The **Road** to *Change*

Halton Region Transportation Master Plan

2031

Halton REGION

September 2011

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1. DEVELOPING *THE ROAD TO CHANGE*

The Halton Region Transportation Master Plan (2031) – The Road to Change defines a sustainable, integrated transportation system that considers all modes of travel (automobiles, transit, cycling, walking) and supports the policies and objectives arising out of the Halton Region Official Plan Review to the year 2031 (ROPA 38).

1.1 Introduction - *The Road to Change*

On December 16, 2009, Halton Regional Council adopted Regional Official Plan Amendment No. 38 (ROPA 38) incorporating the results of the Sustainable Halton Official Plan Review process, defining how and where Halton will grow from 2021 to 2031.

The amendments incorporated through ROPA 38 establish a policy framework that will sustain and improve the quality of life for Halton's residents by moving the Region from a focus on greenfield development to a new approach that balances greenfield development with intensification and uses space and infrastructure more efficiently. It looks to achieve these objectives under projections that will see population in the Region grow from 492,000 to approximately 780,000 and employment grow from 262,000 to 390,000 by 2031. From a transportation perspective, a more balanced and sustainable approach to the future involves a shift away from the current reliance on the automobile.

The transportation system serving Halton Region is complex, comprising a network of infrastructure and services planned, constructed, operated, and maintained by Provincial, Regional and local municipal agencies. All elements of the system are interconnected and play a role in the provision of transportation services to the residents and businesses in Halton.

This Transportation Master Plan (TMP), *The Road to Change*, provides the strategies, policies and tools for the development of a balanced and sustainable transportation system that will support the objectives of Sustainable Halton and meet the Region's transportation needs safely, effectively and cost efficiently to 2031. It will guide and support the development of the Regional Transportation system and help to define the Region's role in the establishment of the broader transportation system serving Halton.

1.2 A Transportation Master Plan

"Transportation Master Plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. These plans examine an infrastructure system or group of related projects in order to provide a framework for planning for subsequent projects and/or developments extending 20 to 25 years in the future and an opportunity to consider different perspectives when looking at the impact of alternatives." (Municipal Class Environmental Assessment, October 2000, as amended in 2007.)

Transportation Master Plans are typically updated every five years to coincide with an Official Plan review. The Region's TMP was last updated in June 2004 and established a transportation strategy to address travel needs in the Region to the year 2021 and forms the basis of this plan.

In addition to the direction established through ROPA 38 and the 2004 TMP update, *The Road to Change* is guided by recent provincial legislation and direction which includes:

- Metrolinx Regional Transportation Plan (RTP) – "The Big Move" (November 28, 2008) – a Greater Toronto and Hamilton Area transportation master plan; and
- Bill 163 (Act to Amend the Greater Toronto Transportation Authority Act, May 14, 2009) – the Metrolinx Implementation Act which directs municipal transportation master plans to be consistent with provincial policy statements.

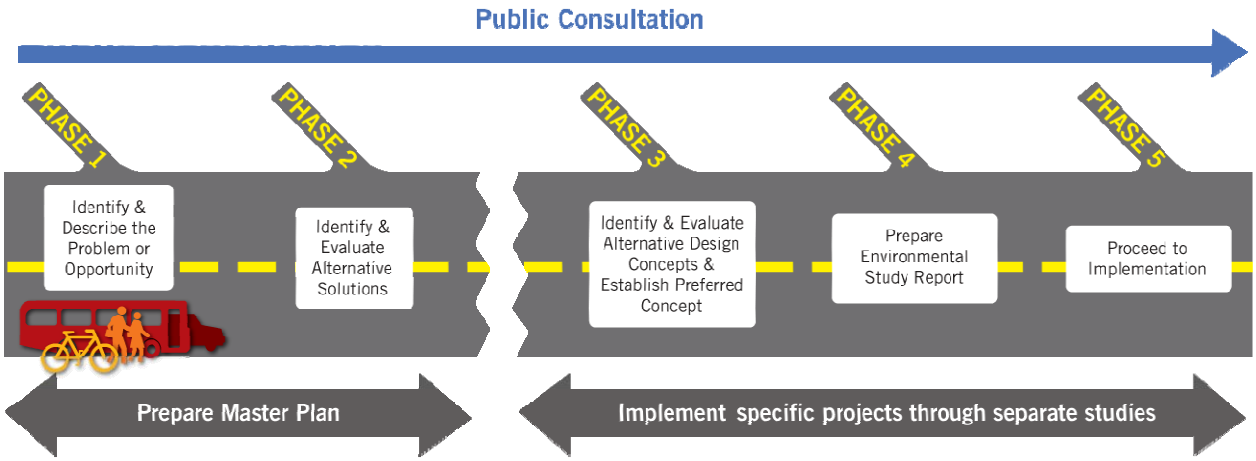
The influence of these and other documents and legislation on the development of *The Road to Change* is summarised in **Appendix A** and **Appendix F.**

1.3 Municipal Class Environmental Assessment Planning Process

The development of *The Road to Change* adhered to the planning and design process of the Municipal Class Environmental Assessment (Class EA) (October 2000, as amended in 2007) and incorporated key principles of successful environmental planning under the Ontario Environmental Assessment Act.

The Class EA process has five-phases as described below and illustrated in **Figure 1.1**.

Figure 1.1 - Municipal Class EA Process



- Phase 1 – Identifying the problem and/or opportunities;
- Phase 2 – Identifying alternative solutions to address the problem or opportunity by considering the existing environment and establishing the preferred solution;
- Phase 3 – Examining alternative methods of implementing the preferred solution;
- Phase 4 – Completion of an Environmental Study Report (ESR) that documents the rationale, the planning, design and consultation process for the project; and
- Phase 5 – Contract drawings and document completion followed by construction and operation.

The transportation master planning process followed in developing The Road to Change satisfies Phases 1 and 2 of the Class EA process.

To successfully complete Phases 1 and 2, critical key elements were incorporated into the planning process:

- Consultation with stakeholders and the public;
- Identification and consideration of reasonable and feasible alternatives;
- Identification and consideration of the effects of each alternative on key aspects of the environment (natural, social, economic);
- Systematic evaluation of the alternatives in terms of their advantages and disadvantages to determine their net environmental (natural, social and economic) impacts including the consideration of appropriate mitigating measures;
- Development of a recommended capital implementation program for the preferred strategy;
- Development of an appropriate implementation/phasing strategy; and
- Provision of clear and complete documentation of the TMP study process to provide a traceable decision-making process.

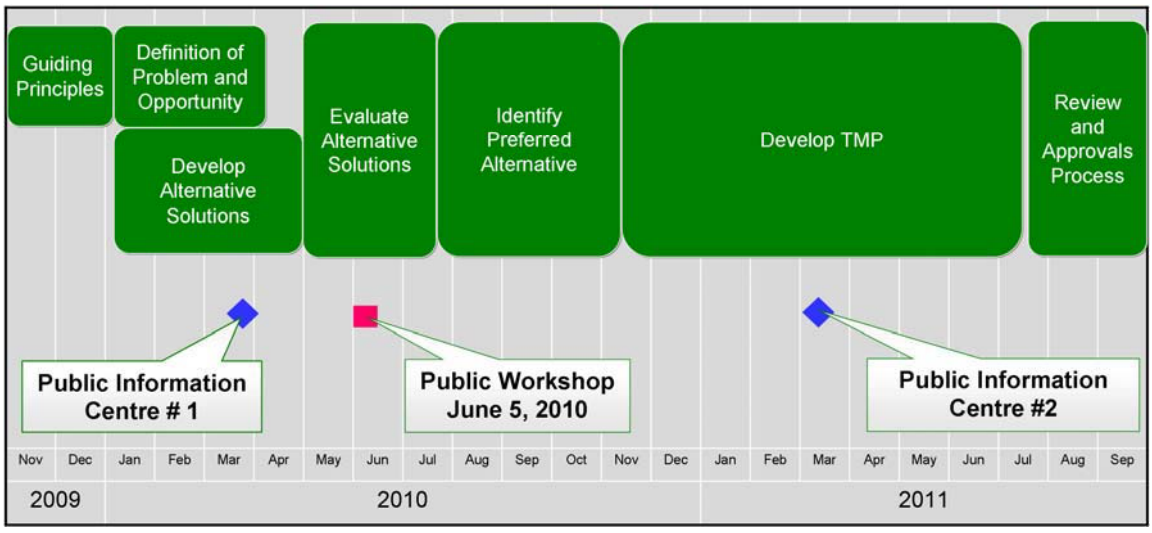
The type and scope of projects identified in a TMP dictates the degree of EA investigation that needs to be followed for each project. Four levels of transportation projects are identified, each of which requires a different level of review:

- Schedule A Projects – minor modifications to existing facilities. Environmental effects of these projects are minimal and the projects are, therefore, considered pre-approved;
- Schedule A+ Projects – minor modifications to existing facilities and are considered to be pre-approved, however, a municipality is required to notify the public prior to project implementation;
- Schedule B Projects – minor expansions to existing facilities. As there is some potential for adverse environmental effects, these projects are required to proceed through a screening process including public consultation; and
- Schedule C Projects – construction of new facilities and/or major expansions to existing facilities. These projects must pass through the entire EA planning process outlined in the Municipal Class EA Process.

All road improvement projects recommended as part of the TMP are Schedule C projects and will require the completion of Phases 3 and 4 (of the Municipal Class EA process), including the preparation of an Environmental Study Report (ESR) for public review, prior to implementation (Phase 5).

The timeline and process for development of *The Road to Change* are illustrated in **Figure 1.2.**

Figure 1.2 – *The Road to Change* Study Process and Timelines



1.4 Study Partners

The Transportation System serving Halton Region comprises infrastructure and services provided by the Province, the Region, the local area municipalities and neighbouring local and regional municipalities. The development of an efficient and sustainable transportation system is dependent on the effective integration of all transportation infrastructure and services provided within Halton Region.

In recognition of the multi-jurisdictional nature of the transportation system serving Halton Region, *The Road to Change* was guided by a multi-discipline team from the Region and the Local Municipalities of Oakville, Burlington, Milton and Halton Hills.

1.4.1 Municipal Advisory Group

A "Municipal Advisory Group" (MAG) established at the outset of the study served as the project steering committee and guided the study team in the development of the TMP.

The MAG included:

- Halton Region staff from Public Works, Legislative & Planning Services, Health, and Corporate Services Departments;
- City of Burlington staff from Engineering, Transportation Services, Burlington Transit, Roads and Parks Maintenance, and Planning and Building Departments;
- Town of Milton staff from Engineering Services, Planning and Development Services, and Community Services Departments;
- Town of Oakville staff from the Infrastructure and Transportation Services Commission, Engineering and Construction, Development Engineering, Planning Services, Parks and Open Space and Oakville Transit Departments; and
- Town of Halton Hills staff from Infrastructure Services, Planning, Development and Sustainability Departments.

Commencing in January 2010 the MAG met a total of eight (8) times to review project information and work-in-progress, and provide feedback and information. The MAG committee members also reviewed feedback obtained through public consultation to ensure public concerns, issues and ideas were appropriately considered in the development of the TMP.

In addition to the MAG meetings, special working sessions were held with the Local Municipalities at two key decision points in the study process. The first set of meetings were held in June 2010, when the study team met one-on-one with each Local Municipality to discuss the potential solutions to provide additional capacity identified through the study modelling. The second meeting was held in October, 2010 with the Local Municipalities to discuss transit and the opportunities to accommodate enhanced transit opportunities within the Regional and local road networks.

1.4.2 Technical Agencies Committee

In addition to the MAG, a "Technical Agencies Committee" (TAC) was established comprising members of the MAG, staff from adjacent municipalities and key stakeholder ministries and agencies. The TAC met three times at key study milestones to discuss the study principles, the consultation program, alternative solutions (the evaluation framework) and the draft preferred road improvements and transportation network.

A complete list of members of the MAG and TAC is provided in **Appendix B**.

1.5 Consultation and Communications

Consultation was a critical component of the TMP study and provided continual guidance and direction to the development of *The Road to Change*.

In addition to meetings with the Municipal Advisory Group and the Technical Agencies Committee, an extensive consultation program was implemented, which included public notification, public information centres, and a public workshop. Considerable input was received and incorporated into the TMP. The following summarises the meetings/events held and the input received. Details of the consultation program are provided in **Appendix C**.

1.5.1 Public Information and Consultation Sessions

Two rounds of Public Information Centres (PICs) were held to provide information to the public, gather feedback, and respond to questions. Each round of PICs comprised a series of meetings held in each of the four local municipalities. In addition a Public Workshop was held following PIC 1 to provide a more detailed and interactive forum to obtain feedback on the concepts and alternatives being considered through the development of the TMP. A brief summary of each PIC is provided below. Full reports on the public information centres and workshop are provided in **Appendix C**.

PIC 1 **March 23 to March 31, 2010**

The purpose of PIC 1 was to present and obtain feedback on:

- The Study process;
- The Problem Statement and Opportunities;
- The draft TMP Vision and Guiding Principles;
- The focus areas being considered in the development of the TMP; and
- The draft evaluation criteria.

A total of 127 people attended PIC 1. Key topics and common themes raised by PIC attendees were as follows:

- Ensure connectivity of the transportation network within the Region and adjoining municipalities;
- Integrate with initiatives and infrastructure being planned at both the local and provincial level, including Metrolinx;
- Ensure the plan recognises the need for coordination of transit (i.e., coordination of local and provincial systems);
- Improve/promote Active Transportation;
- Consider farming community needs;
- Plan for changing demographics (aging population); and
- Identify sustainable financing opportunities.

***Public Workshop* June 5, 2010**

On June 5, 2010, a public workshop was held with 22 interested stakeholders, including regional and local councillors, residents at-large and representatives from various community and interest groups, to present information and solicit input on the study concepts in an interactive forum.

Feedback from the workshop identified the following common themes:

- Integrate land use planning with transportation planning and encourage transit-oriented development;
- Increase transportation modal choices with an emphasis on Active Transportation;
- Use financial incentives/disincentives to spur alternative mobility choices;
- Provide safe, accessible, connected Active Transportation options;
- Place priority on transit infrastructure rather than building/widening roads;
- Prefer Light Rail Transit to Bus Rapid Transit;
- Connect regional and local hubs and consider hubs such as schools, recreational facilities and shopping malls;
- Connect transit systems within the Region;
- Secure local employment opportunities to decrease commuting needs;
- Address need for north-south connection and east-west connection at north end of Region; and
- Look beyond the 2031 time horizon in planning Halton's future.

PIC 2 **March 7 to March 24, 2011**

The purpose of PIC 2 was to present and obtain feedback on:

- The study process;
- The assumptions made while preparing the TMP;
- The findings of the study, including the predicted travel demand in 2031;
- The alternative solutions and the evaluation of those alternative solutions;
- The draft 2031 transportation strategy; and
- The recommendations and next steps.

A total of 115 people attended the second round of PICs. Key topics and common themes raised by PIC 2 attendees included:

- The ability of existing built environments to accommodate transit services and the need for new development to be transit supportive;
- Identifying the consequences of not meeting transit ridership targets;
- Providing clarity on how rail was considered in the study;
- Identifying the timing of projects and how they would be funded;
- Considering a seamless Regional transit system;
- Confirming the need for a crossing of Bronte Creek and the environmental effects of a crossing;
- Coordinating between the Region, Province, Local Municipalities, and adjacent Municipalities in the development of the TMP;
- Considering projects proposed by the Province, such as the Niagara to GTA and the GTA-West Corridors; and
- Understanding the need for policies to support elements of the TMP including safe and connected Active Transportation system.

1.5.2 Correspondence

During the course of the study, correspondence was exchanged with agencies, residents and representatives of the development community. Relevant correspondence is presented in **Appendix C**.

1.5.3 Meeting with Conservation Halton and Niagara Escarpment Commission

In addition to the participation of Conservation Halton and the Niagara Escarpment Commission in the Technical Agencies Committee meetings, the study team held individual meetings with Conservation Halton and Niagara Escarpment Commission representatives to discuss issues of specific concern, which have been incorporated in the final recommendations of the TMP. One of the outcomes of the meeting with Conservation Halton was the development of a figure illustrating areas of environmental concern, as identified by Conservation Halton. This figure is intended to be referenced in the future phases of the Municipal Class EA process. **Appendix D** illustrates the environmentally sensitive areas that coincide with recommended projects identified through the TMP study. These areas are not considered to be

exhaustive and Conservation Halton will be contacted on a project-by-project basis to review environmentally sensitive areas and features.

In the meeting with the Niagara Escarpment Commission, it was noted that the location of the potential GO station proposed near Tremaine Road (realigned) and the CNR tracks north of Steeles Avenue as indicated in the Milton Official Plan, would appear to be on NEC lands and that further studies were required with regards to this site.

2. VISION AND GUIDING PRINCIPLES

Good transportation planning requires a vision and guiding principles to define values and priorities. The Vision and Guiding Principles established for The Road to Change ensure that the recommendations of The Road to Change will support the vision of Halton in 2031.

2.1 The Vision

The Vision for *The Road to Change* is guided by the Transportation Goals and Objectives of ROPA 38, the Vision of the "Big Move" Metrolinx Regional Transportation Plan for the Greater Toronto and Hamilton Area, and the input provided through consultation with the Municipal Advisory Group, the Technical Agencies Committee and the public.

The Road to Change must accommodate various travel choices and support a sustainable and multi-modal network. It must encourage people to change their travel characteristics, maximise the use of transit and other alternatives to the single occupant vehicle, and be aware of the consequences if they do not change.

2.2 Guiding Principles

In addition to the Vision, five Guiding Principles were at the forefront of decisions which defined key components of *The Road to Change*:

- **Balanced Needs** – provide choice for the travel needs of residents;
- **Healthy Communities** – support a healthy and active lifestyle;
- **Economic Vitality** – transportation will be a major contributor to the Region's prosperity;
- **Sustainability** – balance economic, social and environmental goals; and
- **Well-Maintained Infrastructure** – keep the Region's infrastructure in a good state of repair.

