EXECUTIVE SUMMARY

This report documents the current transportation system, to serve as the starting point from which future improvements and modifications can be identified. To understand the performance level of the existing transportation system, it is necessary to review all components.

Existing Conditions

The Official Plans of the City of Brampton and Region of Peel provide the basic context for this project. These Plans provide an appropriate foundation of policies on which to develop a multi-modal transportation system for the City.

The review of **existing travel patterns** shows that Brampton is closely tied to adjacent municipalities, including Mississauga, southern York Region and the City of Toronto. Many Bramptonians work outside the City, and Pearson International Airport is a major employment zone. The vast majority (80 percent) relies on private vehicles for travel to work and other trip purposes. Brampton has a high percentage of trips made on foot or by bicycle (13 percent); this is higher than many municipalities in the Greater Toronto Area. Many Brampton streets also exhibit high levels of truck traffic, reflecting the importance of goods movement in the City.

The recent rapid pace of growth in the City has strained the ability of the road system to meet demands. Areas where the system is experiencing demand close to capacity include the boundaries with Mississauga (the Highway 10/410 corridor) and Vaughan (the Highway 407/7/Castlemore corridor). Steeles Avenue, Queen Street, Bovaird Drive and Airport Road are key links experiencing high demands. Areas of concern include the Four Corners at Queen/Main and the Trinity Common Mall area on Bovaird Drive at the Highway 410 ramp terminal.

Transit Services Review

Transit in Brampton is provided on many levels. Brampton Transit provides fixed routes throughout the urban area of Brampton as well as connections to Mississauga, Vaughan, and Toronto to accommodate a service population of 321,265. Brampton Transit provides 34 fixed routes using 85 standard buses, 27 low floor buses, and one double-decker bus. Brampton is also served by GO rail, on the Georgetown line, and by GO bus services.

Key facts about Brampton transit's role and performance are as follows:

- **Ridership:** Ridership levels have been steadily growing in Brampton since 1994
- **Revenue and Cost:** There has been a 49 percent increase in the net direct operating cost per capita between 2000 and 2001. The decline in cost recovery over the past year can be attributed largely to the increase in costs as opposed to a decrease in revenue. Proportional

growth in transit revenues in the previous five years between 1996 and 2000 have either exceeded or equaled the proportion of growth in operating costs. However, between 2000 and 2001, the situation changed significantly, with transit revenues increasing by only 7 percent and transit operating costs increasing by 20 percent

- **Peer Group System Descriptions:** Brampton's 2001 transit service area population is about 320,000, which sits in the middle of its peer group. The system carries about 7,100,000 revenue passengers per year, ranking fourth, below the peer group average of about 10 million. Brampton uses 113 buses, below the group average of 136. However, based on population per bus, Brampton ranks last in terms of resources used to serve ridership. The population per bus in Brampton is about 2,868, well above the peer group average of 2,100.

  Brampton Transit has the lowest passengers per capita in its peer group (22 pax/capita), 14 less than the group average. Thus, while the system is running cost effectively, it is not attracting the ridership that systems of similar size are. Brampton Transit is addressing this by pro-actively introducing services in developing areas where existing populations do not warrant service. This is a laudable decision to lead development and establish the presence of transit in new areas, in a plan to build on ridership as the area approaches build-out and hence reduce auto dependence.

  Brampton Transit ranks last in its peer group in passengers per hour. This implies that the service in Brampton is not effective or attractive to choice riders. However, providing additional service alone may not increase the effectiveness of the service. Much of the land use in Brampton, including employment destinations as well as densities will have as strong a bearing on the effectiveness of the service as will the level of service.

Growth Trends and Projections

The City is experiencing high growth in population and employment. Over the next 30 years, population and employment levels are forecasted to double, based on the City's analysis. The 1999 Office of the Greater Toronto Area Population and Employment Forecast provides similar projections. By the year 2031, the population of Brampton is expected to double to 680,000 and employment is expected to approximately double, to 292,000.

These projections of very high growth, combined with the level of auto dependency and low vehicle occupancy in the City, indicate a high potential for significant growth in travel demand, particularly in the form of single occupant vehicle trips.

The jobs per capita ratio in the City of Brampton is 0.36, compared to the GTA average of 0.50. This indicates that effectively serving home-work trips by local transit will be a challenge that the City must address.

Public Input from the Mayor's Town Hall Meeting on Transportation

This meeting was held at City Hall on Wednesday, October 23, 2002. Over 200 people were in attendance. Questionnaires completed by the attendees showed the following results:

- **Brampton residents prefer to drive.** Almost 90 percent indicated that they drive more than four times per week, almost seven times more than transit usage for the same period
- **Despite having access to public transit, the majority of residents do not use it.** While more than three in four recipients (77%) have access to public transit, less than one in five (17%) use it in an average month
- **Walking and cycling are important modes of travel in Brampton.** About three quarters of recipients indicated they walk to destinations in the past month and one-quarter (25%) noted that they cycle.

Recipients expressed their **major transportation challenges** as follows:

- Congestion, time of travel and stress
- Traffic (mostly in terms of access and signals)
- Public transit improvement
- Highway 410 improvement
- Bovaird Drive improvement

Recipients expressed their preferred **major transportation improvements** as follows:

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

The public input will be addressed in the short-term action plan and long term planning.

Short-Term Action Plan

The report concludes with a short-term action plan to address the needs and deficiencies, and to take advantage of existing opportunities to improve the balance of transportation demands among modes. The City and Region have already programmed a number of road improvements that will address some current deficiencies.

Among the many priority items for the short-term action plan, one stands out for its potential to address a growing deficiency. The **extension of Highway 410 to Sandalwood Parkway, together with the completion of the missing link of Sandalwood Parkway** in this area, would

address many of the issues related to Bovaird Drive and Trinity Common. However, one lesson that the City can take from this area is that a strong plan for transit is important to avoid the pitfalls of a heavily auto-dependent city.

One opportunity stands out for improvement and balance of the system as well. This is the concept of **transit priority bus routes.** These can be the beginnings of rapid transit spines for the City, linking to York Region and the Airport via Queen Street, and connecting to Mississauga on Main Street/Hurontario Street.

Policy and program initiatives are also defined, focusing on support for alternate modes, and providing the opportunity for City staff to lead by example.

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FOREWORD

The City of Brampton is developing a Transportation and Transit Master Plan. The purpose of the master plan is to define a long-term multi-modal transportation strategy to guide the City's development over the next 20 to 30 years. It will include an implementation strategy and time frame together with priorities for short-term action.

This document summarizes the Assessment of the Existing Transportation System. It is intended to give a brief description of the City's demographics as well as the City's transportation patterns and system performance.

1. INTRODUCTION AND BACKGROUND

An assessment of the current transportation system serves as the starting point from which future improvements and modifications can be identified. To understand the performance level of the existing transportation system, it is necessary to review all components. These include: road and transit system usage; trip purpose and modal split statistics; travel behaviour patterns and truck movements.

The Official Plan, current development patterns and transportation desire lines will be discussed in order to define immediate and long-term strategies. In this document, recent and emerging trends in travel behaviour have also been considered, using information from the Transportation Tomorrow Surveys (TTS) and other sources. This is intended to broaden the discussion from existing conditions towards future conditions.

2. CONTEXT OF THE OFFICIAL PLANS

2.1 CITY OF BRAMPTON OFFICIAL PLAN

The City of Brampton Official Plan (1993, Office Consolidation 2000) outlines strategic goals for the City. These goals carefully balance economic growth and quality of life with the need to protect the environment and create healthy and prosperous communities.

Goals and Objectives

The Official Plan outlines a city structure and urban form development goals and objectives that govern the future urban pattern of the City. The goals and objectives include the following:

- *"To promote the intensification and improvement of the Central Area and its component areas as a major focus of commercial and community activity of all types for the residents of the City, and as an increasingly important location for regional activities related to other parts of the GTA*

- *To maintain a continuing commitment to the preservation, enhancement and development of the Central Area by guiding the locational planning and development of new, expanded and upgraded public and private uses and facilities of all types to appropriate component areas of the Central Area, and by providing the necessary infrastructure, economic development and marketing programs, and implementation tools to support this commitment.*

- *To plan other urban units as part of the long-range City structure concept, to fulfill various roles including districts, nodes and corridors in accordance with existing and projected growth patterns; and to establish general land use and design principles for each type and function of urban unit.*

- *To achieve and sustain a high quality physical environment for Brampton which is consistent with its role as a major urban center, and to establish overall city design principles to serve as the basis for guiding the development of this high quality physical environment."*

Development Nodes and Corridors

The Official Plan identifies the following key nodes and corridors, a key component in achieving the commercial employment and balanced growth objectives of the City:

- **Bram West & Bram East: "***Studies have identified strong potential for the Bram East and Bram West Districts to attract significant amounts of prestige industrial, manufacturing and distribution, and office uses. Business, professional and personal service and retail uses that support this role should be permitted and encouraged."*

- **Bramalea South Gateway: "***This node centered on Steeles Avenue at Bramalea Road has the attributes required; namely the adjacent Highway 407 and the Bramalea GO station, to attract regional scale office and service uses."*

- **Steeles Avenue Corridor: "***Steeles Avenue parallels Highway 407 through the easterly industrial areas of the city and has exceptional visibility and accessibility from Highway 407 as well as from Highway 410, Finch Avenue, Highway 427, and Airport Road. This corridor is particularly well suited to the attraction of prestige industrial, manufacturing, transportation and distribution uses, but also has a role to play in the accommodation of certain large scale retail facilities, service uses and office development."*

Transportation Networks and Policies

The Road and Transit Networks of the Official Plan are shown on the following pages.

Section 4.3 of the Official Plan deals with transportation. The section stresses the importance of establishing a greater role for public transit through planning for transit-supportive development. The relevant transportation objectives and policies are:

- *"To ensure the provision of adequate road, transit, pedestrian and bicycle links between Brampton and adjacent municipalities*

- *To promote a high standard of environmental management and aesthetic quality in the routing, design and construction of transportation and associated structures*

- *To establish a clear functional hierarchy of roads designed to support the urban structure, without disruption of local traffic*

- *To reduce those trips through the Business Retail Corridors which have neither origin nor destination in the corridor*

- *To encourage the reduction in private cars by accommodating facilities for other modes of travel such as carpooling, transit, cycling and walking*

- *To maximize the people moving capability of the road system by utilizing High Occupancy Vehicle (HOV) lanes where appropriate, and other traffic management strategies*

- *To support increased use of public transit and the transit trip share during the peak periods of travel to approximately 25 percent by 2021*

- *To monitor and manage land use designations and zoning that will support transit use and reduce traffic congestion*

- *To channel through movements of heavy trucks away from residential neighborhoods and major commercial areas, and encourage land uses that generate heavy truck movements to locate in the proximity of Provincial Highway access points and major arterials*

- *To encourage the sensitive expansion of Lester B. Pearson Airport subject to appropriate noise management measures*

- *To implement road and transit improvements only when needed and after detailed consideration of affected communities, land use, environmental factors and standards of traffic safety and efficiency."*

2.2 REGION OF PEEL OFFICIAL PLAN

Both the Region and the City are experiencing rapid population and employment growth. The Region of Peel Official Plan (Interim Office Consolidation 1998) outlines strategic goals for the Region. These are in general similar to those of the City. Transportation infrastructure of both the Region and the City needs to be complemented.

