



CITY OF BRAMPTON TRANSPORTATION MASTER PLAN UPDATE

TECHNICAL REPORT #6 - TRANSPORTATION DEMAND MANAGEMENT

MARCH 2015



Table of Contents

1. Scope of the Technical Memorandum	1
2. Introduction	1
2.1 What is Transportation Demand Management?	1
2.2 Why Develop a Transportation Demand Management Plan?	1
2.3 Vision and Goals	2
3. Background	3
3.1 City of Brampton	4
3.1.1 City of Brampton Official Plan	4
3.1.2 Community and Secondary Plans	7
3.1.3 Transportation and Transit Policies	9
3.1.4 Current Travel Statistics	9
3.2 Peel Region TDM Initiatives	13
3.2.1 TDM Study Report	13
3.2.2 TDM Social Marketing Program	13
3.2.3 Five-Year TDM Plan	14
3.2.4 Individualized Marketing Campaign	14
3.2.5 Healthy Development Index	15
3.3 Province of Ontario	15
3.4 Case Studies / Best Practice Review	16
3.4.1 Halifax Regional Municipality	16
3.4.2 City of Kitchener	16
3.4.3 City of Hamilton	17
3.4.4 City of Thunder Bay	17
3.4.5 Alexandria, Virginia	18
3.4.6 Summary	19
4. Transportation Demand Management in Brampton	19
4.1 Work Place Programs	20
4.2 Resident Programs	21
4.3 School-based Programs	22
4.4 Tool Kit of TDM Programs	22



4.4.1	Brampton Work Place Commuter Program	22
4.4.2	Transit	23
4.4.3	Active Transportation	24
4.4.4	Ridesharing	25
4.4.5	Carshare.....	25
4.4.6	Emergency Ride Home Programs	26
4.4.7	Outreach, Marketing and Incentives	27
4.5	TDM in Planning and Development Applications	27
4.6	Resources	29
4.6.1	Staff	29
4.6.2	Financial	29
5.	Implementation and Monitoring	30
5.1	Implementation	30
5.2	Partnerships	32
5.3	Monitoring and Evaluation	32
5.3.1	Performance Indicators	33
5.3.2	Data collection.....	33
6.	Recommendations	34
6.1	TDM Recommendations for the Official Plan	34
6.2	TDM Recommendations for the TMP Update	35
6.3	TDM Toolkit Recommendations	36
6.4	TDM in Planning and Development Applications Recommendations	36
7.	References.....	37



List of Figures

Figure 1 – Integration of TDM with Land Use and Transportation Supply	3
Figure 2 – Urban Growth Centres in Brampton.....	8
Figure 3 – Mode of Travel during the P.M. Peak Period (3:30 to 6:30 p.m.), Years 2011 and 2006.....	10
Figure 4 – Percentage Change in the Number of Trips During the P.M. Peak Period (3:30 to 6:30 p.m.), 2006 to 2011.....	11
Figure 5 – Origins of Travel for Brampton Residents: PM Peak Period.....	12
Figure 6 – Outline of Work to be undertaken in Year One.....	31

List of Tables

Table 1 – Population and Employment Forecasts in Brampton	4
Table 2 – Summary of Peel’s Healthy Development Assessment (recommended Targets).....	39

APPENDICES

- A Summary of Peel’s Healthy Development Assessment
- B Development Approval Guidelines for Transportation Demand Management



1. SCOPE OF THE TECHNICAL MEMORANDUM

The City of Brampton is undertaking an update to its 2009 Transportation and Transit Master Plan to address existing transportation challenges and continue to provide sustainable transportation solutions. Brampton is looking toward Transportation Demand Management (TDM) to provide techniques to alter travel behaviour; assist in the management of transportation impacts; and address travel demand associated with the anticipated population growth of the City over the next 30 years.

This technical memorandum outlines the existing conditions in Brampton with respect to TDM. It provides an assessment of the programs and initiatives that the City should undertake and recommendations for how the TDM program should develop in the future, to meet Brampton's goal of developing a sustainable city.

2. INTRODUCTION

2.1 What is Transportation Demand Management?

Transportation Demand Management is a multi-faceted and multi-modal approach to reducing and managing travel demand through the use of sustainable modes and the distribution of trips beyond traditional peak travel periods. This increases the efficiency and effectiveness of the available transportation infrastructure, through the implementation of strategies that influence travel choice and behaviour to reduce reliance on the single-occupant vehicle trips.

2.2 Why Develop a Transportation Demand Management Plan?

There are many reasons to expand and promote a Transportation Demand Management program. TDM can support land use policies, encourage more transportation options, reduce congestion, reduce pollution and improve health. TDM programs can result in measureable changes to traffic and pollution issues.

Throughout North America, municipalities are experiencing increasing levels of traffic congestion, resulting in longer commuting times, increased levels of stress and economic losses. Traditionally, municipalities have tried to build their way out of congestion by providing more roads and widening existing ones. However, this solution has not reduced congestion as the traffic levels usually increase to meet the available capacity. Therefore, to increase the effectiveness and efficiency of the transportation network, other solutions are required; of which TDM is an integral component.



Transportation Demand Management is important because it provides the framework for using the transportation system more efficiently, to reduce congestion and pollution, and to utilize scarce municipal transportation resources more effectively.

Brampton currently does not have an overall TDM Plan in place, nor has the City developed its own vision and goals related to TDM. However the Official Plan includes policies for integrated land use and transportation planning to provide a balanced transportation system which will give priority to public transit and pedestrians, as well as create complete communities. A formalized TDM strategy will help the City move towards sustainable and integrated land use and transportation planning and develop the basis to be leaders within the community in sustainable transportation.

2.3 Vision and Goals

As part of the development of the TDM strategy, the City will adopt a vision and a set of goals to provide guidance in the development of TDM programs and policies. The proposed vision and goals are as follows:

Vision:

Brampton will be a leader in the use of sustainable mobility options, and will work with staff, residents, employers and stakeholders to reduce dependence upon the single occupant vehicle for commuting and personal trips.

Goals

Goal 1: Identify and implement policies and programs to reduce automobile dependency.

Goal 2: Increase the availability, appeal and use of sustainable and integrated transportation modes.

Goal 3: Reduce the overall number of trips undertaken by providing programs and creating incentives for telecommuting, walking, cycling, ridesharing and using public transit.

Goal 4: Ensure planning policies support sustainable transportation modes and that TDM is incorporated into the development approval process.

Goal 5: Ensure that TDM programs are disseminated to Brampton staff, residents and work places. This will include working with Smart Commute Brampton – Caledon and the Region of Peel to develop educational and promotional campaigns to encourage behavioural change, especially for peak travel periods.

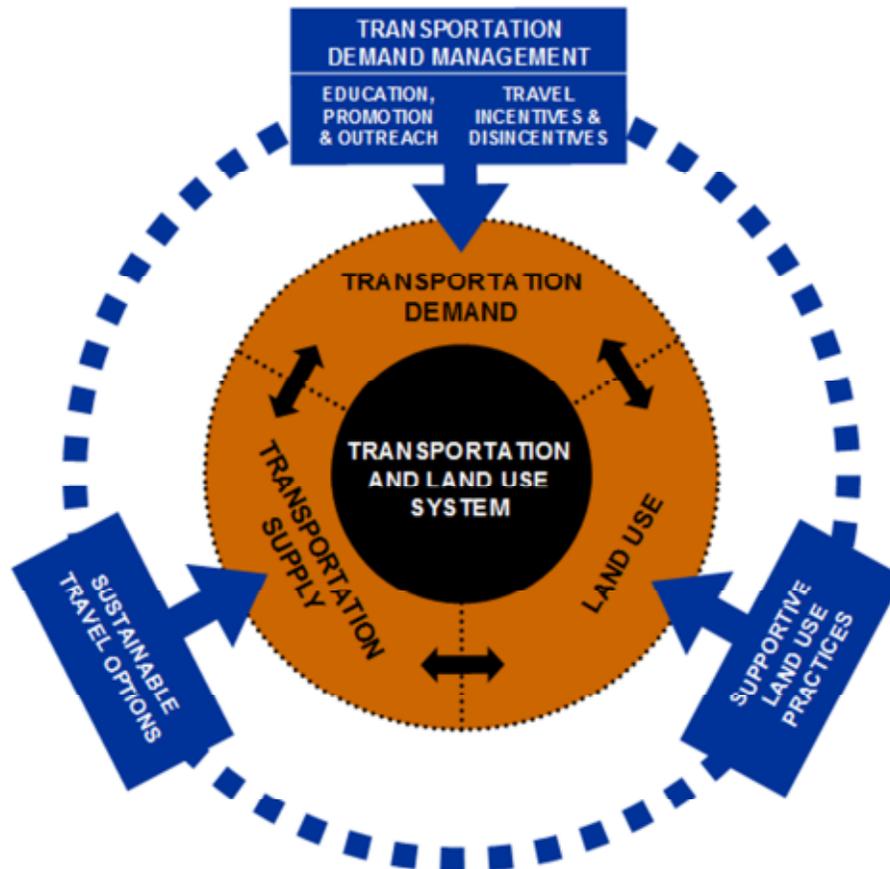
Goal 6: Designate staff to support and champion TDM and to develop programs that are directed toward school trips and residents to encourage the use of sustainable mobility



options more often for day-to-day activities. (Adapted from: Halifax Regional Municipality Transportation Demand Management Functional Plan, 2010)

Figure 1 is an example of how transportation demand, supply and land use planning are integrated.

Figure 1 – Integration of TDM with Land Use and Transportation Supply



Source: <http://data.tc.gc.ca/archive/eng/programs/environment-utsp-tdmintro-1039.htm>

3. BACKGROUND

This section will provide an overview of the sustainable transportation policies and services within the City of Brampton and the Region of Peel, and the existing conditions as well as the future growth projections. A discussion of case studies from across North America is included at the end of this section.

Brampton is a growing City located in a vibrant urban area northwest of Toronto. The growth that the City has undergone has translated into increased demand for all municipal services,



including transportation services and infrastructure. This will continue as the City is expected to grow considerably over the next 30 years. The City will be one of the main growth areas in the Greater Toronto and Hamilton Area (GTHA). The Downtown and Central Area of Brampton is designated as an Urban Growth Centre in the 2006 Growth Plan for the Greater Golden Horseshoe. This growth is shown below in Table 1, which also shows the projected increase in employment within the City.

Table 1 – Population and Employment Forecasts in Brampton

	2001 ¹	2006 ¹	2011 ¹	2016*	2021*	2026*	2031*	2036*	2041*
Population	325,428	433,806	523,911	627,500	701,600	771,300	842,800	874,200	899,500
Employment	134,000	155,000	182,000	202,782	236,082	264,019	291,369	306,263	325,228

¹From Brampton Transit Service Plan 2012-2017 and Census Canada 2011

*City forecasts for development of Brampton TMP Update

3.1 City of Brampton

3.1.1 City of Brampton Official Plan

The Official Plan incorporates policies that accommodate growth with a structured framework and builds upon the policy directions within the *Places to Growth* Act. Specifically, intensification corridors and mobility hubs have been identified which will be the primary focus points for sustainable mobility programs and policies. The Sustainable City Concept (Section 3.0 within the Official Plan) sets out a framework to integrate land use and transportation planning that can reduce the need for and distance and duration of travel as a result of the development of complete communities, in turn leading to cleaner environments, better air quality and sustainable transportation systems.

