) and Metrolinx are also planning a Regional Transit Centre at Lester B. Pearson International Airport to serve the international airport and surrounding employment area. The 407 Transitway would be beneficial for Durham, and the GTHA as a whole, to connect to the Pearson Transit Hub for commuting to work and travel.

Through Envision Durham, the ability to elevate the importance of the 407 Transitway as a future BRT or LRT facility will be reviewed, given its potential to provide a rapid transit connection to York Region, the planned Pearson Transit Hub, and to serve a

future airport and nearby designated employment lands in Pickering.

5.3 Active transportation

The ROP currently supports the development of different mobility options for Durham residents, including walking and cycling, and establishing sustainable transportation initiatives that respect natural, social and cultural environments. The ROP includes the goal of providing for an integrated, safe, efficient and reliable Transportation System for all users, regardless of travel mode. Active transportation also plays a part in most transit trips (for example, walking to a bus stop), and ensuring these are attractive, safe and efficient will provide for a better transportation system.

5.3.1 Planning for all road users

The Level of Service (LOS) refers to the quality of the road environment for drivers, including factors such as intersection delay, congestion and average vehicle speed. A Multi-modal Level of Service (MMLOS) expands the scope of the traditional LOS measure to consider the experiences of all road users, rather than focusing on drivers (and their passengers). For example, a pedestrian LOS considers the quality of the road environment for those on foot by factoring in things like the presence of sidewalks, signalized intersections, trees and landscaping features. The Durham TMP recommends adopting a MMLOS framework to assess road design and rights-of-way for road expansion or reconstruction projects, and Transportation Impact Studies (TISs) for development review (Action #52).

When designing for the experiences of all road users, intersection spacing is a factor that must be carefully considered. Roads with fewer intersections may create a higher LOS for drivers but may, in turn, increase vehicle speeds and reduce the pedestrian or bicycle LOS. Fewer opportunities to cross or turn can also impact how appealing a given road section is to a pedestrian or cyclist. An increase in the number of crossings, provided they are safe and appropriate for the function of the road and development context, offers those using active modes with more route options.



Figure 34: Boulevard multi-use path, Garden Street, Whitby (Source: Durham Region Planning and Economic Development Department)

Adopting an MMLOS framework in Durham would allow for a more holistic consideration of how all road users experience the Region's road network. As the Region seeks to promote transit, cycling and walking as viable alternatives to travelling by car, through *Envision Durham*, the ROP should be reviewed to enhance policies in support of this framework.

Discussion Question:

How can Regional Official Plan policies support planning for all road users when assessing new developments and reconstructing or building new roads?

5.3.2 Cycling and trails

The PCN in the RCP is part of a broader, connected system of cycling infrastructure, comprised of the Provincial Cycling Network as part of #CycleON—Ontario's Cycling Strategy, the Metrolinx RTP cycling network for the GTHA, and networks developed by the area municipalities in Durham.

About 78 per cent of survey respondents think that offering a variety of mobility choices (such as transit, cycling, walking, etc.) for all Durham Region residents is "very" to "extremely important."

(Based on the Envision Durham public opinion survey results, 390 of 391 respondents).

The RTN and Greenbelt Cycling Route will also be integrated with the PCN, pending the update to the RCP in 2020. The Region's cycling network and these plans aim to create a connected, bike-friendly Ontario.

To support the construction of cycling infrastructure in the RCP, the Durham TMP identified a Short-Term Cycling Network. The network consists of cycling facilities that should be constructed within the next 10 years to improve connectivity across the Region. Along with projects identified in the Region's capital road program and nine-year forecast, the network recommended cycling

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facilities that should be constructed as “standalone” projects—those not already associated with a road reconstruction or widening project—in the next 10 years.

In spring 2017, the province announced the Ontario Municipal Commuter Cycling (OMCC) Program as a four-year (2017-2020) program to invest in commuter-based cycling infrastructure. Funded through the Ontario's former carbon tax cap and trade system, the OMCC program was established to curtail commuting by car and reduce greenhouse gas emissions produced by the transportation sector. The Region and several area municipalities applied and received funding from the program, which is helping to advance the construction of cycling infrastructure up to year-end 2020 to implement the RCP. Unfortunately, the OMCC program was cancelled in July 2018 after the initial year of funding.

The OMCC program helped establish a collaborative approach to providing cycling infrastructure across the province. To date, no replacement program has been established by the province to advance the implementation of cycling infrastructure. Consequently, municipalities including Durham will have to fill the funding gap for the Short-Term Cycling Network projects. Envision Durham will consider the inclusion of provincial cycling initiatives, with more emphasis on collaboration between different levels of government for cycling and trail improvements.

Support for monitoring and promotion of cycling in Durham is noted in the ROP; however, it does not provide specific direction on what this entails. Monitoring

and promoting the number of km of active transportation infrastructure installed annually could be one method for achieving this goal. In a similar vein, the Cycling Communications Strategy (Cycle Durham) recommends publishing a progress report every two to three years, documenting new infrastructure, programs and services, and reporting on shifting travel patterns. The consistent documentation of progress is an important component of growing support for cycling. Given that infrastructure alone will not be responsible for the rise in cycling across the Region, documenting the successes and lessons learned from programs and services offered is essential.

5.3.3 Connecting and using public lands

The RTN forms a component of the Region's active transportation and relies on making connections using publicly owned lands. These public spaces include parks, conservation areas, open space lands such as creek valleys, road rights-of-way and hydro corridors.

For example, the “Meadoway” is a 16 km multi-use path in the City of Toronto along the Gatineau hydro corridor, from the Don River ravine to Rouge National Urban Park. The Meadoway reimagines the corridor as a connected green space including a linear MUP with connections to the surrounding areas. This initiative is currently being led by the Toronto and Region Conservation Authority in partnership the City of Toronto, Hydro One and the W. Garfield Weston Foundation.