Objectives and Policies

Section 5.6 of the Regional Official Plan deals with transportation, addressing highway improvements, goods movements and transit enhancement. The relevant transportation objectives and policies are:

- *"To integrate the transportation system in Peel with the transportation plans of the area municipalities, neighboring municipalities and the province*

- *To encourage the Provincial government and neighboring municipalities to increase public transit usage and ridesharing as well as other travel demand management programs*

- *To encourage the area municipalities and the Ministry of Transportation of Ontario (MTO) to implement travel demand management strategies including car or van pooling and ride-share programs*

- *To support the identification by the area municipalities and the MTO, in cooperation with the Region, of opportunities for incorporating a bicycle route or route network into the transportation system in Peel*

- *To request the MTO, in cooperation with the GTA municipalities and neighboring municipalities, to provide an efficient and safe Provincial*

highway network in Peel that can accommodate regional and inter-regional travel demands at an acceptable level of service

- *To locate, where possible, activities generating substantial truck traffic near major roads or expressways*

- *To implement, in corporation with the area municipalities and the Province, the Region of Peel's High Occupancy Vehicle (HOV) Network 2021 on Regional roads and encourage the area municipalities to implement HOV facilities on roads under their jurisdiction*

- *To encourage the area municipalities to achieve a minimum target of 20% Peak Period modal split within the Urban System served by transit by 2021*

- *To request the province to plan, protect, and construct a transitway along or adjacent to the Highway 407 corridor."*

2.3 REVIEW OF THE OFFICIAL PLAN TRANSPORTATION POLICIES

The City of Brampton Official Plan policies related to transportation provide the basis for a multi-modal transportation plan that balances demands among modes while protecting communities. The Region of Peel Official Plan policies are complementary to those of the City of Brampton in this regard. The Official Plans both address all modes of transportation. The Brampton policies also define a complementary land use framework, through the definition of a strong central area, nodes and corridors, which can support a transportation system balanced between public and private transportation.

The City has recently completed a Bicycle Master Plan. The Plan to be developed through this study is therefore to focus on roads and transit, including supporting policies.

The policies with respect to transit modal split are a key component of the Official Plans, given the basic objective of the Transportation & Transit Master Plan. The Region of Peel OP cites support for a minimum transit modal split target of 20% "within the Urban System served by transit" by the year 2021. The City's target of approximately 25% is obviously higher, but is also stated more generally. It should be noted that this is an ambitious target, given that the current transit share is approximately 6% for the municipality. The experience of other municipalities in the Greater Toronto Area has been to focus the definition of the transit modal split target so as to better reflect the potential for transit in light of current realities, in terms of time periods and geographically. However, it should be emphasized that this study will be assessing means of reaching that target. The assessment and public consultation will determine whether the collective will of the City and its communities support this target or a revised value.

3. EXISTING TRAVEL PATTERNS AND SYSTEM PERFORMANCE

3.1 ROAD NETWORK

The Master Plan study area encompasses the entire City of Brampton road network, and will address the roads under the jurisdiction of other agencies but which are located within Brampton. The municipal boundaries extend from Highway 50 / Highway 427 in the east to Winston Churchill Boulevard in the west, and from a line south of Highway 407 in the south to Mayfield Road in the north.

The major road network in the City is shown in Figure 1. Elements of the network are discussed below.

3.1.1 Highways

Highway 407

Highway 407 is an east-west toll highway, currently operated by 407 Express Toll Route. Within the city boundary, Highway 407 has interchanges at most arterials and at Highway 410. The interchange with Highway 40 is just west of the City boundary.

Highway 410

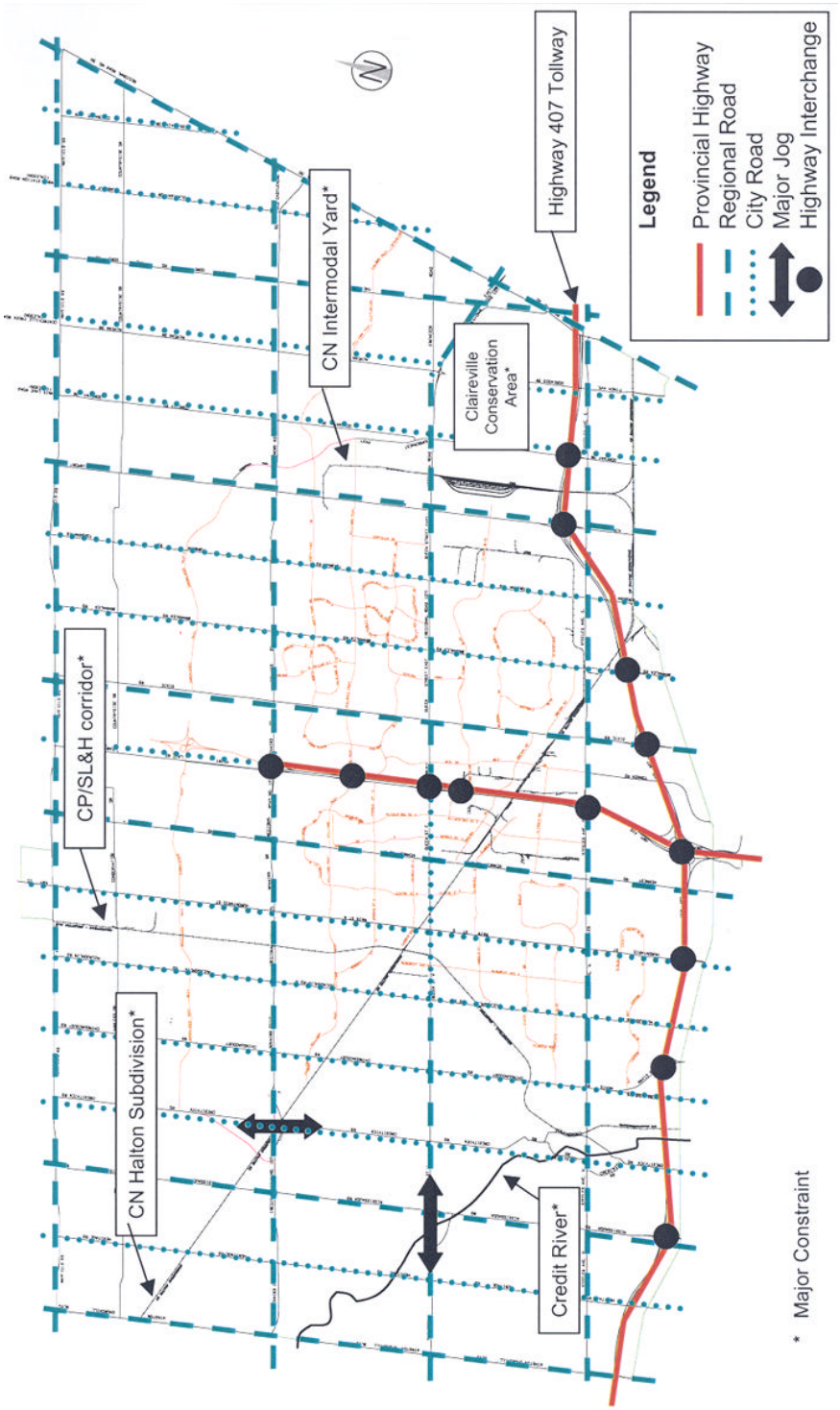
Highway 410 is a north-south divided highway under the jurisdiction of the Ministry of Transportation of Ontario (MTO). It extends from the eastern end of Highway 403 to Bovaird Drive. It has an eight-lane cross-section south of Queen Street and six lanes north of Queen Street. Highway 410 carries a significant amount of long-distance traffic, connecting to Highways 401, 403 and 407. It has interchanges at Highway 407, Clark Boulevard, Steeles Avenue, Queen Street and Bovaird Drive. North of Bovaird Drive, Highway 410 becomes Heart Lake Road, which is a 4-lane arterial road that narrows to 2 lanes north of Sandalwood Parkway. Heart Lake Road is under the jurisdiction of the City of Brampton.

Former Highways

There are a number of former provincial highways passing through Brampton or Peel, which should be noted because they continue to serve an inter-municipal function to some degree. These are:

- Former Highway 7, an east-west major arterial road under the jurisdiction of the Region of Peel. Queen Street is the alternate name for the portion of Highway 7 that connects to York Region in the east. Former Highway 7 continues north along Highway 410, and west along Bovaird Drive to the Halton Region boundary. With connections to York Region and Durham Region, former Highway 7 carries longer-distance traffic. However, its cross-section varies from two lanes to seven lanes, and traffic often experiences delays along Bovaird Drive.

Figure 1 - Major Road Network



- Highway 50 is a north-south arterial road under the joint jurisdiction of the Regions of Peel and York. The Highway 50 cross-section consists of four lanes plus a centre turning lane. Highway 50 carries traffic between northeast Peel Region and the City of Toronto, as well as some east-west traffic due to the discontinuity of various east-west arterials at Highway 50.

- Former Highway 10 / Hurontario Street / Main Street is a major north-south arterial under the jurisdiction of the City of Brampton. Its cross-section varies from four lanes through the downtown core area, to seven lanes in the south. It spans from the north to the south boundary of Brampton, and carries a large volume of traffic across the Region. Traffic on Main Street often experiences delays in the downtown core due to the narrowing of the roadway and operational issues.

3.1.2 Major Arterial Roads

The municipal road network in Brampton includes both the City's roads and those under the jurisdiction of the Region of Peel. Arterial roads oriented north-south are spaced at 1.36-kilometre intervals, which provides for a very effective network in this important travel direction. Major east-west roads generally occur at a 3.2-kilometre spacing.

Over time, the City of Brampton has endeavoured to introduce additional east-west road links to compensate for the wide spacing in this direction. Williams Parkway, Sandalwood Parkway and Clark Boulevard are all examples of this type of intermediate road network. The Official Plan road network illustrates proposed further additions in this east-west orientation (and other additions, as well).

Many of the roads within the City are under the jurisdiction of the Region of Peel. These include:

- East-west
  - Steeles Avenue
  - Queen Street (east of Highway 410 and west of McLaughlin Road)/Embleton Road
  - Castlemore Road/Bovaird Drive
  - Mayfield Road
  - Highway 50 (joint Peel/York arterial road)

- North-south
  - Winston Churchill Boulevard
  - Mississauga Road
  - Kennedy Road
  - Dixie Road
  - Airport Road
  - The Gore Road

3.1.3 Major Constraints on the Road Network

The Credit River poses a challenge for transportation on the western side of the City. This important waterway and its valleylands result in a number of constraints on existing and potential road link, both north-south and east-west. In the north-south direction, one example is Creditview Road – north and south of Steeles Avenue, Creditview is in the Credit Valleylands, which has historically limited its ability to function as a major road on the 1.36-km grid spacing.

In the eastern section of the City, the Claireville Conservation Area and Humber River valleylands pose a major constraint to the network, particularly south of Queen Street.

Railway lines also pose an obstacle for municipal transportation linkages. The CN Halton Subdivision bisects the city in northwest-to-southeast direction. The CP (Orangeville Subdivision)/SL&H corridor runs north-south through the City. The CN Intermodal Yard east of Airport Road poses a constraint to the introduction of new east-west linkages in the segment from the south City boundary to Queen Street.