Some key transportation objectives of the Official Plan that support the development of sustainable transportation and TDM include:



2.4.1 Modern Transportation Systems

Objectives

- a. Create an integrated and expanded transportation network to provide a high level of service tied to the rate of distribution of growth within the City and to enhance accessibility for all residents including persons with disabilities;
- b. Expand public transit service for Brampton's residents including persons with disabilities and employers and to provide seamless connections to popular destinations within the GTA; and
- c. Build a pathway system that is accessible to all including persons with disabilities through a series of walking, cycling and multi-use trails that connects Brampton's major destinations and links with other trails systems outside Brampton.

4.5.3 Transportation System and Demand Management Measures

Objectives

- a. To encourage personal mobility and travel choices that reduce overall transportation resource demands through enhancement of the Brampton transit system, developing and adopting Transportation System and Transportation Demand Management measures and programs and Intelligent Transportation System strategies; and,
- b. To optimize the people moving capability of the transportation network by the utilization of reserve bus lanes or high occupancy vehicle (HOV) lanes where appropriate, and other traffic management strategies for the purposes of minimizing the social, financial and environmental costs of transportation, mitigating impacts to natural features and transportation related pollution and to reduce dependency on fossil fuels.

Policies

Improve Traffic Circulation

- 4.5.3.3 The City shall support pedestrians and transit users in the design of new subdivisions by supplementing the local street intersections along minor arterials and collectors with the provision of sufficient walkway access points so as to achieve a maximum spacing of pedestrian access points along transit routes of 400 metres.



Optimize Road Efficiency

- 4.5.3.7 The City shall endeavour to support the effective operation of high-occupancy vehicle (HOV) and Reserve Bus Lanes (RBL) networks by:
- i. Encouraging the provision of a network of strategically located park and ride lots and, where appropriate, express transit stations;
 - ii. Scheduling transit services to support HOV and RBL lanes;
 - iii. Supporting transit signal priority at intersections; and,
 - iv. Utilizing and encouraging incentives for people to reduce the number of single occupant vehicles by the use of ridesharing strategies.
- 4.5.3.8 The City shall develop a reduced parking strategy through secondary plans or zoning by-laws applicable to the office and retail areas to recognize the availability of and encourage the use of transit, carpools and vanpools.
- 4.5.3.9 The City shall encourage the inclusion of multi-modal transit and ridesharing facilities in new development projects and ensure accessibility to all transit users.
- 4.5.3.10 The City shall require that appropriate transportation demand management measures to reduce single occupancy automobile trips are identified in transportation studies, including environmental assessments, traffic impact studies, and in development proposals.
- 4.5.3.13 The City shall develop Transit Demand Management and Transit System Management Master Plans to optimize use of the planned roadway system and reduce air pollution by educating, advocating and promoting sustainable transportation options to employers and employees in the City of Brampton.
- 4.5.3.14 The City shall support the creation of travel demand management associations such as Smart Commute Brampton – Caledon and shall work with the Region of Peel, Metrolinx, MTO, Transport Canada and other jurisdictions to implement TDM programs.
- 4.5.3.15 The City will support an awareness and marketing campaign for major employers and residents to explain the options and benefits of using alternatives to the private car.



4.5.5 Parking Management

Objectives

- a. To ensure the provision of parking areas and facilities related to development that encourages the efficient functioning of the transportation system; and,
- b. To restrict parking supply, where appropriate, to support transit, transportation demand management measures and reduce development costs.

Policies

- 4.5.5.2 The City shall continue to set parking standards in zoning by-laws for all uses appropriate to their traffic generation and in that process shall recognize and anticipate reductions in parking demand in locations to be provided with enhanced transit service.
- 4.5.5.7 The City shall consider limiting the parking supply within the Office Centers and Retail areas to encourage transit use and reduce single occupancy vehicle trips.

3.1.2 Community and Secondary Plans

In addition to addressing sustainable transportation within the Official Plan, the City also has looked at how greenfield developments will be planned. Transit service will be the backbone of this TDM strategy and will be introduced in the three major Greenfield and urbanizing areas that will be developed. These communities are:

- > West and North West Brampton (Bramwest/Credit Valley/Mount Pleasant Secondary Plan/Heritage Heights – Area 52 Huttonville North and Area 53 Mount Pleasant West);
- > East Brampton (Brameast/Highway 427 Industrial Secondary Plan); and
- > North Brampton (Sandringham-Wellington/Countryside Village/Vales of Humber/Heart Lake East Secondary Plan).

Brampton has developed a transit-supportive community called Mount Pleasant Village that is an example of a suburban residential development that has used sustainable land use and transportation planning principles. The community includes a GO Transit train station and is designed as a walkable community in order to encourage alternative modes of transportation and reduce auto dependency.

Other areas that are transit-supportive are highlighted in the Official Plan. The Urban Growth Centres along Queen Street between McLaughlin Road and Highway 410 and north along Main Street to Vodden Street are shown in Figure 2 below:



Figure 2 – Urban Growth Centres in Brampton





3.1.3 Transportation and Transit Policies

The 2009 Transportation and Transit Master Plan policies were primarily focused on road network development, transit service improvements, active transportation facilities, accessible transportation, transportation system and demand management and goods movement. The City has undertaken considerable investment into improving transit service which is a cornerstone of the move toward a more sustainable transportation system. The existing and planned directions for transit are described below.

Transit service within Brampton is key to reducing automobile dependency, both within the Urban Growth Centre and beyond to new and existing communities. Transit service has significantly improved within the Urban Growth Centre with the introduction of bus rapid transit service, known as Züm, along the Queen Street and Main Street corridors. The 2013 to 2017 Service Plan includes additional service improvements to the Queen Street and Main Street Züm Bus Rapid Transit (BRT) corridors as well as base grid services that connect to this Urban Growth Centre. Another Züm BRT corridor has been introduced along Steeles Avenue.

The 2013 to 2017 Service Plan has indicated that to promote sustainable mobility and reduce automobile reliance, transit service will be introduced early in the development process. In fact, the goal is to:

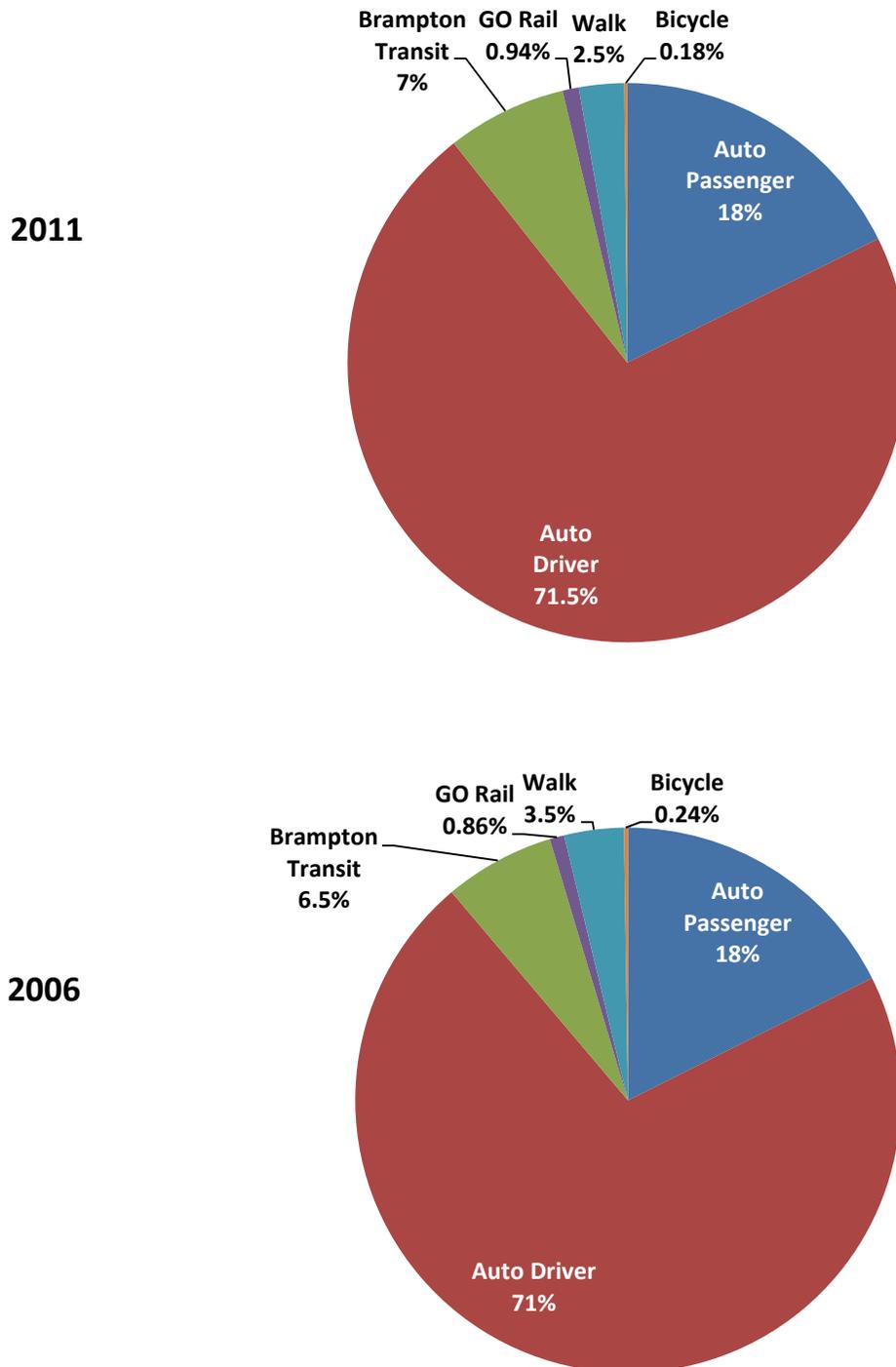
- > Have transit service provided to new developments (as early as possible) so people become accustomed to transit service before buying more vehicles. This objective is to provide service as soon as the road can be used and buses can be turned around. This allows for service to be initiated at the very early stages of development and, in some cases, introduce service before the new subdivision road network is finalized. Subdivision-approved roads are sequenced to ensure transit service can be implemented early.
- > Provide enhanced service along intensification corridors and to major transit nodes. This supports the sustainable transportation objectives identified in the Official Plan. (Brampton Transit Five Year Business Plan (2013-2017) Service Plan Working Paper, January 2013)

3.1.4 Current Travel Statistics

The vast majority of trips in Brampton are by car in the p.m. peak period (3:30 to 6:30 p.m.). Auto driver or auto passenger encompasses 90% of trips, with only 10% of trips by modes other than the automobile. The travel modes for existing (year 2011) conditions as well as historic (year 2006) conditions are shown in Figure 3. There has been very little change in travel mode choice detected by the two surveys.