A more detailed definition of the guiding principles is provided below:

Balanced Needs

Provide a high-quality network that supports Active Transportation, transit, automobile and goods movement by offering a safe, convenient, accessible, affordable and efficient transportation system to meet the daily needs of all residents.

Provide infrastructure that is supportive of transit and Active Transportation and promotes Transportation Demand Management initiatives aimed at reducing reliance on single occupant vehicles.

Healthy Communities	Support healthier communities by promoting non-single-occupant auto travel choices such as Active Transportation and public transit. Provide a transportation system that supports a healthy and active lifestyle and addresses user safety and security, including support for compact urban form with land use intensification, including transit supportive nodes and corridor development.
Economic Vitality	Support economic development and enable the efficient movement of goods and services to 2031. This includes the movement of manufacturing, agricultural, and resource goods as well as the labour force, helping employers improve commuter options and eliminate mobility barriers.
Sustainability	Support the Region's overall goal to enhance the quality of life for all people of Halton, today and into the future. Ensure that Transportation planning decisions protect the environment (natural, social and cultural).
Well-Maintained Infrastructure	Recognise the need to ensure that Halton's transportation system is maintained in a good state of repair. Support the efficient planning, design, construction, operation, maintenance of the system so that it is affordable and continues to support existing and future development

3. HALTON REGION T0 2031

To develop a transportation strategy for Halton to 2031, it is critical to understand today's transportation characteristics and how they will change over the next 20 years. By 2031, population and employment in the Region are expected to double, growing from approximately 492,000 to 780,000 and 262,000 to 390,000, respectively. There will be changes in the urban design, land use and densities.

3.1 Halton Region

Halton Region is located at the western edge of the Greater Toronto Area, encompassing a land area of approximately 967 square kilometres with a 25 kilometre frontage along Lake Ontario. The Region comprises four municipalities that vary in size, population, and character: the City of Burlington, the Town of Oakville, the Town of Halton Hills and the Town of Milton. The current population of the Region is approximately 492,000 with employment of 262,000. The majority of the population resides within Oakville and Burlington, although growth within the period to 2021 will occur primarily in Milton and North Oakville.

Transportation Services within the Region are provided primarily through a network of provincial, Regional and local roads, provincial and local transit services, and Regional and local active transportation facilities.

3.1.1 Roads

Halton Region is connected by a network of provincial freeways and Regional and local roads.

Provincial Freeway Network

The provincial freeway network includes:

- Highway 401 - running east-west through Halton Hills and Milton, between Highway 6 and the City of Mississauga;
- The Queen Elizabeth Way (QEW) - running east-west through Burlington and Oakville, between Hamilton and Mississauga;
- Highway 407 Electronic Toll Route (ETR) - running primarily east-west in Burlington, Oakville, and Milton, between Hamilton and Mississauga; and

- Highway 403 - spanning the southern limits of the Region – east/west through the City of Burlington and the Town of Oakville and then north/south along the eastern boundary of Oakville to Highway 407. Between the Freeman Interchange and the east limit of Oakville, Highway 403 runs concurrently with the QEW.

The province has jurisdiction over two additional highways within the Region:

- Highway 7 running primarily east-west in Halton Hills between Guelph and Brampton; and
- Highway 6 running north-south in Burlington between the QEW and Highway 5.

Regional Road Network

Halton Region is responsible for planning, constructing, operating, maintaining, and improving a network of major arterial roads for the transport of goods and people in a safe and efficient manner. The Regional road system connects the Region's rural and urban centres and provides connectivity to the provincial highway system. The primary east-west Regional arterials include Dundas Street through Burlington and Oakville; and Derry Road, Britannia Road and Steeles Avenue through Milton and Halton Hills. The primary north-south Regional arterials include Regional Road 25, Trafalgar Road and Guelph Line. These roadways provide connectivity to Highways 7, 401, 407 and the QEW/403.

The Regional road system consists of approximately 304 centreline kilometres resulting in approximately 934 lane-kilometres of roadway. In addition to the roads component, the Region is currently responsible for approximately 128 structures / bridges, 4,300 street lights and 208 traffic control signals.

Figure 3.1 illustrates the existing regional road network in Halton Region.

Local Roads

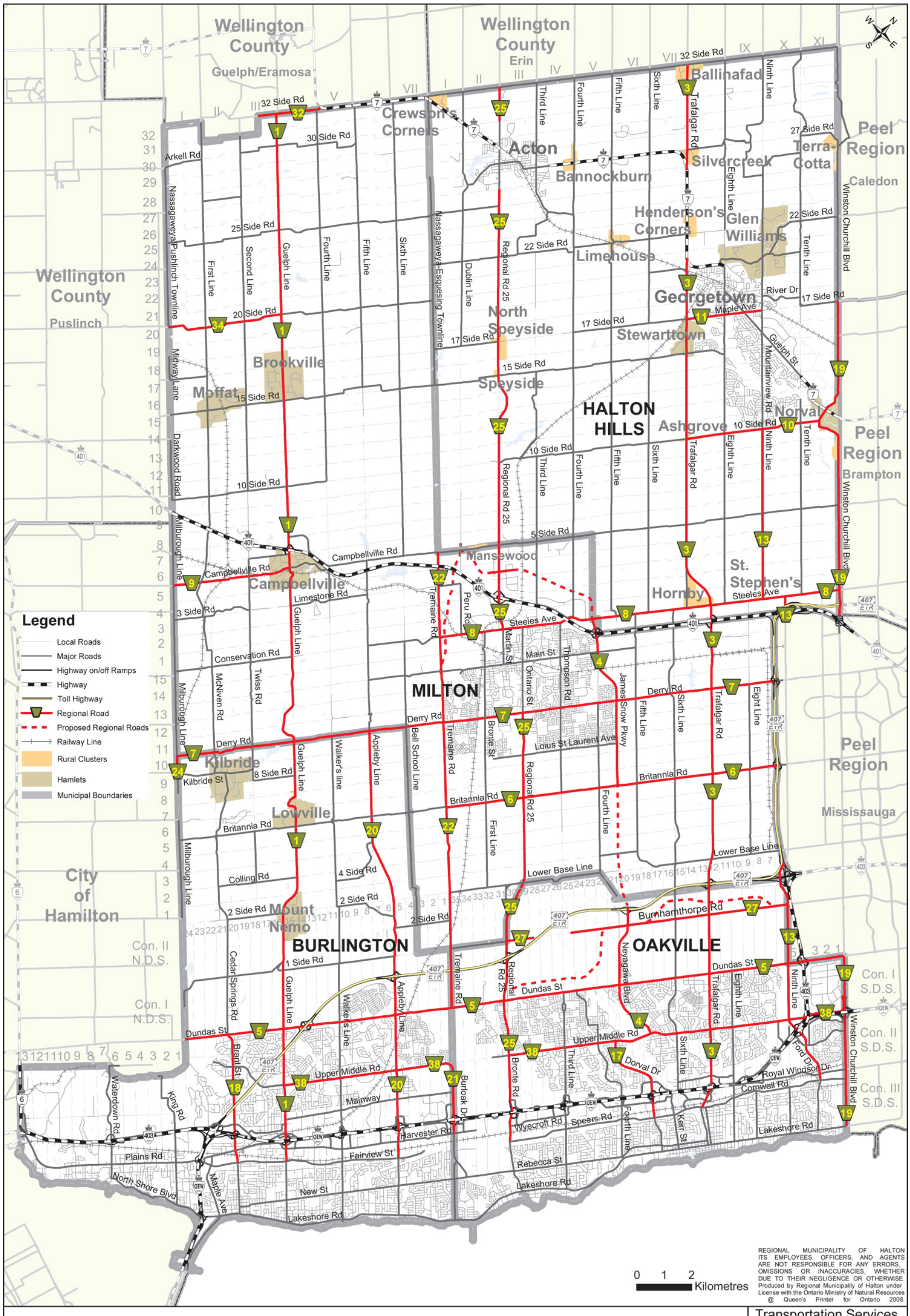
Within the Halton road network, there are a number of roads under the jurisdiction of the local municipalities including minor arterials, multi-purpose arterials, collectors and local roads. Within the hierarchy of the roadway network, these local roads are the primary roads providing access to local communities. They generally have lower speed limits and carry lower volumes of traffic when compared to the arterial roads under the responsibility of Halton Region.

3.1.2 Transit – Local

Transit service in Halton Region is provided by three local municipal transit authorities: Burlington, Oakville and Milton.

In addition, specialised transit services for persons with disabilities are provided by Burlington, Oakville, Milton and Halton Hills.

Figure 3.1 - Existing Regional Road Network



The level of public transit service varies throughout the Region with no local transit provided in Halton Hills. While there is some inter-municipal bus service (primarily east-west in the south and a GO bus service on Bronte Road from Milton to the Oakville GO station), services are not fully integrated. Where cross boundary services do exist between Oakville and Burlington, the service is only provided to destinations adjacent to the municipal boundary and does not serve a broader inter-municipal need. **Table 3.1** summarises the magnitude of local transit ridership by municipality, taken from the Canadian Urban Transit Association 2009 Operating Data Fact Book.

Table 3.1 - Local Transit Ridership by Local Transit Provider

Municipal Transit Service	Local Transit Ridership	Routes	Peak Fleet
Burlington Transit	1,860,000	15	43
Milton Transit	103,000	5	4
Oakville Transit	2,480,000	23	68

Source: Canadian Urban Transit Association – Canadian Transit Fact Book, 2009 Operating Data

In total, 4.44 million transit riders were serviced by the municipal transit systems in 2009.

Although the Region does not offer transit services, the Region is partnering with the City of Burlington and the Town of Oakville on major transit-related studies including the Dundas Street Bus Rapid Transit (BRT) Corridor Study (Brant Street to Trafalgar Road) and the Trafalgar Road BRT Corridor Study (Cornwall Road to Highway 407 ETR) to provide facilities and infrastructure for higher-order inter-regional and intra-regional services.

3.1.3 Transit – Inter-regional

The Region is also serviced by GO Transit, Mississauga Transit and Hamilton Street Railway (HSR). GO Transit provides inter-regional transit service within Halton Region, using both GO Trains and GO Buses.

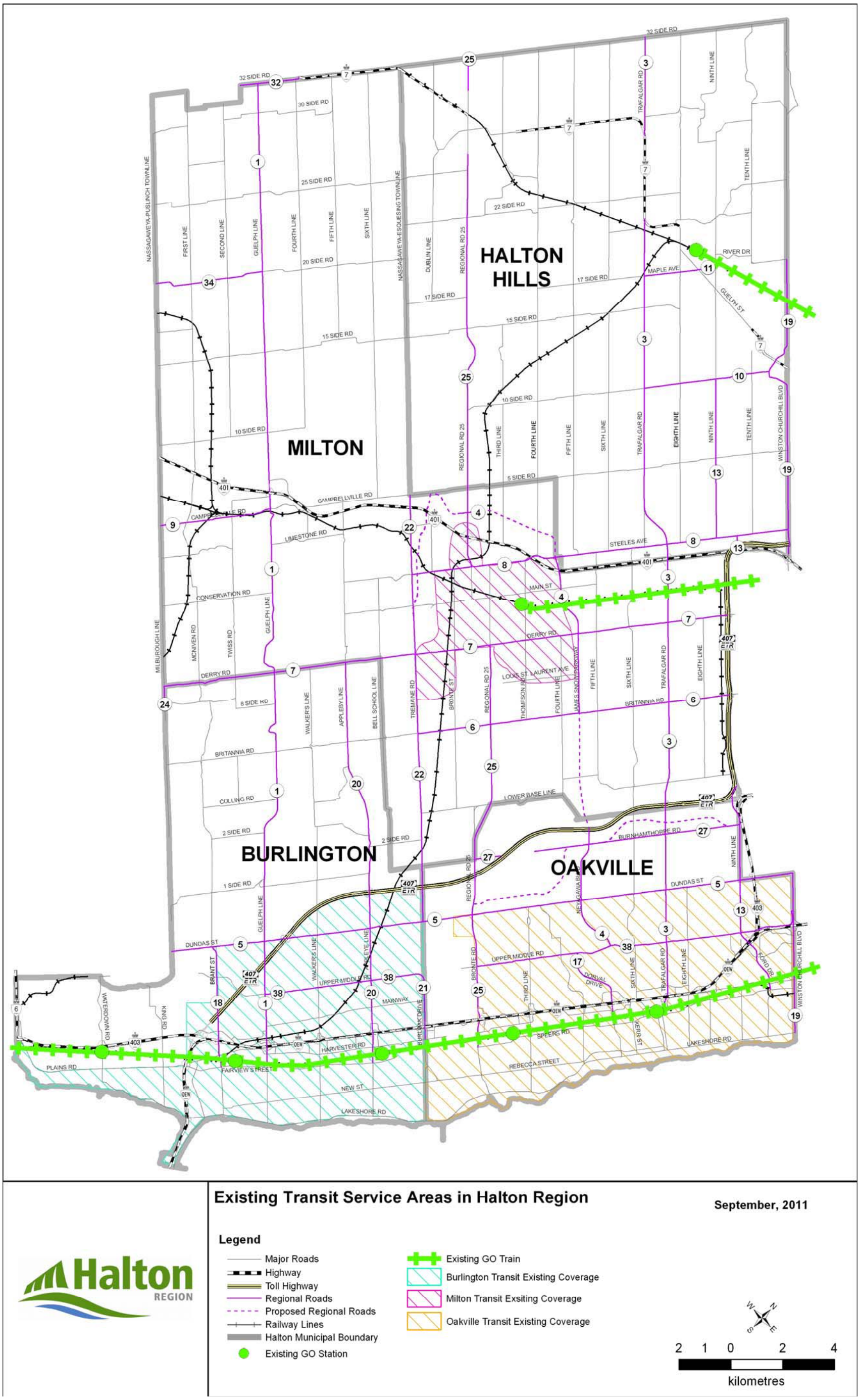
GO Trains provide a public transit service primarily used by Halton residents to/from downtown Toronto. Train service is provided on three lines, the Lakeshore Line, the Milton Line and the Georgetown Line. GO Bus services augment the train services ("train-buses") and also address other interregional travel markets. GO transit provides limited bus service along Highway 407 and Highway 403/QEW:

Currently, VIA Rail offers inter-regional service through Halton Region via the following routes:

- Niagara Falls - Aldershot GO - Oakville GO (2 runs daily);
- London - Aldershot GO - Oakville GO (4 runs daily); and
- Aldershot GO - Oakville GO - Toronto Union Station (7 runs daily Monday-Saturday, 6 runs daily on Sunday).

Figure 3.2 illustrates the local transit service areas in Halton Region as well as the provincial transit rail services.

Figure 3.2 –Transit Coverage



Existing Transit Service Areas in Halton Region

September, 2011

Legend

- Major Roads
- Highway
- Toll Highway
- Regional Roads
- Proposed Regional Roads
- Railway Lines
- Halton Municipal Boundary
- Existing GO Station
- Existing GO Train
- Burlington Transit Existing Coverage
- Milton Transit Exsiting Coverage
- Oakville Transit Existing Coverage

2 1 0 2 4

kilometres

3.1.4 Regional Road Right-of-Way Guidelines

The Region uses corridor guidelines to coordinate the design elements within the Regional road right-of-ways. This includes consideration of travel lanes, median characteristics and elements of the roadway edge such as landscaping, lighting and active transportation facilities.

As part of *The Road to Change*, the Region has updated their guidelines to reflect current public input and better support the objectives of ROPA 38. The Regional Road Right-of-Way Guidelines are presented in **Appendix E**.

3.1.5 Active Transportation

"Active Transportation" (AT) is defined as non-motorised or lightly-motorised travel, including walking, cycling, roller-blading and movements with mobility devices. The AT network includes sidewalks, crosswalks and designated on and off-road trails to accommodate Active Transportation (Regional Official Plan Amendment No. 38, Section 212.1). Other elements of AT include: benches; lighting and designated pedestrian crossing infrastructure.

With respect to Active Transportation, the Regional Road Right-of-Way Guidelines include within an urban setting the accommodation of a 4.2 metre curb lane and/or on-road cycle lanes at 1.8 metres wide to accommodate cyclists. On rural roads, 2.5 metre partially paved shoulders are provided with a 1.5 metre paved bike lane to accommodate cycle usage. Under current practice, off road Active Transportation infrastructure on Regional roads is provided and maintained by the local municipalities and has been protected for with a 3.0 metre wide sidewalk / multi-use path within the boulevard of each urban corridor. The application of the Right-of-Way Guidelines will be confirmed through further implementation-related studies including the Class Environmental Assessment process.

Regional Cycling Committee

Regional Council through approval of Report PW-04-11 at its meeting of December 22, 2010, dissolved the Regional Cycling Advisory Committee and endorsed the establishment of a new Halton Active Transportation Advisory Committee. The purpose of the Committee is to advise and assist the Region in the development of policies and plans for an integrated active transportation system within Halton Region to accommodate self-propelled modes of travel such as cycling, walking, in-line skating and skateboarding.

Terms of Reference for the Committee were approved by Regional Council at its meeting on July 13, 2011 through staff report PW 47-11.

All of Halton's Local Municipalities have undertaken the development of Active Transportation / Cycling/ Trails Plans as outlined below.

Oakville

In the spring of 2009, the Town of Oakville finalised its Active Transportation Master Plan. The plan identifies short, mid and long-term actions and recommendations to support the Oakville Official Plan, Oakville Transportation Master Plan and Environmental Strategic Plan by:

- Providing a convenient and efficient town-wide cycling and pedestrian system that links all communities in the town;
- Establishing an environmentally friendly transportation system that improves mobility; and
- Increased cycling and walking network connectivity.