Several municipal road networks include a number of major jogs at intersections, due to the presence of natural or man-made obstructions. In Brampton, major jogs occur at the following locations:

- Queen Street West / Mississauga Road / Embleton Road
- Creditview Road / Highway 7

Some intersections of Brampton/Peel roads with Highway 50 and/or roads in the Regional Municipality of York (to the east) occur at highly skewed angles, due to the different orientations of the two networks. These include The Gore Road and Coleraine Drive. At this boundary, the road networks are somewhat discontinuous. This issue has been addressed by the York/Peel Boundary Area Transportation Study (June, 2002).

3.2 PERFORMANCE OF THE EXISTING ROAD NETWORK

3.2.1 Screenline Analysis

A screenline is an imaginary line crossing a number of roads (such as the roads linking the City of Brampton and the City of Mississauga), which is used to assess the need for additional transportation capacity across that boundary or division point. A screenline comparison of volume to capacity is a basic transportation planning tool, used to address the performance of the routes which link major destinations and to define the need for additional capacity. Screenlines are often defined at municipal boundaries and at natural and man-made barriers to travel (such as the Credit River or a rail line).

A comparison of demand to capacity has been completed for a number of screenlines around the City of Brampton. The link capacities are based on capacities per hour per lane, for the various road classifications.

This analysis has been based on 2001 data from the City and the Peel Region Cordon Count Program. The Cordon Count data includes automobile, truck and bus volumes. The a.m. peak period (7 – 9 a.m.) and the p.m. peak period (4 – 6 p.m.) have been analyzed in detail. Based on this analysis, it has been possible to identify the screenlines or segments of them that are operating at full capacity ("full capacity" has been taken as a volume to capacity ratio above 0.90). Automatic Traffic Recorder (ATR) counts and intersection traffic counts on several traffic corridors have been collected from the Region of Peel and the City of Brampton to supplement the Cordon Count data. These counts do not include any breakdown of automobiles, trucks and buses. Counts conducted by MMM have supplemented the municipal and regional data as necessary.

The detailed traffic data and capacity calculations are shown in the Appendix.

Key results of the comparison of volume to capacity on the screenlines are shown in Figure 2, for the City at a municipal-wide level. Figure 3 provides the same type of analysis for central Brampton.

Figure 2 – Screenline Comparison of Existing Volume to Capacity: AM and PM Peak Periods

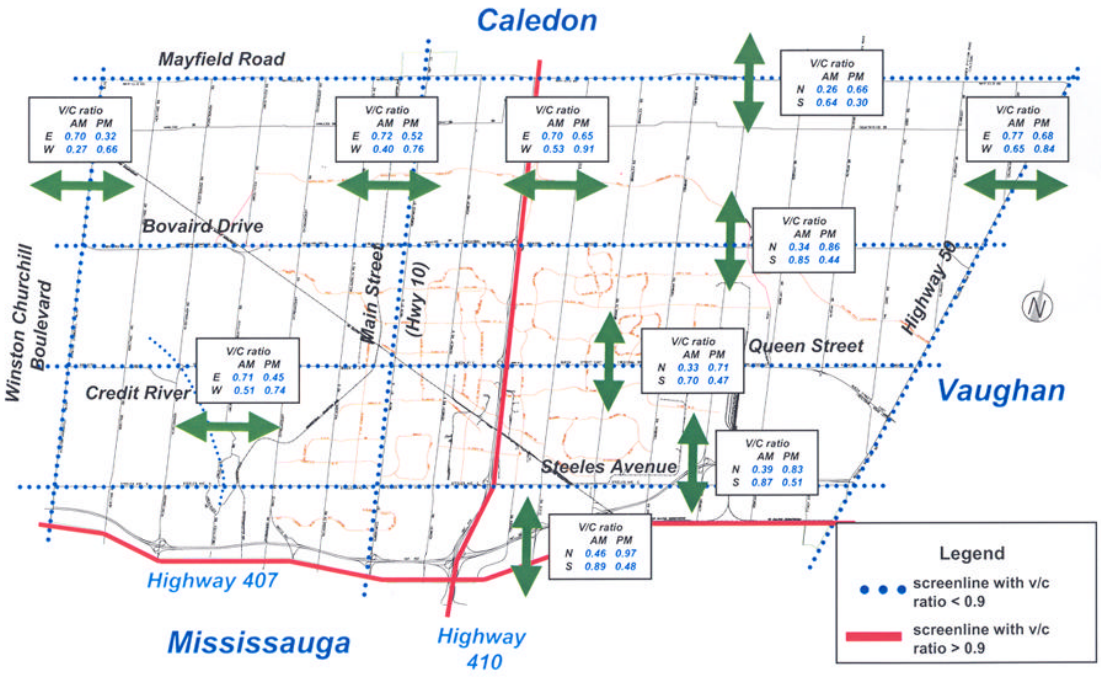
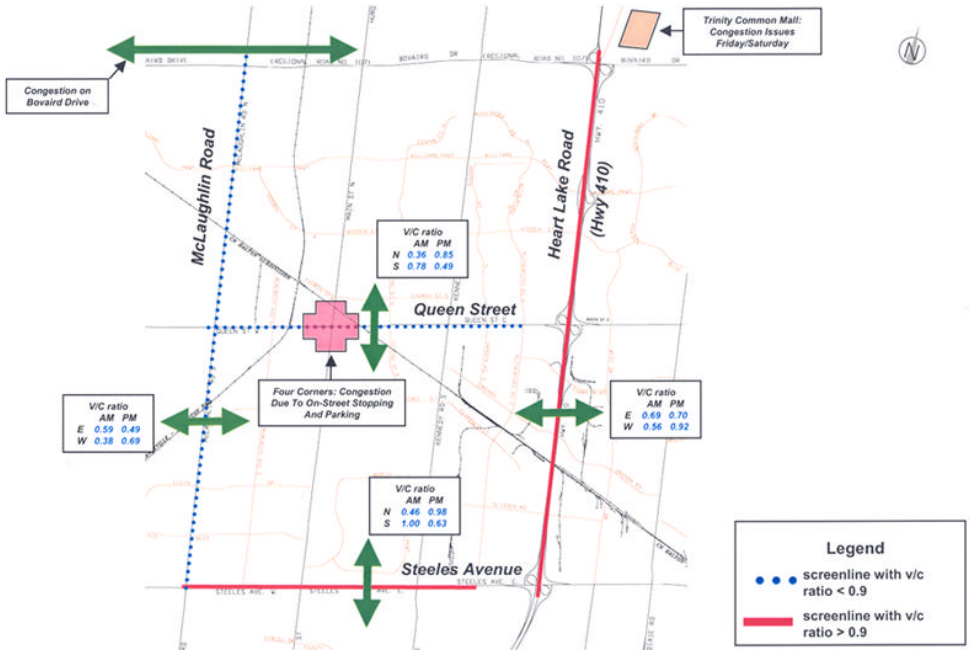


Figure 3 - Capacity Analysis / Central Brampton Existing Conditions



Screenlines at the Municipal-Wide Level

Road capacity deficiencies are generally concentrated in the south end of the City, and are heavily related to travel to and from the adjacent municipalities of Mississauga and York Region; however, internal growth in the north end along Bovaird Drive has created the need to address the road network in that area, as well.

Eastbound and southbound traffic through the City dominate the traffic patterns during the a.m. peak hour. The capacity deficiency is most acute in the Peel-York boundary area. Eastbound traffic on Steeles Avenue operates over capacity at Hurontario Street and Highway 410. Eastbound traffic on Queen Street operates near capacity at Highway 50. Highway 407, Queen Street and Steeles Avenue provide good continuity and access to York Region and the various industrial/commercial districts along the Highway 7/Steeles corridor.

In comparison, other east-west arterials perform at a good level of service eastbound and westbound during the a.m. peak period. Traffic across Highway 50 is low on Mayfield Drive and Castlemore Road, reflecting the lower level of development in northeast Brampton.

Southbound traffic volumes are significantly higher than the northbound volumes crossing all the east-west screenlines during the a.m. peak hour. Highway 410 volumes are high throughout the City; this serves as a major link to other areas of the GTA via Highways 401, 403, 407 and the QEW. Traffic volumes on Highway 410 at Queen Street and Steeles Avenue are not available from MTO, and therefore traffic volumes on Highway 410 at Bovaird Drive and at the City boundary were adopted for these two locations. Southbound traffic on Mississauga Road, McLaughlin Road, Highway 10 and Kennedy Road at the Mississauga boundary are also over capacity, reflecting the need to increase person-carrying capacity between the two cities in this area.

It is noted that while Highways 7, 410 and 407 provide good access between Brampton and the other cities in GTA, inbound trips during the a.m. peak hour are not significant relative to the outbound flows. Brampton is a net outbound trip generator to the south and the east. Traffic at the north of Brampton is much less than that in the south, reflecting the lower level of development and transportation capacity in northern Brampton, Caledon and other outlying municipalities.

The p.m. peak hour screenline v/c ratios are generally slightly higher than the a.m. peak hour values. This is primarily explained by the addition of non-work-related trips during the p.m. peak period. The dominating traffic pattern is westbound and northbound traffic through the city, reflecting the tidal traffic pattern throughout the City (eastbound and southbound during the a.m. peak period, and westbound and northbound during the p.m. peak period).

It is noted that traffic across the Mayfield Road screenline to the north is very light, reflecting the low level of development in Caledon to the north.

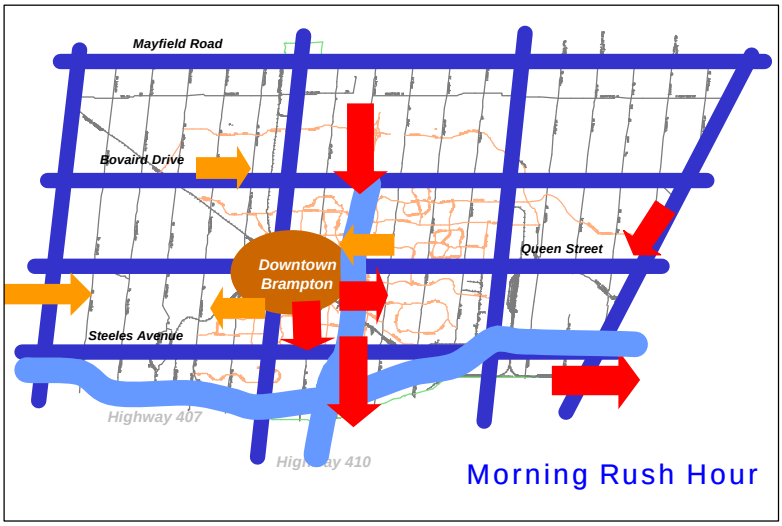
In terms of the overall magnitude of trips and level of congestion, the Highway 50, Mississauga-Brampton city boundary and Highway 410/Heart Lake Road screenlines are the most heavily loaded relative to capacity.