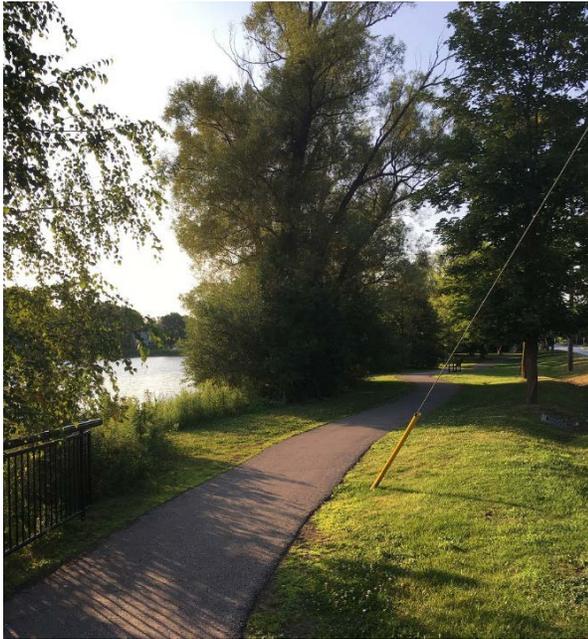


Figure 35: Off-road multi-use path, Veterans Memorial Park, Uxbridge (Source: Durham Region Planning and Economic Development Department)

There is an opportunity to extend the Meadoway easterly into Durham Region on the same hydro corridor as a valuable east-west connection for Pickering, northern Ajax, Brooklin and north Oshawa. A Durham Meadoway would not only enhance the RTN, but also support opportunities for complementary community uses including urban agriculture, small gardens, parks or naturalization efforts.

The Waterfront Trail is a key component of the RTN, connecting the Waterfront Areas in the ROP within the Lake Ontario shoreline municipalities in Durham. It connects Durham to the GTHA and beyond along Lake Ontario and the St. Lawrence River. The Waterfront Trail, and Greenbelt Cycling Route, are managed by the Waterfront Regeneration Trust. Currently, the Waterfront Regeneration Trust is looking at potential north-south connector routes in

Durham to link the Waterfront Trail with the Greenbelt Cycling Route.

The **Waterfront Areas** of Lake Ontario, Lake Scugog and Lake Simcoe shall generally be developed as “people places” with the exception of significant natural areas, which will be protected in their natural states. Each waterfront shall be a continuous system, penetrating and linking the urban and rural areas. Where access to the waterfront is not desirable or in the public interest, Waterfront Links are provided (Source: Regional Official Plan, policy 10C.1.1).

The RTN and RCP connect to Waterfront Areas in Port Perry and Beaverton, on Lake Scugog and Lake Simcoe, respectively. The RCP also connects to the Port Perry Waterfront Trail via Reach Street and Simcoe Street. Given the importance of the Waterfront Areas as destinations for Durham residents and visitors alike, the importance of providing active transportation connections to, from and within them should continue to be recognized and enhanced through the ROP.



Figure 36: Waterfront Trail, Ajax (Source: Durham Region Planning and Economic Development Department)

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Discussion Question:

How should the Regional Official Plan recognize or plan for enhanced trail connections as key active transportation linkages within hydro corridors and Waterfront Areas?

5.4 Roads and corridor protection

The ROP designates roads, transit priority and strategic goods movement networks. Existing and future arterial roads are identified, along with future freeways and interchanges, using alignments that reflect current EA studies or area municipal Official Plans. In addition, a hierarchy of transit corridors is identified through the Transit Priority Network. The Strategic Goods Movement Network reflects key provincial highway and Regional road sections of preferred haul routes for year-round use and connects major generators of truck traffic. Building on this foundation, however, are additional considerations described below.

5.4.1 Right-of-way map schedule in Regional Official Plan

To improve right-of-way requirements for future Class EA studies for road widenings or reconstruction, as well as to help in the review of development proposals adjacent to arterial roads, the TMP recommended that a right-of-way map be added to the ROP (Action #49). This map would identify the required right-of-way widths based on ultimate widening needs for specific arterial road sections.

The ROP includes right-of-way criteria for Type A and Type B arterials corresponding to Rapid Transit Spines (such as sections of Highway 2 and Simcoe Street) or HOV lanes which could be converted into dedicated bus lanes over the long-term.

Summary of current arterial road designations in Regional Official Plan

Type A Arterials are mostly flow-oriented with operating speeds of 70-80 km/h and right-of-way widths of 36-45 m providing connections between the Durham Region municipalities and areas not served by provincial highways (examples include, Taunton Road, Lake Ridge Road, Bayly Street, Bowmanville Avenue).

Type B Arterials are intended to move a lower volume of vehicles with operating speeds of 60-80 km/h and right-of-way widths of 30-36 m (with certain exceptions for accommodating rapid transit lanes). They provide secondary connections through the southern municipalities and provide access to the urban areas and hamlets in northern Durham Region (examples include Rossland Road, Simcoe Street, Liberty Street, Reach Street)

Type C Arterials are the most access-oriented with operating speeds of 50-60 km/h and right-of-way widths of 26-30 m. Type C Arterials are primarily located within designated urban areas (examples include Valley Farm Road, Williamson Drive, Garrard Road, Longworth Avenue).

(Adapted from Durham Transportation Master Plan, 2017)

Consideration for intersections for auxiliary lanes, transit stops/shelters, cycling facilities and potential storm water management measures that support low impact development would inform the right-of-way determination. Also, provincial studies such as the Metrolinx RTP or the GGH Transportation Plan could also inform right-of-way needs, particularly for the provincial highways (as undivided highways are designated as arterial roads in the ROP).



Figure 37: Recently constructed BRT and buffered bike lanes on Kingston Road, Pickering (Source: Durham Region Works Department)

Discussion Question:

Would providing clearer future right-of-way requirements for specific sections of arterial roads in the Regional Official Plan be beneficial for development application review or Class Environmental Assessment studies?

5.4.2 Complete streets approach

As noted in Section 4.5, the TMP recommends updating the Arterial Corridor Guidelines, 2007, to reflect complete streets principles and recent best practices for design, particularly for transit and cycling

facilities. Since the Arterial Corridor Guidelines were prepared, updated design guidelines for roads and cycling facilities have been developed by various agencies, as well as “in house” Regional guidelines including those for bus stops and intersection treatments for cycling. Specific items for complete streets could be reflected as part of the new ROP.