Figure 3 – Mode of Travel during the P.M. Peak Period (3:30 to 6:30 p.m.), Years 2011 and 2006

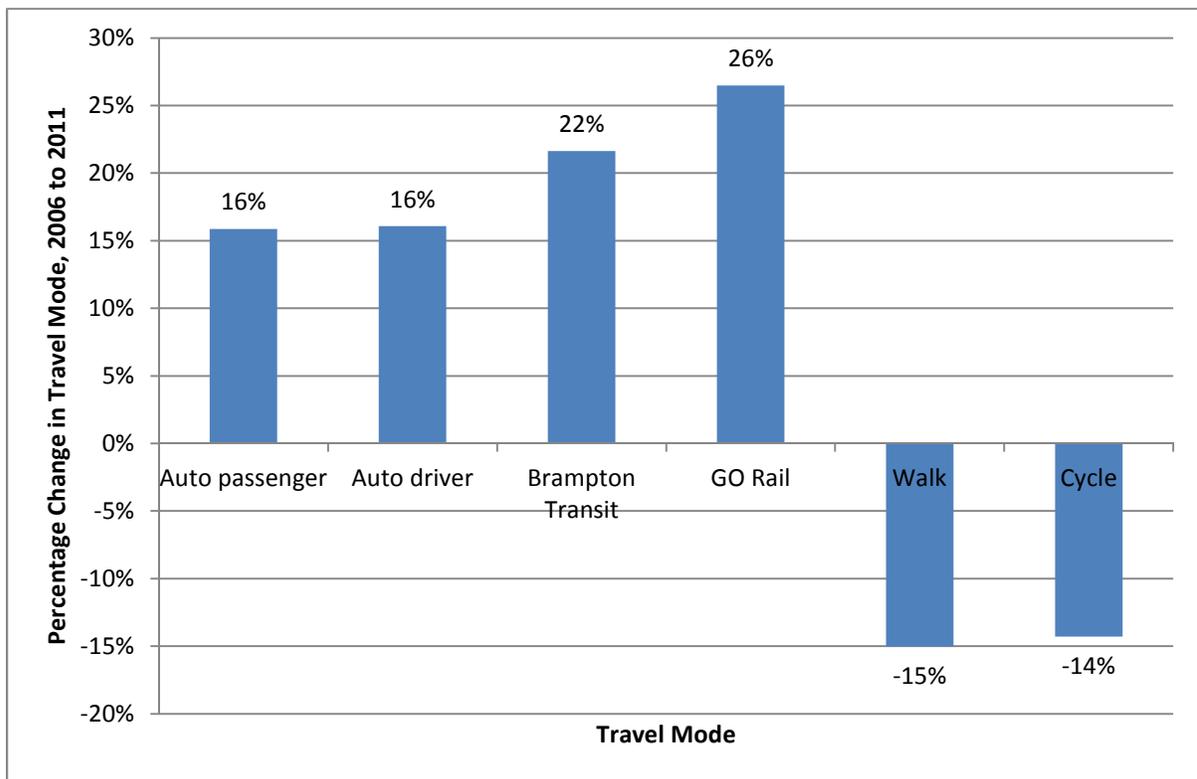


Source: Transportation Tomorrow Survey, 2011 and 2006



During the period of 2006 to 2011, the Census reported a 21% increase in the population of Brampton. The Transportation Tomorrow Survey data for these two years indicate that, for the p.m. peak hour travel period, trips using GO Rail and trips using Brampton Transit grew faster than population growth; the growth in automobile trips was less than population growth, but the number of trips by walking or cycling actually decreased, even with population growth. The percentage increase in the number of trips by mode between these two years is shown in **Error! Reference source not found.** Even though the number of transit trips have increased faster than population growth, the vast majority of trips continue to be by automobile, as reported in Figure 3.

Figure 4 – Percentage Change in the Number of Trips During the P.M. Peak Period (3:30 to 6:30 p.m.), 2006 to 2011



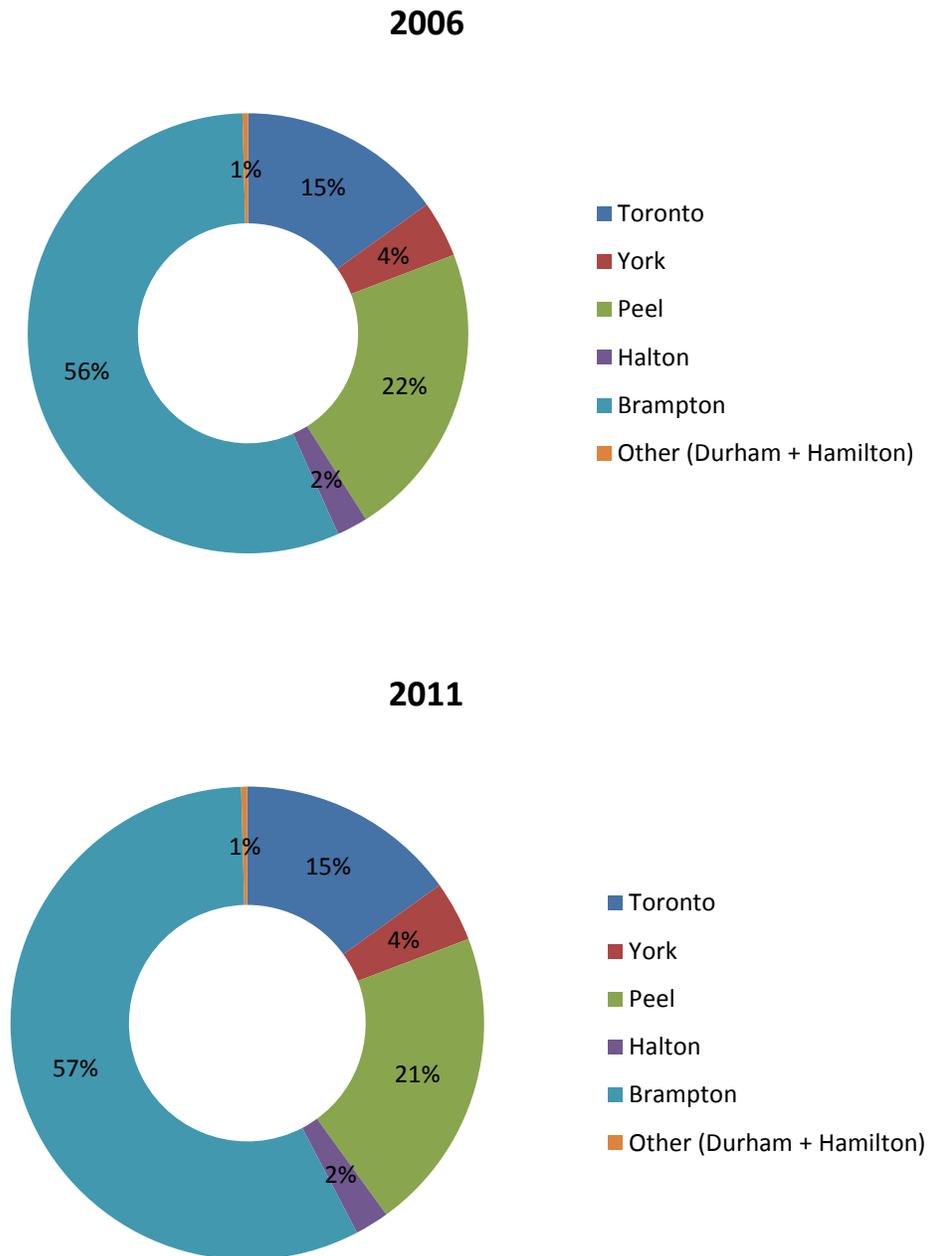
Source: Source: Transportation Tomorrow Survey (2006 & 2011)

The breakdown of trip origins for Brampton residents travelling during the peak p.m. period is shown in Figure 5. The percentage of those whose trip originates and ends in Brampton is 57% for 2011. The other major origins of travel outside of the City of Brampton are Peel Region (City of Mississauga and Town of Caledon) (21%) and Toronto (15%). Some of these trips may reflect commuters returning home from employment centres outside of the City of



Brampton. The TTS data do not show any appreciable change between 2006 and 2011 for the origin of p.m. peak hour trips.

Figure 5 – Origins of Travel for Brampton Residents: PM Peak Period





3.2 Peel Region TDM Initiatives

The Region of Peel has a comprehensive Transportation Demand Management Program in place that has been developed to help residents and workers choose more sustainable modes of transportation. The aim is to reduce costs associated with travel for individuals and municipalities, mitigate the increase in projected traffic volumes and improve the quality of the environment. The Regional Official Plan includes TDM policies, such as increasing travel options available in Peel Region, and measures to reduce traffic congestion (Region of Peel Transportation Demand Management website). According to the policies within Section 5.9.9 of the Regional Official Plan, the Region intends to work with all levels of government and the private sector to develop communities that support sustainable transportation, to prioritize the reduction or elimination of trips and to increase the use of sustainable modes. The City of Brampton can use the policies within the Regional Official Plan to shape their long term objectives for TDM planning and sustainable transportation services and facilities.

3.2.1 TDM Study Report

Peel Region developed a TDM Study Report in 2004 which included a number of initiatives. These initiatives include: a vision for TDM in Peel; policy recommendations, including an implementation policy; and next steps. In the original plan, the Region stated its intent to work with area municipalities. In 2008, Peel issued their TDM Plan – Five Year Plan for Supplemental Funding. This plan provided an overview of what had occurred since the adoption of the TDM Study Report in 2004. Of particular note: Smart Commute Brampton – Caledon was created in 2006; the Regional Development Charges By-law included TDM for the first time in 2007 to manage traffic growth and to secure stable funding for TDM in Peel; TDM support programs were launched and funded, such as the Transportation Management Association (TMA) program; TDM technical support was developed; an Active Transportation (AT) coordinator position and safe and active routes to school program were initiated; regional TDM programs were launched including: a five year marketing campaign, employer individual marketing program, TDM workshops, and new programs and strategies, including goods movement, commuter store feasibility study and employer-based trip reduction programs.

3.2.2 TDM Social Marketing Program

In 2013 the Region of Peel commissioned a Strategic Update to its TDM Social Marketing Program. The purpose of the update was to focus on initiatives beyond the programs provided by Smart Commute, which serve member employers. The intent of the social marketing plan would be to create measurable travel behavior change amongst all residents in the Region of Peel through mass marketing as well as targeted marketing.



Targeted marketing would be aimed at residents in proximity to major transportation infrastructure networks. Participation would be through an on-line trip tracking tool, and a reward program would be utilized to encourage TDM trip reporting.