Key Areas of Concern

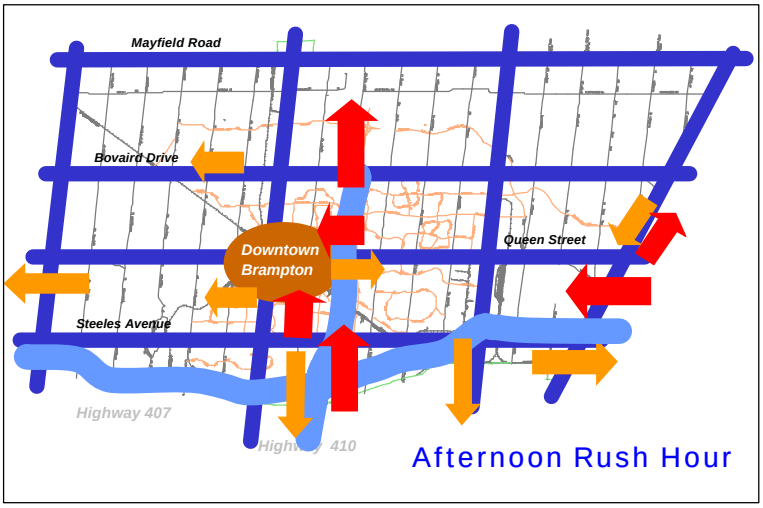
Some of the most pressing problems from the perspective of road capacity do not occur across the whole screenline, but are focused on individual roadways or limited corridors. These include:

- **The Highway 407/Queen Street/Steeles Avenue corridor** - tidal commuter traffic
- **The Highway 410/Highway 10 corridor** - tidal commuter traffic
- **Bovaird Drive west of Highway 410.** Rapid growth in this area has created pressure on the road system. Road network options are limited in the east/west direction by the presence of the Credit River. An Environmental Assessment is underway for improvements to Bovaird Drive
- **Highway 50 southbound at Queen Street.** This has been an ongoing concern for a number of years, relating to the termination of Highway 427 at Highway 7

In these corridors, demand exceeds capacity and some form of capacity improvement is required.



The tidal traffic flows are predominantly out of the City during the a.m. peak period, and back into the City during the p.m. peak period, as illustrated at right and below. The p.m. peak period flows are complicated by the increased number of discretionary trips, which tend not to be focused in one particular direction.



Conditions in Central Brampton

The comparison of volume to capacity shown in Figure 3 for the central area of Brampton indicates that on the screenlines, there is generally some reserve capacity remaining. On specific links such as Hurontario Street, there are capacity deficiencies. Overall, the Queen Street, Highway 410 and Steeles Avenue screenlines are experiencing demands that approach effective capacity (i.e. 85 to 90 percent) in the peak direction at some times of day.

Other key areas of congestion in central Brampton include:

- **The Four Corners,** at the Queen/Main intersection. Historically, turning movements and on–street parking and stopping activity have limited traffic-carrying capacity through the commercial centre of old Brampton. This congestion extends east along Queen Street to the Highway 410 interchange. This is a key commercial corridor. There are no continuous parallel routes in close proximity to Queen Street in this area. An assessment of traffic operations completed in 2001 by MMM related to the Wellington-Royce connection showed that the Queen Street corridor is operating at Level of Service D. The City has recently attempted to address operational problems by prohibiting left turns in all directions at the Queen/Main intersection
- **Trinity Common Shopping Centre.** Located at the Bovaird Drive/Highway 410 interchange, this new shopping centre has been the source of conflict with residents and travellers on Bovaird and at the Highway 410 interchange, due to its high level of popularity relative to the number and form of accesses to the mall. Problem areas are on Bovaird Drive, where queues extend back to the Highway 410 ramp terminal on occasion, and the entry/exit points on Great Lakes Drive, where mall traffic interferes with residential access. The access problem was a prime concern at the Mayor's Town Hall Meeting on Transportation. It should be noted that completion of the missing link of Sandalwood Parkway could play a role in alleviating congestion in this area, as would the planned extension of Highway 410 to Sandalwood Parkway.

However, these road improvements alone are not expected to solve all the issues related to Trinity Common, because they are intended to cope with further growth

3.2.2 Vehicle Occupancy

Automobile occupancy was derived from Region of Peel Cordon Count data. Occupancy through the City of Brampton is fairly low, ranging from 1.09 to 1.19 during the a.m. and p.m. peak periods. This is typical of conditions across many suburban areas of the GTA. The low values reflect the prevalence of single occupant vehicle trips. They show that out of every ten vehicles, only one to two carry more than one person. This represents a very low level of utilization of the investment in the road network infrastructure.

3.3 TRAVEL DEMAND CHARACTERISTICS

3.3.1 Trips Made by Residents of Brampton

The 1996 TTS report outlines that on an average weekday, a total of 529,000 trips are made by Brampton residents. The residents of Brampton have a high dependence upon the automobile, with a total of over 460,000 trips (87%) made by automobile (drivers and passengers) daily. Table 1 summarizes the trips made by residents of Brampton, subdivided by trip purpose.

Table 1 - Trips Made by Residents of Brampton

Time Period	Total Trips	Home Based-Work	Home Based-School	Home Based-Other	Non-Home Based
6 to 9 am	132,100	54%	22%	16%	8%
24 Hour	528,900	38%	12%	36%	14%

During the a.m. peak period, 132,100 trips begin in the City of Brampton while 99,500 trips are destined to Brampton. This imbalance of 32,600 more outbound trips results in a heavy tidal flow. Most of those trips travel east and south, causing heavy demands on the divided highways and arterials.

3.3.2 Trips Made to Brampton

The 1996 TTS results show that the largest component of trips destined to Brampton are home-based, representing approximately 48 percent of the daily total. Work-based trips account for 75,500 trips or 16% of the daily total. Another 7 percent of the trips are school-based.

During the a.m. peak period (6 to 9 a.m.), 50% of all trips destined to Brampton or 49,750 trips are work trips. During the same period of the day, trips to school amount to 27,860 or 28%. Table 2 summarizes the travel patterns by destination purpose.

Table 2 – Trips Made to Brampton

Time Period	Total Trips	Home Based-Work	Home Based-School	Home Based-Other	Non- Home Based
6 to 9 am	99,500	50%	28%	6%	16%
24-Hours	472,500	16%	7%	48%	29%

3.3.3 Modal Split

Brampton residents are highly dependent on the automobile to meet their travel needs. Ninety-four percent of the City's households have access to at least one private vehicle. The average car ownership per household is 1.7.

Figure 4 - Number of Drivers per Household

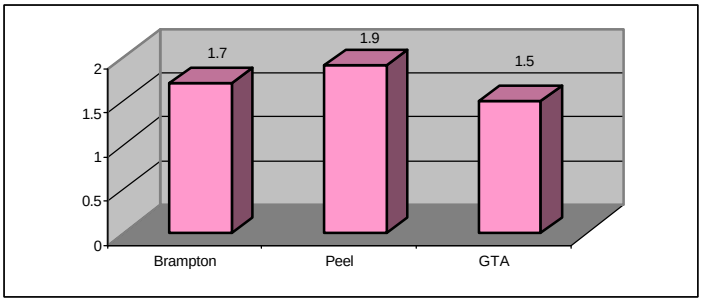


Figure 4 compares the number of drivers per household in Brampton to the same statistics for Peel Region and the entire GTA (extending from Durham Region to Hamilton). Brampton has a higher than average rate of drivers per household than the GTA average, but a slightly lower value than the Peel average.

Figure 5 - Average Vehicle Ownership per Household

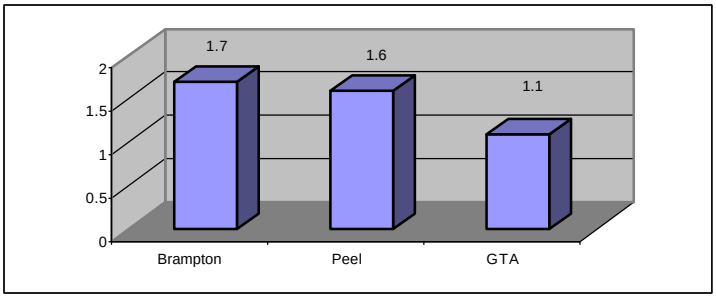


Figure 5 compares vehicles per household statistics. Brampton residents have access to a higher number of vehicles than the average Peel or GTA resident. This is tightly related to the higher auto-dependency of Brampton residents.

Figure 6 - Modal Split - Trips Made to Brampton

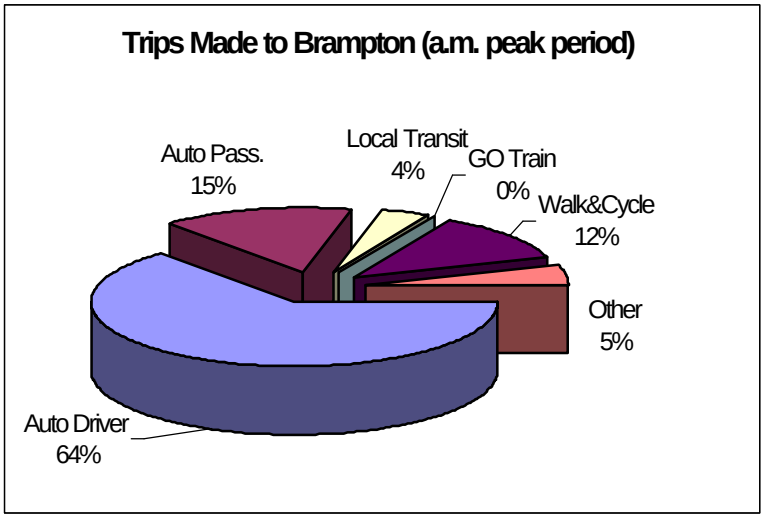


Figure 6 shows the trip modes for trips made to Brampton.

Based on trips made to the City, local transit and GO Train users account for 5 percent and 2 percent of trips, respectively, during the a.m. peak period (6 to 9 am), and 4 percent and 1 percent of trips, respectively over the 24-hour period. Over these same periods, auto trips represent 65 percent and 70 percent of all trips, respectively.

Comparing the modal splits to other nearby cities, the City of Mississauga shows a similar high auto accessibility, though Mississauga has a higher transit modal split.

In terms of walking and bike trips, compared to Mississauga and to Richmond Hill, Brampton presents a more positive picture for the a.m. peak period and the 24-hour period. During the a.m. period, the total of 12% of all trips made by Brampton residents represents approximately 12,000 combined walking plus bike trips.

Figure 7 - Modal Split - Trips Made by Residents of Brampton

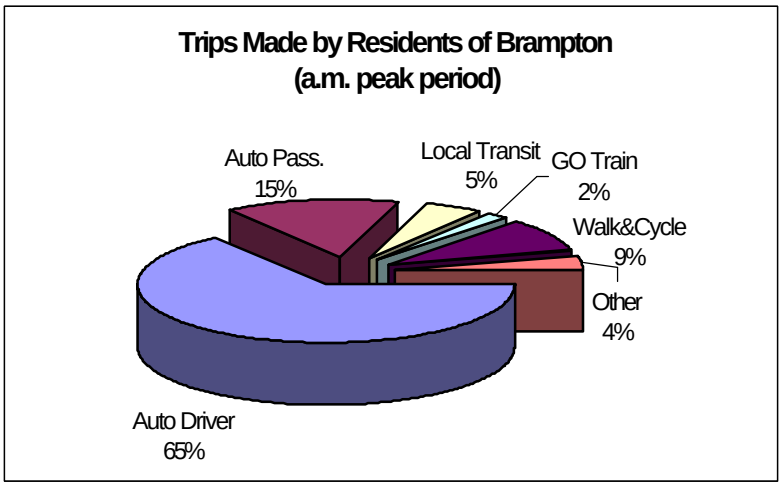


Figure 7 shows the trip modes for trips made by residents of Brampton (i.e. trips from Brampton). The percentages confirm the low transit usage described above.

Comparison to Other GTA Municipalities

Comparisons with other municipalities' experience is always a worthwhile means of gaining perspective. Table 3 provides a comparison of transit shares across the GTA, ranging from older, largely self-contained municipalities, such as Hamilton, to more suburban areas, such as Etobicoke.