5.4.3 Corridor protection and the Class Environmental Assessment process

The ROP identifies future arterial road corridors, some of which have not proceeded to a municipal or provincial Class EA study. Protecting for these corridors over the long-term is important component of the ROP. To address the protection for certain road corridors, the TMP has recommended feasibility studies for the following road links, where unusual engineering issues or environmental impacts are anticipated as significant factors affecting their potential construction:

- Ravenshoe Road extension to Highway 7 and Highway 12.
- Clements Road connection across Duffins Creek.
- Consumers Drive extension from Thornton Road to Laval Drive/Fox Street.
- Extending Shirley Road between Highway 7/12 and Simcoe Street.
- Courtice Road connection to Enfield Road at Taunton Road.

Through Envision Durham, revisions to the ROP may be considered to recognize these feasibility studies, consistent with the TMP.

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The province is currently reviewing the Environmental Assessment Act to streamline the requirements for different types of EA studies. With the proposed changes that may come forward from these EA reviews, Planning Act processes may pre-approve the alignments of arterial (and longer collector) roads in new growth areas. The Planning Act process, however, may not identify the most suitable alignment from an environmental or engineering perspective, compared to the four-phase Municipal Class EA process in planning for new roads. An integrated Planning Act and Class EA process would examine alternatives for an entire new section of arterial road in a comprehensive manner, for example, instead of just for an arterial road section within the boundary of a specific development area.

Class Environmental Assessment (Class EA) means a planning process, approved under the EA Act for a class or group of undertakings. Projects included in the Class EA may be implemented without further approval under the EA Act provided the approved Class EA planning process is followed (Source: Municipal Engineers Association, Municipal Class Environmental Assessment, October 2000, as amended in 2007, 2011 and 2015).

If the Class EA requirements are superseded by the Planning Act process, the Region will consider policies that support the application of an integrated Class EA and Planning Act process for these new growth areas.

Discussion Question:

Is it appropriate that the Regional Official Plan address an integrated Class Environmental Assessment and Planning Act process in new growth areas to optimize the alignment and design for arterial roads?

5.4.4 Road safety

Durham Vision Zero is the name given to the Region’s Strategic Road Safety Action Plan, which was officially launched by the Region in May 2019. Based on the Swedish road safety concept of “Vision Zero”, Durham Vision Zero adopts the view that no loss of life is acceptable due to a motor vehicle collision. The focus of this plan is to ultimately eliminate fatal and injury collisions on roads in Durham Region, beginning with a specific goal of a 10 per cent reduction in these collisions between 2019 and 2023.



Figure 38: Durham Vision Zero logo

Through Durham Vision Zero, several emphasis areas and accompanying action items are identified, laying out strategies for creating safer roads for all. The Durham Vision Zero work will be reviewed for any potential implications on Transportation

System policy with regards to safety, particularly for active transportation and aspects of the Arterial Road Criteria in the ROP.

5.4.5 Climate change adaptation and mitigation

The Durham TMP recognizes that both adapting Regional road infrastructure to climate change and mitigating the impacts of climate change on Regional roads, are important considerations in keeping the Transportation System functioning.

A key consideration in adapting Regional road infrastructure to projected climate conditions, such as more extreme storm events and warmer temperatures, is to prevent or reduce travel disruptions. The Durham Community Climate Adaptation Plan, 2016 recommends programs for resilient asphalt, road embankments, and adaptive culverts and bridges to protect Regional Transportation System assets. Another way of adapting to climate change impacts on Regional roads and the overall Transportation System is to support low impact development storm water management techniques to reduce the amount of runoff going into the storm sewer system. While storm water management is largely a responsibility of the area municipalities, the Region manages storm water on the Regional road network.

Related to mitigating climate change impacts on Regional road infrastructure, the Durham

TMP also recommends mode share targets by 2031 to not only reduce auto congestion, but also to reduce the per capita impacts of the transportation sector on overall GHG emissions. The purpose of the TMP targets is to monitor how the development of complete communities, as emphasized by provincial policies in the Growth Plan, and more compact built form can influence the ways in which Durham residents travel. Mode share targets are outlined based on generalized land use categories, with UGCs and Regional Corridors on the Rapid Transit network having the highest transit, walk and cycle targets.

Envision Durham's Climate Change and Sustainability Discussion Paper emphasizes reducing auto travel through developing complete communities, Transportation Demand Management (TDM) and the provision of active transportation infrastructure. With the 2031 Preferred Network in the TMP, achieving the mode share targets would enable growth in vehicle-kilometres travelled by auto by 37 per cent for roads, and by 260 per cent for DRT transit passenger-km, from 2011 levels. This compares with 2011-2031 population and employment growth forecasted at 49 per cent and 55 per cent, respectively.⁸ Accordingly, the number of auto trips per person are forecasted to decline, while transit trips are expected to increase per person, as the Region grows.

⁸ Durham Transportation Master Plan, 2017. Vehicle-kilometres (km) travelled is the cumulative total of the number of auto trips multiplied by the distance for

each trip. Transit passenger-km travelled is the cumulative total of the number of transit trips multiplied by the distance for each trip.

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Adapting to and mitigating impacts on the Transportation System from climate change reinforces the goals and actions to reduce auto trips, plan for long-term infrastructure needs, and support intensification and a mixture of uses in the Region's urban areas.

5.5 Travel choices

Implementing TDM programming is supported in the ROP, which recommends introducing trip reduction strategies such as providing cycling facilities, designated carpool parking and options for vanpooling.⁹ Through Envision Durham, there may be opportunities to provide stronger support for Regional action and advocacy on TDM, along with creating more travel choices for more residents using the Transportation System.

Transportation Demand Management (TDM) strategies are key to unlocking the benefits of new investments in transportation infrastructure and services, and to making the best use of the transportation system's available capacity. TDM uses a variety of tools including carpooling and vanpooling, HOV lanes, telework and park-and-ride (Source: Metrolinx, 2041 Regional Transportation Plan).

5.5.1 Transportation Demand Management for employers

In 2007, Smart Commute Durham was established in partnership with Metrolinx, which developed a workplace-based TDM program for employers in the Region. Smart Commute Durham is one of 13 similar transportation management associations across the GTHA.¹⁰

Currently, TDM policies in the ROP are focused on employer-based programming. The ROP supports TDM as part of an effort to curb single-occupant vehicle travel, and to promote alternatives to help reduce peak period travel. It encourages employers to promote programs intended to reduce dependency on motor vehicles through strategies including providing DRT passes, ridesharing and vanpooling programs, carpool spaces, alternative work hours, telecommuting (such as working from home) and developing facilities that support cycling.

