# 1. INTRODUCTION

## 1.1 Purpose of the Transportation and Transit Master Plan

Brampton is a rapidly growing urban municipality, prominently located within the Greater Toronto Area. Because of the City's vitality, congestion is being increasingly experienced by Brampton residents, visitors and businesses. As with the rest of the GTA, this situation is expected to continue into the future.

In the summer of 2002, the City initiated the Transportation and Transit Master Plan Study (TTMP) to define a long-term multi-modal transportation strategy to guide the City's growth over the next 30 years. The overall goal of the TTMP is to establish a framework for guiding future transportation decisions. The TTMP will set out policies and programs to support the long-term transportation vision for the City, and will include an implementation strategy based on targets established for 10-year horizon intervals. The TTMP will also set out a Short-Term Action Plan for the next five years, to address current needs and deficiencies, and to begin working towards the long-term vision.

**The fundamental strategy of the TTMP, and the long-term vision, is to plan for a balanced road and transit system.** The current system is heavily reliant on the private vehicle, but such reliance will be increasingly less feasible as Brampton continues to grow, and policies and programs are needed to establish a balance. It is not the goal of the TTMP or the long-term vision to eliminate transportation activity, but rather to provide the tools needed to effectively manage it as the City grows. The TTMP's recommendations are in compliance with the strategic direction outlined by the City's strategic Plan which includes a "Modern Transportation System" as the first of "Six Pillars Supporting Our Great City".

## 1.2 Why is a Transportation Plan Needed?

At a basic level, the TTMP is needed to provide input to the City's Development Charge By-law, the Official Plan and future Environmental Assessments.

The TTMP also aims to address the following basic issues:

- Coping with Growth
- Sustainability, Efficiency and Equity
- Containing Urban Sprawl and Promoting Quality of Life

The rationale for each principle is addressed below.

### 1.2.1 Coping with Growth

In April 2003, the City of Brampton adopted the Growth Management Program (GMP) which outlines the City's innovative and dynamic response to challenges and opportunities arising from high rates of growth. The GMP aims to co-ordinate infrastructure and growth prioritizing in a manner that maintains service levels and is financially sustainable.

The GMP could be described as the ensemble of the following key strategic components:

- A communication tool to provide timely, comprehensive, reliable and up to date population and employment information about current and forecasted growth levels and distribution, for planning and budgeting purposes;

- A mechanism to establish, implement and monitor service level targets and thresholds;

- An early warning system to identify instances where infrastructure programmed may not be synchronized with the growth forecast;

- A practical program that can be effectively implemented at various stages including the review and approval stage for individual development proposals.

The TTMP addresses the issues arising from the need for growth management by outlining the improvements for the road and transit networks in relation to population and employment forecasts.

### 1.2.2 Sustainability

Many Canadian urban areas, and the Greater Toronto Area (GTA) in particular, face challenging major transportation issues. These issues can largely be grouped into three broad, inter-related categories of sustainability, efficiency and equity:

- **Sustainability** involves the notion that we must meet our current needs without jeopardizing future generations' well-being. Short-term gain must not come at the expense of long-term, potentially irreversible loss. Major concerns in transportation that affect the long-run sustainability of urban systems include:
  - The excessive amount of carbon dioxide emitted by automobiles and other vehicles;
  - The excessive amount of other pollutants possessing direct and indirect health effects (carbon monoxide, nitrogen oxides, uncombusted hydrocarbons, particulate matter, etc.) emitted by automobiles and other vehicles. In fact, one-quarter of Greenhouse gas emission is generated from transportation;
  - The excessive loss of life, injuries and property damage which occur on the roadways; and
  - The consumption of land and disruption of habitat (both natural and man-made) by roads and other transportation facilities, and by the sprawling development which is facilitated by auto-dependent cultures and systems.