3.2.3 Five-Year TDM Plan

On June 26, 2014, the Council of the Region of Peel approved in principle the Five-Year TDM Plan for 2014 to 2018. The cost of the plan is estimated to be \$3.64m over the next five years. The goal of the plan is to continue to improve air quality by reducing single occupancy vehicle travel demand – by redistributing the demand to alternate modes of transportation or times of the day. The plan builds upon the success of the previous five-year plan which boasts a success rate of 15:1 cost/benefit ratio.

The new five-year plan has five key components:

1. To provide support to local Smart Commute programs;
2. To develop tools and marketing techniques to advance travel behavior change. This will be accomplished through Individualized TDM Marketing, a Telework Program and a Social Marketing Plan;
3. To identify new opportunities to further integrate TDM into the Planning and Development Process. This will be accomplished through the establishment of TDM Guidelines and Tools (recommendations for how the City of Brampton can support this component are detailed in Section 4.5 and Appendix B);
4. To develop tools to improve TDM program measurement and benefit estimation. This will be accomplished through the development of an evaluation tool (referred to as a TDM Model) and a study entitled State of TDM;
5. To provide technical support to assist partners and advance TDM throughout the region. This will be accomplished through workshops and the provision of technical assistance, and an update to this five-year plan.

The funding for the program in 2014 has been identified in the Capital Projects Budget at an unspecified level, and funding for future years will be requested of Regional Council on an annual basis.

3.2.4 Individualized Marketing Campaign

The Region has recently implemented the first large scale employer individualized marketing (IM) campaign in the Greater Toronto and Hamilton Area (GTHA). It can be used to develop other similar campaigns and assure significant vehicle trip reductions. Through partnerships, the Region has designed this program to increase the use of sustainable mobility and reduce overall vehicle kilometres traveled (Region of Peel Transportation



Demand Management website). The programs developed by Peel have been used to inform the recommendations presented in Section 6 of this strategy.

3.2.5 Healthy Development Index

Importantly, in 2005, Peel Public Health was asked to comment on planning applications submitted to the Region of Peel by Peel Regional Council in order to address the health issues that were becoming more apparent and the concern that the suburban development patterns were contributing to this issue. Therefore input from the Region's Public Health Unit was sought to increase the opportunities for more active living through the planning process. However, after the Peel Region Public Health unit began to comment on applications, staff realized that more was needed, so a Healthy Development Index was developed in association with St. Michael's Hospital Centre for Research on Inner City Health and McMaster University. This report was created to provide more evidence-based criteria for public health staff to use when commenting on development applications. The index was created to provide a framework within which public health comments can be provided through consistent and quantifiable standards when commenting on planning applications (Peel Public Health: Peel Healthy Development Index, December 2009). A summary table of Peel's healthy development assessment is located in Appendix A. The City of Brampton can refer to the index when updating land use regulations and policies to encourage the development of healthy active communities.

Since that time, Peel Public Health has been involved with medical officers in other parts of the GTHA to promote healthy design in a broader geography, through a collaborative effort to produce the *Improving Health by Design in the Greater Toronto-Hamilton Area* report.

3.3 Province of Ontario

Metrolinx was created by the Province of Ontario and oversees the development of major transportation initiatives in the Greater Toronto and Hamilton Area. Metrolinx's seminal document, *The Big Move*, includes a regional strategy for a transportation demand management plan. Part of this strategy is the Smart Commute Program. The Smart Commute program:

- > Originates from both Metrolinx and participating municipalities in the GTHA;
- > Works with employers to create workplace commuter options programs to encourage the use of more sustainable transportation options.
- > Operates several programs, including: online carpool system; vanpool programs; shuttle programs; emergency ride home; incentive, events and promotions; and site assessments.

The City of Brampton is a long standing member of Smart Commute Brampton-Caledon. According to Smart Commute Brampton-Caledon, since the launch of the City's program in



November 2011, City employees have saved \$156,679, reduced single occupant vehicle trips by 2,696, eliminated 242,784 vehicle kilometers travelled, and eliminated the production of 52,715.69 kg of greenhouse gas emissions through the Smart Commute Carpool Zone Program.

3.4 Case Studies / Best Practice Review

The following case studies were selected as they have evolved over time and will provide Brampton with solid programs that can be referred to as their program evolves and a more detailed plan is developed and implemented.

3.4.1 Halifax Regional Municipality

Halifax Regional Municipality (HRM) initiated their TDM program in 2003 with the hiring of HRM's first TDM Coordinator. Over the last 10 years, the program has evolved. The concepts are ingrained in the Regional Municipal Planning Strategy out of which came a number of functional plans including the TDM Plan, the Active Transportation Plan and the Regional Parking Strategy (which is TDM-based). The Municipality also participated in Transport Canada's ecoMobility program which built upon the internal and external Workplace Commuter Options program known as SmartTrip by piloting the program with five work places and providing a guaranteed ride home program to participants.

The program has evolved with the addition of a specialist to promote the work place programs and is further evolving to include a supervisor. With the addition of staff, the program has been able to grow.

3.4.2 City of Kitchener

The City of Kitchener developed a TDM plan to reduce demand for parking and single occupancy vehicles (SOV) trips in the downtown core so that development can be intensified. The TDM Plan is part of the Transportation Master Plan and is intended to move workers away from auto-dependent travel. The plan recommended funding of a TDM Coordinator position so that the strategy would be successful. The Coordinator would address:

- > Various components of the Cycling plan: implementing the network; signage; updating zoning by-laws to include bicycle parking; integrating cycling infrastructure into all road work; integrating with Grand River Transit (GRT); promoting and marketing cycling; and
- > Various components of the TDM Plan: GRT subsidized pass program; carpool matching; guaranteed ride home program, promotional events; pilot telework program; carbon tracking; employer stakeholder support; outreach to businesses and residents; individualized marketing programs.



The TDM program has 4 phases:

- > Phase 1 – develop staff program, hire a TDM specialist, provide subsidized transit passes, implement ridematching and guaranteed ride home programs, and conduct promotional events and develop promotional materials;
- > Phase 2 – build support with stakeholders, support the existing carshare program, implement a telework pilot program, develop a carbon tracking program and create guidelines for TDM-friendly design;
- > Phase 3 – expand outreach programs with businesses, residents and property owners, and develop policies and regulations that support TDM; and
- > Phase 4 – undertake an individual travel planning marketing program to residents in the downtown, and create a commuter store.

3.4.3 City of Hamilton

The City of Hamilton decided that TDM could help the City mitigate the development of travel congestion-related problems and provide incentives to use sustainable transportation. The following initiatives have been implemented by the City:

- > Smart Commute Hamilton has a considerable number of programs, more than other Smart Commute associations and is run by City staff;
- > Hamilton Street Railway's Employer Commuter Pass provides a discount to employers who purchase monthly bus passes for staff which are offered to employees at full, partial or no cost. The City has also implemented this program for its staff;
- > McMaster has a strong campus TDM program which helps with the promotion of sustainable transportation in Hamilton;
- > In December 2013 the City of Hamilton introduced a mobile app called Travelwise to provide assistance for traveling around the City by using sustainable modes, such as obtaining information on getting around by transit, walking, cycling, carsharing, taxi (www.travelwisehamilton.ca); and
- > The City has also included TDM in various plans including the Waterdown / Aldershot Transportation Master Plan.

3.4.4 City of Thunder Bay

The City of Thunder Bay's TDM Plan was approved by City Council in 2011. The plan is designed to avoid the congestion issues that other cities have and is categorized into three phases for implementation. Thunder Bay is being proactive in the development of the TDM Plan and branded it early as TravelSmart. Strategies to be undertaken are:



- > Leadership Strategy – The City will become a community and corporate role model, which will include a TDM staff position; an internal TDM committee; the development of a work place travel plan for City employees; links between TDM and other City programs and links between City and external organizations;
- > Outreach Strategy – The goal is for the City to work with partners whose reach, influence and resources can help motivate Thunder Bay residents to make more sustainable travel choices. This will include outreach to: employers; post-secondary institutions; City schools; distinct groups in the community; and individual households;
- > Marketing Strategy – The strategy will build public support for sustainable travel options, improve public awareness of benefits, encourage their use and show the link with the leadership and outreach strategy. The marketing strategy includes: various messages to use in addressing key market segments and to overcome challenges specific to Thunder Bay; the use of a TDM program identity; how the internet can be used effectively; the role of special events; and the value of media and printed material; and
- > Performance Measurement Strategy – This is the monitoring and assessment strategy for the TDM Program.

3.4.5 Alexandria, Virginia

The TDM program in Alexandria, Virginia was one of the early TDM programs and has evolved over time. It began as a rideshare program called *AlexRide* for carpools and vanpools which were set up to conserve energy and improve air quality. Over 25 years, the TDM program broadened to include all sustainable modes of transportation and, as such has been renamed *Local Motion*. Services now include: outreach and engagement of local employers; hosting and promoting participation in events that promote alternatives to single occupant vehicle (SOV) travel; supporting private partners and offering incentives for residents and businesses to employ carsharing strategies and administration of transit subsidies to City's employers. The plan also reinforces and supports other goals, policies and functions of the City, including: site plan coordination for TDM opportunities associated with high traffic land uses / developments; partnership and initiatives; and the multi-modal vision in the Transportation Master Plan.

The TDM Plan includes program delivery, strategic opportunities, program evaluation, tracking and reporting, and program funding. The program has primary (employers and employees) and secondary (residents and visitors) target audiences. Strategic opportunities include development-related strategies, mobility between centres, investments in programs.



The evaluation of the program as well as the reporting on the success and tracking has evolved from a four step process to a more detailed seven step process. The process involves:

- > Awareness of modes and services and related benefits;
- > Addressing attitudes towards modes and willingness to try new ones;
- > Participation in services;
- > Monitoring satisfaction with services and repeated use;
- > Measuring utilization of modes, travel change;
- > Identifying influences on decisions to change; and
- > Measuring impacts resulting from travel change.

3.4.6 Summary

The case studies above provide insight into the development of TDM Plans. The programs outline the process undertaken to establish these initiatives, which identify that it is a methodical process which will grow over time. The following are the key elements that are the most appropriate for Brampton to consider in developing their TDM Plan:

- > Hire a Sustainable Mobility Coordinator to oversee the development and implementation of the TDM program;
- > Develop a systematic and phased approach to implementing the TDM program as it will change and grow over time;
- > Take a leadership role in TDM and develop internal programs; and
- > Develop partnerships with other levels of government, private enterprises and other stakeholders to advance the cause of sustainable transportation programs and initiatives.

4. TRANSPORTATION DEMAND MANAGEMENT IN BRAMPTON

This section outlines various TDM Strategies that are appropriate for Brampton at this time. However, it will be necessary to develop a more detailed TDM Plan that will include a long-term action plan. Section 5, Implementation provides the short term actions to be undertaken by the City to initiate the TDM program.

The increase in automobile traffic congestion in major urban areas has had an impact upon society and the individual's ability to move around the community. The increase in traffic congestion has not occurred in isolation as many factors have contributed to this increase. Such occurrences as strong economic growth, the expansion of residential developments into rural and suburban areas, segregation of land uses, increase in car ownership, and decrease in



the use of public transit have all added to the increasing volumes of traffic on our roads, particularly at peak times (rush hours).