Burlington

The City of Burlington has prepared a Cycling Master Plan (July 2009) that includes policies and programs to guide the expansion of the city's network of on-road bike lanes and off-road multi-use pathways from 90 kilometres to 310 kilometres.

The Burlington Cycling Committee has been active for twenty years. Its mandate is to assist, advise, recommend, and support Burlington Council in matters pertaining to cycling in the City of Burlington.

Milton

The Town of Milton has prepared a Trails Master Plan (September 2007), which provides a vision for a "trail network that unifies neighbourhoods and destinations within the community of Milton". The Town has committed to update the Trails Master Plan to reflect the changing needs of residents and businesses and will explore new technology and design possibilities for trails development.

The Town of Milton also has a Trails Advisory Committee, which meets regularly to guide trails development in Milton.

Halton Hills

The Town of Halton Hills completed a Cycling Master Plan in 2010 and a Pedestrian Charter in 2009 to encourage Active Transportation in the town. The Town of Halton Hills has a Trails Advisory Committee, which provides advice and input to the Town of Halton Hills on matters relating to the design, construction and funding of a trails system. The Town also has a Sustainability Advisory Committee that provides input into Active Transportation matters.

3.1.6 Transportation Demand Management

Transportation Demand Management (TDM) is a term used to describe a wide variety of initiatives aimed at reducing the amount of travel by single occupant vehicles and achieving a more balanced mode split in the transportation system, particularly during the commuter peak hours.

The Region launched the Smart Commute Initiative in 2006. Since its inception, Smart Commute Halton has brought awareness to the Smart Commute initiative as well as encouraging employers across Halton Region to try alternative travel modes. Smart Commute is continuing to expand across the Region in partnership with Metrolinx, the local municipalities and local employers.

3.2 Commuter Travel Trends in Halton Region

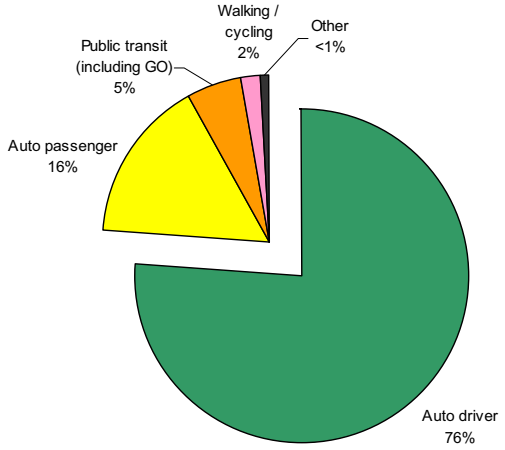


Figure 3.3 - Halton Residents Preferred Mode of Transportation To/From Work

Based on the 2006 Transportation Tomorrow Survey, a significant proportion of travel on Halton's road network is due to commuter traffic: persons who drive to and from their places of employment. **Figure 3.3** presents the primary mode of transportation in Halton Region during the afternoon peak period, when commuter travel is high. Over 76 percent of people drive a vehicle, while only 5 percent of people take public transit; 16 percent are vehicle passengers and 2 percent walk or cycle.

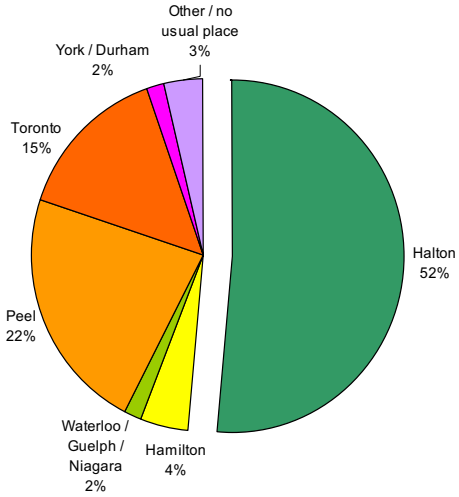


Figure 3.4 - Places of Work for Employed Halton Residents

Figure 3.4 illustrates where employed Halton residents work. Just over half of employed Halton residents commute to work within the Region. Nearly a quarter of employed residents commute to Peel Region and 15 percent commute to Toronto. The remainder of commuters travel to the Regions of York, Durham and Niagara, Hamilton, Waterloo and Guelph.

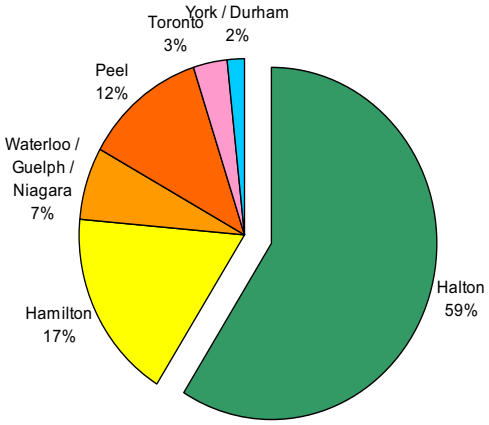


Figure 3.5 - Place of Residence for Halton Region Work Force

Figure 3.5 illustrates the places of residence for Halton Region's work force. More than half of the work force live and work within Halton while 17 percent of workers reside in Hamilton, 12 percent reside in Peel Region, 7 percent in Waterloo, Guelph and Niagara, and 3 percent reside in Toronto.

3.3 Halton Region - 2031

In developing a TMP for the Region to 2031, assumptions must be made regarding how travel demand will change over the next 20 years. Demographics will change, as will trip generation and travel patterns.

To develop an integrated transportation system, planned improvements to local transportation systems, provincial highway facilities and inter-regional transit services must be considered in addition to planned improvements to Regional infrastructure.

Population Growth to 2031

Halton is one of the fastest growing regions in Ontario. Based on the best planning estimates established through the Sustainable Halton process and ROPA 38, the Region will grow from a population of approximately 492,000 with employment of 262,000, to approximately 780,000 residents and 390,000 jobs by 2031. Most of this growth will occur in Oakville north of Dundas Street, Milton to the east and southwest, and Halton Hills in southwest Georgetown.

Table 3.2 shows the population and employment numbers as approved by Halton Region Council in July 2011.

Table 3.2 - Distribution of Population and Employment for Halton Region, 2006 to 2031

	POPULATION				EMPLOYMENT			
	2006	2011	2021	2031	2006	2011	2021	2031
City of Burlington	164,446	173,761	178,847	186,169	87,854	95,656	102,846	105,349
Town of Halton Hills	54,978	56,066	61,672	91,885	19,228	19,856	22,936	41,962
Town of Milton	53,938	88,438	161,750	228,084	27,232	44,452	81,106	114,330
Town of Oakville	165,529	174,780	221,826	246,400	82,089	90,969	120,795	128,359
Halton Region	***438,891***	***493,045***	***624,094***	***752,537****	***216,403***	***250,932***	***327,683***	***390,000***

** Population and Employment numbers (Best Planning Estimates – BPE) as approved by Halton Region Council, July 2011*

*** 780,000 residents corresponds to 752,357 residents in the BPEs when the census undercount is taken into consideration*

Roads

Provincial Freeway network

The Ontario Ministry of Transportation (MTO) is planning to widen Highway 401 by two lanes in each direction from Highway 407 ETR to James Snow Parkway and one additional lane from James Snow Parkway to Regional Road 25; and is currently undertaking two long range transportation studies in Halton Region: the Niagara to GTA Corridor Study and the GTA West Corridor Study. The GTA West Study includes recommendations for the establishment of a North South freeway within the area addressed through the Halton-Peel Boundary Area Transportation Study.

Halton Region Road Network

- Halton Region currently has a Capital Roads Program to address transportation needs to 2021. The program has a budget of over approximately $1 billion and is planned to be implemented by 2021. The TMP has been developed with the assumption that all of the planned improvements identified in the Capital Roads Program will be in place by 2021. The Region's 2021 Program is illustrated in **Figure 3.6**.

- The Halton-Peel Boundary Area Transportation Study (HPBATS) assessed transportation demands along and across the Halton-Peel boundary north of Highway 401. This study made a number of recommendations related to roads and transit in this area to improve mobility to and from North-East Halton. These recommendations are included in **Table 3.3**.

Table 3.3 – Halton-Peel Boundary Area Transportation Study Recommendations

Project ID	RR No.	Regional Road	From	To	Improvement
6822	8	Steeles Avenue	Trafalgar Road	Winston Churchill Boulevard	Widening from 4 to 6 lanes for reserved bus lane (RBL)
6758	10	10 Side Road	Trafalgar Road	Winston Churchill Boulevard	Widening from 2 to 4 lanes
6846 / 6847	19	Winston Churchill Boulevard	Steeles Avenue	5 Side Road	Widening from 4 to 6 lanes
3989	19	Winston Churchill Boulevard	5 Side Road	10 Side Road	Widening to 4 lanes and realignment
N/A	N/A	Halton-Peel Freeway	Highway 401 / 407 ETR Interchange	Bovaird Drive	New 8-lane link (by others)
N/A	N/A	Halton-Peel Freeway	Bovaird Drive	Mayfield Road	New 6-lane link (by others)
N/A	N/A	Norval West Bypass	10 Side Road / Winston Churchill Boulevard	Guelph Street	New 4 lane north-south link
N/A	N/A	Highway 7	Norval West Bypass	Trafalgar Road	Provide consistent 4 lanes of capacity (by others)
5837	N/A	East-West Connection	Bovaird Drive	Georgetown	Corridor to be determined by EA

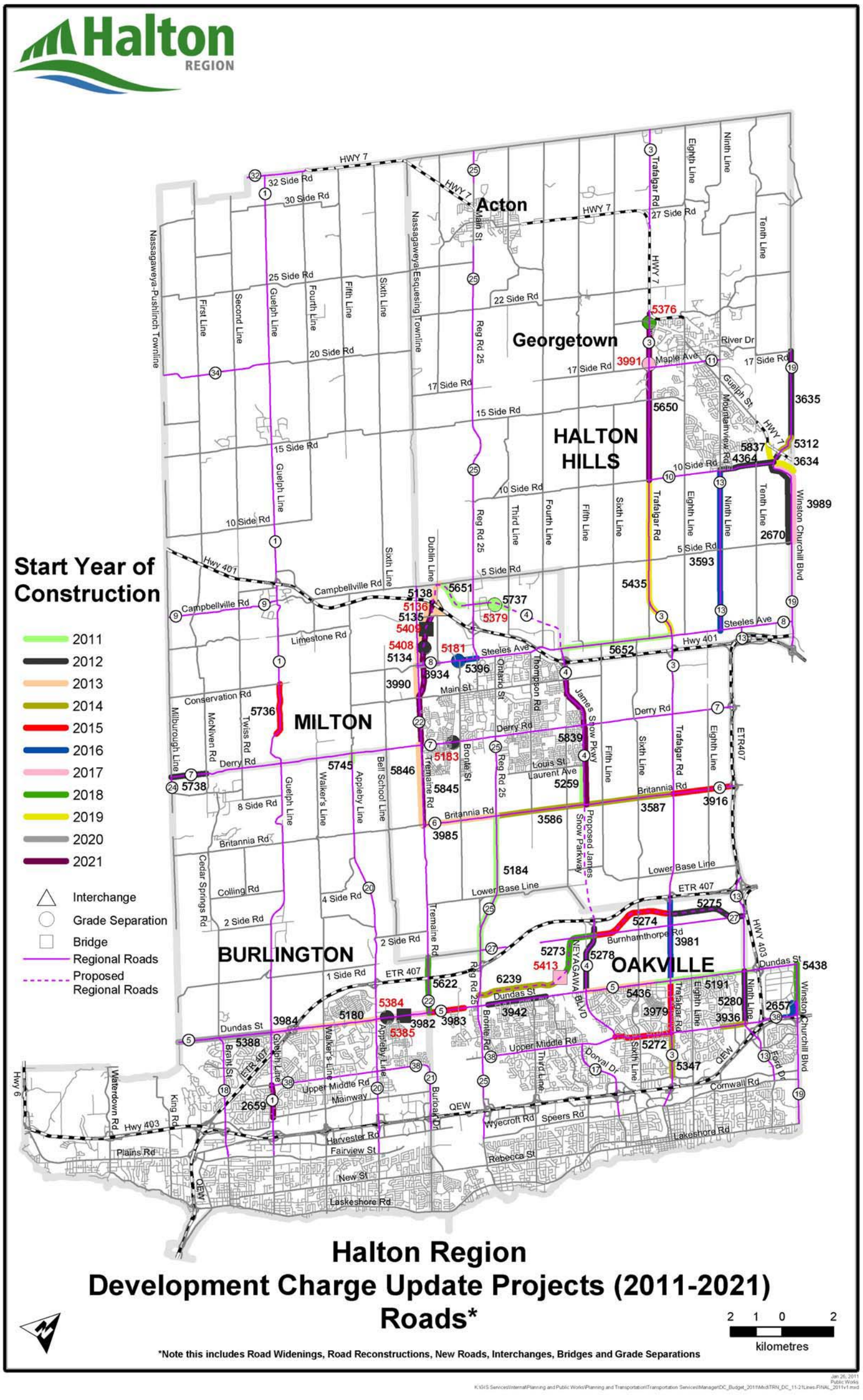
The HPBATS recommendations were taken into consideration in the TMP when considering future travel demands for this area of Halton Region.

GO Transit

Through the GO 2020 and the Big Move Metrolinx plans to provide a number of improvements to inter regional transit service in the Greater Toronto Area over the next 25 years. Some of the improvements that have been assumed to be in place as part of *The Road to Change* are:

- All-day, two-way service with up to 15-minute peak-period service frequency on the Lakeshore, Milton, and Georgetown GO Rail lines;
- Potential extension of service from Milton and Georgetown to Cambridge and Kitchener-Waterloo, respectively;
- New GO stations at Acton and Milton East;
- Upgrade to high-speed express rail between Hamilton and Oshawa GO stations;
- Improved GO bus service including High Occupancy Vehicle (HOV) lanes on Highway 407 and Highway 403/QEW;
- Local and inter-regional service integration (i.e., scheduling, fares); and
- Implementation of the Dundas Street and Trafalgar Road Higher Order Transit corridors.

Figure 3.6 – Halton Region 2021 Capital Roads Program



4. PROBLEMS AND OPPORTUNITIES

The transportation system identified to 2031 must accommodate growth in travel demand in a manner that supports the vision and guiding principles while maintaining current levels of service.

4.1 Objectives to 2031

The transportation system identified to 2031 must accommodate growth in travel demand in the Region over the next 20 years in a manner that supports the vision and guiding principles established through the TMP process. Consistent with the Big Move, Metrolinx Regional Transportation Plan, it is also assumed that the level of service currently provided by the Region's transportation system will be maintained to 2031.

The future transportation system must provide mobility options for all users and seamless connectivity for travel within Halton and the GTHA. The transportation strategy needs to consider: growth; associated travel demand; expectations of current residents/workforce; the environment; sustainability; and improvements planned by the local municipalities, Metrolinx and the province. Funding and affordability of transportation infrastructure also needs to be addressed for sustainable implementation and phasing plans.

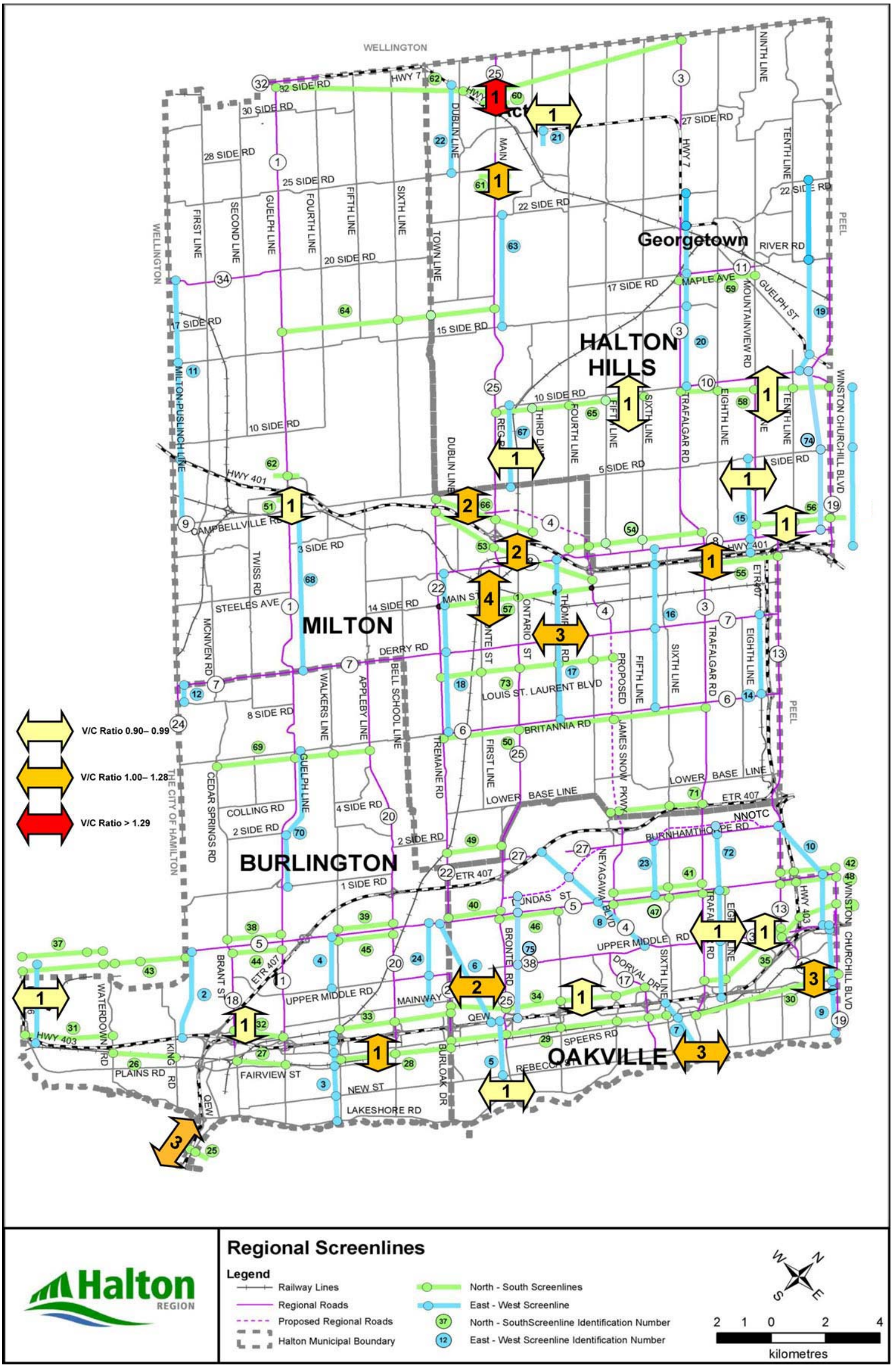
The transportation system must also provide for the efficient movement of goods to and from local industry, including Halton's prime agricultural industry. MTO studies have indicated that trucks will continue to be the dominant mode for shipping in the Greater Golden Horseshoe (GGH).