- **Efficiency:** Efficiency includes both the quality (i.e. level of service) and cost of transportation services provided to users of the system, as well as the cost-effectiveness of the investments in the transportation system. Specific issues include:
  - Ever-increasing congestion on the highways and streets, particularly in suburban regions;
  - Appropriate user fees, subsidies, etc. for various transportation services (both as a means of funding transportation services, and as mechanisms for efficient allocation of resources among users of the system and/or for controlling their travel behaviour in socially optimal ways); and
  - Appropriate funding mechanisms and investment levels for different transportation services.
- **Equity:** Equity issues include:
  - Mobility of people without a private vehicle (the young, the elderly, the economically disadvantaged etc.);
  - Mobility of the physically and cognitively disabled; and
  - The spatial distribution of benefits and costs associated with the transportation system across the urban area.

In Brampton, the equity issues related to mobility can be expected to increase over the next twenty to thirty years as the population ages. Residents and employees who are highly mobile now may not be at these future horizons. Brampton faces the choice of either planning to accommodate their needs or accepting that the City will not offer life-long mobility to many citizens.

The spatial distribution of transportation costs and benefits is a complex question, because of the hidden nature of many transportation costs and the difference in the City's ability to fund roads and transit through development charges. The temporal distribution of these costs should also be considered, in terms of a life-cycle assessment of the transportation network costs to the City, its businesses and citizens. At present, businesses bear the transportation cost of parking provision and development charges. Residents bear the cost of auto ownership and use. If gasoline prices escalate significantly (as can be expected, given that discovery of new oil reserves is shrinking) and auto insurance rates continue to rise, it will be increasingly difficult for Brampton residents to maintain their auto-based lifestyle. At that point, they may well ask the City for better transit service. If the road network is not designed to accommodate that enhanced transit service, the City's overall economy could be affected.

These issues illustrate the impacts which automobiles have in our society, and in turn, the role which alternative modes of travel (principally public transit) can play to shape our life as a whole and society in particular. Despite new automobiles being more fuel efficient than before, they still produce an enormous amount of pollutants directly endangering our health. The carbon dioxide generated by burning fuel is changing our global climate. Over 3,000 Canadians die and many thousands are seriously injured each year in automobile related accidents. The finite supply of productive farmland is being consumed by the ever increasing demands of automobiles directly due to roadways and parking facilities, and indirectly through the promotion of auto-oriented low-density suburban development.

#### *1.2.2.1 Current Trends in Transportation*

The following paragraph summarizes the current North American trends in transportation. They have been quoted from the Neptis Foundation report Travel in the Greater Toronto Area: Past and Current Behaviour and Relation to Urban Form, by Dr. Eric Miller and Dr. Amer Shalaby:

> *"It is difficult to see how one can look at our current levels and trends of automobile usage and believe that they represent a sustainable system for the long-run, given their high environmental, ecological and social costs. In addition, it is far from clear whether even the benefits of the automobile-based system are sustainable in the long run as the efficiency of the system is degraded by ever-increasing levels of congestion."*

Can technology "save" us? The same report goes on to note that:

> *"… While alternative fuel cars, etc. may eventually become technically and economically viable… such technologies will, at best, resolve or reduce some of the pollution problems, but will not necessarily address fundamental issues related to safety, congestion, and consumption of land, among others. Intelligent Transportation Systems… will not alter the fundamental land use – transportation dynamics currently driving the evolution of our urban systems… The role of telecommunications is far from clear... Work-at home arrangements, although growing rapidly, still constitute a very small proportion of the labour force and do not necessarily significantly reduce travel…"*

Thus, managing transportation demands is expected to continue as a challenge. Most of the cities in North America, including those in the GTA, have current trends that are heading in the "wrong direction" with respect to sustainability. These trends include:

- Increasing auto ownership levels, particularly in suburban locations outside the City of Toronto;
- Increasing individual trip rates, with this increase in daily trips per person occurring almost entirely as auto-driver trips. Vehicle occupancy continues to decline;
- Increasing suburbanization of population and employment into areas and forms of development which are less well served (if served at all) by public transit;

- Increasingly complex travel patterns, involving more trip–making for non-work/school purposes, more non-home based trips, and more travel outside of the morning and afternoon peak periods; and

- Transit, at best, maintaining a reasonably constant number of trips per capita, but losing modal shares as overall trip rates rise.