The Durham TMP recommended expanding the scope of TDM in Durham to further engage employers through pilot projects, and to expand TDM programming to the broader community (Action #70).

⁹ A vanpool is a vehicle used specifically for the purpose of shared commuting, and can be owned or leased by an employer for the benefit of their employees who drive and ride in the van (Source: Smart Commute North Toronto-Vaughan <https://smartcommute.ca/north-toronto-vaughan/>).

¹⁰ In May 2019, Metrolinx indicated that it will no longer be supporting the Smart Commute program or the 13 transportation management associations (including Smart Commute Durham) that administer the program. Durham Region (and the other associations) is currently investigating how it will maintain the program in-house.

5.5.2 Transportation Demand Management development guidelines

The Durham TMP recommends that TDM development guidelines be created to ensure that when proposals for new development are reviewed, cycling facilities, pedestrian and transit access to and from the site are constructed in a manner that supports non-auto modes, (Action #1).

The ROP could also contain policies towards creating and regularly updating TDM development guidelines. Supporting policies for these guidelines would promote a more rigorous and consistent approach to reviewing site-specific design for new developments. They could articulate how TDM measures such as bike parking, end-of-trip facilities (bike lockers and showers at workplaces, for example) and better connections to transit stops should be enabled.

Related to TDM development guidelines, the TMP also recommends a parking strategy for the Region in “strategic nodes and corridors” (Action #80). A parking strategy could aim to identify areas where parking supply should be optimized to support transit and non-auto travel, in consultation with the area municipalities.

Through Envision Durham, supportive policy language around TDM development guidelines and a Regional parking strategy will be considered as a means to further to support TDM in the Region.

5.5.3 Active and sustainable school travel

Supporting TDM for the Region’s younger residents is also supported by the Durham TMP, which recommends that the Region establish an “active school transportation portfolio” (Action #76).

Active and Sustainable School Travel (ASST) encourages student travel to school actively and/or using other sustainable modes such as transit, carpooling or school busing for longer distances. Stemming from the Durham TMP recommendations to work with partners to develop an Active School Travel Strategy, the Region is leading various initiatives to increase ASST. Recently, the Region was awarded funding through the Ontario Active School Travel fund to carry out ASST programming at eight schools across Durham.

The development review process can also support ASST by evaluating pedestrian access for planned residential units to new school sites within a five or 10-minute walk, in a similar manner to monitoring access to transit stops.

Discussion Question:

Are there aspects of Transportation Demand Management beyond employer and school trips, and review of development applications, that should be addressed in greater detail in the Regional Official Plan?

5.5.4 Commuter lot program

Commuter lots include carpool parking lots that may also be used as transit stops or transfer locations, as well as lots primarily

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used as park-and-ride facilities for accessing higher order transit service (such as the GO Train). Most of the existing commuter lots in Durham are purpose-built and owned by the province, consisting of MTO carpool lots and Metrolinx park-and-ride parking garages and lots.

Two commuter lots are owned by the Region (one at Simcoe Street/Shirley Road in Scugog and one at Simcoe Street/Cameron Street in Brock). These lots were built to establish commuter parking that was informally occurring on vacant Regional properties.

While the Region does not have a formal role in the provision of purpose-built commuter lots, the Small Urban and Rural Carpool Lot Program was created as part of Smart Commute Durham to provide commuter parking at convenient locations across the Region. The program involves working with area municipalities to enhance carpooling in underserved areas of the Region, and to promote use of commuter parking by sharing information with the public. This program provides an opportunity for residents in less transit-connected areas of Durham, for whom walking or cycling is also not an option, to commute more sustainably. To date, the program has been implemented in Uxbridge, Brock, Scugog and Clarington, and has designated carpool spaces at various public facilities (such as arenas and community centres) along with promotion of purpose-built commuter lots such as at GO Stations or MTO carpool lots.



Figure 39: Carpool parking spot sign, Smart Commute Durham

The use of public facilities for carpool spaces can supplement the existing purpose-built commuter lots in the Region’s small urban and rural areas and can support HOVs. In addition, advocacy for the Province of Ontario to continue to implement purpose-built commuter lots for carpooling, and park-and-ride for access to GO Transit bus service, is another important measure for reducing single-occupant vehicle commuter trips.

As a TDM measure, encouraging HOVs and use of designated carpool spaces is in the current ROP. Through Envision Durham, the opportunity to further develop the Region’s role in the provision of carpool spaces will be considered.

Discussion Question:

What should the Region’s role be in supporting carpooling, and in what locations would this be most appropriate?

5.5.5 Age-friendly communities

In Durham Region, the walking network should be accessible, connected, safe and well-lit with direct routes to destinations of all kinds, for persons of all ages and abilities. The Durham Region Strategic Plan speaks to the overall transportation network, providing direction to ensure that infrastructure is functional, integrated, reliable and barrier-free (refer to Figure 19). Curb-cuts, tactile walking surface indicators and other accessibility measures are being implemented for new and reconstructed intersections to ensure that pedestrians can move more freely across the Region. Through the ROP, urban areas are intended to be developed in a pedestrian-oriented manner, so that these spaces are comfortable and accessible to those on foot.

In 2017, the Region completed its Age-Friendly Durham Strategy and Action Plan, which focused on adults aged 55 and older. It is geared toward providing a strong and vibrant community where older adults remain active, enjoy better health, and are more engaged and informed. This plan contains a series of actions designed to enhance transportation infrastructure and services, to address gaps and improve the transit passenger experience. Several actions pertain to active transportation, not only by recognizing pedestrian access to transit, but also by providing transportation options for bikes, scooters and walking. With an aging population and a tendency for fewer seniors to drive compared to other adults, supporting active transportation modes with older adults in mind is an important consideration for the Transportation System.

Through Envision Durham, age-friendly communities and the promotion of active transportation for all users will be reviewed from a broader active transportation perspective.