4.2 The Problem

Specific transportation system deficiencies to be addressed through *The Road to Change* have been identified by analysing the travel demand to 2031 and determining where the current transportation system, together with planned system improvements, are unable to maintain current levels of service.

This analysis represents a "do-nothing" or status quo scenario beyond 2021. If the Region does not provide additional capacity to its transportation system there will be deficiencies throughout the Region as illustrated in **Figure 4.1**.

Figure 4.1 – Transportation Deficiencies (Do Nothing Scenario)



The colour coded arrows indicate the direction of the deficiency and the severity of the anticipated congestion as well as the additional number of equivalent road lanes per direction required to address the travel demand deficiency.

4.3 The Opportunities

Within the scope of this study, there are a number of opportunities to develop systems to address the transportation deficiencies:

- Defining a sustainable transportation system that conforms to provincial policy and the Metrolinx Regional Transportation Plan;
- Developing policies, programs and guidelines that optimise potential for transportation alternatives (high order transit service (i.e., buses operating on exclusive rights-of-way or exclusive lanes), Active Transportation and Transportation Demand Management);
- Providing transportation choice: improved inter- and intra-regional connections;
- Increasing travel reliability for commuters and goods movement;
- Optimizing existing transportation infrastructure;
- Minimizing impacts to the natural, social, economic and cultural environments to the extent possible;
- Investigating funding options and alternatives to deliver a sustainable transportation system; and
- Supporting land use planning objectives.

4.3.1 Active Transportation

To increase the use of Active Transportation (AT) a well-connected, safe and functional transportation network consisting of sidewalks/multi-use paths, designated bicycle lanes, separated bicycle lanes, wider paved shoulders and off-road trails is required. Initiatives associated with education, planning, design and infrastructure development need to be closely coordinated with Halton's Local Municipalities. AT is being promoted as a year-round travel mode option that should be available for all members of the community.

4.3.2 Transportation Demand Management

Transportation Demand Management (TDM) initiatives encourage individuals to reduce the number of trips they make, to utilise alternatives to the personal automobile, to travel outside peak periods, and to reduce the length of their trips. TDM strategies are designed to make alternatives to the single-occupant vehicle more attractive, build a positive public attitude towards those alternatives, and provide adequate information and incentives that will encourage responsible and sustainable travel behaviour.

4.3.3 Goods Movement

Effective and efficient movement of goods is an important element of the Regional transportation system, benefitting consumers as well as the economy of the Region, the Greater Toronto and Hamilton Area (GTHA) and beyond. The GTHA generates about 30 percent of Canada's economic activity, and more than 400 million tonnes of goods are transported to, from or through the GTHA each year.

Within Halton Region, the road network captures the vast majority of goods movements. Therefore, initiatives identified through the TMP must consider the ability of the road network to support:

- Manufacturing — shipping of goods to wholesale/retail, "just in time" delivery;
- Resource-related industry — shipping of aggregates and other materials from source; and
- Agriculture — shipping of produce, and movement of equipment between farms.

4.3.4 Level of Service

Traditionally, Level of Service (LOS) has focused on increasing the capacity of the road network to accommodate more vehicles. The solution most often applied has been to build new roads, provide additional lanes or add turn lanes and other road-related improvements to intersections.

The opportunities applied in developing transportation solutions must address the Halton Region TMP guiding principle of "balanced needs" by providing travel choices.

Opportunities to improve LOS or quality of service for transit, cycling and pedestrians will need to be undertaken hand in hand with local municipalities and service providers.

The Regional Road Right-of-Way Guidelines provide a foundation that encourages transit, cycling and pedestrian activities.

4.3.5 Air Quality

Growth in single-occupant vehicle use and congestion across the GTHA has resulted in increasing impacts on air quality. The strategies identified through the TMP should work to support initiatives, programs and monitoring established through the Regional Health Department and the local municipalities for the protection of air quality.

Technical references discussing the above opportunities are presented in **Appendix F.**

5. ALTERNATIVE SOLUTIONS

Alternative solutions were considered through the development and evaluation of policy, transit and roadway solutions to support the vision for transportation in Halton Region to 2031.

5.1 Methodology

In accordance with the Guiding Principles, the transportation solutions developed to 2031 must maximise the use of existing and planned transportation infrastructure, Transportation Demand Management and Active Transportation (cycling and walking).

A detailed network analysis was undertaken to assess the transportation requirements for Halton Region to 2031. The demand forecasting model used in development of the Region's transportation strategy (Halton's Model) was developed on an EMME/3 platform and includes Halton, Hamilton, Peel, York, and Toronto. It has been used in the development of Halton's previous TMPs, and was updated for the purposes of the current study, with the latest data available from the 2006 Transportation Tomorrow Survey and 2006 Cordon Count Program. Consideration was also given to the volume of truck traffic over the transportation system through an auto-equivalent factor.

The ability of the Regional transportation network to accommodate the 2031 travel demand was assessed by comparing the PM peak hour traffic volume through a screenline, or corridor, with the available capacity; resulting in a volume to capacity ratio (v/c).

A screenline is an imaginary boundary that defines a broad corridor consisting of one or more roadway links.

Capacity deficiencies were determined based on achieving a target volume-capacity ratio of 0.90 or higher by 2031. At a V/C of 0.9 the transportation network crossing the screenline is operating at 90 percent of its functional capacity, but congestion is beginning to appear on many of the roads crossing the screenline.

Future lane requirements were determined based on the number of arterial lanes (850 veh/hr/lane) required to provide sufficient capacity to return the transportation network crossing the screenline to 90 percent of its capacity. Where the actual capacity deficiency crossing the screenline was determined to be less than one third of a lane of capacity (i.e., 280 veh/hr for an arterial road) it was assumed that the deficiency will be addressed through TDM initiatives and Active Transportation.

Each step in the forecasting process was reviewed, updated and calibrated to ensure that it accurately predicts current commuting patterns. The Halton Model was calibrated to match observed trip distribution patterns for Intra-Regional trips to an accuracy of +/- 8 percent and Inter-Regional trips to an accuracy of +/- 4 percent. For a strategic regional model, industry standards for calibration are typically set at +/- 15 percent. Therefore, the Region's model is well calibrated. A complete technical description of the model update is provided in **Appendix G**.

It is intended that Halton's model will also be made available for use by the Local Municipalities in the development of the local transportation master plans.

To quantify the magnitude of the transportation problem to be addressed, a base case or "do-nothing" scenario was initially modeled to determine if the transportation system improvements currently planned at the Region, local and provincial levels could accommodate travel in the PM peak period at 2031. The model established the anticipated demand on the regional system and the locations where additional capacity may be required. The strategy, then, was to determine how to best provide the additional capacity in consideration of the guiding principles established through the TMP process.

In each case where a deficiency was identified in the regional system by 2031, alternative improvements were considered. The need for roadway improvements were identified taking into consideration the potential for transit, cycling, walking and TDM alternatives as well as impacts to the natural, social and cultural environment.

The roadway improvement alternatives were assessed based on a set of evaluation criteria resulting in a preferred alternative selected for each area. The preferred roadway solutions for each area were then combined with the proposed transit and other considerations to form a total network solution.

5.2 Alternative Solutions to Support Growth to 2031

To maintain current levels of service in terms of mobility, the Region's 2031 transportation system must look beyond the single-occupant automobile. Therefore, the transportation system developed through the TMP must provide transportation options to the Region's residents and workforce.

Evaluation of alternative solutions first considered measures that maximised the use of current infrastructure and travel options provided through Active Transportation and Transportation Demand Management. Options to provide capacity via improved local transit service and planned GO Transit improvements, some of which would require the widening of existing roads to accommodate transit infrastructure, were then considered by evaluating options reflecting transit utilization ranging from the current usage of 5 percent (2006 TTS) to the 20 percent modal split reflected in the ROPA 38

transportation objectives. Finally, roadway improvement alternatives were evaluated to address travel demand that could not be reasonably met through other travel options.

The analysis of alternative options is discussed in more detail in the following sections.

5.3 Status Quo / Do Nothing

An analysis of the anticipated travel demand within Halton Region by 2031 indicates that even with the significant investment in new transportation infrastructure currently included in the Region's 2021 Capital Roads Program and planned improvements by other agencies, continued growth in the Region between 2021 and 2031 will create significant deficiencies in infrastructure capacity throughout the Region as presented previously in **Figure 4.1.** The colour coded arrows indicate the direction of the deficiency and the additional number of equivalent road lanes per direction required to address the travel demand deficiency.

Under the "do nothing" alternative, commuters would experience increased roadway congestion, longer travel times and delays. A reduction in levels of service will have a corresponding negative effect on the community, economic competitiveness, and the quality of life that Halton residents currently enjoy.

The "do nothing" alternative is not considered to be a viable alternative for addressing future transportation needs in the Region.

Although the "do nothing" alternative avoids the physical impacts typically associated with road widening projects (such as disturbances to natural areas, habitats, community features and adjacent properties), there will be higher potential for impacts on local air quality within the community as traffic congestion increases. Also, social impacts such as neighbourhood traffic infiltration may result from increasing congestion.

The "do nothing" alternative would result in lower capital costs compared to other strategies; however, this alternative does not address the problems and opportunities identified to accommodate the projected growth to 2031.

5.4 Transportation Demand Management

Transportation Demand Management (TDM) provides an alternative solution to help reduce peak hour automobile travel, lower traffic congestion and reduce the need for new or expanded transportation infrastructure.

A comprehensive TDM program involves independent action of residents and private businesses as well as partnerships between governments, the private sector, public institutions, non-governmental organizations and community groups. The success of TDM depends on the implementation of outreach

strategies that encourage the general public, as well as public and private institutions to change unsustainable travel habits.

TDM efforts are complemented by the increasing role of information technology as a substitute for travel. The internet, and the application of telecommuting, has enabled home-based work and learning to flourish. TDM can provide high benefits at relatively low costs as the measures utilise existing resources and require low capital expenditure compared to the construction of new transportation facilities.

TDM-related peak period auto trip reductions, beyond those attributable to increased transit use, are directly related to changes in travel behaviour, particularly ridesharing, telecommuting, flexible work hours, walking and cycling. Additional auto trip reductions may be realized through reductions in the average home-work trip length that are expected to occur with implementation of policies to encourage intensification and mixed land use strategies, particularly an increase in the proportion of internal trips within each neighbourhood.

Assumptions made in the development of the TMP with respect to effectiveness of each TDM measure was based on research conducted into previous applications across North America. The application of the research results for Halton Region considered the existing and planned land use and transportation characteristics of the Region to 2031. The potential for TDM initiatives to impact auto trip reduction for trips less than and greater than 10 kms is summarised in **Table 5.1**.

Table 5.1 – Summary of TDM Auto Trip Reduction Potential (in percent) for Halton Region

TDM Measure	Short Trips (<10 km)	Long Trips (>10 km)
Land Use Intensification (high live/work ratio resulting in more walk/cycling trips)	2.5%	2.5%
Carpooling	2%	3%
Telecommuting	0.5%	1.5%

When the auto trip reductions in **Table 5.1** are applied in the travel demand forecasting process for Halton Region, they have the potential (depending on the measure) to reduce peak period auto demand up to 3 percent (see Carpooling in Table 5.1), based on current experience and the forecasted trip length. Therefore 3 percent has been carried forward in the TMP as the target for TDM initiatives. These reductions reflect the combined effects of the various TDM measures on the range of trip lengths and do not include reductions associated with increased transit use or measures to encourage more walking and cycling, which are discussed separately.

TDM initiatives do not on their own address the forecasted travel demand to 2031 but these should be considered an element of the overall transportation solution to ensure the efficient movement of people and to encourage the use of alternative modes of travel while minimizing impacts on socio-economic and natural environments.

5.5 Active Transportation

Active Transportation refers primarily to walking and cycling. Active Transportation can provide health benefits to individuals by increasing physical activity and can benefit the environment by conserving energy and reducing emissions that impact air quality.

The attractiveness of walking and cycling is influenced by:

- The distance between origin and destination;
- Individual attitudes towards walking and cycling;
- The availability of pedestrian and cycle facilities that are:
    - Maintained year round;
    - Direct and continuous; and
    - Physically safe with respect to pedestrian/cyclist interaction with other pedestrians/cyclists as well as interaction with vehicles; and
- Suitable facilities such as benches, water fountains, bicycle parking/storage, personal showers and change rooms at a destination.

According to the 2006 Transportation Tomorrow Survey, approximately 34 percent of current "auto drive" trips during the PM peak period are short trips under 5 km in length, with a further 30 percent of trips falling in the 5-10 km and 10-15 km trip length range. These represent the target market for shifts to Active Transportation modes as longer trips do not become reasonable or feasible for "average" travellers.

The success of Active Transportation depends on the ability to attract those individuals that are driving their car (as a single occupant) to a destination which is within 5 to 10 km.

Table 5.2 summarises the distribution of trip length for auto driver trips made by Halton residents in 2006 (according to the 2006 Transportation Tomorrow Survey).

Table 5.2 - 2006 Trip Length Distribution of Halton Residents (Auto Trips)

Trip Length Range (km)	2006 TTS Person Trips	2006 TTS Person Trips %
0 - 5	118,783	34.4%
5 - 10	75,275	21.8%
10 - 15	29,696	8.6%
15 - 20	26,588	7.7%
20 - 30	36,602	10.6%
30 - 50	41,091	11.9%
>50	17,265	5.0%
Sum	345,300	100.0%

The policy target assumed in the TMP of a 5 percent mode split for Active Transportation by 2031 can be realized through investments in walking and cycling infrastructure and the introduction of policies to encourage shifts from auto travel to active modes for trips less than 10 kilometres in length. In addition to the current usage of Active Transportation, a shift of approximately 25,000 auto trips to Active Transportation trips would be required to meet the 2031 5 percent policy target.

Achieving a 5 percent mode split for Active Transportation modes within Halton Region represents a large increase in the absolute number of person trips but will only address a small component of the "capacity" needed to accommodate forecasted transportation deficiencies.

5.6 Public Transit

Public transit holds the potential to accommodate large numbers of trips to, from and within Halton Region and is an important alternative solution.

In identifying required system improvements, travel demand was analysed at various levels of transit usage, from the 5 percent of peak period trips identified as the current average across the Region in the 2006 Transportation Tomorrow Survey, to the 20 percent identified in the ROPA 38 transportation objectives.

The transportation master planning process used Transit Mode Split as an "input" to the demand forecast model. Trips assumed to be accommodated by transit (and Active Transportation and TDM measures) were removed from the model, leaving the remaining trips to be accommodated by vehicular trips.

Transit demand was assessed separately from the Region's vehicular demand to determine the impact of increased transit ridership on the road network. The various Transit Mode Split scenarios were refined in consultation with the local municipalities to identify specific areas within each municipality

that could be expected to generate increased transit ridership given planned land use and density patterns or opportunities to introduce higher order transit services such as express routes, transit signal priority, or full Bus Rapid Transit in dedicated or semi-dedicated lanes.

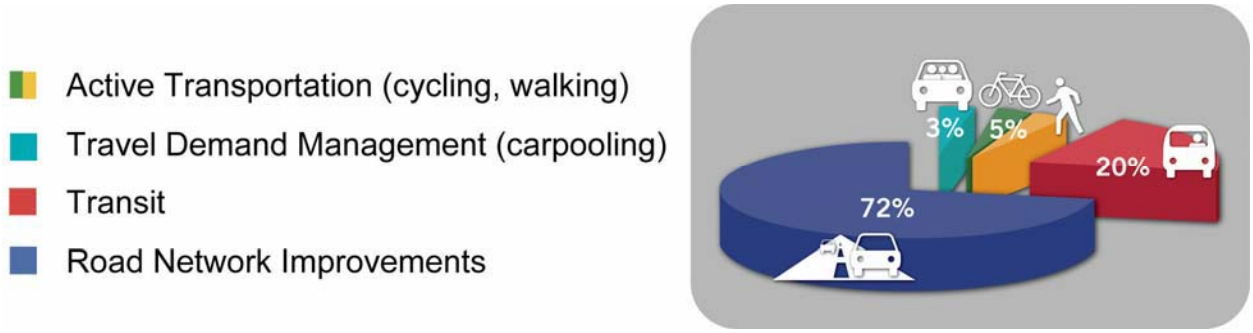
A large component of the projected increase in 2031 transit ridership in Halton Region is associated with trips to and from external municipalities, particularly Toronto, Mississauga, and Hamilton. These external transit trips (which represent an estimate of 29% of the external person trips) will be provided primarily through the GO Rail service along the Lakeshore West, Milton and Georgetown corridors. To achieve the increase in external transit mode share required to achieve level of service objectives within the transportation system, the significant increase in inter-regional transit service, recommended in the Metrolinx Regional Transportation Plan, The Big Move, will have to be implemented by 2031. This includes the new transit routes/facilities identified by Metrolinx along Dundas Street and Trafalgar Road.