Table 3 - Modal Split Comparison - A.M. Peak Period
(Based on the trips made by the residents of the relevant jurisdiction)

Jurisdiction	Population	Auto (%) (driver + passenger)	Transit (%) (Local + GO Train)	Other (%) (Walk, Cycle & Other)
City of Brampto	***255,70***	***80***	***7***	***13***
Town of Oakville	123,600	77	10	13
City of Vaughan	127,800	77	9	14
City of Oshawa	133,500	76	8	16
Town of Markham	163,500	78	10	12
Etobicoke	317,700	70	21	9
City of Hamilton	320,600	72	9	18
City of Mississauga	518,700	76	11	12
Scarborough	531,300	64	25	11
North York	570,400	65	25	10
Average	**311,900**	**72.8**	**14.2**	**12.8**

Source: TTS 1996 Report

Brampton has the highest auto share of these nine municipalities, and the lowest transit share. Brampton's percentage of trips by other modes is however higher than average, which is an encouraging base from which to build a multi-modal system.

The data from other municipalities is valuable in terms of examining Brampton's transit target of 25 percent, and what Brampton's future direction or form may need to be to reach this goal. The Scarborough and North York communities are at this level now, and Etobicoke is close behind. These communities are served by the Toronto Transit Commission grid bus network, and by rapid transit lines (subway or Intermediate Capacity Transit System [the Scarborough RT] plus GO rail). The municipalities outside the Toronto boundaries also provide service into these communities, and thus they are part of an inter-regional transit system (albeit a system that could be better integrated). By contrast, Hamilton and Oshawa, more self-contained municipalities, have a much lower transit share. These municipalities have historically put more emphasis on facilitating auto travel, through various policies and programs.

3.4 TRUCKING NETWORK AND ACTIVITY

Background

Goods movement is an important consideration in the transportation system. Safe and efficient movement of goods and services within, and through, the City of Brampton is essential for sustainable economic growth.

Goods movement is closely integrated with the structure of the municipal/regional transportation system, urban form and the location and conduct of industry and commerce. Trade is the engine of the region's economy and it is highly dependent on an efficient and effective transportation system, particularly the highway networks, because of the prevalence of trucking in moving goods.

Road and highway improvements typically lead to lower operating costs and savings in travel time for commercial users. Road improvements result in less wear and tear on vehicles, improved fuel efficiency and shorter trips. With lower transport costs, trucking firms can direct these savings to reductions in the cost of goods and services, or they can derive a higher profit. An efficient road system can provide savings for local goods manufacturing and shipping industries that will in turn improve the economy of the GTA and Brampton.

Analysis

Truck traffic has been analyzed using information from the Region of Peel Cordon Count program. Truck traffic data has been collected for four classifications of commercial vehicles, namely light, medium, heavy and aggregate trucks. "Truck traffic" includes vacant taxis and trucks with dual rear tires, box vans, heavy-duty pick-up trucks and tractor-trailer units. Light trucks are those with characteristics similar to automobiles and small vans, and are distinguished by having only four tires on the pavement.

Table 4 summarizes the two-way truck traffic percentages across the screenlines during the a.m. peak period (7 – 9 a.m.) and p.m. peak period (4 – 6 p.m.) and for the 15-hour period (5:30 a.m. – 8:30 p.m.). The truck traffic volumes have not been converted to passenger car units for this assessment.

The truck percentages are quite high across the City, showing the prevalence of truck transportation. The a.m. peak period percentages extend from 11 to 19 percent, which is a substantial percentage of the traffic stream. During the p.m. peak period, truck percentages form a slightly smaller fraction of the traffic stream, from 10 to 18 percent. That is likely due to the larger number of discretionary trips on the road at this time, not a lower absolute number of trucks. It is noted that from 5:30 a.m. to 8:30 p.m., truck traffic forms a larger component than it does during only the peak hours, ranging from 13 to 22 percent.

Table 4 - Truck Traffic Percentages on Screenlines (Two-Way)

Screenline	5:30 a.m. – 8:30 p.m.	A.M. Peak (7 – 9 a.m.)	P.M. Peak (4 – 6 p.m.)
Winston Churchill Boulevard	20.7%	18.1%	16.0%
Steeles Avenue	14.0%	10.1%	10.6%
Mayfield Road	15.6%	15.3%	11.1%
Bovaird Drive	12.5%	11.0%	10.0%
Highway 410/Heart Lake Road	17.9%	17.3%	12.9%
Highway 50	22.2%	18.7%	17.6%
Highway 10/Hurontario Street	14.2%	13.9%	10.5%
Brampton-Mississauga	15.6%	12.5%	11.0%

The Winston Churchill Boulevard and Highway 50 screenlines show much higher truck percentages than average. This reflects the high level of cross-boundary truck traffic demand with York Region, Halton Region and other municipalities. It is noted that the Brampton-Mississauga screenline does not show a high truck percentage.

Most of the major industrial land area is designated in the vicinity of Highway 7, Highway 407 and Steeles Avenue, east of Kennedy Road and west of Gorewood Drive. With their continuity and high capacity across the GTA, these east-west roads serve as major east-west truck routes. Currently neither the City nor the Region has any restrictions on truck traffic on these roads. Trucks pay a higher toll than passenger cars on Highway 407. Highway 410, Dixie Road, Bramalea Road and Airport Road serve as major north-south truck routes.

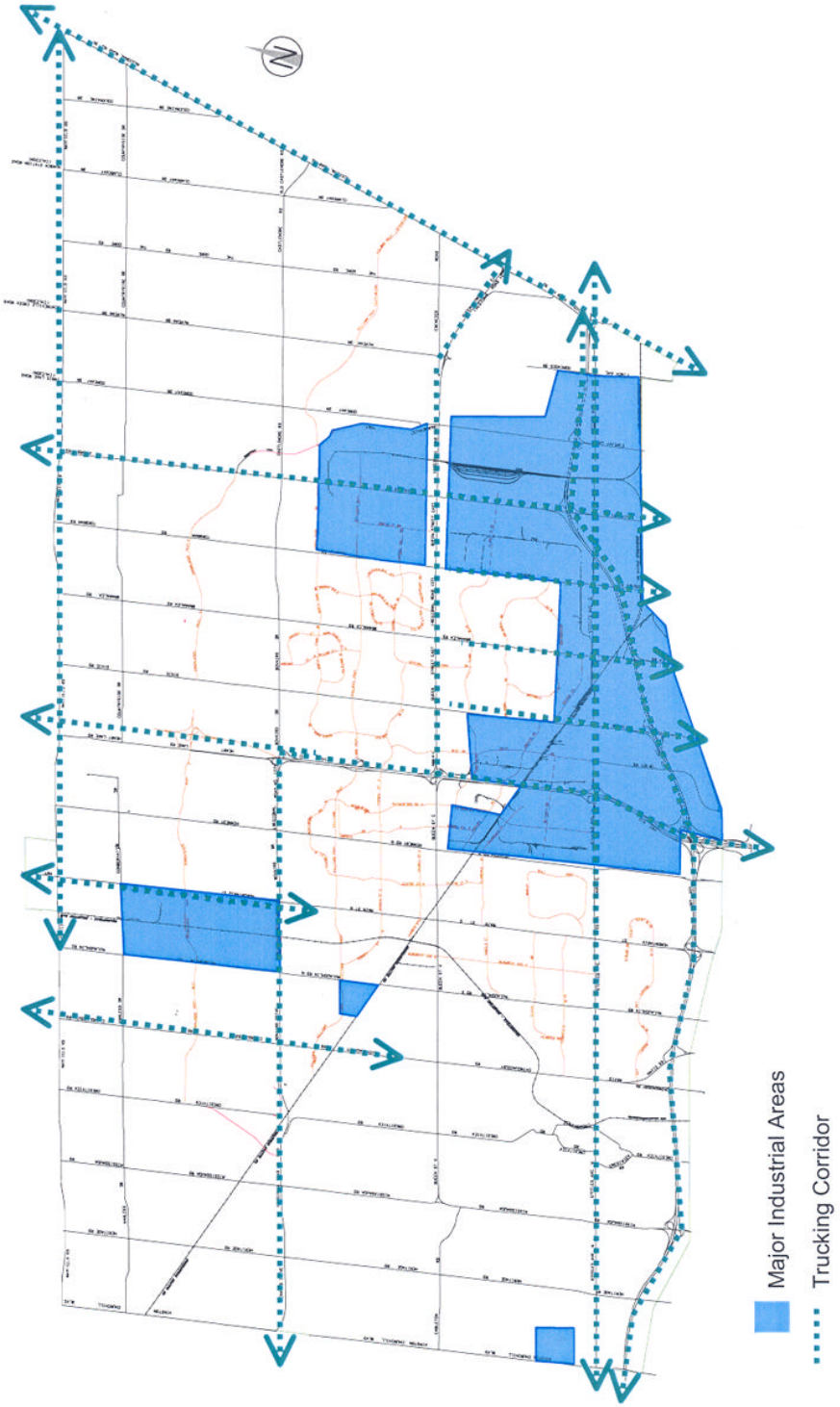
Goods Movement Strategy Issues and Objectives

There is currently no overall municipal truck route or goods movement strategy. However, the Region of Peel is preparing to initiate a Goods Movement Study that would be completed in Fall 2003. The City of Brampton and the Region have some route-specific restrictions on truck traffic. Figure 8 shows the major industrial areas and trucking corridors. Truck corridors have been defined informally as corridors with a high truck percentage. These streets effectively function as a trucking network serving the major industrial areas in the City of Brampton. These streets and the industrial areas they serve are in accordance with the City and Regional OP policies regarding location of land uses requiring large trucks to be located close to expressways and major roads.

A goods movement strategy will be a beneficial component of the TTMP. It should address:

- Efficient movement of goods by truck and rail
- Effective intermodal connections
- Protection of residential communities from undue impacts of goods movement

Figure 8 - Major Industrial Areas and Trucking Corridors



4. PRELIMINARY REVIEW OF TRANSIT SERVICES

4.1 SUMMARY OF EXISTING SERVICES

4.1.1 Brampton Transit

System Characteristics

Transit in Brampton is provided on many levels. Figure 9 shows the existing services. Brampton Transit provides fixed routes throughout the urban area of Brampton as well as connections to Mississauga, Vaughan, and Toronto to accommodate a service population of 321,265. Brampton Transit provides 34 fixed routes using 85 standard buses, 27 low floor buses, and one double-decker bus. Some key statistics on this system is presented in Table 5.

Table 5 - Brampton Transit System Profile (2001)

Active Vehicles	Total Operating Expenses	Cost / Recovery Ratio	Per Service Area Capita Ridership	Per Capita Operating Expenses
113	$22,181,191	66%	22.15	$0.95

Source information provided by CUTA Transit Fact Book 2001.

Hours of Service

Brampton Transit operates from 5:00 a.m. to 1:00 a.m. Monday to Saturday and from 7:10 a.m. to 11:30 p.m. on Sundays. There are 13 routes that run throughout the day and evening, 4 routes that operate during the peaks and afternoon period, and an additional 8 routes that run only during the peak hours. Four express busses are provided to help the system interface with GO Transit's services and 5 routes run school services in the morning and afternoon.