5.5.6 Emerging technologies

Recent technological advances in transportation are transforming travel. Paid ridesharing services such as Uber or Lyft are a well-established component of the market. Referred to as part of Mobility as-a-Service (MaaS), paid ridesharing, along with bike sharing and car sharing, enable people to access on-demand travel without owning a car. This forms part of the “sharing economy” brought about by the advance of mobile applications and wireless communications.

Technological advances in how people access travel information, such as through their smartphone or web-based applications, can provide travellers with real-time traffic or construction information (such as through the Region’s Traffic Watch map online), or through “plan your trip” applications for transit such as Metrolinx’s Triplinx (also hosted by DRT). These tools help residents make better trip making decisions to suit their needs.

Electric Vehicles (EVs) have been part of the marketplace for several years and require supporting infrastructure such as charging stations. Automated Vehicles (AVs) and Connected Vehicles (CVs) have the potential to significantly change how we travel day-to-day. CVs can optimize how different vehicles interact on the road network, potentially reducing congestion and increasing road safety.

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Autonomous Vehicles (AVs) are capable of interpreting the world around them and navigating roads without human intervention.

Connected Vehicles (CVs) are vehicles that are connected to infrastructure, mobile devices and other CVs. They are capable of sharing information with each other to optimize their function and performance.

(Source: Adapted from Durham Transportation Master Plan, December 2017)

AVs can enable and free up occupants from driving (once cars are fully autonomous) if used in conjunction with MaaS. AVs have the potential to optimize use of the Region's Transportation System by allowing use of shared vehicles, reduce parking requirements and pooling of trips through dynamic carpooling. However, AVs present risks to the Transportation System if not managed properly, such as adding more vehicle-trips on the road (including trips with empty vehicles to pick up passengers) and extending commuting trip lengths and patterns geographically.

Through Envision Durham, the Region will continue to monitor the rapidly changing field of emerging technologies and consider policies which support their use as appropriate.

Discussion Question:

What are the potential implications of emerging technologies on the Regional Transportation System?

5.6 Goods movement

The ROP includes the Region's Strategic Goods Movement Network (SGMN) which identifies preferred haul routes planned to accommodate commercial vehicles on a year-round basis, linking major generators of truck traffic.

Goods movement is not only an integral part of employment area lands to support industry, but it is also linked to other land uses such as retail and even residential uses for deliveries. In residential areas, with increased online shopping, delivery trucks are becoming more prevalent on local streets. Through Envision Durham, the provincial guidelines will be examined with respect to land use planning and development review, and to identify how best to minimize conflicts between truck traffic generated by employment areas (as well as other uses) and adjacent communities.

5.6.1 Port of Oshawa and St. Marys Cement dock



Figure 40: Cargo ship entering the Port of Oshawa (Source: Durham Region Planning and Economic Development Department)

The Port of Oshawa is the Region's largest port and an important component of the Region's transportation system and economy. From 2007-2017, the port handled over 500 vessels, shipped over 357,000 metric tonnes of cargo and generated over \$46 million in economic activity per year. The cargo handled by the port includes steel, liquid asphalt, calcium chloride, grain, corn, soybeans, potash and project-specific cargo for General Motors.¹¹ The port is linked to the Transportation System via Farewell Street (which is part of the SGMN), the Highway 401/Harmony Road interchange and a rail spur (opened in 2015) to connect to CN's Toronto-Montreal rail line.

In June 2019, the port authorities for Oshawa and Hamilton were amalgamated to form the Hamilton-Oshawa Port Authority.

The St. Marys Cement dock supports the cement manufacturing facility in Bowmanville. An aggregate extraction facility is also part of the St. Marys Cement lands. With respect to the St. Marys property, the ROP permits the aggregate operation, waterfront planning, future rehabilitation of the lands and possible future expansion of the dock facility to a Regional harbour facility. The SGMN in the ROP (and Durham TMP) identifies the dock as a future harbour (refer to Figure 41).

The current ROP includes a policy for Oshawa Harbour (Port of Oshawa) that states it should be maintained until such time as studies have been completed for both

Oshawa and the St. Marys Cement dock facility, after which the role of the Oshawa Harbour may be reconsidered. Given the recent progress at the Port of Oshawa and its growing role in the broader Regional economy, this policy will be reviewed as part of Envision Durham.

Discussion Question:

How should the ROP be enhanced to better support the role of ports to the Regional economy, such as the Port of Oshawa and the St. Marys Cement dock facility?

5.6.2 Pickering federal airport lands

The ROP designates the federal airport lands and includes several policies in anticipation of an airport on these lands. As noted in the Envision Durham Urban System Discussion Paper, a decision has not yet been made by the federal government on whether to proceed with an airport in Pickering. ROP policies that speak to the airport, from a transportation perspective, include recognizing the airport as part of the Transportation System, and establishing the required Transportation System improvements prior to the development of a future airport.

¹¹ Port of Oshawa, Facts and Stats (www.portofoshawa.ca)

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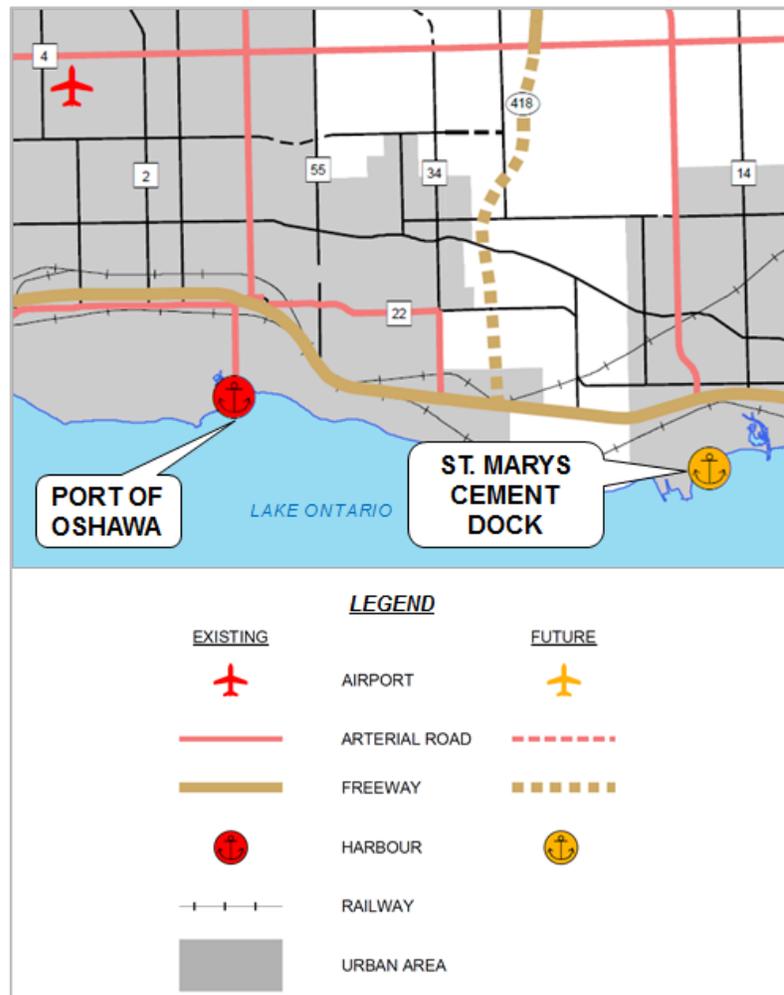