The combined result of these above trends is increasing auto dependency, congestion, and environmental degradation throughout most of the GTA.

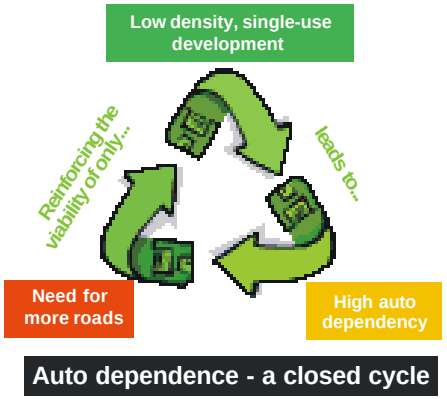
#### *1.2.2.2 Creating a Sustainable Future*

Notwithstanding the negative trends, the GTA (and the City of Toronto in particular) have shown some indications from which a more sustainable transportation system might yet be constructed. The following points are noted:

- Overall mode splits, and transit system revenue-cost operating ratios are extremely high by North American standards. The Toronto Transit Commission (TTC) provides a very strong example upon which to build a more sustainable, less auto dependent urban system across the GTA;
- The GO Transit system has been very successful in continuously attracting increasing number of commuters who live outside Toronto and work in the Toronto central area. While GO Transit ridership is small in absolute terms compared to the TTC ridership, it represents those riders who would be auto users in the absence of the GO Transit system;
- The continuous strength and vitality of selected nodes of development outside the Toronto Central Business District is critical to the ability to provide a strong, viable transit service; and
- Newer developments outside the City of Toronto are occurring at densities that are higher than North American norms, especially within well-defined travel corridors. Hence a potential exists to reinforce these patterns and to upgrade transit services within these corridors.

The GTA is now at a crossroads with respect to continuing the development of its transportation system. This crossroads is defined by the increasing incompatibility between auto-dominated suburban expansion occurring outside the City of Toronto, and fundamentally strong transit-oriented urban form within the City.

It is clear that low density, auto oriented suburban sprawl consumes increasing areas of land, creating more congestion and the "need" for even more roads. This decentralized development is not sustainable in the long-run, because of the congestion, pollution and other negative impacts generated by these roads, cars and related sprawl.



Auto dependence - a closed cycle

Currently many people seem to prefer a suburban, auto-oriented life-style. The political structures defining municipal governance in Ontario essentially require maximization of the property tax base, resulting in municipalities competing for population and employment. This is often detrimental to the region in the long run. A better awareness among the public, planners and politicians of the current trends and of their implications for the future must be developed.

The options available to move the GTA towards more sustainable transportation must include some combination of:

- Transit-supportive urban development, including: higher residential densities; high density employment/activity centres at key nodes within the transit network; and focussed population and employment development along well defined transit corridors;
- Reinvestment in transit infrastructure and services, particularly in areas in which land use and other factors make transit a viable alternative to the automobile;
- Use of road-pricing to include the social and environmental costs of auto travel, thereby making auto users conscious of the "true" costs of their actions;
- More extensive and aggressive use of parking charges and parking supply restrictions;
- Reform of tax laws, that at present, provide incentives for many people for auto use but which do not provide comparable incentives for transit use; and

- Promotion of sustainable modes of travel (transit, carpool, vanpool, walk and bicycle) wherever viable.

### 1.2.3 Urban Sprawl and Quality Of Life

#### *1.2.3.1 The Problem*

In general, North Americans are too sedentary, are more disease prone than ever and weigh too much. The focus to date has been on the issue of eating habits, but researchers have started to pay attention to the level of physical activity and environmental conditions as factors that may affect health conditions. It has been found that the design of our communities influences to a significant effect the physical activity and quality of living for the inhabitants of the community.

Sprawling communities are spread-out areas where homes are typically far from any other destination (even a simple trip to the "corner store" requires an auto trip), and often the only route between the two may be on a busy high-speed arterial road that may be unpleasant or even unsafe for biking or walking. Driving is the most convenient, hence the most common or default means to complete one's errands and discretionary trips. People are less likely to take the opportunity to walk, bicycle or take transit as part of their daily routine in such a community.