The increase in external transit trips associated with the enhanced transit mode share targets will also increase pressure on the local transit services to carry passengers to and from the GO Stations, as there is limited capacity beyond current plans at these stations to accommodate large increases in the number of parking spaces.

5.7 New Roadway Capacity

The alternative solutions reviewed provided options to address the 2031 forecasted travel demand, however TDM, AT, and public transit, on their own, do not fully address the deficiencies identified. The total demand forecasted to 2031 is estimated to be reduced by 3 percent through TDM initiatives, by 5 percent through Active Transportation and 20 percent by public transit. The 72 percent of travel demand expected to be generated through auto trips needs to be addressed through additional capacity in Halton's roadway network. **Figure 5.1** illustrates the forecasted 2031 transportation mode split for the four modes assessed in the TMP.

Figure 5.1 Transportation Mode Split



The need for roadway capacity enhancements was addressed using the Region's demand forecasting model.

In accordance with the guiding principles and vision for the TMP, deficiencies at each screenline were addressed by applying the following in an additive manner:

- Underlying all potential solutions is the assumption that the Region's Transit Mode Split in 2031 will be 15-20 percent, adopted gradually with Transit Mode Splits of 5 percent in 2016, 10 percent in 2021, and 15 percent in 2026;
- After transit was factored into the evaluation, TDM and Active Transportation measures were considered in the evaluation. Modelling has shown that this suite of solutions can address deficiencies at several screenlines. In some situations, such as when the required additional lane capacity was less than one third of a lane, it was assumed that TDM and Active Transportation could address the deficiency; and
- Where roadway improvements proposed by other jurisdictions (such as local roads (i.e., extension of Louis St. Laurent), MTO or Highway 407 ETR) address the deficiency, no further evaluation or consideration of Regional alternatives was necessary.

With consideration of these improvements and strategies, there still remained areas where road widenings will be required to accommodate travel demands in 2031.

When considering the need for more roadway capacity, the study team defined six lanes as the maximum cross-section for Regional roads. Widening a road to more than six lanes can have impacts on:

- property;
- urban form (can require 12 - 14 lanes at intersections);
- quality of life; and
- Sustainability.

Widening beyond six lanes for general purpose travel is not recommended and was not considered an option to address capacity needs in the TMP. This respects the Guiding Principles of the TMP and comments provided at the study's numerous public consultation sessions.

Appendix H lists the lane-deficient screenlines, net of transit, and the potential alternatives to address the deficiency at each screenline. A full multi-discipline evaluation of these alternatives, consistent with the environmental assessment process, was conducted where appropriate and is presented in Section 6 of this report.

5.8 Summary

The Regional transportation system will need to provide capacity through a combination of measures to: encourage alternative modes of transportation, including Active Transportation and TDM; increase transit usage (including transit-related roadway widenings); and widening roadways to accommodate automobiles and the construction of new links.

Based on the analysis of 2031 conditions it was determined that, despite the implementation of Active Transportation and TDM initiatives, and increased transit, travel demand cannot be accommodated without additional road widenings.

The combination of widening regional roads in the urban area to six lanes, where practical and feasible, and transit usage of approximately 15 to 20 percent was determined to be necessary to provide the capacity required to accommodate the demand anticipated by 2031.

Even with increased overall transit usage and widening most regional roads to six lanes in the urban area, new links were determined to be required in east Milton, in Oakville between Bronte Road and Burloak Drive, and in Acton.

6. EVALUATION OF ALTERNATIVE SOLUTIONS

The alternative solutions considered to address the travel demands by 2031 were evaluated against a number of environmental, social, cultural and service criteria to determine the overall impact of each alternative.

Despite the application of TDM, Active Transportation, public transit and road network improvements proposed by other plans and jurisdictions, it was determined that in some areas deficiencies will require the widening of all available Regional Roads within the area to a maximum width of six lanes.

At two screenlines, Regional Road 25 and Highway 7 through Acton, and Crossing of Bronte Creek - north and south of the QEW, however, more than one combination of road widening alternatives could address the deficiency and, therefore, an evaluation of alternative solutions was undertaken. This section provides a summary of the evaluation and the results. The evaluation and existing conditions are provided in **Appendix I**.

6.1 Evaluation Criteria

The study team, in consultation with the public and interested agencies, identified a set of 18 criteria for evaluation of alternative solutions. The evaluation of alternative solutions at screenlines requiring additional capacity was guided by these criteria and associated indicators in the five criteria groups below. An initial list of criteria and indicators was presented to the MAG, the TAC and the public for comment and was modified based on feedback received. The criteria are presented in **Table 6.1.**

6.2 Evaluation of Alternative Road Widening Solutions

Using the evaluation criteria, alternative road widenings were evaluated to identify a preferred solution and potential opportunities. Information regarding conditions assumed to be in place during the planning horizon, was collected in support of the evaluation to determine the impact of each road widening.

Alternatives for roadway improvement were evaluated at two screenlines:

- Regional Road 25 and Highway 7 through Acton; and
- Crossing of Bronte Creek - north and south of the QEW.

Prior to consideration of any road improvements, TDM and Active Transportation measures were considered and it was assumed that by 2031, 20 percent of trips would be accommodated by transit.

The road improvements and the results of the evaluation for each screenline are described below.

Table 6.1 – Evaluation Criteria for Screenline Analysis

Criteria	Indicators
NATURAL ENVIRONMENT	
Potential for impact on terrestrial features	Extent of sensitive land (such as significant woodlands, natural hazard lands, valley lands, Environmentally Sensitive Areas and Areas of Natural and Scientific Interest, documented Species at Risk) removed or disrupted
Potential for impact on aquatic features	Number and significance of watercourse crossings, intrusions on Provincially Significant Wetlands and documented Species at Risk
Potential impact on the Natural Heritage System	Proximity to and number of crossings of the Natural Heritage System
SOCIO-ECONOMIC ENVIRONMENT	
Potential for impact on residents	Number and character of residential properties that may experience displacement or disruption effects
Potential for impact on businesses	Number and character of businesses that may experience displacement or disruptions effects
Potential for impact on farming community	Number and character of agricultural operations that may experience displacement or disruptions effects
Potential for impact to community features	Number and character of features such as schools, institutions and parkland that may experience displacement or disruption effects
Potential for impact to community character	Potential for maintaining integrated communities, including hamlets, villages and rural clusters.
Potential for impact on mineral resource areas	Presence of mineral resource and mineral extraction areas
Potential for impact on planned land use	Conformity with the Regional and Municipal Official Plans
CULTURAL AND HERITAGE ENVIRONMENT	
Potential for impacts on heritage features and cultural landscapes	Number and significance of designated or listed built heritage features that may experience displacement or disruption effects
TRANSPORTATION SERVICES	
Change in level of transportation service	Composite road volume to capacity ratios at screenlines
Potential to support active transportation and carpooling	Potential to accommodate and connect infrastructure for active transportation (bike lanes, trail linkages) and carpooling (HOV lanes)
Potential to support transit	Potential to link/support transit hubs (local transit stops and GO stations) and accommodate transit infrastructure (BRT lanes, queue jump lanes)
Efficiency of infrastructure	Relevance to adjacent proposed alternatives Whether new corridor / ROW is required
Potential for efficient agriculture related transportation	Potential for agriculture-related transportation to conflict with other transportation
Potential for efficient non-agricultural goods movement related transportation	Potential for non-agriculture-related goods transportation to conflict with other transportation
COST	
Estimated capital costs	Estimated capital cost and timing of expenditures

6.2.1 Regional Road 25 and Highway 7 through Acton

Regional Road 25 and Highway 7 through downtown Acton will be over capacity by 2031 requiring one additional lane in each direction. Heavy truck traffic is part of the problem in this area and has also resulted in safety concerns in the downtown area. Three alternative solutions to this problem were considered.

1. Widen Highway 7 (Queen Street East, Young Street, Main Street North, and Guelph Street) to four lanes through downtown Acton;
2. Construct a new 4-lane Alternate Route off Highway 7 from 4th Line around the north side of Acton to reconnect with Highway 7 near Dublin Line; or
3. Construct a new 4-lane Alternate Route off Highway 7 from 4th Line around the south side of Acton to Dublin Line and widen Dublin Line to four lanes north to the intersection with Highway 7.

An alternate route from Regional Road 25 to Dublin Line was also considered as an option; however, this improvement would not draw the traffic required as it is a north-south corridor whereas the deficiency is east-west. Therefore, the detailed evaluation was limited to the three alternatives listed above. For each of these alternatives, it was assumed that Highway 7 will be widened to four lanes from west of Georgetown to near 4th Line and again from Dublin Line to the municipal boundary at Nassagaweya-Esquesing Townline. The evaluation only considered improvements to Highway 7 that were unique to each alternative, therefore, environmental effects from west of Georgetown to east of Acton were not considered, nor were effects for the portion of Highway 7 northwest of Acton, which will require improvements regardless of the alternative implemented.

The recommended alternative at this location involves the construction of a partial alternate route to the north of Acton. While this alternative will have greater effects on the agricultural community and natural environment, the socio-economic effects of a widened Highway 7/Regional Road 25 through downtown Acton and the capital costs to do so are so great that they outweigh the negative effects of the northern alternate route. The northern alternate route is also preferred to the southern alternate route due to fewer negative effects on the socio-economic environment and improved transportation services. This solution (which would be subject to further review and approval by MTO) addresses the screenline deficiency in the area and will result in improved safety in downtown Acton by providing an alternate route for truck traffic.

6.2.2 Crossing of Bronte Creek – North and South of the Queen Elizabeth Way

The deficiency in this area is across two screenlines, one north and one south of the QEW. Each of the alternative solutions identified will address the deficiency across both screenlines. The alternatives are as follows:

1. Link Upper Middle Road across Bronte Creek with an extended 4-lane Upper Middle Road; or
2. Link North Service Road across Bronte Creek with an extended 4-lane North Service Road.

A third alternative, the widening of Wyecroft Road across Bronte Creek, was not evaluated further because widening this corridor for exclusive transit was required to support transit demand. Additional general purpose lane widening beyond what was being proposed for transit was not considered reasonable or practical.

The North Service Road alternative is recommended given that this improvement will prevent a new bisection of the Bronte Creek Provincial Park and the associated natural heritage system and provide the required capacity.

6.2.3 5 ½ Line

"5 ½ Line" represents a new corridor in the Halton roadway network. This corridor is envisioned between Fifth Line and Sixth Line extending from Steeles Avenue to Britannia Road with a new interchange at Highway 401. A need for additional roadway capacity totalling six lanes (three lanes in each direction) is needed to address travel demand in central and eastern Milton by 2031. Other alternatives were considered; however, by 2031 the north-south Regional roads in this area (Tremaine Road, James Snow Parkway, Trafalgar Road) were already designated to be at six lanes. In considering local roads (Milton) there were no other opportunities for widening of the existing facilities, hence a new corridor was identified. The specific alignment of the corridor will be subject to future study through the Class Environmental Assessment process.

7. PREFERRED TRANSPORTATION STRATEGY TO 2031

The preferred transportation strategy to 2031 for Halton Region includes policies and initiatives to support Transportation Demand Management and Active Transportation, enhanced transit services and additional capacity in the Regional roadway network.

7.1 Transportation Demand Management

A number of TDM measures are currently in place in Halton Region to reduce the overall number of vehicles on the road during peak hours.

As roadway capacity becomes constrained, these measures will need to be further promoted and expanded to add new programs and new participants (private businesses, public institutions and public organisations) to better manage traffic flow. TDM measures are an important part of the preferred transportation solution in Halton Region as they help optimise utilization of the existing transportation system including roads, transit, cycling and pedestrian infrastructure.

Since its inception in 2006, Smart Commute Halton has expanded to include the Local municipalities (Burlington, Halton Hills, Milton and Oakville), institutions and businesses across the Region. The Region will continue working with the local municipalities, Metrolinx, private local employers and other government agencies to promote TDM measures, and establish a Halton Transportation Management Association Working Group to further promote, educate and implement the Smart Commute program across the Region.

7.2 Active Transportation

Each local municipality in Halton Region has promoted Active Transportation through the preparation of Cycling and Pedestrian Master Plans. More work is required to create a cohesive, integrated Active Transportation Plan and network throughout the Region.

A well-connected, safe and functional Active Transportation network consists of sidewalks/multi-use paths, designated bicycle lanes, wider paved shoulders and off-road trails. Initiatives associated with education, planning, design and infrastructure development need to be closely coordinated with the local municipalities to increase the use of Active Transportation.

Previously, the Region coordinated cycling through the former Halton Regional Cycling Advisory Committee. A broader focus is required to account for the other Active Transportation modes including walking, roller blades and scooters. In December 2010 Regional Council dissolved the Regional Cycling Committee and approved the establishment of a new Regional Active Transportation Advisory Committee. The Region's "Active Transportation Advisory Committee" (ATAC) will define a coordinated approach to all non-motorised travel needs across the Region. The ATAC will play an active role in establishing a strategy defining educational and outreach initiatives and infrastructure improvements to promote increased non-motorised travel throughout the Region.

7.3 Public Transit

The evaluation of transportation demand in the Region to 2031 determined that in order to maintain current levels of service and establish a transportation system that recognises the vision and guiding principles established through ROPA 38 and this TMP, 15 to 20 percent of all peak period trips must be accommodated by public transit by 2031. Meeting this objective will, however, require a significant enhancement of transit services over the planning period, a stronger commitment to transit-supportive development and policies, the implementation of a transit supportive road network and implementation of transit improvements by neighbouring municipalities and Metrolinx in accordance with the Metrolinx Regional Transportation Plan (The Big Move).

To ensure that the proposed Regional road network effectively accommodates the transit services required to achieve the 2031 transportation system objectives, a conceptual Transit Strategy was developed with the local municipal transit authorities to ensure transit supportive initiatives within the Regional roadway network are provided to accommodate:

- Implementation of a Bus Rapid Transit (BRT) service along Dundas Street and Trafalgar Road;
- Protection for higher order transit corridors within key areas of Halton Region; and
- Development of a Transit Priority Program and implement measures along key corridors and nodes.

The TMP analysis considered a gradual transit increase over the next 20 years as presented in **Table 7.1.**

Table 7.1 - Transit Mode Share Targets by Horizon

Horizon Year	Transit Mode Share Target		
	Internal Trips	External Trips	Total
2016	2%	7%	5%
2021	6%	20%	10%
2026	8%	30%	15%
2031	11%	30%	20%

A transit servicing concept was developed to demonstrate the feasibility of achieving a 20 percent transit mode share by 2031. This concept evolved from discussions with the Municipal Advisory Group and is an initial step in addressing the anticipated travel needs of the Region and its local municipalities. Further discussion among these stakeholders will be required to define transit servicing to 2031.

Higher order transit corridors were identified within Halton Region to increase transit service usage and help meet the region-wide Transit Mode Split targets. Three types of corridors were considered, each providing a different level of transit service:

- Transit in reserved rights-of-way;
- Transit in semi-exclusive/exclusive rights-of-way; and
- Corridors with transit priority.

Transit in reserved rights-of-way - This is the highest level of priority for transit. In this corridor type, transit vehicles operate in an exclusive travel lane unimpeded by traffic (with the exception of intersection crossings). Transit signal priority features are also placed at signalised intersections to give transit vehicles priority and improve the reliability of service. An example of this type of corridor is the proposed Dundas Bus Rapid Transit corridor.

Transit in semi-exclusive/exclusive rights-of-way – This is the second highest level of priority for transit. In this corridor type, buses operate in high occupancy vehicle lanes; shared with taxis and automobiles with 2+ or 3+ occupants. Transit signal priority measures are placed at signalised intersections (where warranted). An example of this corridor type includes Eglinton Avenue East in Toronto.

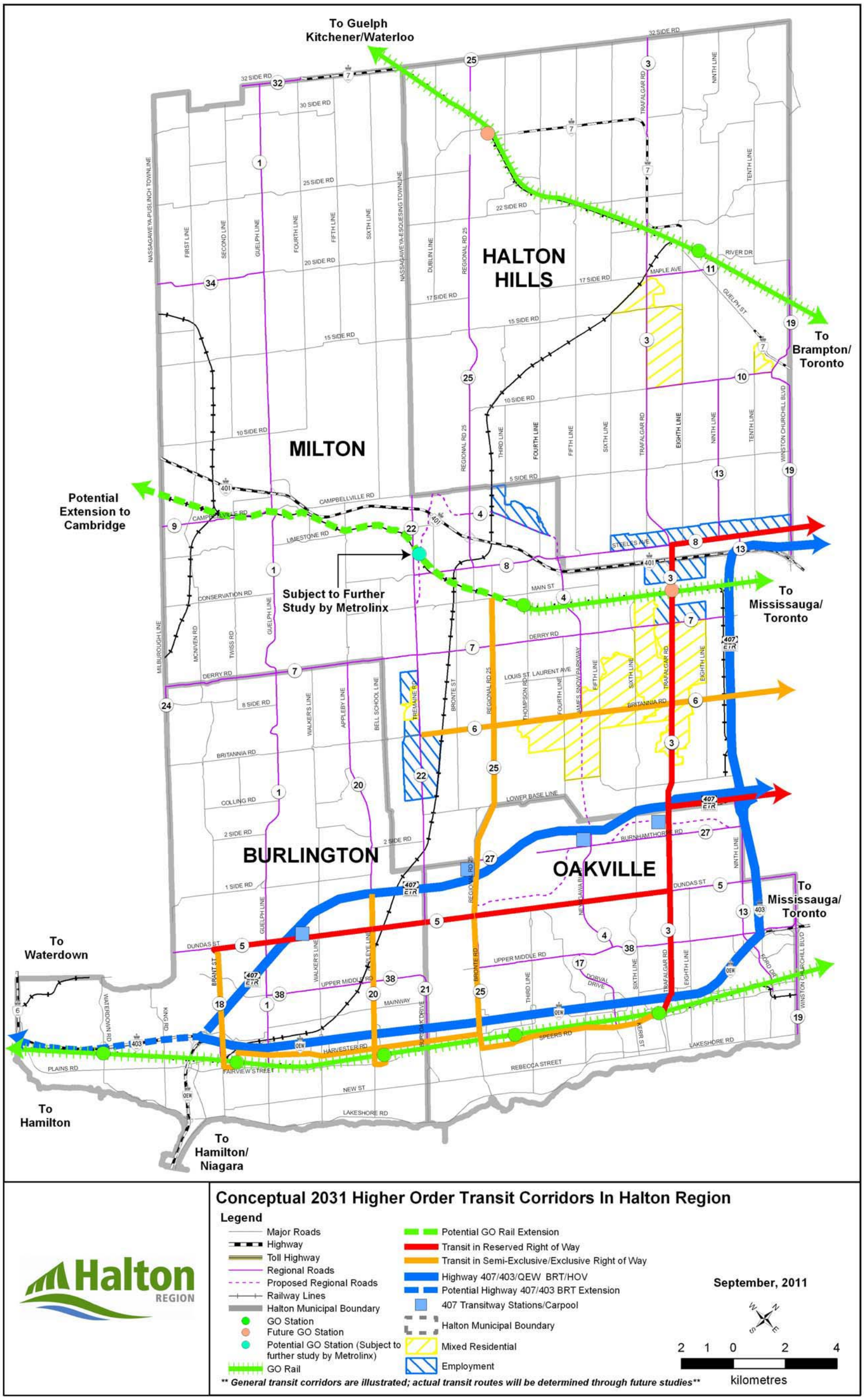
Corridors with transit priority – This is the third highest level of priority for transit. In this corridor type, buses operate in mixed traffic lanes. Transit priority features such as signal priority and queue jump lanes are implemented at specific intersections along the corridor to improve service reliability and decrease travel time. An example of this is the first phase of the Züm higher order transit service on Queen Street in Brampton.