The solution to traffic congestion for years was to increase the capacity of the road network. The emphasis was placed on the expansion of existing road and the construction of new ones in order to accommodate the increase in traffic. However this is not the solution as it contributes to the overall congestion problem, not to mention that it is a very costly method of dealing with transportation demand.

The “old” ways of transportation management are no longer the most appropriate solution to the traffic concerns facing us today. There is a need to look at alternatives to the expansion of the road network and the use of cars by single occupants for utilitarian trips. Policies, programs and regulations are required to ensure that other transportation modes become part of the overall development of our cities.

These issues need to be examined as part of an overall growth strategy that includes land use polices that reflect a “neo-traditional” approach to development, regulations that require developers to include support for alternative forms of transportation within all forms of development and a road network that includes such facilities as bike lanes, sidewalks, and carpool/bus priority lanes.

It is acknowledged that the car will not be eliminated but we can provide a framework that will help encourage communities to use other methods at least part of the time. (Halifax Regional Municipality: TDM Options Report, 2004)

This section will introduce programs that are appropriate for Brampton. Three areas of TDM will be introduced: Work Place Programs; Residential Programs and School-based Programs. After the introduction of these three areas a Tool Kit of programs for Brampton to consider will be provided.

4.1 Work Place Programs

Since 2008, Smart Commute has been a program of Metrolinx and the municipalities of the Greater Toronto and Hamilton Area (GTHA). The focus is on commuter trips to reduce congestion, pollution and improve the overall quality of life for residents of the GTHA. Through Smart Commute, work places can access a variety of services such as:

- > Ridematching;
- > Site assessments and surveys;
- > Shuttle programs;
- > Emergency ride home program; and
- > Information on flexible work arrangements and telework.



Smart Commute Brampton – Caledon (SCBC) was established to meet the needs of work places in the Brampton and Caledon communities. At the present time, there are 19 work places registered with SCBC, most of which are located in Brampton. The City of Brampton is a member, indicating their interest in the promotion and use of sustainable transportation options. However the City should become more involved in SCBC by becoming more than just a work place member but a partner in the provision of TDM programs by promoting the use of sustainable modes and trip avoidance programs.

4.2 Resident Programs

Residential TDM Programs are developed and directed towards residents to provide information on the use of sustainable modes of transportation for various commuting and non-commuting trips.

It has been determined in areas where residential programs have been carried out that the greatest success in changing travel behaviour has been through direct contact and follow through. Individual travel planning is a technique that has been carried out in different communities, including Waterloo, ON and in Vancouver BC. Individual travel planning is based upon the concept of Community-Based Social Marketing, which is based upon five stages:

“Carefully selecting the behavior to be promoted; identifying the barriers and benefits associated with the selected behavior; designing a strategy that utilizes behavior-change tools to address these barriers and benefits; piloting the strategy with a small segment of a community; and, finally; evaluating the impact of the program once it has been implemented broadly” (Fostering Sustainable Behaviour, Mackenzie-Mohr, from www.cbsm.com)

A number of case studies are available on the Fostering Sustainable Behaviour website showing that this approach has been successful at changing behaviour. An individual travel planning pilot program, based upon the Community-Based Social Marketing approach should be implemented by City staff and partners (once the TDM program has been further developed) to determine if such programs will benefit Brampton and provide a shift towards sustainable mobility.

Partnering with SCBC to implement residential programs is possible as there is interest on the part of the SCBC to assist the City with the delivery of residential programs. This would require the City to provide funding to SCBC to undertake this endeavour.



4.3 School-based Programs

There are several successful programs in Canada that have been developed to address how students travel to school and encourage the use of active and sustainable modes.

'Active and Safe Routes to School' is a program administered by Green Communities Canada that works with schools and school boards to encourage the use of active modes of transportation for the journey to school. The City should develop partnerships with Green Communities Canada, the Region of Peel and the local school boards to encourage school travel programs. Another program that has evolved out of the Active and Safe Routes to School program is the school travel plan. This program involves working directly with individual schools to develop a plan that will encourage children to walk, ride or skate to school and discourage parents from driving them.

School travel planning programs have been successful throughout Canada. Examples in Halifax, Toronto and Surrey can be found within the School Travel Planning Tool Kit which can be found at: www.saferoutestoschool.ca/school-travel-planning-toolkit. Working with the local school boards and with other partners can be fundamental to reducing the number of trips to school that occur by private automobile and increase the use of sustainable modes of travel.

4.4 Tool Kit of TDM Programs

There are a number of components to a TDM program. Below are a number of initiatives that could be considered in Brampton.

4.4.1 Brampton Work Place Commuter Program

The City of Brampton will show its commitment to the development of a TDM program by revising a workplace program it had initiated for its staff. Representatives from Smart Commute Brampton – Caledon (SCBC) have met with senior staff to reinvigorate the program and obtain support. The re-launch of the program will be an important catalyst to encouraging further TDM initiatives.

The City relies upon the programs offered through SCBC for their internal work place travel program. However, the City should be able to build upon these programs that will provide other employers with incentives to provide their staff. Prior to the initiation of any programs, a survey of City staff should be undertaken to understand travel behaviour and determine the measures that will support staff and encourage sustainable travel behaviour.

To ensure that the program will be successful and continue to grow, the City requires a champion to work with SCBC as well as City staff and promote the use of sustainable



transportation modes. The champion should be the Sustainable Mobility Coordinator, which is recommended below.

The components of the City TDM program for staff should include:

- > Finalizing the Telework policy and develop an implementation program;
- > Continuing to participate in the Emergency Ride Home program through Smart Commute and promote it to employees;
- > Continuing the corporate transit pass program and work with Smart Commute Brampton – Caledon as the City transitions from paper passes to the Presto Card. The City should also promote the transit trip planner (e-Ride) to staff;
- > Providing incentives to staff such as work day travel options which can include a carshare service (City or from private provider) or fleet vehicles that are available to all staff to use for meetings or site visits. Another option would be to provide transit maps and tickets / passes to staff;
- > Encouraging the use of active modes of transportation to travel to work and provide sufficient end-of-trip facilities (such as sufficient secure bicycle parking, showers and locker rooms). The City should also develop a Bicycle User Group (BUG) for city staff; and
- > A Sustainable Mobility Coordinator, who would be the champion for staff to contact with questions, suggestions, requests for information and to provide promotion, education and programs to encourage sustainable behaviour.

4.4.2 Transit

For each new service that is added, staff in the Planning & Infrastructure Services Department and the Sustainable Mobility Coordinator should work with Brampton Transit staff to develop marketing and promotional materials to encourage residents and workers to use the new services and be early adopters. This will therefore further encourage the use of transit and reduce automobile reliance. As described in Section 3.2, the Region of Peel recently endorsed the creation of an individualized TDM marketing campaign which could be aimed at residents in proximity to major transportation infrastructure networks. Brampton has an opportunity to partner with the Region to bring added value to this initiative.

New rapid transit services are recommended for implementation over the lifetime of the TMPU. These services are outlined in the *Future Transit Provisions* Technical Report, with mapping showing the routes and types of services that will be available and recommendations on policies, tools and further actions for the City to take to encourage transit usage. The services, which include additional Züm routes as well as BRT and LRT routes, will form the basis of the



future network. Transit staff and the Sustainable Mobility Coordinator should work together to develop marketing and outreach programs that will encourage substantial uptake in the use of these services.

Particular attention should be given to the developments in and near the stations that will be upgraded or added to the network. These are prime areas for intensification and mixed use developments. The developers of new residential buildings along the corridors and located at stations should encourage the use of transit by including a year-long transit pass with the sale of the unit. As well, developers should unbundle parking, meaning they should not include parking with the unit but offer it as an additional feature, at the full cost of construction.

The City has created an environment in which transit is not only important but a priority. In the Five-year Service Plan, it is stated that as new communities are developed, transit will be provided at the early stages and will be in place to encourage the uptake of transit service. This will work to increase the modal split and reduce single occupant vehicle travel and car ownership. This has already proven to be successful with the Mount Pleasant Village development, which had the involvement of the developer in providing the transit station from the very beginning of the occupancy of the development. Concurrent delivery of a new community and transit service is significant and should be further encouraged, even in areas that are not located along GO train lines.

To access transit stations and terminals, commuters are required to find their way to the terminals. Many commuters often encounter issues with traveling to and from the transit stations. Therefore, it is important to address the infrastructure and services that lead to transit stations and provide convenient and direct links so that transit is seen as a viable alternative to the single occupant vehicle trip. The “first mile / last mile” concept, which addresses the travel to and from transit stations, should be developed further as it will allow improved access and increased use of rapid transit services. Many people will travel further to rapid transit stations and stops than to local transit services but it must be easy to do so. For pedestrians and cyclists, routes need to be direct, pedestrian and cycling-friendly and with easy access to the station. Cyclists also require secure bicycle parking. Local transit routes need to be convenient and coordinated with the rapid transit schedules. Parking and drop off areas need to be available and well-signed. Registered carpools should have priority parking provided to them. If the “first mile / last mile” is looked after, not only will there be an increase in the use of transit services, there will also be an increase in the overall use of sustainable mobility.

4.4.3 Active Transportation

Active Transportation modes are important components to any TDM program. While Active Transportation, like transit, often has its own plan and implementation strategy, it is important to incorporate active modes into TDM plans. Cycling and walking are prime



travel modes for short trips to work as well as for personal trips (including running errands, shopping, and appointments, as well as being a prime mode of travel to transit services). The *Active Transportation Strategy* Technical Report sets the context for active transportation in Brampton, outlines barriers and opportunities to promoting active transportation, identifies missing pedestrian and cycling links and presents policies and initiatives that can be used as tools to support active transportation.

4.4.4 Ridesharing

Ridesharing, or carpooling as it is more commonly referred to, has been a long-standing method to encourage increased auto-occupancy and the reduced number of single occupant vehicle trips. The use of on-line ridematching programs has taken the place of other methods such as the use of maps and bulletin boards. These programs enable more people to find carpool matches and now include finding “buddies” to encourage commuters to take transit, ride their bikes or walk to work by pairing up with others.

However, as will be discussed later, the programs need to be promoted and the benefits of ridesharing need to be provided. It is not a matter of “if it is there, they will use it”. Why is this? A lot of commuters will not be aware of the program unless they are told about it and how it works.

Brampton will need to provide their staff with information about the ridematching program available through SCBC as well as work with staff at SCBC to promote the use of the program further, even with the work places that are already participating in the program.