The present form of urban sprawl, once seen as an escape for the people with more disposable earnings, has given rise to communities that are not only inefficient but are also detrimental to its population, and the environment at large if sustained in the long run. Apparent problems associated with urban sprawl are:

**Low Physical Activity:** People living in sprawling communities are more likely to suffer from weight problems and other related diseases such as hypertension, because of reduced physical activity. A study done by Smart Growth America, the Surface Transportation Policy Project indicates that in New York County, NY, which is the most compact county in the US, the weight of the average person was 161.1 pounds. At the other extreme was the most sprawling county in the US, Geauga County, OH, where the weight of the average person was expected to be 167.5 pounds, a difference of six pounds between the two counties. Regardless of gender, age, education levels, and smoking and eating habits, the odds of being obese is higher in more sprawling communities. Researchers suggest routine physical activity in order to lower the body mass index (weight to

height ratio). Physical inactivity, obesity, and the resultant chronic diseases reportedly account for the second highest rate of premature deaths every year, second only to tobacco-related deaths.

**Health Outcomes from Air Pollution:** Any urban sprawl is directly related to higher automobile usage. A study by the U.K. Atomic Energy Authority has shown that per capita greenhouse gas emissions by an automobile are the second highest, after those of an aircraft. This also holds in the case of other harmful gases. Health effects from ground level ozone, sulphates and particulates (which primarily are from the road transportation sector) at levels that occur in Canada are sufficient to induce poorer health, reduced exercise capacity, increased hospital admissions and possibly increased mortality. Studies in the United States have estimated the following annual health outcomes of air pollution from highway vehicles in 1991:

- Approximately 20,000-46,000 cases of chronic respiratory illness;
- Roughly 50-70 million respiratory-related restricted activity days;
- An estimated 530 cases of cancer from air toxins associated with highway use;
- An estimated 40,000 premature deaths in the United States, of which 33,000 can be attributed to particulate matter: a number comparable to the number of deaths from motor vehicle accidents.

**Other Impacts:** Other impacts that can be associated with deterioration of the quality of life due to urban sprawl are as follows:

- Increased social isolation, due to the barrier effects of transportation infrastructure, and from everyday activities for those who do not have direct access to cars;
- Increased psychological stress due to increased time and distance required for commuting travel, congestion, and cost incurred in acquiring and maintaining an automobile;
- Increased economic costs for both the consumer and service provider; and hence reduced economic efficiency and loss of municipal and regional competitiveness.

#### *1.2.3.2 Seeking Solutions*

From promoting health consciousness at the individual level to a cleaner environment at the global level, the City of Brampton can play a significant exemplary role in planning a sustainable land use and transportation system. A positive step towards this

direction can be attained by promoting a biking, pedestrian, and transit-oriented lifestyle for the community. This will result in a more active and healthy community that depends less on automobiles, and achieves the recommended daily level of physical activity and improves quality of life. A transit, pedestrian and biking friendly environment is less polluted, and places fewer burdens on the environment. Various avenues have the potential to promote a more healthy and active style of living. Some of these are as follows:

Moving to sustainability in transportation

a) **Invest in Bicycle and Pedestrian Infrastructure.** City initiatives, public-private partnerships and strategic funding mechanisms can assist in creating biking and pedestrian trails. Compact and moderately self-sustaining neighbourhoods would promote a more bike and pedestrian friendly atmosphere;

b) **Calm Traffic.** Various techniques are available to slow traffic and give pedestrians and cyclists priority on neighbourhood streets. Narrowing streets at intersections, creating raised crosswalks, and installing traffic circles make streets safer and more pleasant for pedestrians;

c) **Create Safe Routes to School.** Targeted to mitigate childhood obesity, the City can work with the school boards in creating Safe Routes to School programs, that produce a safe walking and biking environment for trips to school, and encourage children and their parents to get into the habit of walking;