Figure 41: Excerpt of the Regional Official Plan, Strategic Goods Movement Network, showing harbours

In 2015, Regional Council formally supported the development of an airport in Pickering in principle. In 2018, the Region released the Capacity Where It Counts: The GTA East Airport at Pickering report, to review the future role and function an airport could bring to the Region's economy. It recognized its importance as a strategic site for goods movement to handle air cargo and support

the development of an employment cluster, which could include employment area lands in the emerging Seaton community known as the Pickering Innovation Corridor. The federal airport lands are well connected to Highway 407 at Brock Road and at the Whites Road extension (currently under construction), the 407 Transitway and the CP Havelock rail line.

To support the provision of regional infrastructure in the Seaton community, the Central Pickering Class EA for Regional Services was completed in 2014. As part of its recommended design for Regional roads, the extension of Whites Road north of Highway 7 can be accommodated as a connection to the federal airport lands. Brock Road could also serve as a connection to the lands, and both it and Whites Road are planned as part of the Region's High Frequency Transit Network including future HOV lanes. If demand warrants, the HOV lanes could be converted into dedicated BRT lanes if one or both routes was to be the primary means of access to the airport.

Through Envision Durham, the overall impact of the federal airport lands will be considered in an effort to contemporize existing ROP policies.

5.6.3 Traffic Management Guideline for Hamlets

In April 2014, the Region released a Traffic Management Guideline for Hamlets, which provides guidance on the process and techniques to address traffic issues on Regional roads within hamlets and smaller urban areas. The guideline addresses traffic growth on rural commuter routes, as well as goods movement on these routes, including trucks that transport aggregate and surplus fill material. It addresses a complete streets approach, making roads through these areas more suitable for all users, directed toward increasing safety by helping to reduce vehicle speeds. Approaches to address traffic concerns in hamlets and smaller urban areas

are identified through education, enforcement and engineering solutions, similar to the Region's Vision Zero Strategic Road Safety Action Plan.

The guideline will be considered as part of the Arterial Corridor Guidelines update. Support for the SGMN, while mitigating traffic impacts from goods movement in hamlets and small urban areas, is a delicate balance that will be further reviewed through Envision Durham.



Figure 42: Simcoe Street, downtown Beaverton (Source: Durham Region Planning and Economic Development Department)

Discussion Question:

What should the Region consider in supporting the Strategic Goods Movement Network while preserving a complete streets approach for all road users?

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6.0 Next steps

This Discussion Paper is the fifth in a series of Discussion Papers being released over the course of 2019. These Discussion Papers provide an overview and background on theme-based land use planning matters and pose various questions in order to gather opinions and to help shape future policy.

Your feedback is important to us. The Regional Planning Division appreciates your interest and encourages your participation throughout the Envision Durham process. To submit your comments, please visit durham.ca/EnvisionDurham.

Following the release of these Discussion Papers, interested parties will also have opportunities to provide feedback on theme-based policy proposals and, a future draft of the Regional Official Plan.

To stay up-to-date on Envision Durham, please visit durham.ca/EnvisionDurham and subscribe to receive email updates.

Discussion Question:

Have we missed any trends that you feel should be reviewed and considered from a Transportation System context as part of Envision Durham?

Appendix A: Discussion questions workbook

Discussion questions are posed throughout the Transportation System Discussion Paper. We are interested in hearing from you on these topics or any others that are important to you, and which have not been addressed. The following is a summary of the questions contained within this discussion paper:

1. **Beyond “In Delivery” and “In Development” transit projects, which projects do you feel will have the greatest benefit to increase transit use and promote transit supportive development in Durham? (Page 23)**

2. **Should the Region only designate Regional Corridors adjacent to the High Frequency Transit Network? (Page 37)**

3. **Should Transit Oriented Development policies and guidelines for Strategic Growth Areas be tailored to the planned level of transit service? (Page 38)**

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4. Do you support Major Transit Station Areas having specific transportation-related policies to support their development as Transit Oriented Development places, similar to those already applied to Regional Centres? (Page 39)

5. What up-front considerations should the Regional Official Plan provide with respect to transit supportive development outside of Strategic Growth Areas? (Page 39)

6. Do you support a new Transit Hub designation and policies as part of the Regional Official Plan? (Page 40)

7. How can Regional Official Plan policies support planning for all road users when assessing new developments and reconstructing or building new roads? (Page 44)

8. How should the Regional Official Plan recognize or plan for enhanced trail connections as key active transportation linkages within hydro corridors and Waterfront Areas? (Page 46)

9. Would providing clearer future right-of-way requirements for specific sections of arterial roads in the Regional Official Plan be beneficial for development application review or Class Environmental Assessment studies? (Page 48)

10. Is it appropriate that the Regional Official Plan address an integrated Class Environmental Assessment and Planning Act process in new growth areas to optimize the alignment and design for arterial roads? (Page 48)

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11. Are there aspects of Transportation Demand Management beyond employer and school trips, and review of development applications, that should be addressed in greater detail in the Regional Official Plan? (Page 52)

12. What should the Region's role be in supporting carpooling, and in what locations would this be most appropriate? (Page 53)

13. What are the potential implications of emerging technologies on the Regional Transportation System? (Page 55)

14. How should the Regional Official Plan be enhanced to better support the role of ports to the regional economy, such as the Port of Oshawa and the St. Marys Cement dock facility? (Page 56)

15. What should the Region consider in supporting the Strategic Goods Movement Network while preserving a complete streets approach for all road users? (Page 58)

16. Have we missed any trends that you feel should be reviewed and considered in the Transportation System context as part of Envision Durham? (Page 59)

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Appendix B: Glossary

Active Transportation: Any method of travel that is human-powered, such as walking and biking (Durham Regional Official Plan).