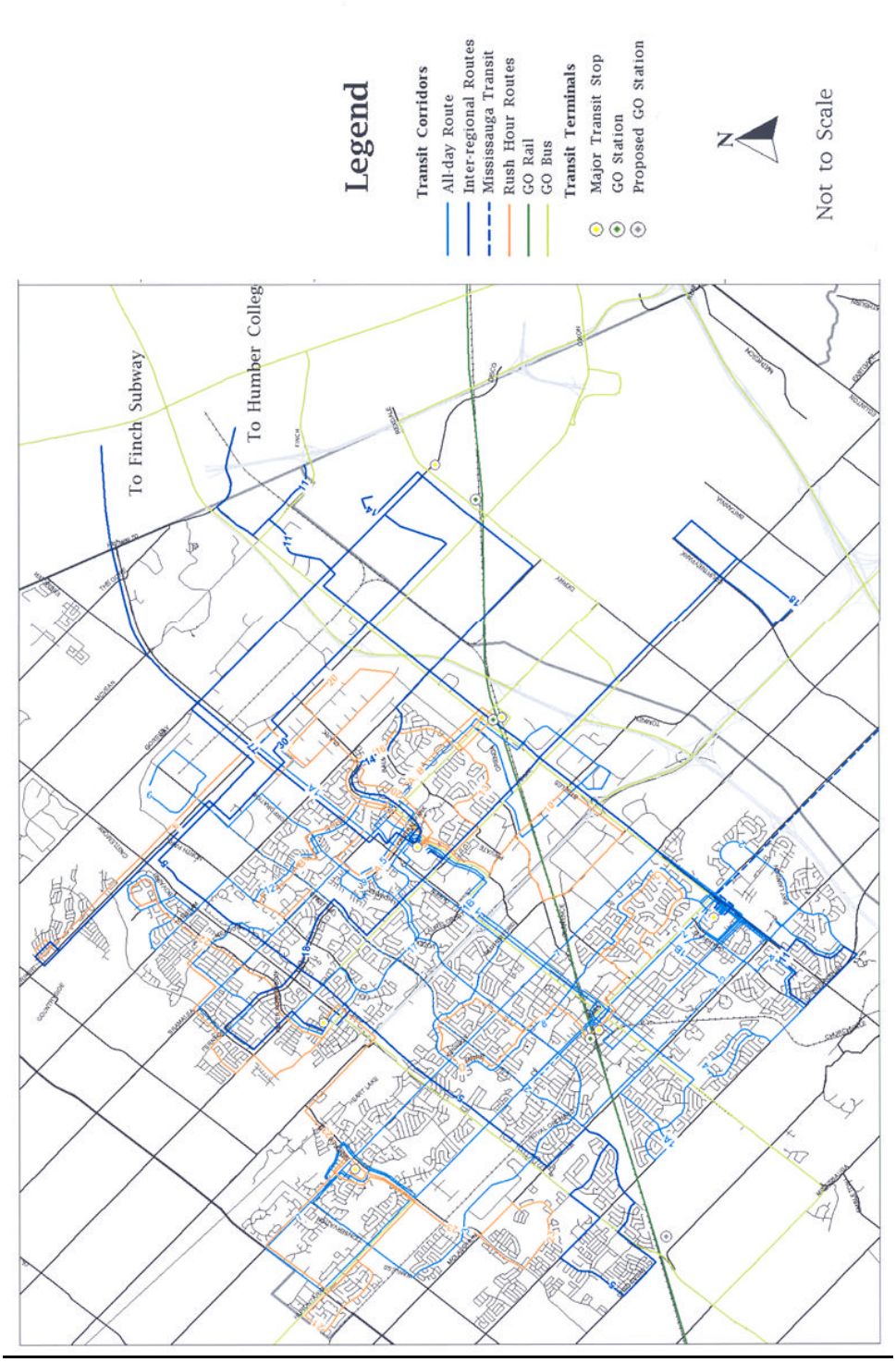
Service Frequencies

Service frequencies during the peak periods range from 10 - 15-minute service on three of the corridor routes (18 Dixie, 2 Main and 77 Finch) to 60 minute service on Route 23 Sandalwood, which operates as a peak period neighbourhood circulator service. The average route frequency during the peaks is between 20 and 30 minutes. During the midday period, service frequencies range from 30 to 60 minutes and during the evening, service frequencies for routes still in operation range from 30 to 45 minutes.

Terminals

Brampton has three major transit terminals: Bramalea City Centre, Shoppers World, and Downtown Brampton. There are also three minor terminals in Brampton with four routes meeting at each: Heart Lake, Trinity Common, and the Bramalea GO.

Figure 9 - Brampton Transit Route Map



Transit Connections

Brampton Transit provides direct connections with surrounding municipalities, via the following routes:

- Route 19A Hurontario: a Mississauga Transit route that connects into Shoppers World
- Route 77 Finch: a Brampton Transit and York Region Transit route that operates on Highway 7 to the Finch Subway station;
- Route 18 Dixie: connects into Mississauga at Courtney Park Drive and Dixie Road;
- Route 14 Torbram: connects into Westwood Mall in the Malton Community in Mississauga;
- Route 30 Industrial: connects into Westwood Mall in the Malton Community in Mississauga;
- Route 5 Bovaird: connects into Westwood Mall in the Malton Community in Mississauga; and
- Route 11 Steeles: connects to Humber College in the City of Toronto.

Fare and service coordination are varied on each of these inter-municipal routes.

4.1.2 GO Transit

GO Rail

The Georgetown GO Train runs between Georgetown GO Station in Halton Hills to Union Station in downtown Toronto. The line carries 4,631 a.m. peak period passengers (1999), and is projected to increase to 7,520 by 2009. There are two stations located in the City of Brampton, Brampton GO Station and Bramalea GO Station. According to the Fletchers Meadow Secondary Plan, a third GO Station named Pleasant is expected to open at Hwy 7 West and Creditview Road sometime in 2003 or early 2004. In 1999, approximately 60 percent of passengers egressing on the Georgetown Line from Union Station occurred at the Brampton and Bramalea GO Stations. Some key information can be found in Table 6.

Table 6 - Brampton and Bramalea GO Station Data

	Total Daily Trips		Egress Mode			
GO Station	Total	% of System Total	Walk	Transit	Drive & Park	Kiss n' Ride
Bramalea	1,667	3%	1%	14%	65%	12%
Brampton	1,984	3%	7%	7%	64%	12%

The Georgetown GO Train runs four peak period a.m. trips into Union Station from Brampton and Bramalea GO Stations and five peak period p.m. trips from Union Station to Bramalea and Brampton GO Stations, at approximately twenty-five minute intervals. Five additional trains start service at the Bramalea GO Station heading south to Union Station. In the reverse direction, four additional trains terminate at Bramalea GO Station from Union Station.

The corridor is supplemented by train-bus services between Georgetown and Union Station. In 2001, the Georgetown train-bus carried 242,320 annual passengers on weekdays and 28,565 annual passengers on weekends.

GO Bus

GO Transit also provides a number of GO Bus service through Brampton.

The Guelph - Georgetown GO Bus service connects the City of Guelph to Georgetown, Brampton, Yorkdale, and York Mills. Thirteen runs are made throughout the day in each direction, running at half-hour intervals in the peak period peak direction and every hour to two hours in the off-peak and reverse direction. In 2001, the route carried 182,000 passengers during the weekdays and approximately 24,000 passengers during the weekend.

The Brampton Local, Hwy 27 and Hwy 427 Express GO Bus service runs seven days a weeks between Brampton and Yorkdale and York Mills subway station in Toronto. During the weekday, the service provides three alternative routes: Express, Hwy 27 and Dixon routes. The Express service travels with limited stops towards Yorkdale and York Mills. The Hwy 27 service provides a stop at Humber College in Toronto. The Dixon service provides a stop at Lester B. Pearson Airport. In 2001, the Dixon service carried just under 300,000 annual weekday passengers while the Express and Hwy 27 services each carried just under 200,000 passengers. On weekends, the Dixon service carried approximately 105,000 passengers while the Hwy 27 service carried 58,000 passengers.

The Orangeville GO Bus service is a weekday train-meet service that connects Orangeville via Highway 10 to the Brampton and Bramalea GO Stations. The service runs trips to meet the GO Train at Brampton GO Station, In 2001, the service carried just over 30,000 passengers, up 29 percent from the previous year.

The Hwy 407 GO Bus Service is a weekday route primarily along the Highway 407 corridor that provides service between the City of Hamilton and the City of Pickering. The service stops at the Bramalea GO Station approximately 32 times in each direction per day. In 2001, approximately 150,000 passengers used this service, a 965 percent increase from the previous year. Since then the service has continued to expand and grow.

4.2 PERFORMANCE ASSESSMENT

4.2.1 Route Performance

Brampton Transit operates three types of service: fixed route services, GO Train Express services, and School services. Table 7 displays some key statistics for each service.

Proportionately, the most successful services in the system are the School services and GO Train express services. These services operate during the peak hours and are focused on specific markets.

Table 7 - Brampton Transit Service Statistics (January to April 2002 Year to Date Total)

Service Type	Route	Peak Bus Utilization	Total Service Hours	Revenue Psgnr	Cost of Operation	Total Revenues	Rev Psgnr Per Hour	R/C Ratio	Transfer Ratio	Cost per Revenue Psgnr	Net Cost per Rev Psgnr
Fixed Route	*Total*	78	97,188	2,282,128	$6,148,089	$4,062,188	485			$133.65	$89.15
Service	*Averag*	3	3,888	91,285	$245,924	$162,488	19	55%	30%	$5.35	$3.57
GO Train	*Total*	4	779	22,788	$49,259	$40,563	110			$9.96	$2.84
Express Ser	*Averag*	1	195	5,697	$12,315	$10,141	28	77%	6%	$2.49	$0.71
School Serv	*Total*	12	1,470	57,121	$92,992	$101,675	447			$10.45	-$0.23
	Averag	2	245	9,520	$15,499	$16,946	74	209%	16%	$1.74	-$0.04

Fixed Route Services

The most successful fixed route in terms of cost recovery ratio is Route 7 Kennedy, which provides a corridor service along Kennedy Road between Mayfield Road and the Shoppers World terminal. This route runs seven days a week, every twenty minutes during the peak period, every thirty minutes during the day, and every forty minutes in the evening. Route 7 Kennedy has a cost revenue ratio of 108 percent, accommodating approximately 53 passengers per hour of service.

The next most successful routes are 1A and 1B Queen, which have revenue to cost ratios of 86 percent and 85 percent respectively. These routes provide a corridor service along Queen Street, connecting the Bramalea City Centre Terminal with the Downtown Brampton terminal and the Shoppers World Terminal respectively. Both services run every 20 minutes during the peak, every 30 minutes during the day and every 40 minutes during the evening.

Route 2 Main Street operates at an 83 percent cost recovery ratio providing a corridor service along Main Street/Hurontario Street between Shoppers World terminal and the Heart Lake terminal with a connection to the Downtown Terminal and Brampton GO Rail Station.

Route 14 Torbram and 17 Howden both operate at an 82 percent cost recovery ratio. Both operate primarily on collector roads and provide two terminal connections, the Bramalea City Centre as the terminus for each route, and the Westwood Mall stop in Mississauga and the Trinity Common terminal respectively as mid-way points of both routes. Both routes access denser development in Brampton including apartments on Hanover Road and North Park Drive on Route 17 Howden, and medium density residential on Clark Boulevard and Balmoral Drive on Route 14 Torbram.