4.4.5 Carshare

Carsharing is becoming more common and popular as people look for more sustainable transportation options and reduce their reliance upon single occupant vehicle trips. Car sharing has been seen as an urban option for city-dwellers who do not want to own a car or have limited if any parking options. Joining a carshare can have financial benefits as the cost of owning a car can range from \$7000 to \$15,000 (including car payments) per year depending upon the type of vehicle (CAA: Driving Costs - Beyond the Price tag: Understanding your vehicle’s expenses, 2012 edition). On the other hand, carshare programs are much more economical with the costs tied to the amount that a member drives. Therefore, the costs are considerably lower than owning a car. One Toronto-area company has membership rates that vary from \$6 / month to \$65 / year depending on the plan chosen. The cost per hour will vary according to time of day and the type of plan selected (<http://www.zipcar.ca/toronto/check-rates>).

Carsharing is moving into the suburban areas of Canada and could be an option for Brampton. Not only could there be access to carshare vehicles for residents but it could



also be an option for City staff to use for work day travel (for example, the City of Gatineau has three Communauto cars on site for use by City staff). The use of carsharing for daytime work-related travel will benefit employees who require transportation to conduct their jobs. This can either be carried out directly by the City with its own vehicles or through a carsharing program.

Mississauga has signed an agreement with a carsharing company for a 2 year pilot program that will be finished this year. Brampton should discuss the results of the pilot with Mississauga once it has been completed. However, this pilot should be carried out after a survey is carried out with City staff and the interest is shown. As well, it should be considered as part of a larger project that will enable staff to use the cars during the weekdays and during evenings and weekends, the cars are available to the community – who have become members of the carshare.

4.4.6 Emergency Ride Home Programs

Many commuters will state that they need their cars in case of emergencies or having to work late and not being able to get home safely. While this is a concern, the actuality is that the emergencies do not occur very frequently. As well, unplanned overtime is not as common as people fear. However, to ease the concerns, emergency ride home (ERH) programs need to be developed and promoted to staff.

Currently, there is an emergency ride home program promoted by the SCBC which is only available to employees of member employers of SCBC. It should be promoted as a benefit to the use of sustainable modes. Some of the conditions are:

- > Commuters may use ERH for any distance, routing and stops they prefer, but will only be reimbursed to a maximum of \$75 per ride, which may include a tip of up to 20 per cent.
- > Commuters are responsible for initial payment of all costs, and are responsible for costs exceeding the maximum.
- > Commuters may use ERH for unplanned reasons. Smart Commute reserves the right to track individual usage and verify the reason for rides. The following situations qualify for ERH coverage:
 - o Personal or family illness, accident, injury or emergency situation;
 - o Unscheduled overtime, approved by a supervisor; and
 - o Unplanned absence of a carpooling partner due to his or her having to leave early or stay late unexpectedly (from: Smart Commute Brampton – Caledon: www.smartcommutebc.ca).



4.4.7 Outreach, Marketing and Incentives

To be successful, a TDM program must include outreach, marketing and education elements. These elements are needed to provide information to commuters that will encourage them to use sustainable modes of transportation rather than the single occupant vehicle trip. However, producing posters or developing websites are only a small part of an outreach program. Organizations cannot just advertise a TDM program, they need to reach the community directly using a number of initiatives such as individual marketing programs (as discussed in Section 3.2), information booths at community events and meetings with community organizations. As the City develops its TDM program, the City will need to evaluate the type of initiatives to undertake to promote sustainable transportation and influence travel behaviour.

Successful TDM programs also include the use of incentives to encourage changes in travel behaviour. The following are some of the most common incentives:

- > Carsharing opportunities for City staff and residents and employees in the downtown;
- > Discounted transit passes;
- > Bicycle parking;
- > Car pool parking and reduced parking rates for carpools;
- > Carshare parking; and
- > Prizes for taking part a TDM program which could be applied to both internal (City of Brampton staff) and SCBC members and for completing travel surveys.

4.5 TDM in Planning and Development Applications

Encouraging and implementing TDM through planning and development process can occur in several ways. One way is to develop policies related to TDM to be incorporated into planning policy documents. The policies will provide the framework within which TDM will become part of community development. As discussed in Section 3.2, this is one of the key areas of focus for the new five-year TDM plan recently endorsed in principle by Peel Regional Council. This section describes in detail how the City of Brampton can partner with its regional colleagues by developing TDM guidelines and tools related to planning and development applications. An example of the policies and tools that can be implemented for the development approval process that will support transportation demand management is included in Appendix B. The City should customize these tools to fit its development approval process.

During the approval process, traffic impact studies (TIS) are undertaken to determine the impact of the development on traffic levels and the transportation network. Currently, the TIS process does not include the impact of shifting travel to more sustainable options. The City must develop a set of guidelines that will take sustainable travel options into account (see



Appendix B for an example of guidelines). The City should refine these guidelines and implement these guidelines as part of the development approvals process as a way to promote TDM in new developments. As well, to ensure that the sustainable travel continues to be part of the development, the City should develop conditions to be included in development agreements to support TDM.

The City should continue to support the development of new communities which are based on similar principles as Mount Pleasant Village. Communities such as Mount Pleasant are intrinsically supportive of sustainable mobility and are more sustainable overall. The use of the Peel Healthy Development Index should be applied to new developments and redevelopments in order to continue to develop communities based on a model of sustainable land use and transportation planning.

The mitigation of traffic impacts should include the use of TDM initiatives in order to show that if they are present, they can reduce traffic volumes. However the type and rate of implementation will be dependent upon location, transit service, Active Transportation infrastructure, parking regulations and surrounding land uses. Tools such as the Travelwise mobile telephone application, specific staff designated to address TDM and other measures to promote sustainable travel have been profiled in the Cases Studies / Best Practices Review presented in Section 3.4 of this report.

Parking is a key component in the implementation of sustainable transportation through the development process. Traditionally the amount of parking available needs to be sufficient to meet the requirements of the development, often providing more than the minimum required and reinforces the culture of driving. Alternatively parking regulations should be reduced to maximums or not even be mandatory in areas near transit nodes, as a means of controlling the number of cars in an area. Parking exemption for non-residential uses is already in place in the core of the Central Area and while not formalized, exemption sought by applicants (subject to submission, review and approval of parking rationale) have been extended to development outside of the area. Providing opportunities for car pool parking and supportive policies will also reduce the need not only for parking spaces but also for road expansion.

It is important that there are internal work place policies and residential programs in areas where developments can potentially lead to increases in traffic that the existing road network cannot support. The introduction of one aspect of a TDM program cannot occur without others, there will need to be compensation and a sense of equilibrium within the transportation network. For example, if the concern over traffic leads to a reduction in parking requirements to mitigate traffic volumes, then there will need to be transit stops / stations nearby as well as car pool parking and at the same time, support for the development of a program to encourage the use of these sustainable modes and reduce the reliance upon the single vehicle car trip.



Incentive as well as marketing and educational materials will be needed as well as a well-supported carpool program.

The TDM-related recommendations for developments will depend upon where they are located, the land uses that are within the development and the types of transportation services and facilities that are available. Suburban areas will be more focused on transit services and facilities, park and ride availability, and ridesharing availability, as well as car trips. Higher density, urban areas will also focus on transit services and ridesharing as well as walking and cycling trips and the provision of infrastructure to safely support these modes.

4.6 Resources

A successful TDM program is one that has a dedicated budget and staff resources. While it is recommended in this plan that both financial resources and staffing be implemented in the short term, a more detailed plan will be required.

4.6.1 Staff

A staff position is required in order for a sustainable mobility program to be developed and maintained. This position would be ideally located within Transportation Planning, Planning and Infrastructure Services. This is due to the focus of the department on long-range planning and the understanding that transportation is evolving and requires increasing emphasis on sustainability and linkages to the overall development and future growth of the City. Ideally the staff position should be termed Sustainable Mobility Coordinator and would be responsible for not only the programs recommended in this strategy but working on active transportation programs and infrastructure as well as acting as a liaison and partner with SCBC staff. This position can also assist with development-related TDM review and develop guidelines for planning applications.

4.6.2 Financial

An annual budget for both TDM programs and staff is required for the program to be implemented. The budget will grow as the program grows and prospers. The budget should include the salary and benefits for a full-time position and for over the first two years, money to initiate the internal TDM program and programs that are included in the short term implementation program in Section 5. The initial annual funding should be \$150,000 which includes the TDM position and initial activities, and should increase as the program grows over time.



5. IMPLEMENTATION AND MONITORING

5.1 Implementation

This section will look at the immediate activities that should be undertaken by the City of Brampton. Other areas will need to be developed through a more detailed TDM Plan which should include a comprehensive Action and Implementation Plan. The following are the initial activities that should be undertaken by the City to show their commitment to TDM and desire to be leaders in the community:

A. Year One (2015-2016)

1. Create a budget for a TDM program – the budget should initially be set at \$150,000. This budget will include salary and benefits for the Sustainable Mobility Coordinator as well as for the implementation of the early projects.
2. Hire a Sustainable Mobility Coordinator – this will be a priority to implement the program and to ensure that the internal program (described below) is re-established with a champion to support staff.
3. Develop a stronger partnership with SCBC – this will enable the City to be a leader in TDM and develop strategic partnerships with stakeholders.
4. Re-establish the internal Commuter Workplace Program for City staff in partnership with SCBC – an internal program should be re-established to indicate that the City is a leader in sustainable mobility, that workplace programs have credibility and to enable staff to understand that they have more options, whether it is how they travel to work or where (telework) they work or even when they work (flexible work hours and condensed work weeks).
5. Establish TDM Guidelines for Development Approvals – the development of the guidelines will also give more credibility to TDM as it will be engrained in City policy and the development approvals process.
6. Initiate the outreach, marketing and education program – without a substantial program to increase awareness of programs, the goal of increasing the modal share for sustainable transportation will not occur. Therefore, a program to highlight the benefits of sustainable commuting and incentives should take place. The Sustainable Mobility Coordinator should also work with the Region of Peel to assist with the development of this program.