The transit servicing concept is presented in **Figure 7.1**.

7.3.1 External Transit Demand

The external transit demand will largely be met by planned improvements in the GO Transit network (rail and bus). Halton Region has also initiated a number of studies with the objective of improving local and inter-regional transit access such as the Dundas BRT Study in partnership with Oakville and Burlington, as well as the Trafalgar Road BRT Study.

Figure 7.1 - Transit Servicing Concept



There are also a number of transit improvements planned by Metrolinx and adjacent municipalities that will form part of the regional transit network in the GTHA and the Region. These include:

- Metrolinx plans to provide a number of transportation improvements in the Greater Toronto and Hamilton Area over the next 25 years. Some of the improvements assumed to be in place for Halton Region to incorporate as part of its long term transportation planning are:
    - Two-way 15-minute service on the Lakeshore, Milton, and Georgetown GO Rail lines;
    - Improved GO Bus service including High Occupancy Vehicle (HOV) lanes on Highway 407 and Highway 403/QEW; and
    - The implementation of the Dundas and Trafalgar Higher Order Transit corridors.
- The City of Hamilton is planning Light Rail Transit along Main Street/King Street between Eastgate Square and McMaster University which will provide frequent service (5 minute peak period) with potential connections to Burlington Transit.
- In Mississauga, Dundas Street and Hurontario Street are planned as higher order transit corridors. This is identified in the Metrolinx 'Big Move' Regional Transportation Plan as part of the 15-year strategy. The ultimate build-out on both corridors is expected to have public transit operating in its own right-of-way.
- Also in Mississauga, the Mississauga Highway 403 BRT is expected to be completed by 2013 and is part of a 100-kilometre BRT corridor that will ultimately connect municipalities from Oakville to Pickering. It will cover 18 kilometres and run along Highway 403, Eastgate Parkway and Eglinton Avenue between Winston Churchill Boulevard and Renforth Drive.
- The City of Brampton will be implementing BRT along Steeles Avenue east of Hurontario Street by 2012 and in 2015 the BRT service is planned to extend to west of Hurontario Street and connect with the Lisgar GO Station in Mississauga. The Steeles BRT in Brampton will operate at a 5-minute headway during peak periods. Higher order transit will also be in place on a number of other corridors, including Bovaird Drive with connections to the Mount Pleasant GO Station.
- Provision of a fare payment system across the GTHA with the implementation of the Presto Smartcard.

These improvements will be imperative to reach the Transit Mode Split target. However, achieving this target will also involve enhancing the attractiveness of corridors through transit supportive development surrounding key corridors and stations as well as a local transit strategy that supports effective connections to the inter-regional network (i.e., frequent service and good access via transit priority measures).

7.3.2 Internal Transit Demand

To achieve the significant growth in transit usage required to meet ridership objectives higher order transit services (transit in reserved, exclusive and semi-exclusive rights-of-way and transit priority) and improved local services will be required.

Different service strategies can accommodate the projected ridership for internal and external trips carried by local transit:

1. **Corridor Service** – Higher order routes providing service between municipalities in Halton and to adjacent municipalities in Peel Region and the City of Hamilton using local transit; and
2. **Local Service** – Fixed route service provided in each of Halton's Local Municipalities representing an origin and destination within the municipality.

Higher Order Transit corridors were identified within Halton Region that would increase the attractiveness of transit service and help achieve transit mode share targets. As identified above, two types of corridors were considered, each providing a different level of service for transit.

- Transit in reserved right-of-way; and
- Transit in semi-exclusive/exclusive right-of-way.

In addition to higher order transit corridors, additional use of transit priority measures is anticipated and should be protected along key corridors and nodes. This should include access and egress points at each transit terminal and support connections within Halton Region and to adjacent municipalities (Hamilton and Peel Region). These measures will be identified as corridor specific Class Environmental Assessment and operational studies are undertaken.

7.4 Roads

Roadway network improvements required within Halton Region by 2031 are described below by roadway jurisdiction.

7.4.1 Provincial Roadway Improvements

Provincial roadway improvements are assumed based on current plans by the Ontario Ministry of Transportation. The QEW widening to incorporate new HOV lanes is complete as of December 2010. This will promote TDM and transit travel as buses will have a semi-exclusive lane to travel and jump queues formed during peak times on the freeway. The Ministry has recently initiated a Preliminary Design and Class EA study for the widening of Highway 401 through the Milton area to consider an ultimate 12-lane cross section to James Snow Parkway and a 10-lane cross section west to Regional Road 25. It is assumed through the TMP that more freeway capacity will be available by 2031 via additional improvements to Highway 401.

The future lane requirements noted on Highway 401 through Milton are subject to the final recommendation of the Province's GTA-W study.

Highway 407 widening has been identified as a provincial project, although it is recognised that the proponent of this work is 407ETR, the private company that owns and operates Highway 407. Decisions on the need for and timing of future widening are made in consultation with the province. **Table 7.2** identifies the provincial infrastructure requirements assumed to be in place by 2031. Each of these projects is subject to its respective environmental assessment process and resulting analyses.

Table 7.2 - Provincial Infrastructure Requirements by 2031

Roadway	Improvement and General Limits	Comment
QEW widening	6 lanes and 2 HOV from Highway 403 to Highway 407 ETR	Implemented Dec 2010
Highway 403 / QEW interchange	Implementation of new E-N and N-E ramps	Under study by MTO
Highway 401 widening	12 lanes from Highway 401/407 ETR to James Snow Parkway	Under study by MTO
Highway 401 widening	10 lanes James Snow Parkway to Regional Road 25	Under study by MTO
Highway 401 widening	10 lanes Regional Road 25 to Regional Boundary	Subject to MTO study and approval
Highway 407 ETR widening	6 lanes from Highway 401 to Highway 403	Assumed
Acton Alternate Route	4 lanes from Highway 7 east of Acton to Highway 7 west of Acton	Subject to MTO study and approval
Highway 7 widening	4 lanes from Acton Alternate Route to 32 Side Road	Subject to MTO study and approval
Highway 7 widening	4 lanes from Trafalgar Road to Acton Alternate Route	Subject to MTO study and approval
HPBATS Corridor	6 lanes from Mayfield Road to Bovaird Drive	Recommended by HPBATS
HPBATS Corridor	8 lanes from Bovaird Drive to Highway 401 interchange	Recommended by HPBATS
"5 ½ Line"	Interchange at Highway 401 (generally between 5th and 6th Line)	Subject to MTO study and approval

HOV = High Occupancy Vehicle Lanes

7.4.2 Local Roadway Improvements

Local road improvements identified through the Region's network analysis (as identified in **Table 7.3**) are recommended for consideration by the Local Municipalities in addition to planned improvements contained in their current transportation master plans. Some of the recommendations are only required to accommodate concepts for the provision of higher order transit and are subject to further detailed study and approval by the Local Municipality.

Table 7.3 - Recommended Local Road Improvements

Jurisdiction / Road	General Limits	Improvement
Burlington		
Harvester Road	Brant Street to Burloak Drive	Widening from 4 to 6 lanes for provision of exclusive transit services only
Halton Hills		
None		
Milton		
Third Line extension	James Snow Parkway to Steeles Avenue including new structure across Highway 401	Extension across Highway 401 - 4 lanes for general purpose travel
Ontario Street	Derry Road to Steeles Avenue	Widening from 4 to 6 lanes for provision of exclusive transit services only
Oakville		
Speers Road	Bronte Road to Trafalgar Road	Widening from 4 to 6 lanes for provision of exclusive transit services only
Wyecroft Road	Burloak Drive to Bronte Road	Widening from 4 to 6 lanes for provision of exclusive transit services only

7.4.3 Regional Roadway Improvements

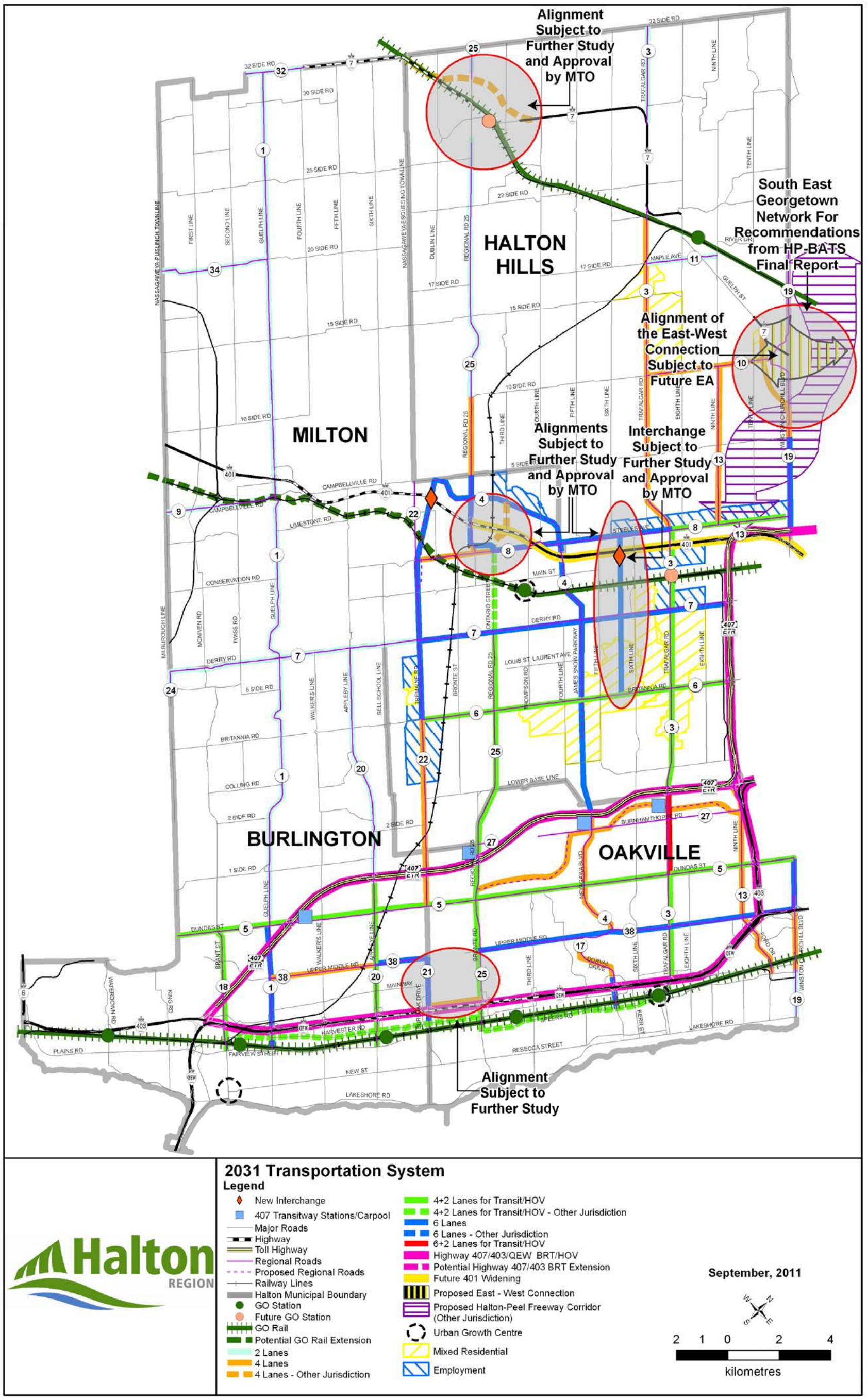
Halton Region roadway network improvements required between 2021 and 2031 are presented in **Table 7.4**. These improvements are in addition to the planned improvements identified in the current Halton Region Capital Roads Program, 2011 to 2021 and studies by others, as presented in Section 3.3.

With the 2021 and 2031 programs in place, the Regional road network in most of the urban areas will have the maximum six-lane cross-section where practical and feasible. **Figure 7.2** illustrates the 2031 network envisioned for Halton Region as part of this TMP exercise.

Table 7.4 – Regional Road Infrastructure Requirements (2021 to 2031)

Project ID	RR No.	Regional Road	From	To	Improvement
6757	TBD	"5 1/2 Line"	Britannia Road	Steeles Avenue	New 6 lane construction + Interchange
6810	TBD	North Service Road	Burloak Drive	Bronte Road	New 4 lane link across Bronte Creek
6805	1	Guelph Line	Upper Middle Road	Dundas Street	Widening from 4 to 6 lanes
6823	3	Trafalgar Road	Highway 407	Britannia Road	Widening from 4 to 6 lanes
6827	3	Trafalgar Road	Britannia Road	Steeles Avenue	Widening from 4 to 6 lanes
6806	4	James Snow Parkway	Highway 407	Britannia Road	New 6 lane construction
6807	4	James Snow Parkway	Highway 401 (east)	Tremaine Road	Widening from 4 to 6 lanes
6802	6	Britannia Road	Tremaine Road	Highway 407	Widening from 4 to 6 lanes
6804	7	Derry Road	Tremaine Road	Highway 407	Widening from 4 to 6 lanes
6821	8	Steeles Avenue	Regional Road 25	Trafalgar Road	Widening from 4 to 6 lanes
6819	8	Steeles Avenue	Tremaine Road	Industrial Road	Widening from 2 to 4 lanes
6808	13	Ninth Line	Burnhamthorpe Road	Highway 407	Widening from 2 to 4 lanes
6809	13	Ninth Line	Dundas Street	Burnhamthorpe Road	Widening from 2 to 4 lanes
6824	18	Brant Street	North Service Road	Dundas Street	Widening from 4 to 6 lanes
6812	20	Appleby Line	Fairview Street	Taywood Drive	Widening from 4 to 6 lanes
6803	21	Burloak Drive	Harvester Road	Upper Middle Road	Widening from 4 to 6 lanes
6830	22	Tremaine Road	Dundas Street	Lower Base Line	Widening from 2 to 4 lanes
6834	22	Tremaine Road	Lower Base Line	Britannia Road	Widening from 2 to 4 lanes
6818	25	Regional Road 25	Speers Road	Highway 407	Widening from 4 to 6 lanes
6814	25	Regional Road 25	Highway 407	Britannia Road	Widening from 4 to 6 lanes
6815	25	Regional Road 25	Britannia Road	Derry Road	Widening from 4 to 6 lanes
6817	25	Regional Road 25	Steeles Avenue	5 Side Road	Widening from 4 to 6 lanes
6811	25	Regional Road 25	5 Side Road	10 Side Road	Widening from 2 to 4 lanes
6825	38	Upper Middle Road	Appleby Line	Burloak Drive	Widening from 4 to 6 lanes
6828	38	Upper Middle Road	Bronte Road	Neyagawa Boulevard	Widening from 4 to 6 lanes
6826	38	Upper Middle Road	Trafalgar Road	Grand Boulevard	Widening from 4 to 6 lanes
6829	38	Upper Middle Road	Ninth Line	Winston Churchill Boulevard	Widening from 4 to 6 lanes

Figure 7.2 – 2031 Transportation System



7.5 Costing

Estimates of the capital costs to implement the recommended transportation improvements have been developed to establish a Capital Expenditure Plan for Halton's transportation network between 2021 and 2031.

The total cost of the Regional roadway infrastructure required as defined by the TMP is in the range of $1.13 billion including Regional projects identified from other studies as presented in Section 3.3.

7.5.1 Capital Costs – Reconstruction and New Widening/New Alignments

The 2021 to 2031 roadway improvements proposed as part of the TMP consist of roadway widenings, new links as well as new grade separations and a new interchange at Highway 401.

Costing is primarily based on benchmark costs which provide the per-kilometre cost for each road improvement category in accordance with the anticipated roadway classification as presented in **Figure 7.3**. These classifications are derived from the Regional Right-of-Way Guidelines as presented in **Appendix E**. Although all Regional roads have been categorized, in some instances this represents an ultimate condition (beyond 2031). For example, a road may be designated for an ultimate 4-lane cross-section; however, this cost has not been included in the program since the need for that cross-section was not identified by 2031. However, the ultimate designation is identified for purposes of right-of-way protection.