Brampton's worst performers are Routes 21 Mayfield Park, 22 Springdale, and 23 Sandalwood. All three of these routes operate a single bus each during only the peak hours. Routes 21 and 22 run at thirty-minute headways. Route 23 runs at sixty-minute headways. These routes travel close the outermost edges of Brampton, mostly in newly developed residential, in the case of Route 21 Sandalwood, without access to any major destinations. Much of these routes are also duplicated by fixed routes that lead to one of the primary transit terminals. Routes 21, 22, and 23 have revenue to cost ratios of 5 percent, 11 percent, and 14 percent respectively. These routes were put in place to lead development in new areas of Brampton.

4.2.2 Brampton Transit Trends

Ridership

Ridership levels have been steadily growing in Brampton since 1994 as shown in Figure 10. The single highest ridership month was recorded in November of 2000 at 663,428. The trend in ridership growth for Canadian transit authorities in municipalities of similar size (between 150,000 - 400,000) have followed somewhat of a different path. Overall, average ridership growth in Brampton's population group has been relatively stagnant, with slight dips and bumps in the last few years. Between 2000 and 2001, the population group saw a large increase in ridership.

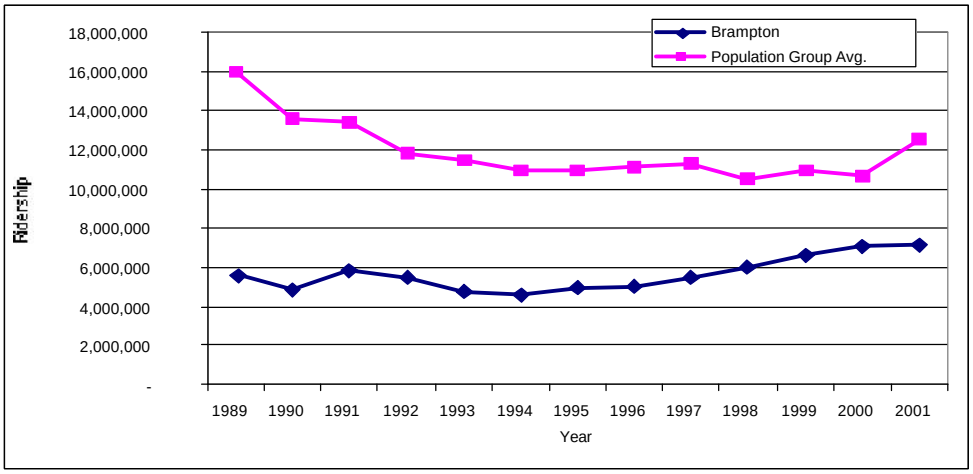


Figure 10 - Brampton Transit Ridership Trends Compared to Population Group Average

Part of the increase in transit ridership is due to the rapid population growth that Brampton has experienced. However, per capita ridership trends tell a very different story than overall ridership. As seen in Figure 11, ridership per capita is on a slight decline between 2000 and 2001 and has remained relatively unchanged since 1993.

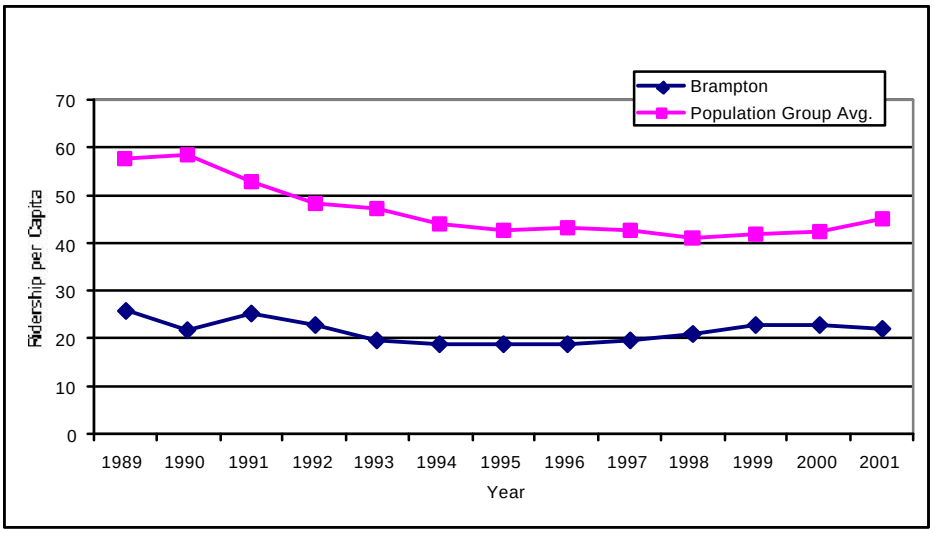


Figure 11 - Per Capita Ridership Trends

Service Hours and Kilometres

Over the past five years, Brampton has been increasing its revenue service hours and revenue kilometres of its bus services to meet the needs of Brampton's growing population and improve overall service, as shown in Figure 12. This includes an extension of Sunday service in September 2001 from 8:00 p.m. to 11:00 p.m., the extension of existing transit routes such as Route 5 Bovaird and Route 11 Steeles, and the addition of new transit routes such as Route 21 Springdale. Many new routes were put in place to lead development and get transit into new areas before the areas are fully built. While this may result in poor cost recovery for these routes, this is a policy decision designed to increase long-term ridership.

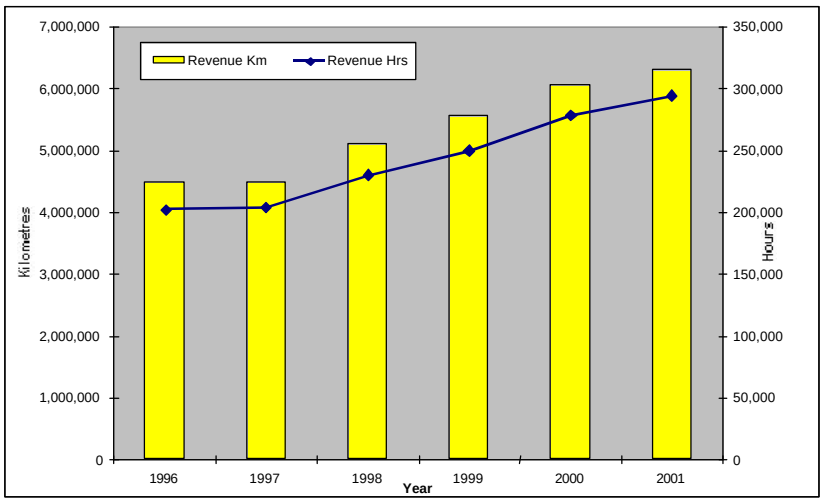


Figure 12 – Brampton Transit Service Hours and Kilometres

Hours per Capita

Revenue service hours has also grown at a similar rate to population growth, as indicated in Figure 13. Since 1997, revenue service hours per capita has increased steadily indicating that Brampton Transit is increasing service in proportion to population growth. However, this does not conclude that Brampton Transit is providing an adequate amount of service, since other factors will determine whether too much or too little service is being provided.

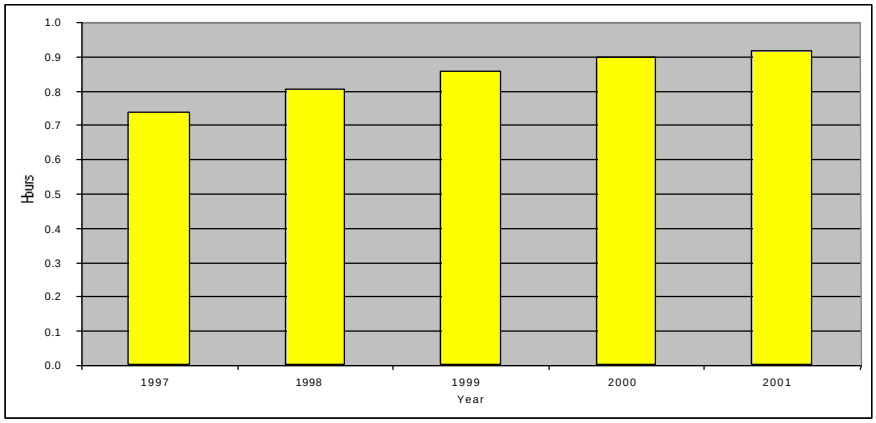


Figure 13 - Hours per Capita

Passengers per Hour

While ridership is growing in Brampton in the past five years, passengers per hour have been steadily declining (as shown in Figure 14). This suggests that the increased service hours put on by Brampton Transit is not yet significantly adding to ridership.

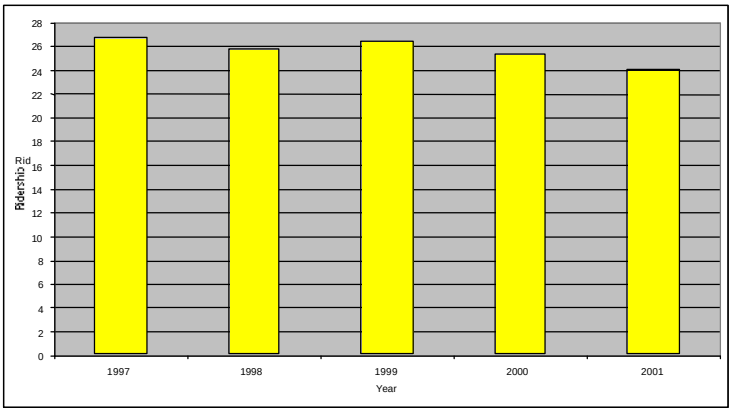


Figure 14 - Passengers per Hour

Revenue/Cost Ratio

While Brampton Transit has the highest cost recovery in its peer group, this measure of financial performance has fluctuated significantly over the past five years from a high of

75 percent in 1999 to 66 percent in 2001. Between 2000 and 2001, the R/C ratio fell by 8 percent. While the current ratio is still meets the City's Revenue Performance Policy stating a target R/C of 65 percent, this large drop in the financial return on performance should be examined closely to ensure this decline does not continue. Cost recovery for the last five years is shown in Figure 15.

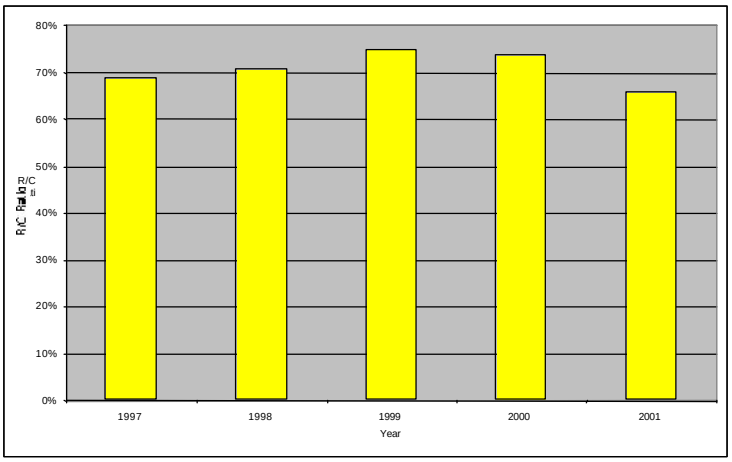


Figure 15 - Cost Recovery

Revenue and Cost

Figure 15 shows a revenue-cost performance that has been generally increasing over the pas several years until 2001, where there is a marked decline. As shown in Table 8, operating costs increased significantly in 2001, particularly in relation to revenue. This increase in operating costs is a direct result of a policy decision by the City and Brampton Transit to increase investment in both transit levels of service and coverage.