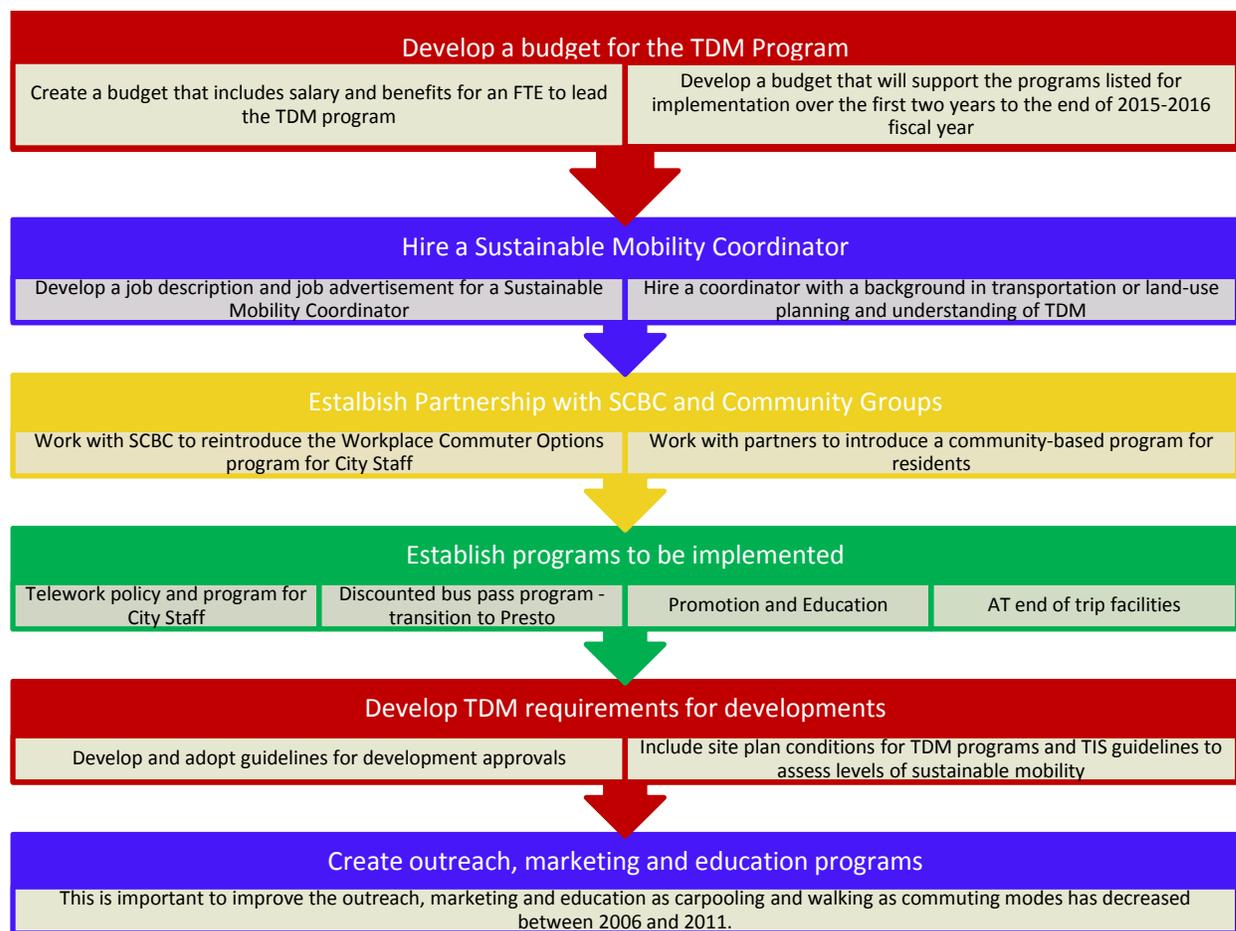


B. Year 2 (2016-2017)

1. Development of the detailed TDM strategy and the Action Plan – this will provide greater detail for TDM program development and enable the City to plan for future programs and endeavours that relate to sustainable transportation.
2. Develop incentives for internal Commuter Workplace Program – this can include car and bike share programs that will enable staff to have an alternative to their own vehicle for work day travel.
3. Continue the working relationship with Brampton Transit as transit service is the cornerstone of a TDM program. This will also include making sure that the first mile / last mile concept is addressed.
4. Continue with work established in year one.

The work to be undertaken in Year One is summarized in Figure 6.

Figure 6 – Outline of Work to be undertaken in Year One





5.2 Partnerships

Developing relationships with partners is essential to the success of a TDM program. These programs cannot be developed nor can they be successfully delivered in isolation. Therefore, the City of Brampton should continue to work with existing partners and form new alliances to ensure that the promotion and implementation of sustainable mobility is part of the culture in the City. It can be assumed that the nature and number of partnerships will change over time as the programs become more engrained in City culture and that of the general community.

The following list briefly describes potential partnerships:

1. Other city departments – to coordinate the internal program and to work together to achieve development goals;
2. Region of Peel – Planning, Transportation Planning (TDM), Public Health
3. Smart Commute Brampton – Caledon;
4. City of Vaughan – coordinate with activities that are ongoing within employment areas that border both Cities;
5. City of Mississauga – coordinate with activities and plans ongoing in areas adjacent to City of Brampton;
6. Work places – partnership with SCBC and TDM staff;
7. Community groups – non-commute travel – work with residents to encourage sustainable modes; and
8. Schools and school boards – School travel planning.

5.3 Monitoring and Evaluation

The evaluation of a TDM program requires two things: baseline data, which provide information on travel behaviour at the commencement of the program; and follow up data. These data can be collected through work place surveys, community surveys or data collected by others such as the National Household Survey and the Transportation Tomorrow Survey. As well, data can be collected from transit ridership statistics, monitoring of bicycle and walking activity and the use of facilities such as bicycle racks. While these are more labour and time intensive, important data can be obtained. Regular follow-up surveys and data collection activities are required as a means to show how travel behaviour is changing over time.

Regular collection and thorough analysis of data will provide an overview of the efficiency and effectiveness of the transportation network. An effective and sustained monitoring program will be critical to ensuring that over time, the transportation goals will be achieved.



The TDM program can be evaluated through performance indicators and monitoring activities. Both are outlined below.

5.3.1 Performance Indicators

The success of the transit services, ridematching, workplace programs among others can be determined by how well targets are met. Modal shares can indicate the impact of various transit services on the commuting behaviour. The percentage of commuters using ridematching services can also be an appropriate target and for individual work places the target could be based upon the number of carpools requesting carpool parking space passes. Other targets such as increasing the number of commuters traveling by bicycle or walking are also important. The use of monitoring techniques can provide insight into how well the targets are being met.

Other targets that the city can adopt include reductions in overall Greenhouse Gas Emissions and Vehicle Kilometres Traveled. These targets require more work and an understanding of the impacts that various modes have on the environment.

5.3.2 Data collection

There are various methods of data collection that can be used to assess the changes in the uptake of sustainable modes. These include:

- > Collecting data on vehicle classification (include cycling, walking and transit) and occupancy counts at key locations in the City;
- > Transit ridership data;
- > Transit service (routes and types of services);
- > Use of on-line ridematching program;
- > Transportation Tomorrow Survey;
- > Work place surveys;
- > National Household survey; and
- > Observations.

Data collection needs to occur on a regular basis. Once the baseline data has been obtained, the data should be collected regularly to monitor the success of the various programs. However, not all of the monitoring programs will apply to all TDM programs. The overall changes in modal share and uptake in the use of sustainable modes can use large-scale surveys, traffic counts and ridership data for transit. Workplace surveys can be used to evaluate the effectiveness of the education and promotional activities. The use of on-line ridematching



can be monitored through the changes in the use of the program. All methods are critical to understanding the impact that TDM has on travel activity and reducing automobile dependency.

6. RECOMMENDATIONS

The following recommendations will assist in the implementation and long-term success for the TDM program. The recommendations have been grouped All of the policy recommendations should be considered for inclusion in the Official Plan and the Transportation Master Plan Update. The City of Brampton shall:

6.1 TDM Recommendations for the Official Plan

1. Ensure, as part of the development process, that information is provided to new owners, residents, tenants and leaseholders related to the adjacent sustainable transportation services and infrastructure being implemented within the project and available throughout the City, such as transit stops and schedules, and Active Transportation facilities on and off street;
2. Develop a partnership with Peel Public Health to further explore the health development index and further integrate transportation and public health policies and programs;
3. Develop a more detailed TDM Plan and Action Plan that has contextual Brampton solutions and that includes the exploration of monitoring and evaluation tools to ensure that there is sufficient support and funding for the duration of the TMP and the TDM Strategy. The key component to both the TDM Plan and the Action Plan will be the hiring of a Sustainable Mobility Coordinator and situating the position within the Transportation Planning team. Champions from senior staff will also be needed to provide continuity of support and be a voice for the program;
4. Incorporate TDM policies related to the development and implementation of TDM into the Transportation Master Plan, the Official Plan and all Secondary Plans. The policies should include developing a comprehensive TDM Plan and TDM Action Plan; creating TDM-based development guidelines for development applications including site plans and guidelines for traffic impact study reports; and
5. Develop parking regulations that support TDM programs. This will require a Parking Study to be developed, which should be undertaken within 2 years of the Sustainable Mobility Coordinator being hired.



6.2 TDM Recommendations for the TMP Update

1. Hire a staff member whose role will be to lead the TDM program for the City of Brampton and work with Smart Commute Brampton – Caledon and other stakeholders;
2. Work with the Region of Peel TDM staff to provide assistance in the development of engagement techniques, develop partnerships and coordinate TDM programs and policies;
3. Continue to work with Smart Commute Brampton – Caledon to promote TDM internally and be a partner in the development of other TDM programs such as marketing for ridematching services and the emergency ride home program;
4. Work with Brampton Transit to promote new and expanded transit services as outlined in the Transit Service Plans. Programs should be coordinated as new services are implemented such as new Züm Corridors, new Light Rapid Transit (LRT) and BRT services and services to new communities, as shown in the Future Transit Services Plans; Continue, as stated in the *Brampton Transit Five Year Business Plan (2013-2017)*, *Service Plan Working Paper*, to establish transit service early in the development process, including new or extended routes into new areas. The new service should be preceded by information to developers and new residents about the service. Residential outreach programs, once established by the City should be included in these areas;
5. Develop a detailed action plan that is in line with the phasing of the TMP Update. This should occur after the initial short term actions are initiated – staff and budget and initial partnerships. As well, the implementation of the development check list for new developments should be outlined;
6. Engage appropriate partners and stakeholders to undertake residential travel planning programs and develop a funding source;
7. Work with post-secondary institutions such as the Sheridan College campus to develop campus-based TDM programs; and
8. Carry out the implementation and monitoring of the TDM program as outlined in Sections 5 and 6 of this strategy. As the program matures, the City should further expand both programs. Both will need to be adaptable to new initiatives and population and employment growth.