d) **Build Transit-Oriented Development.** Building on the *Accele*RIDE Bus Rapid Transit initiative, the City can build transit-oriented development by concentrating a mix of housing and businesses around train or bus stations (as envisioned for the Mount Pleasant GO station precinct in Fletcher's Meadow). A concentrated development oriented to transit is a design solution that can promote walking and biking to and from transit stations or stops. The City should embark on transit priority measures to make transit time competitive with automobile travel. An integrated intermodal transit provides efficient service and is hence more attractive to its users;

e) **Retrofit Sprawling Communities.** The City can create or require pedestrian cut-throughs in neighbourhoods that will allow people living in cul-de-sacs to reach shops, parks and offices on foot. Promoting a mix of uses or redevelopment of existing sites, such as shopping malls that are isolated from neighbourhoods by expansive parking lots, or re-imagining large office buildings to hold apartments and businesses as well as shops, can promote less automobile usage and more physical activity;

f) **Revitalize Walkable Neighbourhoods.** Many downtown areas, main streets, and community centres have the attributes of a walkable, bikeable community but they lack economic investment. The City of Brampton can review if any neighbourhoods can be revitalized through commercial investment, by bringing unused or vacant properties back to productive use, and by creating new housing for a mix of income levels;

g) **Educate and Encourage.** It is critical to impart the knowledge of actions that can be taken to encourage sustainability, the costs and benefits of those actions, benefits of physical activities etc. People should be made aware of the purpose of new developments and encouraged to utilize these benefits. Several other policies and programs can also encourage reduced automobile usage: for example walk-in rather than drive-through eateries; programs that promote people's active participation for betterment of the community; and promotion of biking as a "trendier" alternative to cars to the young generation;

h) **Manage Travel Demand.** A wide range of options is available. For example, the City can promote travel demand management by providing incentives to institutions with work-from-home opportunities. Organizations in the City could support their employees in travel demand management via subsidized transit passes, carpool-only parking lots, etc;

i) **Intermodal Parking at Transit Stations.** The City can provide separate and secure bike parking areas in major transit stations, and separate bike racks on transit buses; and

j) **A Private Parking Policy** that discourages long-term parking downtown, supports short-term parking for customers, provides street-reserved parking for residents and uses tax policy to discourage transformation of vacant land into outdoor parking.

#### *1.2.3.3 Conclusion*

While automobiles are a part of life and no city can be built without building proper access for automobiles and trucks, a multi-modal solution is intended to promote environmentally friendly options in transportation and the choice of healthy living. The way the City of Brampton and its communities are built will affect how sustainable the City is in the long run, how active its citizens will be, and how big a burden they will be on the health system. Communities in North America are beginning to take proactive approaches to make it easier for their residents to travel by transit, on a bicycle or on foot. This approach by the City of Brampton will help its residents lead healthier and happier lives.

## 1.3 The TTMP Study Process

The TTMP study included a consultation program to involve the public. The study has followed the "Master Planning Process" as set out in Ontario legislation for **Municipal Class Environmental Assessments (EA)**. This process integrates the planning of municipal infrastructure requirements for existing and future land use, with the principles of Environmental Assessment Planning, which include:

- Consulting with affected parties early and often;
- Considering a reasonable range of alternatives;
- Identifying and considering the effects of each alternative on all aspects of the environment;
- Evaluating the alternatives systematically to determine their net environmental effects; and
- Providing clear, complete and traceable documentation of the planning process.

The preparation of this TTMP thus meets the requirements of both the Ontario Environmental Assessment (EA) Act and the Planning Act. More detailed investigations are still required to fulfil consultation and documentation requirements. The TTMP will be used to support future environmental assessments for specific transportation infrastructure improvements, in terms of Phases I and II of the class EA process, identifying needs, opportunities and alternatives.

The TTMP does not require approval under the *Environmental Assessment Act*, although the projects recommended by TTMP must fulfil all appropriate EA requirements.

The TTMP is also based on principles of "Universal Accessibility", which comply with the Ontarians with Disabilities Act.

## 1.4 TTMP Organization

**Figure 1.1** outlines the project organization. The Steering Committee was composed of senior staff of the City, Councillors and the Mayor. The Technical Advisory Committee was composed of representatives of the Region of Peel, GO Transit, the adjacent municipalities and the Ministry of Transportation.