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 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 (Metrolinx, 2041 Regional Transportation Plan, Engage consultation program www.metrolinxengage.com).

Bus Rapid Transit: 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 to one kilometre) to maintain higher average speeds and ensure reliability of the service (Metrolinx, 2041 Regional Transportation Plan, Engage consultation program www.metrolinxengage.com).

Class Environmental Assessment: A planning process, approved under the Environmental Assessment (EA) Act, for a class or group of undertakings. Projects included in the Class EA may be implemented without further approval under the EA Act provided the approved Class EA planning process is followed (Municipal Engineers Association, Municipal Class Environmental Assessment,

October 2000, as amended in 2007, 2011 and 2015).

Compact Built Form: A land use pattern that encourages the efficient use of land; walkable neighbourhoods; mixed land uses (residential, retail, workplace, and institutional) all within one neighbourhood; proximity to transit; and reduced need for infrastructure. Compact built form can include detached and semi-detached houses on small lots, as well as townhouses and walk-up apartments, multi-storey commercial developments, and apartments or offices above retail. Walkable neighbourhoods can be characterized by roads laid out in a well-connected network; destinations that are easily accessible transit and active transportation; sidewalks with minimal interruptions for vehicle access; and a pedestrian-friendly environment along roads to encourage active transportation (Growth Plan, 2019).

Complete Communities: Places such as mixed-use neighbourhoods or other areas within cities, towns, and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores, and services, 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 (Growth Plan, 2019).

Complete Streets: Streets that are designed to be safe for everyone: people who walk, bicycle, take transit, or drive, and people of all ages and abilities. A Complete Streets

policy ensures that transportation planners and engineers consistently design and operate the entire street network for all road users, not only motorists. Complete Streets offer wide ranging benefits. They are cost effective, sustainable, and safe (Complete Streets for Canada, The Centre for Active Transportation, 2019).

Connected Vehicles: Vehicles that are enabled to communicate with other vehicles, mobile electronic devices, and connected road infrastructure (such as traffic signals). Many vehicles already use some connected technology, such as GPS-enabled navigation systems (Metrolinx, 2041 Regional Transportation Plan, Engage consultation program www.metrolinxengage.com).

Frequent Rapid Transit Network: 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 (Metrolinx, 2041 Regional Transportation Plan, Engage

consultation program www.metrolinxengage.com).

High Frequency Transit Network: Consists of buses in planned High Occupancy Vehicle (HOV) lanes, or buses in mixed traffic, with transit signal priority at major intersections and other measures to ensure fast and reliable transit service. Planned HOV lanes may be converted to dedicated bus lanes as growth in ridership warrants (Durham Regional Official Plan).

High Occupancy Vehicle Lane: A lane of roadway that is typically designated for use only by vehicles with a specified minimum number of occupants, including transit vehicles (Metrolinx, 2041 Regional Transportation Plan, Engage consultation program www.metrolinxengage.com).

Higher Order Transit: Transit that generally operates in partially or completely dedicated rights-of-way, outside of mixed traffic; and therefore, can achieve levels of speed and reliability greater than mixed-traffic transit. Higher Order Transit can include heavy rail (such as subways and intercity rail), light rail, and buses in dedicated rights-of-way (Growth Plan, 2019).

Intensification: The development of a property, site or area at a higher density than currently exists through: a) Redevelopment, including the reuse of brownfield sites. b) The development of vacant and/or underutilized lots within previously developed areas. c) Infill development, and d) The expansion or conversion of existing buildings (Provincial Policy Statement, 2014).

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Light Rail Transit: 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 to one kilometre) to maintain higher average speeds and ensure reliability of the service (Metrolinx, 2041 Regional Transportation Plan, Engage consultation program www.metrolinxengage.com).

Major Transit Station Areas: 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- to 800-metre radius of a transit station, representing about a 10-minute walk (Growth Plan, 2019).

Multi-modal Level of Service: Expanding the scope of the traditional Level of Service (LOS), which refers to the quality of the road environment for drivers, by factoring in things like intersection delay, congestion and average vehicle speed measure to considers the experiences of all road users, rather than focusing on drivers and their passengers (Durham Transportation Master Plan, 2017).

Other Transit Connection: Facilitates longer-distance trips, providing direct links to Transportation Hubs and Commuter Stations from smaller urban and rural areas (Durham Regional Official Plan).

Priority Transit Corridors: Transit corridors shown in Schedule 5 of the Growth Plan or as

further identified by the Province for the purposes of implementing the Plan (Growth Plan, 2019).

Rapid Transit Spine: An arterial road corridor with dedicated transit lanes in most road sections [that] intersect with local transit services (Durham Regional Official Plan).

Strategic Goods Movement Network: Preferred haul routes that are planned to accommodate commercial vehicles on a year-round basis, and which link major generators of traffic (Durham Regional Official Plan).

Strategic Growth Areas: Within settlement areas, nodes, corridors and other areas that have been identified by municipalities or the province to be the focus for accommodating intensification and higher-density mixed uses in a more compact built form. Strategic Growth Areas include Urban Growth Centres, Major Transit Station Areas, and other major opportunities that may include infill, redevelopment, brownfield sites, the expansion or conversion of existing buildings, or greyfields. Lands along major roads, arterials, or other areas with existing or planned frequent transit service or higher order transit corridors may also be identified as strategic growth areas (Growth Plan, 2019).