6.3 TDM Toolkit Recommendations

1. Revise the Brampton Work Place Commuter Program
2. For each new transit service that is added, the Sustainable Mobility Coordinator should work with Brampton Transit staff to develop marketing and promotional materials to encourage residents and workers to use the new services and be early adopters
3. Continue to require the concurrent delivery of transit service with new developments
4. Develop and promote an emergency ride home program for those who use sustainable modes to travel

6.4 TDM in Planning and Development Applications Recommendations

1. Develop customized tools to incorporate TDM into development applications
2. Refine a TDM checklist for use in the development application review process.
3. Develop conditions for the inclusion of TDM in development approvals.
4. Support the development of new communities which are based on similar principles as Mount Pleasant Village
5. Reduce parking regulations to maximums and consider minimal or zero parking requirements in areas near transit nodes, as a means of controlling the number of cars in an area



7. REFERENCES

1. BA Group for ACT Canada. *TDM Supportive Guidelines for Development Approvals*, December 2008.
2. Cambridge Systematics, Inc., LDA Consulting and Southeastern Institute of Research for Alexandria, Virginia. Long-Range Transportation Demand Management (TDM) Plan 2011-2036: Local Motion. February 2011.
3. City of Brampton <http://www.brampton.ca/EN/Business/edo/business-knowledge/Pages/welcome.aspx>
4. City of Brampton: <http://www.brampton.ca/en/Business/planning-development/projects-studies/TransportationandTransitMasterPlan/Pages/transportation-transit-master-plan.aspx>
5. City of Brampton. 2006 Official Plan. Office Consolidation November 2013.
6. City of Hamilton. <http://www.smartcommutehamilton.ca/en/home/what-smart-commute-hamilton>
7. City of Kitchener.
<http://www.kitchener.ca/en/livinginkitchener/TransportationDemandManagement.asp>
8. Dillon Consulting et al for City of Brampton. Brampton Transit Five Year Business Plan (2013-2017) – Service Plan Working Paper. January 2013.
9. Halifax Regional Municipality: <http://halifax.ca/TDM/>
10. IBI Group and Noxon Associates for the City of Hamilton. Development of Policy Papers for Phase Two of the Transportation Master Plan for the City of Hamilton: Travel Demand Management (TDM) Policy Paper. January 2005.
https://www.hamilton.ca/NR/rdonlyres/E055AFDC-2C92-45F8-8046-CEBB3B325C17/0/Travel_Demand_Management_Part_A_16281.pdf
11. IBI Group and UrbanTrans North America. City of Kitchener TDM Plan. Fall 2010.
12. Labrecque, Dan. Report to Peel Regional Council “Five-Year Transportation Demand Management Plan (2014-2018). June 17, 2014.
13. Mackenzie-Mohr, Doug. *Fostering Sustainable Behaviour: Community-Based Social Marketing*. From website: <http://www.cbsm.com/public/world.lasso>
14. McMaster University and St. Michael’s Hospital Centre for Research on Inner City Health for Peel Public Health. Final Report: Peel Healthy Development Index. December 2009.
15. Medical Officers of Health in Hamilton, Peel Region, Simcoe Muskoka and Toronto. *Improving Health by Design in the Greater Toronto-Hamilton Area*. May 2014 – 2nd Edition.
16. Metrolinx: The Big Move: <http://www.bigmove.ca/>
17. MMM Group and Noxon Associates. City of Thunder Bay: travelSMART: Transportation Demand Management Plan. December 2011.
18. Ontario Ministry of Infrastructure. Places to Grow: <https://www.placestogrow.ca/index.php>
19. Region of Peel: <http://www.peelregion.ca/planning/transportation/trans-demand-summary.htm>
20. Region of Peel. Official Plan, Working Draft Office Consolidation. February 2013.
21. Smart Commute Brampton – Caledon: <http://www.smartcommutebc.ca/en/home>
22. Transport Canada: <http://data.tc.gc.ca/archive/eng/programs/environment-utsp-tdmintro-1039.htm>
23. Transport Canada: <http://data.tc.gc.ca/archive/eng/programs/environment-utsp>
24. UrbanTrans Consultants, Inc. for Region of Peel. Five Year TDM Plan 2014 – 2018. May 2014.
25. UrbanTrans Consultants, Inc. for Region of Peel. TDM Social Marketing 2013 Strategic Update.
26. UrbanTrans Consultants, Inc. for Region of Peel. Transportation Demand Management Study Report. June 2004.



Appendix A. Summary of Peel's Healthy Development Assessment



Summary of Peel’s Healthy Development Assessment

Table 2 – Summary of Peel’s Healthy Development Assessment (recommended Targets)

	Element	Healthy Targets / Ranges*
1.	<i>Density</i>	Residential Density: <ul style="list-style-type: none"> • 35 dwelling units per hectare • 35 to 85+ units per hectare for credits Commercial and Mixed-use Density <ul style="list-style-type: none"> • 0.7 FSI / FAR • 0.7 to 3.0 + FSI / FAR for credits
2.	<i>Service Proximity</i>	Proximity to Services: <ul style="list-style-type: none"> • At least 75% of residential units must be within ≤ 800m of ≥ 5 neighbourhood public services and ≥ 7 neighbourhood retail services Proximity to Employment: <ul style="list-style-type: none"> • Centre of primarily residential communities must be within ≤ 800 m of the same number of full-time jobs as 50% of the number of dwelling units. • Centre of primarily non-residential communities must be within ≤ 800m of the same number of dwelling units as 50% of the number of full-time jobs Other Service Proximity Measures <ul style="list-style-type: none"> • Consideration: access to sufficient number of jobs via transit • Credits address higher targets for the prerequisite measures as well as proximity to transit stops and % of dwellings within a 30-minute transit trip of 60,000 to 140,000 jobs
3.	<i>Land Use Mix</i>	Heterogeneity of Land Use <ul style="list-style-type: none"> • Credit earned for providing new neighbourhood services, outdoor public space, and a mix of housing types within 1km of the community centre Heterogeneity of Parcel / Building Use <ul style="list-style-type: none"> • Credit earned for providing pedestrian uses in commercial buildings, mixed-use buildings and multi-family residential buildings Mixed Housing Types <ul style="list-style-type: none"> • Credit earned for providing a mix of housing types while limiting large lot detached homes
4.	<i>Street Connectivity</i>	Intersection Density <ul style="list-style-type: none"> • 75 intersections / km² (average) • 75 – 150+ intersection / km² (average) Block Size <ul style="list-style-type: none"> • Max. block size: 1.5 ha (not an average)



	Element	Healthy Targets / Ranges*
5.	<i>Road Network and Sidewalk Characteristics</i>	<p>Complete Streets</p> <ul style="list-style-type: none"> All new local roads ≤ 40km/h All new non-local roads ≤ 50 km/h According to traffic speed, communities must meet the requirement for number and width of sidewalks, vehicular lanes, and bike lanes <p>Other road / sidewalk characteristics measures</p> <ul style="list-style-type: none"> Credits earned for traffic calming, lowering speed and creating woonerfs, implementing various cycle-friendly designs, and incorporating pedestrian-friendly (safe and aesthetically-pleasing) lighting
6.	<i>Parking</i>	<p>Parking: Key Recommendation</p> <ul style="list-style-type: none"> Recommendation to eliminate minimum parking requirements <p>Other Parking Measures:</p> <ul style="list-style-type: none"> Credits earned for unbundled parking, shared parking, market rate parking zones, increased parking difficulty, parking location in rear and side of buildings, and limiting parking in front setbacks, in particular
7.	<i>Aesthetics and Human Scale</i>	<p>Setbacks:</p> <ul style="list-style-type: none"> Note that setback requirements in the index are expressed as maximums, whereas setbacks in zoning by-laws are set as minimums Maximum setback ≤ 7.6 m for detached and semi-detached residential structures Setback ≤ 4.6 m for attached and multi-family residential structures Setback ≤ 3 m for commercial and light industrial structures ≥ 70% of front façades and main entrances of commercial / mixed use are flush with sidewalk Main entrances of residential, commercial and light industrial cannot front onto parking lots <p>Other Aesthetics and Human Scale Measures</p> <ul style="list-style-type: none"> Credits earned for building height to street width ratios between 1.3 and 3.1, limiting blank walls, encouraging transparent glass facing public space, encouraging streetwalls and having a high percentage of streets with street trees

The development of the targets is based upon the Region as a whole and not the individual municipalities. Only the suggested targets have been included. For the full report, which includes the full summary table, please refer to: *Peel Healthy Development Index*, December 2009, which can be found at: <http://www.peelregion.ca/health/resources/healthybydesign/our-initiatives.htm>.

*More detail available in the Report: *Peel Healthy Development Index*



Appendix B. Development Approval Guidelines for Transportation Demand Management



Development Approval Guidelines for Transportation Demand Management

The table below is the Urban Context Classification from ACT Canada’s *TDM Supportive Guidelines for Development Approvals* (October 2008). This particular classification fits the characteristics of Brampton at this time. Over time, the classification may change.

	Class 2 Medium Density / Moderate Congestion Approach: <i>TDM Moderate</i>
Density	Medium to high density
Mobility	Mixed presence of mobility choice in area
Congestion	Moderate to heavy during peak periods
Mixed Use	Moderate amounts of mixed uses
Transit Services	Bus-based, with headway of 20 – 30 minutes during peak periods
Modal Split	Car-oriented, typical transit mode split 10 – 15%
Population Range	100,000 to 600,000
Examples	Hamilton ON, Halifax NS, Regina SK, Mississauga ON, London ON, Kelowna BC, Laval QC, Surrey BC

The development approval process includes the assessment of traffic levels that will result from a proposed development. The most common applications that are subject to such assessments are site plans and plans of subdivision. The guidelines that follow can be used in the overall evaluation of traffic levels and how the use of sustainable transportation can mitigate the transportation impacts of a development. The checklists should be included in areas where increases in traffic could result in safety issues and the possible need to expand road infrastructure. They are not required for all developments.

The following TDM checklist can be included in a traffic impact assessment report. It has been adapted from: the ACT Canada Sample Travel Demand Management (TDM) Implementation Checklist – Moderate Approach, which is included in the *TDM Supportive Guidelines for Development Approvals* (October 2008). This checklist can be adapted to meet more specific needs and changes occur to the TDM program over time.



Sample TDM Checklist

Development Application No
 Applicant:

Date:
 Planner:

A	Sustainable Modes	Yes	No	N/A	Comments
A-1	Development is near to cycling and pedestrian facilities (on-road and off-road)				
A-2	Development is within 500 m of transit stop				
A-3	Development is within 800 m of Rapid Transit				
A-4	Good pedestrian connectivity between development and transit				
A-5	Development includes secure bicycle parking and shower / locker facilities for staff / residents				
A-6	Is bicycle parking provided for visitors near to main entrance?				

B	Parking	Yes	No	N/A	Comments
B-1	Provides no more than minimum required in Zoning By-law?				
B-2	Are carpool parking spaces indicated?				
B-3	Are car share parking spaces indicated?				
B-4	Is priority parking provided for other sustainable modes?				
B-5	Is shared parking / off-peak parking supported?				

C	TDM Measures	Yes	No	N/A	Comments
C-1	Has staff approached applicant about developing TDM program or joining TMA (SCBC)?				
C-2	Has parking been unbundled from the cost of a unit and charged separately?				



C-3	Will unit owners (in condominiums) be provided with a year-long transit pass upon occupancy?				
C-4	The building owner / occupant agrees to provide reduced cost for users of car / van pools				
C-5	The owner / occupants agree to become part of Smart Commute Brampton Caledon				
Totals (final score)					

The scorecard values:

Final Score	Rating	
91 to 100%	*****	TDM Supportive Development
81 to 90%	****	
71 to 80%	***	
61 to 70%	**	Non-TDM Supportive Development (need to review and upgrade TDM strategies and sustainable mobility options)
50 to 60 %	*	
Less than 50%		

The rating can be used as part of the overall assessment of the traffic impacts from the development and to mitigate the impact of potential increases in traffic levels. Where needed, the TDM programs can be enhanced and developed to reduce traffic impacts.

Adapted from: TDM Supportive Guidelines for Development Approvals: A handbook for practitioners. Prepared for: the Association for Commuter Transportation of Canada. By BA Consulting Group. October 2008