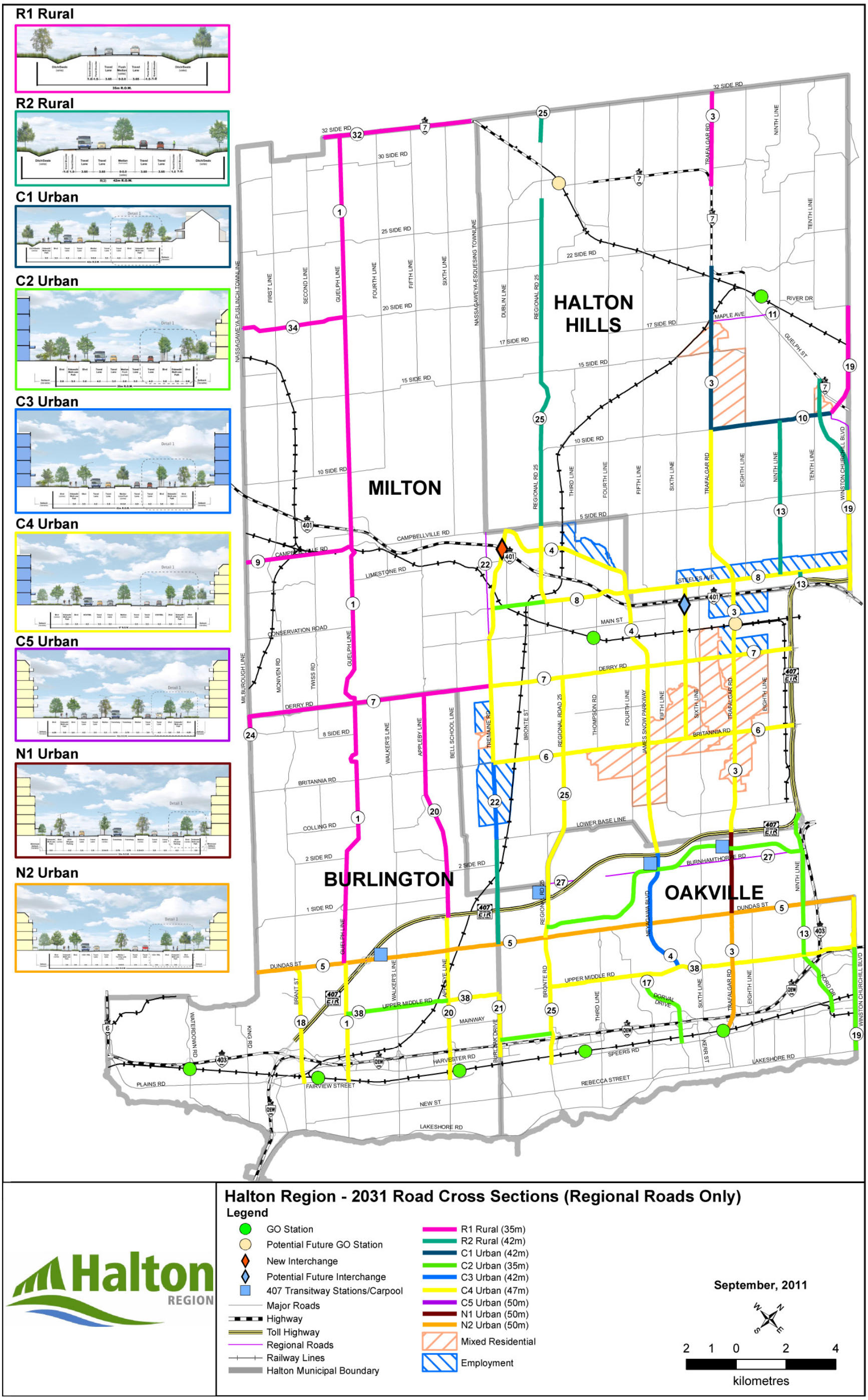
To produce benchmark costs, a comprehensive list of items was developed, quantities calculated based on typical cross sections over the length of a kilometre, and quantities multiplied by standard unit prices. The resulting product is a list of benchmark costs used to calculate the cost of each length of road. The benchmark costs contain engineering (15%) and construction contingency (15%) allowances. Based on a review of each of the corridors, additional costs were included to account for the cost of bridges, major culverts, interchanges, utility relocations and property acquisition.

Details of the roads capital project estimated costs are provided in **Appendix J**.

7.5.2 Transit Strategy

A transit strategy was developed at a conceptual level and, therefore, detailed costs are not presented in this report. Costing in transit terms refers to capital and operating costs associated with a transit service that would accommodate the anticipated 15 to 20 percent Transit Mode Split by 2031.

Figure 7.3 - 2031 Cross-Sections



7.6 Phasing Plan – Road Network

The road network improvement phasing plan was developed using an iterative modeling process to identify the optimum timing of projects to address interim year capacity needs and deficiencies. Model runs were used to identify capacity deficiencies in time horizons based on a forecast of population and employment growth from the Sustainable Halton growth planning process (2016, 2021, and 2026). The 2016 and 2021 runs were also used to determine whether the current phasing plan identified in the Region's 2021 Roads Capital Projects (January 2011) required any modifications. No changes to the current Roads Capital Projects were identified as part of this analysis.

The general approach to prioritizing which projects should be implemented in each horizon year followed the following key principles:

- Screenline travel deficiencies were used to identify the number of new lanes that would be required by horizon year; and
- Projects were identified to address the screenline deficiency using the following approach:
    - Projects in the current capital program identified for construction prior to 2016 were assumed to be in place by 2016 and their timing was not adjusted (given they are in the Class EA or design and approvals process);
    - Where deficiencies were not addressed by planned 2016 projects, projects in current capital program beyond 2016 would be advanced;
    - Individual improvements to Regional roads recommended in the HPBATS study were phased to address screenline deficiencies prior to 2021 as required. Implementation of the new north south facility recommended through the HPBATS was assumed to be a Provincial facility and was included in the 2031 network; and
    - New projects identified to accommodate growth beyond 2021 were only implemented prior to 2021 if required to address screenline deficiencies.

Projects currently scheduled per the 2021 Halton Region Capital Roads Program were found to be programmed appropriately (within the context of the available population and employment data).

The phasing requirements for 2021 to 2031 projects were then analysed in the context of the Region's ability to implement these projects from a financial point of view based on the Region's 2012 Transportation Development Charge Technical Report (August 2011). The phasing defined through the modeling analysis was rationalised in the context of the costing model to define a 2021 to 2031 implementation strategy while respecting the forecasted need for the project per the TMP analysis.

The phasing plan for the combined 2012 to 2021 projects and 2021 to 2031 projects (as defined through the TMP) are presented in **Figure 7.4**.

Notwithstanding the project phasing plan defined through these processes, as illustrated in Figure 7.4, there may be instances when the Region may wish to revisit the current phasing plan. Some examples of such instances include:

- New funding opportunities become available;
- Re-prioritising project phasing due to changes in the rate of development in the Region;
- Adjusting phasing due to findings from Class Environmental Assessment and Detailed Design studies;
- Future economic outlook or trends;
- Project financing opportunities through changes in roadway costing (unit pricing) or construction delivery methods;
- Region's annual review and Council Approval of the Roads Capital Program; and
- Update to the Halton Region Transportation Master Plan, typically undertaken every 5 years.

Figure 7.4 – Halton Region Roads Capital Projects (2012-2031)

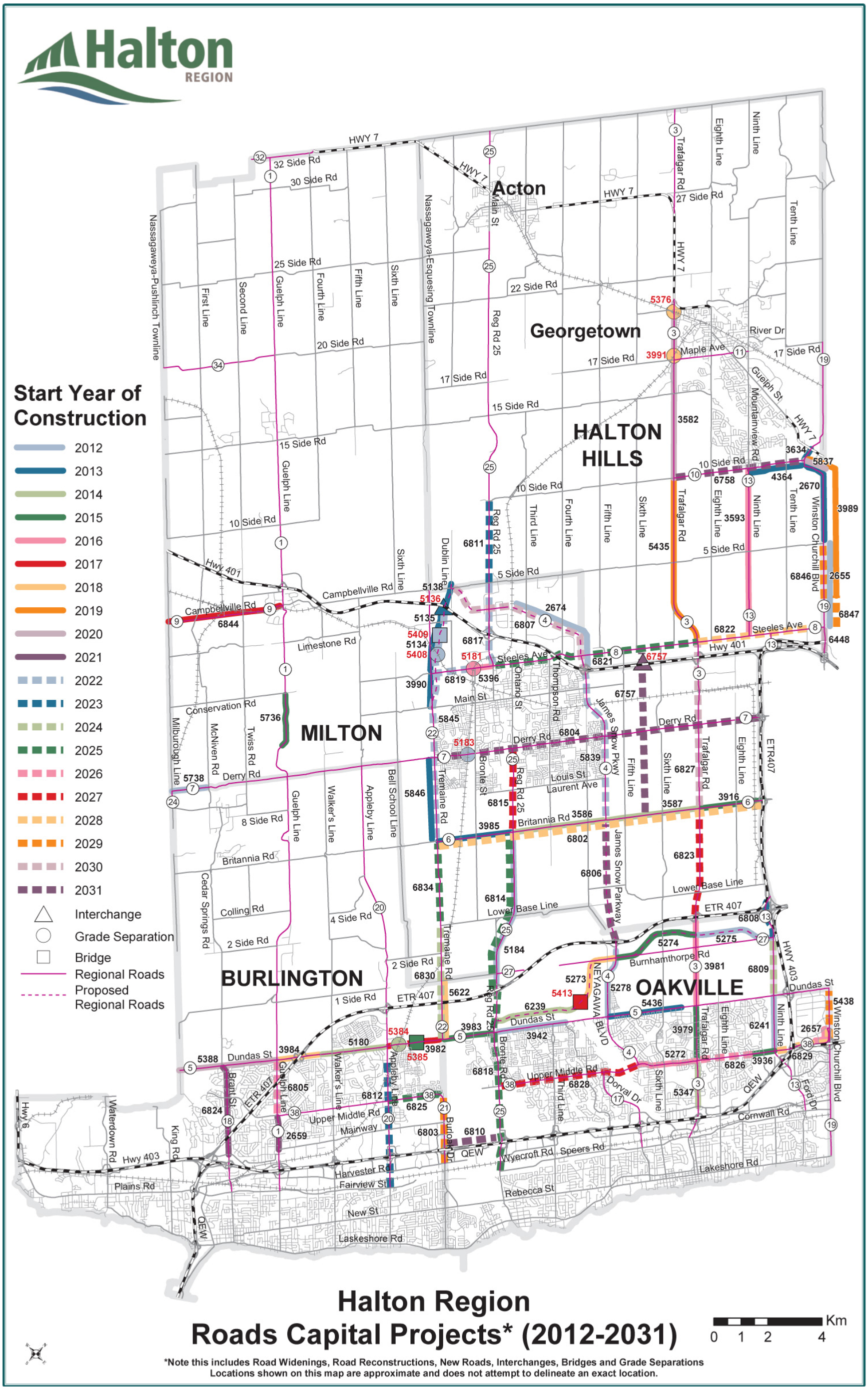


Figure 7.4 – Halton Region Roads Capital Projects (2012-2031) (cont'd)