The project team was comprised of staff of the relevant City departments and the consulting team. A collaborative process was followed where possible by the Team.

Public input took the form of two-way dialogue with the project team (via ongoing consultation through the website and informal communications) and with the Steering Committee (via the public meetings).

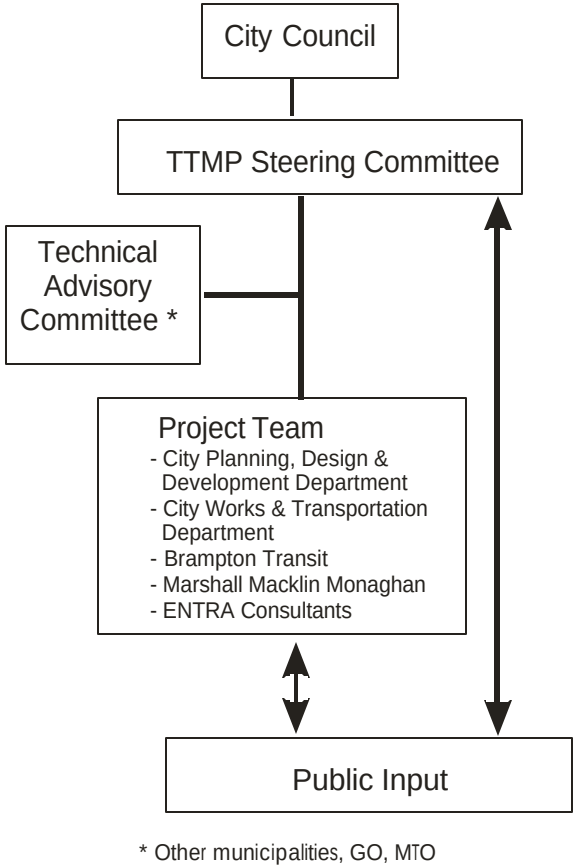



**Figure 1.1 - TTMP Organization Chart**

## 1.5 Public Consultation

Prior to the TTMP initiation, a survey entitled "Residents' Attitudes toward City of Brampton", was conducted by Environics Research Group Limited from October 29 to November 18, 2002. A total of 1,014 residents of the City of Brampton participated in this survey. The following are the highlights of the survey:

- Traffic is the top issue; its importance has grown steadily since 1998. Transit and development are also key issues;
- Traffic and transit are the top two most important problems facing Brampton today.

For transportation and works services, the majority are satisfied with all areas except public transit (one-third volunteer they don't use this service). Four in ten are dissatisfied with snow clearing and public transit; three in ten are dissatisfied with on-street parking restrictions. Satisfaction is holding in all areas except public transit.

One-third of all residents use public transit. Nine in ten GO Transit users also use Brampton Transit, but just half of Brampton Transit users ride the GO. A slight majority of Brampton Transit users is dissatisfied with service in general. More than eight in ten users are satisfied with the cleanliness of the service, but just one-third are satisfied with frequency of service.

This survey was one of the motivations in initiating the TTMP.

Three public consultation sessions have been held as part of the TTMP. At the first (held at the project outset), the public defined their concerns. These included challenges such as:

- Traffic congestion and time of travel;
- Public transit deficiencies; and
- Travel on Highway 410 and Bovaird Drive.

Needs expressed by the attendees included:

- Roads widenings and extensions;
- Brampton Transit/GO Transit service improvements;
- Traffic operational improvements (mostly in terms of signal coordination, access and traffic calming);
- Development hold-backs and better relationship between planning of transportation infrastructure and development; and
- Bike lane and carpool/bus lanes.

The second session was held at the stage of defining long-term options. The public were asked for their opinion on strategic choices for the Brampton transportation system, between the status quo (i.e. road-based planning); balanced multi-modal strategy, and a "transit-first" option. The public supported the balanced multi-modal strategy.

The response at the third session (at the stage of draft recommendations) confirmed that the TTMP recommendations are appreciated by the residents. Their desire is to start the TTMP actions immediately and initiate the steps.

The details of the Public Consultation Meetings are shown in **Appendix A**.