Transportation Demand Management: Strategies that unlock the benefits of new investments in transportation infrastructure and services, and make the best use of the transportation system's available capacity. TDM uses a variety of tools including carpooling and vanpooling, HOV lanes, telework and park-and-ride (Metrolinx, 2041 Regional Transportation Plan).

Transit Oriented Development: The clustering of high density, compact development in close proximity to transit infrastructure, with a mix of uses including office, residential, community uses retail and other amenities that support transit ridership. They also place a high priority on good quality pedestrian-oriented streetscapes, parks and buildings (Durham Transportation Master Plan, 2017).

Transit-supportive: Relating to development that makes transit viable and improves the quality of the experience of using transit. It often refers to compact, mixed-use development that has a high level of employment and residential densities. Transit-supportive development will be consistent with Ontario's Transit Supportive Guidelines (based on Provincial Policy Statement, 2014 and modified for Growth Plan, 2019).

Urban Growth Centres: Existing and emerging downtowns, as identified in Schedule 4 of the Growth Plan, 2019. In the context of Durham Region, downtown Pickering and downtown Oshawa are Urban Growth Centres.

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Acronyms

ASST: Active and Sustainable School Travel

AV: Autonomous Vehicle

BRT: Bus Rapid Transit

CV: Connected Vehicle

DRT: Durham Region Transit

EA: Environmental Assessment

EV: Electric Vehicle

FRTN: Frequent Rapid Transit Network

GGH: Greater Golden Horseshoe

GTAA: Greater Toronto Airports Authority

GTHA: Greater Toronto and Hamilton Area

HOV: High-Occupancy Vehicle

LRT: Light Rail Transit

LTTS: Long Term Transit Strategy

MaaS: Mobility-as-a-Service

MMLOS: Multi-modal Level of Service

MTO: Ontario Ministry of Transportation

MTSA: Major Transit Station Area

MUP: Multi-use Path

OMCC: Ontario Municipal Commuter Cycling

PCN: Primary Cycling Network

PPS: Provincial Policy Statement

RCP: Regional Cycling Plan

ROP: Regional Official Plan

RTN: Regional Trail Network

RTP: Regional Transportation Plan
(Metrolinx)

SGA: Strategic Growth Area

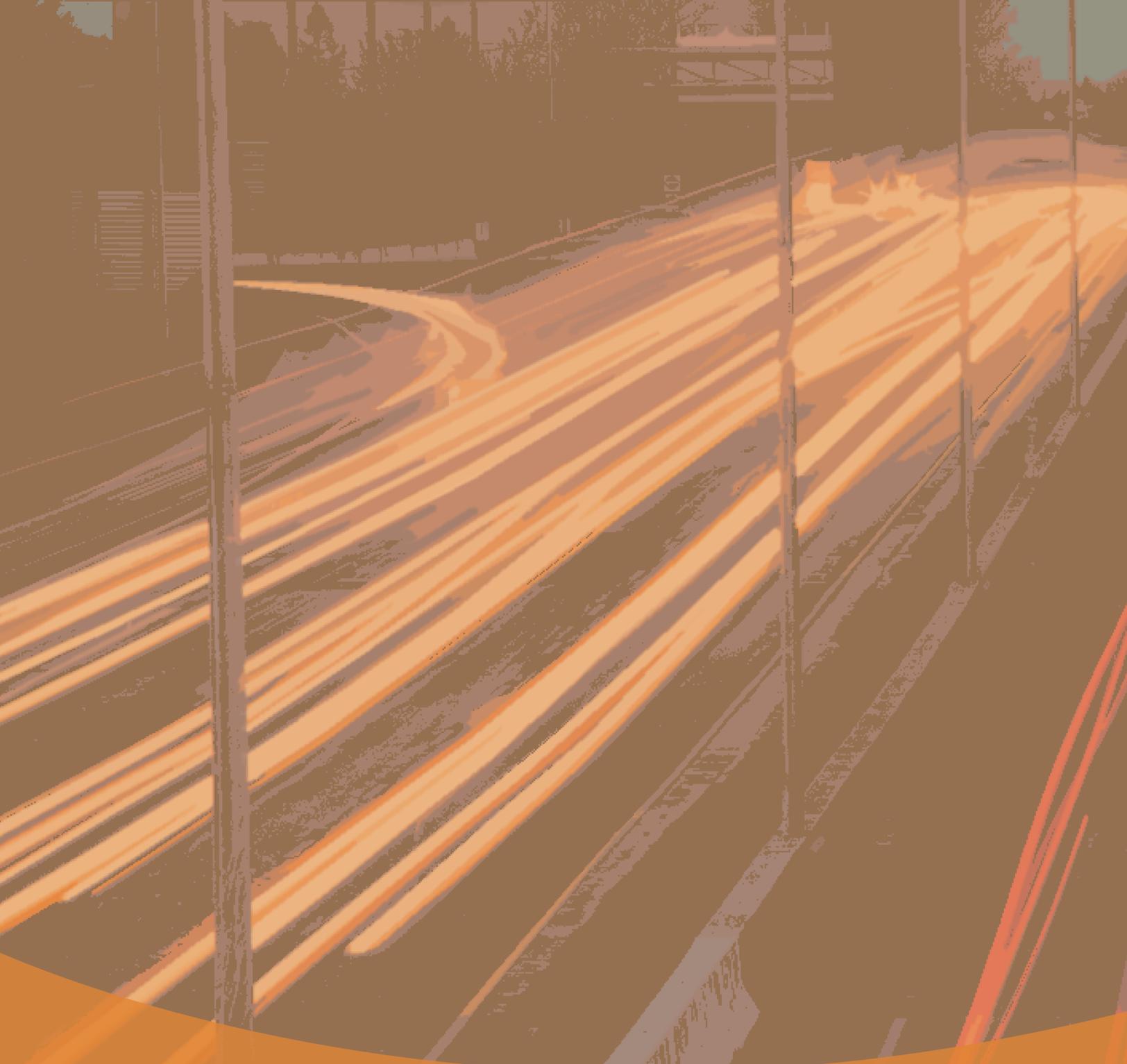
TDM: Transportation Demand Management

TMP: Transportation Master Plan

TOD: Transit Oriented Development

TPAP: Transit Project Assessment Process

UGC: Urban Growth Centre



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