RD #	ID	Regional Municipality of Halton Capital Projects (2012-2031) Project Descriptions	Start Year Construction
1	2659	Guelph Line - Widening - 4 to 6 lanes from Mainway to Upper Middle Road (BUR) (Regional Road 1)	2021
1	6805	Guelph Line - Widening - 4 to 6 lanes from Upper Middle Road to Dundas Street (BUR) (Regional Road 1)	2026
1	5736	Guelph Line Reconstruction - 1km North of Derry Road to Conservation Road (MIL) (Regional Road 1)	2015
3	5347	Trafalgar Road - Widening - 4 to 6 lanes from Leighland Avenue to Upper Middle Road (OAK) (Regional Road 3)	2014
3	3979	Trafalgar Road - Widening - 4 to 6 lanes from Upper Middle Road to Dundas Street (OAK) (Regional Road 3)	2015
3	3981	Trafalgar Road - Widening - 4 to 6 lanes from Dundas St to Hwy 407 (OAK) (Regional Road 3)	2016
3	6823	Trafalgar Road - Widening - 4 to 6 lanes from Highway 407 to Britannia Road (MIL) (Regional Road 3)	2027
3	6827	Trafalgar Road - Widening - 4 to 6 lanes from Britannia Road to Steeles Avenue (MIL/HHS) (Regional Road 3)	2030
3	5435	Trafalgar Road - Widening - 2 to 4 lanes from Steeles Avenue to 10 Side Road (HHS) (Regional Road 3)	2019
3	3582	Trafalgar Road - Widening - 2 to 4 lanes from 10 Side Road to Hwy 7 (HHS) (Regional Road 3)	2020
3	3991	Trafalgar Road - Grade Separation at CN Crossing North of Maple Avenue (HHS) (Regional Road 3)	2018
3	5376	Trafalgar Road - Grade Separation at GEXR Crossing South of Hwy 7 (HHS) (Regional Road 3)	2018
4	5278	Neyagawa Boulevard - Widening - 2 to 4 lanes from Dundas Street to Burnhamthorpe Road (OAK) (Regional Road 4)	2012
4	6806	James Snow Parkway - New 6 lane road from Highway 407 to Britannia Road (MIL) (Regional Road 4)	2031
4	5839	James Snow Parkway - Widening - 4 to 6 lanes from Britannia Road to Hwy 401 (MIL) (Regional Road 4)	2022
4	2674	James Snow Parkway - New Construction from South of Steeles Avenue to west of Boston Church Road (MIL) (Regional Road 4)	2012
4	6807	James Snow Parkway - Widening - 4 to 6 lanes from Highway 401 to Highway 401 (MIL) (Regional Road 4)	2030
5	5388	Dundas Street - Widening - 4 to 6 lanes from Guelph Line to Halton/Hamilton Boundary (BUR) (Regional Road 5)	2020
5	3984	Dundas Street - Widening - 4 to 6 lanes from Guelph Line to North Hampton (BUR) (Regional Road 5)	2018
5	5180	Dundas Street - Widening - 4 to 6 lane from North Hampton to Appleby Line (BUR) (Regional Road 5)	2014
5	3982	Dundas Street - Widening - 4 to 6 lanes (excluding CNR & Bronte Crk Bridges) from Appleby Line to Tremaine Road (BUR) (Regional Road 5)	2017
5	5384	Dundas Street - Grade Separation at CNR Crossing between Appleby Line and Tremaine Road (BUR) (Regional Road 5)	2014
5	5385	Dundas Street - Bronte Creek Bridge between Appleby Line and Tremaine Road (BUR) (Regional Road 5)	2015
5	3983	Dundas Street Widening - 4 to 6 lanes from Tremaine Road to Bronte Road (OAK) (Regional Road 5)	2015
5	3942	Dundas Street - Widening - 4 to 6 lanes from Bronte Road to Proudfoot Trail (OAK) (Regional Road 5)	2012
5	5436	Dundas Street - Widening - 4 to 6 lanes from Neyagawa Boulevard to Oak Park Boulevard (OAK) (Regional Road 5)	2013
6	3985	Britannia Road - Widening - 2 to 4 lanes from Tremaine Road to Regional Road 25 (MIL) (Regional Road 6)	2013
6	3586	Britannia Road - Widening - 2 to 4 lanes from Regional Road 25 to James Snow Parkway (MIL) (Regional Road 6)	2014
6	3587	Britannia Road - Widening - 2 to 4 lanes from James Snow Parkway to Trafalgar Road (MIL) (Regional Road 6)	2014
6	3916	Britannia Road - Widening - 2 to 4 lanes from Trafalgar Road to Highway 407 (MIL) (Regional Road 6)	2015
6	6802	Britannia Road - Widening - 4 to 6 lanes from Tremaine Road to Highway 407 (MIL) (Regional Road 6)	2028
7	5738	Derry Road - Reconstruction from Milburough Line to McNiven Road (MIL) (Regional Road 7)	2012
7	6804	Derry Road - Widening - 4 to 6 lanes from Tremaine Road to Highway 407 (MIL) (Regional Road 7)	2031
7	5183	Derry Road - Grade Separation at CNR crossing west of First Line (MIL) (Regional Road 7)	2012
8	6819	Steeles Avenue - Widening - 2 to 4 lanes from Tremaine Road to Industrial Drive (MIL) (Regional Road 8)	2022
8	5181	Steeles Avenue - Grade Separation at CN crossing west of Bronte Street (MIL) (Regional Road 8)	2016
8	5396	Steeles Avenue - Widening - 2 to 4 lanes from Industrial Drive to Martin Street (MIL) (Regional Road 8)	2016
8	6821	Steeles Avenue - Widening - 4 to 6 lanes from Regional Road 25 to Trafalgar (MIL/HHS) (Regional Road 8)	2025
8	6822	Steeles Avenue - Widening - 4 to 6 lanes (with RBL) from Trafalgar Road to Winston Churchill Boulevard (HHS) (Regional Road 8)	2028
9	6844	Campbellville Road - Reconstruction from Milburough Line to Guelph Line (MIL) (Regional Road 9)	2017
10	6758	10 Side Road - Widening - 2 to 4 lanes from Trafalgar Road to Winston Churchill Boulevard (HHS) (Regional Road 10)	2031
10	4364	10 Side Road - 2 lane reconstruction from Ninth Line to Winston Churchill Boulevard (HHS) (Regional Road 10)	2013
13	6241	Ninth Line - Widening - 2 to 4 lanes from Upper Middle Road to Dundas Street (OAK) (Regional Road 13)	2012
13	6809	Ninth Line - Widening - 2 to 4 lanes from Dundas Street to Burnhamthorpe Road (OAK) (Regional Road 13)	2024
13	6808	Ninth Line - Widening - 2 to 4 lanes from Burnhamthorpe Road to Highway 407 (OAK) (Regional Road 13)	2023
13	3593	Ninth Line - Widening - 2 to 4 lanes from Steeles Avenue to 10 Side Road (HHS) (Regional Road 13)	2016
18	6824	Brant Street - Widening - 4 to 6 lanes from North Service Road to Dundas Street (BUR) (Regional Road 18)	2021
19	5438	Winston Churchill Boulevard - Widening - 4 to 6 lanes from Upper Middle Road / QEW to Dundas Street - (OAK) (Regional Road 19)	2029
19	6448	Winston Churchill Boulevard - Widening - 4 to 6 lanes from Hwy 401 to Steeles Avenue (HHS) (Regional Road 19)	2020
19	6846	Winston Churchill Boulevard - Widening - 4 to 6 lanes from 2km south of Embleton Road to Embleton Road (HHS) (Regional Road 19)	2029
19	6847	Winston Churchill Boulevard - Widening - 5 to 7 lanes from Steeles Avenue to 2 km south of Embleton Rd (HHS) (Regional Road 19)	2029
19	2655	Winston Churchill Boulevard - 2 lane Reconstruction from Steeles Avenue to 5 Side Road (HHS) (Regional Road 19)	2012
19	3989	Winston Churchill Boulevard - Widening - 2 to 4 lanes from 2km south of 5 Side Road to potential by-pass (HHS) (Regional Road 19)	2019
19	2670	Winston Churchill Boulevard - 2 lane Reconstruction from 5 Side Road to 10 Side Road (HHS) (Regional Road 19)	2013
19	3634	Winston Churchill Boulevard - 2 lane Reconstruction from 10 Side Road to Highway 7 (HHS) (Regional Road 19)	2013
20	6812	Appleby Line - Widening - 4 to 6 lanes from Fairview Street to Taywood Drive (BUR) (Regional Road 20)	2023
21	6803	Burloak Drive - Widening - 4 to 6 lanes from Harvester Road to Upper Middle Road (BUR/OAK) (Regional Road 21)	2029
22	5622	Tremaine Road - Reconstruction from Dundas Street to No. 1 Side Road (BUR/OAK) (Regional Road 22)	2018
22	6830	Tremaine Road - Widening - 2 to 4 lanes from Dundas Street to Lower Base Line (MIL/OAK) (Regional Road 22)	2024
22	6834	Tremaine Road - Widening - 2 to 4 lanes from Lower Base Line to Britannia Road (MIL/OAK) (Regional Road 22)	2025
22	5846	Tremaine Road - Widening - 2 to 4 lanes from Britannia Road to Derry Road (MIL) (Regional Road 22)	2013
22	5845	Tremaine Road - Widening - 4 to 6 lanes from Britannia Road to Hwy 401 (MIL) (Regional Road 22)	2022
22	3990	Tremaine Road - Widening - 2 to 4 lanes and Realignment from Main Street to Steeles Avenue (MIL) (Regional Road 22)	2013
22	5408	Tremaine Road - Grade Separation at CPR Crossing north of Steeles Avenue (MIL) (Regional Road 22)	2012
22	5134	Tremaine Road - New 4 lane roadway from Steeles Avenue to 16 Mile Creek (MIL) (Regional Road 22)	2013
22	5409	Tremaine Road - Bridge over 16 Mile Creek north of Steeles Avenue (MIL) (Regional Road 22)	2012
22	5135	Tremaine Road - New 4 lane roadway from 16 Mile Creek to Tremaine Road (IC)s (MIL) (Regional Road 22)	2013
22	5136	Tremaine Road - New 4 lane roadway from Tremaine Road (IC)s to Tremaine Road (IC)n (MIL) (Regional Road 22)	2013
22	5138	Tremaine Road - New 4 lane Roadway from Tremaine Road (IC)n to JSP (MIL) (Regional Road 22)	2013
25	6818	Bronte Road - Widening - 4 to 6 lanes from Speers Road to Highway 407 (OAK) (Regional Road 25)	2025
25	5184	Regional Road 25 - Widening - 2 to 4 lanes from Hwy 407 to Britannia Road (MIL) (Regional Road 25)	2012
25	6814	Regional Road 25 - Widening - 4 to 6 lanes from Highway 407 to Britannia Road (MIL) (Regional Road 25)	2025
25	6815	Regional Road 25 - Widening - 4 to 6 lanes from Britannia Road to Derry Road (MIL) (Regional Road 25)	2027
25	6817	Regional Road 25 - Widening - 4 to 6 lanes from Steeles Avenue to 5 Side Road (MIL) (Regional Road 25)	2022
25	6811	Regional Road 25 - Widening - 2 to 4 lanes from 5 Side Road to 10 Side Road (HHS) (Regional Road 25)	2023
27	6239	NNOTC - New 4 lane road from Regional Road 25 to Sixteen Mile Creek. (OAK) (Regional Road 27)	2014
27	5413	NNOTC - New 4 lane Bridge over 16 Mile Creek (OAK) (Regional Road 27)	2017
27	5273	NNOTC - New 4 lane road from Sixteen Mile Creek to Neyagawa Boulevard (OAK) (Regional Road 27)	2018
27	5274	NNOTC - New 4 lane road from Neyagawa Boulevard to Trafalgar Road (OAK) (Regional Road 27)	2015
27	5275	NNOTC - New 4 lane road from Trafalgar Road to Ninth Line (OAK) (Regional Road 27)	2012
38	6825	Upper Middle Road - Widening - 4 to 6 lanes from Appleby Line to Burloak Drive (BUR) (Regional Road 38)	2025
38	6828	Upper Middle Road - Widening - 4 to 6 lanes from Bronte Road to Neyagawa Boulevard (OAK) (Regional Road 38)	2027
38	5272	Upper Middle Road - Widening - 4 to 6 lanes from Neyagawa Boulevard to Trafalgar Road (OAK) (Regional Road 38)	2016
38	6826	Upper Middle Road - Widening - 4 to 6 lanes from Trafalgar Road to Grand Boulevard (OAK) (Regional Road 38)	2026
38	3936	Upper Middle Road - Widening - 4 to 6 lanes from Grand Boulevard to Ninth Line/Ford Drive(OAK) (Regional Road 38)	2015
38	6829	Upper Middle Road - Widening - 4 to 6 lanes from Ninth Line to Winston Churchill Boulevard (OAK) (Regional Road 38)	2028
38	2657	Upper Middle Road - Widening - 2 to 4 lanes from Winston Park Drive to Winston Churchill Boulevard (OAK) (Regional Road 38)	2016
	6757	"5 1/2 Line" - New 6 lane Road from Britannia Road to Steeles Avenue and Interchange at Highway 401 (MIL)	2031
	6810	North Service Road - New 4 lane road from Burloak Drive to Bronte Road (OAK)	2031
	5837	Norval Bypass (HHS)	2020

7.7 Other Considerations

Other issues/items for discussion were introduced throughout the study, through meetings, public consultation sessions or correspondence from stakeholders. This section discusses these additional considerations.

7.7.1 Funding Sources

There are options available to the Region to fund the recommendations of the TMP. These options are briefly presented in the following sections.

7.7.2 Development Charges

The roads component of the strategy is mainly developed in response to anticipated growth. Hence, much of the roads needs identified for the period 2021 to 2031 can be funded via Regional Development Charges.

Widening of Regional roads to maximum feasible cross sections did not provide enough capacity to accommodate forecasted travel demand to 2031. A significant shift in transit usage is required to address the demand. The resulting increase in transit service will require more investment in transit capital and operations.

The Region and its local municipalities should work with Metrolinx to consider appropriate funding mechanisms to increase public transit services to achieve the 20 percent average Transit Mode Split target proposed in the TMP.

7.7.3 Mobility Hub

Metrolinx has published The Big Move, a Regional Transportation Plan for the GTA, which includes the designation of mobility hubs. Midtown Oakville, downtown Burlington and the Milton GO Station have been designated as Gateway Mobility Hubs. To support development of these mobility hubs, Metrolinx is proposing to establish a mobility hub investment program with proposed total funding of $50 million per year over the life of the Regional transportation plan. Midtown Oakville is identified as the second largest Hub in the Metrolinx plan, hence the Region and the Local Municipalities need to continue dialogue with Metrolinx to take full advantage of the availability of this funding.

7.7.4 Boundary Road Jurisdiction

Through the public consultation component of the TMP study, questions were raised about jurisdiction over the Region's boundary roads (i.e., a road that defines the boundary between two regional municipalities). In Halton, boundary roads include Regional Road 19 / Winston Churchill Boulevard (boundary with Peel Region); Regional Road 32 (boundary with Wellington County) and Regional Road 24 Milburough Line (boundary with City of Hamilton).

A road's jurisdiction should be aligned with the function of the road. The Halton Regional Roads Rationalization study completed in 2010, based Regional road jurisdiction on the following criteria:

- connecting two or more urban areas or municipalities;
- providing crossing of major physical barriers;
- carries high volumes of traffic (relative to traffic volumes in the municipality);
- accommodates truck traffic;
- feasible and practical to increase capacity (from engineering and environmental perspective); and
- accommodates transit service.

As the Region updates its Roads Rationalisation study, boundary roads will be reviewed through this process and necessary changes will be identified where required.

The current designation of Regional roadways has been defined per the 2010 Roads Rationalisation study.

7.7.5 MTO/Metrolinx Projects

The transportation system presented in *The Road to Change* is dependent in large part on the Metrolinx/GO Transit services planned per the Metrolinx RTP – "The Big Move". Should these projects not materialise as scheduled, then the Region's target of a 20 percent Transit Mode Split will not be achieved in the timeframe to 2031. Hence, it is imperative that the upper tier transit plans move forward in order for the transportation system to succeed.

Similarly, it is assumed that various MTO projects such as improvements to Highway 401 and the HPBATS improvements will be in place by 2031

Should these plans not materialise, greater congestion will be experienced on Regional roads and on provincial facilities traversing Halton Region. This, in turn, will lead to deterioration in air quality and quality of transportation services for Halton residents.

7.7.6 Intra Regional Transit

Although the Region does not offer transit services, within its mandate to provide a "safe, convenient, affordable, efficient and energy conserving transportation system…", it has commenced major transit infrastructure-related studies for the Dundas Street Bus Rapid Transit (BRT) and the Trafalgar Road BRT in partnership with its Local Municipalities. These studies are considering higher-order transit corridors to provide the infrastructure and level of service necessary to make transit more competitive with the private automobile.

Throughout the study consultation, inquiries were made about "Regional Transit" – a single authority providing transit services throughout Halton Region. This TMP did not evaluate the justification or need for Regional Transit, but focussed on ensuring the 2031 transportation strategy was developed in a coordinated effort with the local transit providers.

7.7.7 Accessibility for Ontarians with Disabilities Act

The Accessibility for Ontarians with Disabilities Act (AODA) received Royal Assent on June 13, 2005, and is now law. The ultimate goal of the AODA legislation is for a fully accessible Ontario by 2025. Under the AODA, Sector Specific Accessibility Standards are being developed for customer service, built environment, employment, information and communications, and transportation.

The Accessible Transportation Standard addresses the transportation needs of persons with disabilities and focuses heavily upon public transit, but also includes taxis, ferries, school buses and the motor coach industry. The Transportation Standard requires that the subject transit authority provide access to persons requiring specialised services to all areas served by conventional transit and at the same service hours.

7.7.8 Peak Oil and Transportation Technologies

Peak oil refers to energy resource depletion and the recognition that the oil being used to power a large proportion of the transportation system will eventually run out. There is much debate regarding the impact of higher energy costs on travel demand and whether or not higher fuel costs will reduce the amount of vehicle travel.

Record high gasoline prices could negatively impact economic activity and change decisions individuals make about where to live, where to work and how to travel. Even if alternative fuel sources prolong the use of personal automobiles, the consumption of land for transportation uses and the long travel times produced by urban sprawl may shift attitudes toward a different urban form and different modes of travel.

The Road to Change provides alternatives to the single occupant vehicle. As transportation is intrinsically linked to land use, urban planners must envision ways to structure urban form to promote more sustainable travel methods, consistent with the objectives of ROPA 38.

Notwithstanding a reduction in oil production, current innovations in propulsion technologies such as diesel fuel, hybrids and fully electric powered vehicles may alleviate the environmental impact of transportation while maintaining a demand for auto travel.

The five year update of the TMP (i.e., planned for 2016) will capture these trends as they start to materialise and will allow the Region to see what impact they have and to respond accordingly.

7.7.9 Demographics

In recognition of the aging population in the GTA, future TMP updates should take into account the impacts of travel demand from this in all aspects of the transportation system.

8. CONCLUSIONS AND RECOMMENDATIONS

The objective of the TMP was to develop a sustainable and integrated plan that considers all modes of travel to accommodate growth in the Region to the year 2031, as established through Regional Official Plan Amendment (ROPA) 38.

8.1 Conclusions

The guiding principles that provide the foundation for the development of the TMP have been considered in the TMP as follows:

- ***Balanced Needs*** – the TMP recommended:
  - Initiatives associated with active transportation education, planning, design and infrastructure development be closely coordinated with the local municipalities;
  - The Region continue working with the local municipalities, Metrolinx, private local employers and other government agencies to promote transportation demand management measures; and
  - The Region and Local Municipalities undertake a region-wide coordinated Transit Servicing Study.

- ***Healthy Communities*** **-** the TMP recommended:
  - Strategies that complement initiatives, programs and monitoring in support of air quality protection that were established through the Regional Health Department and the local municipalities;
  - The reorganisation of the Halton Cycling Committee into the Halton Active Transportation Committee; and
  - The undertaking of a region-wide Active Transportation Master Plan in consultation with the Local Municipalities.

- ***Economic Vitality*** - the TMP recommended:
  - Minimizing congestion through a comprehensive roadway, transit and Active Transportation Plan.

- ***Sustainability*** - the TMP recommended:
  - Sustainable transportation modes and services.

- ***Well-Maintained Infrastructure*** - the TMP recommended:
    - A roads program that maximises the use of existing infrastructure.

The TMP produced through the study process sets out a strategy for the development of a transportation system in Halton to 2031 that reflects the Vision and Guiding Principles by supporting:

- Programs that promote alternatives to single-occupant automobile use;
- Measures that pro-actively optimise the road network and the allocation of roadway rights-of-way, and minimise the impact of increased congestion;
- Strategic expansion of the road network to ensure level of service standards are maintained;
- Allocation of roadway space to priority elements for non-auto modes (e.g., cyclists and pedestrians);
- Design, operating and maintenance practices that strategically manage roadway rehabilitation; and
- Reconstruction to extend the useful life of roadway investments as much as possible.

8.2 Recommendations

Recommendations for the key components of the TMP are presented below.

8.2.1 Active Transportation

It is recommended that:

- The Regional Active Transportation Advisory Committee to pursue a coordinated approach to non-motorised travel needs across the Region; and
- A detailed Region-wide Active Transportation Master Plan be developed to establish a strategy defining educational and outreach initiatives and infrastructure improvements (e.g., sidewalks, multi-use paths, separated bicycle lanes) to promote increased non-motorised travel throughout the Region.

8.2.2 Transportation Demand Management

It is recommended that:

- The Region continue working with the Local Municipalities, Metrolinx, private local employers and other government agencies to promote TDM measures through Smart Commute;
- A Halton Transportation Demand Management Association working group be established to promote, educate and implement the Smart Commute program across the Region; and
- The Region develop, with the Local Municipalities, TDM policies and strategies for major development applications.

8.2.3 Goods Movement

It is recommended that:

- The Region continue to foster joint working relationships with Metrolinx and the GTHA municipalities regarding the Metrolinx Urban Freight Study;
- Metrolinx be encouraged to continue to provide a forum to improve collaboration between municipalities and provide an opportunity to identify and engage key stakeholders in local and regional goods movement including manufacturing, resource and agricultural businesses; and
- The Region undertake a Region-wide goods movement study.

8.2.4 Intra-Regional Transit

It is recommended that:

- The Region work with the Local Municipalities and Metrolinx to define an inter-municipal transit strategy for Halton in the short, medium and long term;
- The Region, jointly with the local transit providers, establish an annual ridership monitoring program; and
- The Region ensure transit supportive land uses and densities are implemented along high priority and semi-exclusive transit corridors as defined in the transit servicing concept particularly along
    - Trafalgar Road;
    - Dundas Street;
    - Bronte Road;
    - Britannia Road
    - Steeles Avenue; and
    - at major regional development nodes.

8.2.5 Roadway Improvements

It is recommended that:

- The Region include the roadway improvements identified as part of this TMP in its 2031 Roads Capital Program; and
- The Region implement the Regional Road Right-of-Way Guidelines;
- The Region and Local Municipalities undertake a review of the classification of boundary roads and any potential changes to the function of local roads arising from the 2031 road network recommendations which may justify adjustment to current designations;
- The Region work with the province to plan and implement:
    - The recommended Highway 401 interchange between 5th and 6th Line;
    - The alternate route through Acton; and,
    - Widening of Highway 401 from the Halton-Peel boundary to Regional Road 25.

- The Region and the Town of Milton undertake:
    - A study to define the most appropriate roadway configuration for the recommended extension of Third Line from James Snow Parkway to Steeles Avenue and the connection of Regional Road 25 to Ontario Street; and
    - Further reviews of the need for a new north/south arterial road between 5th Line and 6th Line ("5 ½ Line").
- The Local Municipalities consider in their transit and transportation master planning, the local road improvements identified in *The Road to Change*.

8.2.6 Other Considerations

- ***Funding*** **-** The Region needs to continue its dialogue with Metrolinx and the province to advocate for improved funding or improved mechanisms to raise funding required for the implementation of the TMP recommendations.
- ***TMP Update*** – The Region needs to update the Halton Transportation Master Plan (2031) – *The Road to Change* in five years, upon the availability of new census data, Transportation Tomorrow Survey data and updated Best Planning Estimates.