This change is part of an attempt to lead development with transit services: introducing transit services in new developments early enough to attract new users to transit. While this direction leads to initial declines in revenue/cost and other financial performance indicators, it can be effective in increasing transit ridership and performance in the medium-term.

Table 8 - Transit Revenue and Operating Cost Growth

Year	Revenue		Operating Cost	
	Total	*Growth*	*Total*	*Growth*
1996	$8,726,145		$12,934,004	
1997	$9,698,674	11%	$13,150,690	2%
1998	$10,703,103	10%	$14,316,458	9%
1999	$11,654,410	9%	$15,260,040	7%
2000	$12,848,913	10%	$16,909,691	11%
2001	$13,789,874	7%	$20,243,738	20%

Financial Performance

Figure 16, Figure 17 and Figure 18 show a variety of financial performance indicators, which also reflect the change in performance for 2001, related to the increased service and coverage investment. Figure 14 shows the increase in municipal investment per capita. Figure 15 shows the municipal investment levels per passenger, and Figure 16 shows the total cost per passenger. As development areas continue to attract new residents and new riders, this indicator is expected to return to its previous, if not improved levels.

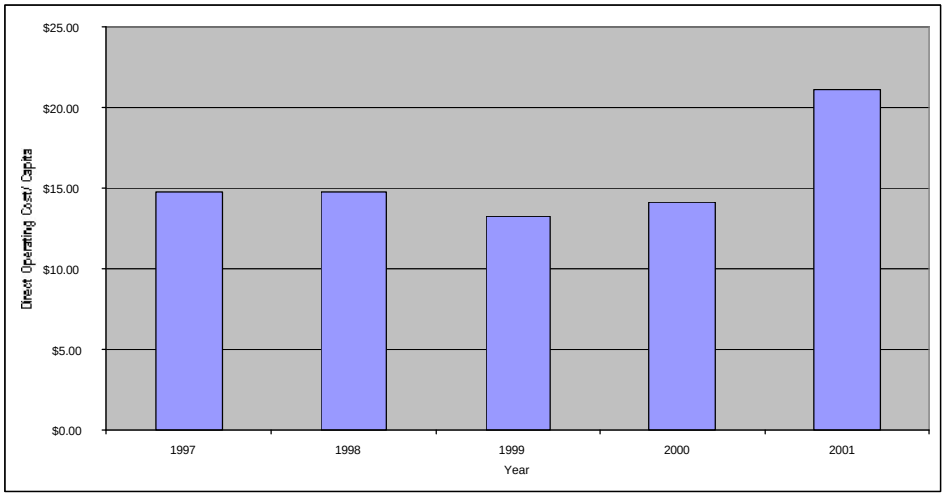


Figure 16 - Municipal Investment per Capita

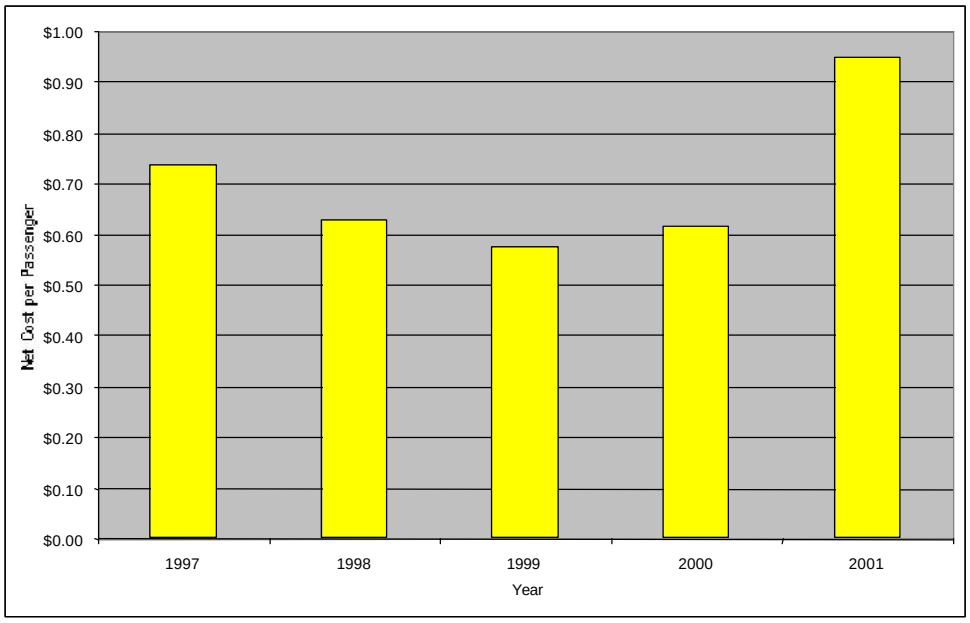


Figure 17 - Net Operating Cost per Passenger

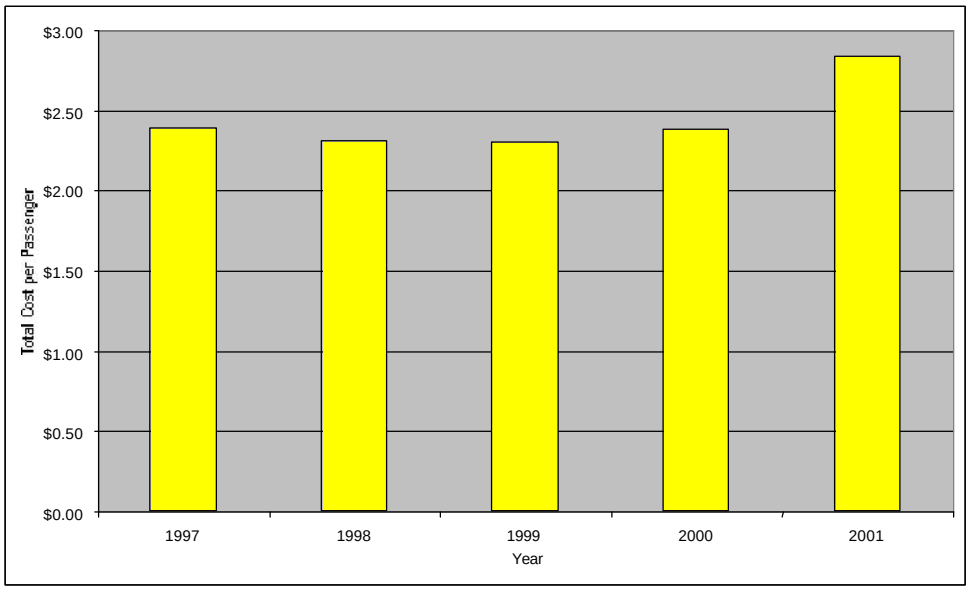


Figure 18 - Total Cost per Passenger

4.3 PEER REVIEW

Background

A peer review of Brampton Transit was conducted using a benchmark process. The transit systems benchmarked against Brampton were selected based on similar population sizes and urban characteristics as the City of Brampton. The six systems in Brampton's peer group are:

- London, ON
- Saskatoon, SK
- Grand River, ON
- Windsor, ON
- Laval, PQ
- Regina, SK

Data from the benchmark exercises were obtained from the CUTA 2001 Transit Fact Book. The benchmark review also compares Brampton statistics and performance measures with the peer group average and from the average of CUTA's Population Group 2, which is a summary of transit systems across Canada with a population between 150,001 and 400,000.

Peer Group System Descriptions

Brampton's 2001 transit service area population is about 320,000, which sits in the middle of the peer group, about 45,000 people above the peer group average. The system carries about 7,100,000 revenue passengers per year, ranking fourth in the peer group,

below the peer group average of about 10 million. To serve its population, Brampton uses 113 buses, just below the peer group average of 136. However, based on population per bus, Brampton ranks last in terms of resources used to serve ridership. The population per bus in Brampton is about 2,868, well above the peer group average of 2,100.

4.4 PERFORMANCE MEASURES

Revenue/Cost Ratio

Cost recovery is a reflection of the rate of return in a transit system; the amount of money spent to operate the system versus the amount of revenue received. According to CUTA calculation methods, this ratio does not include capital expenditures but is based on direct operating costs only. Cost recovery is influenced by many factors, including the efficiency of the operation, the fare structure, and the ability to attract ridership based on the amount of and quality of service. The average cost recovery for larger transit systems within the 150,001 to 400,000 population group is 54 percent. Depending upon the policy of the transit system, a higher cost recovery rate does not always imply that the objectives of the transit system are being met. Higher cost recovery performance could also mean that there is not enough service being provided based on demand. Increasing service may increase ridership and overall transit modal splits, but may reduce cost recovery.

Figure 19 shows that Brampton has the highest cost recovery in its peer group at 66 percent, followed closely by its fellow Ontario systems London and Windsor. In Ontario, cost recovery seems to take a higher status in measuring the performance of transit systems than it does in Saskatchewan and Quebec, where the average cost recovery are at least 20 percent lower than Ontario.

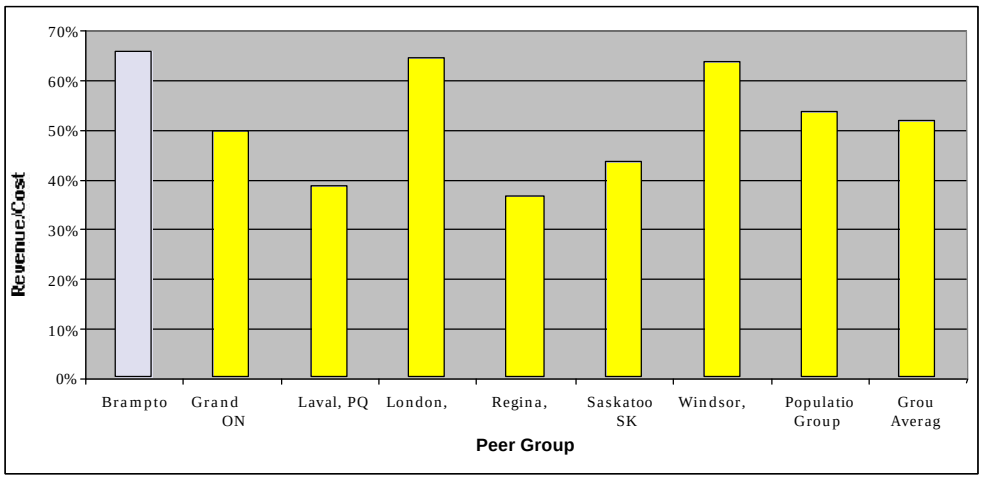


Figure 19 - Revenue /Cost Ratio

Utilization

Brampton Transit has the lowest passengers per capita in its peer group at 22 passengers per capita, 14 passengers less than the peer group average. Thus, while the system is running cost effectively, it is not attracting the ridership levels that systems of similar size are. Where traffic congestion is increasing on the social agenda in the GTA, this deficiency should be addressed to increase the modal split of transit in Brampton. Brampton Transit is doing this by introducing new services in developing areas where existing populations does not warrant new services. This is a laudable policy decision to lead development and establish the presence of transit in new areas, in a plan to build on ridership as the area approaches build-out and hence reduce auto dependence.

Brampton Transit also ranks last in its peer group in passengers per hour. This implies that the service in Brampton is not effective or attractive to choice riders. However, providing additional service alone may not increase the effectiveness of the service. Much of the land use in Brampton, including employment destinations as well as densities will have as strong a bearing on the effectiveness of the service as will the level of service. Passengers per capita and per hour are illustrated in Figure 20 and Figure 21.

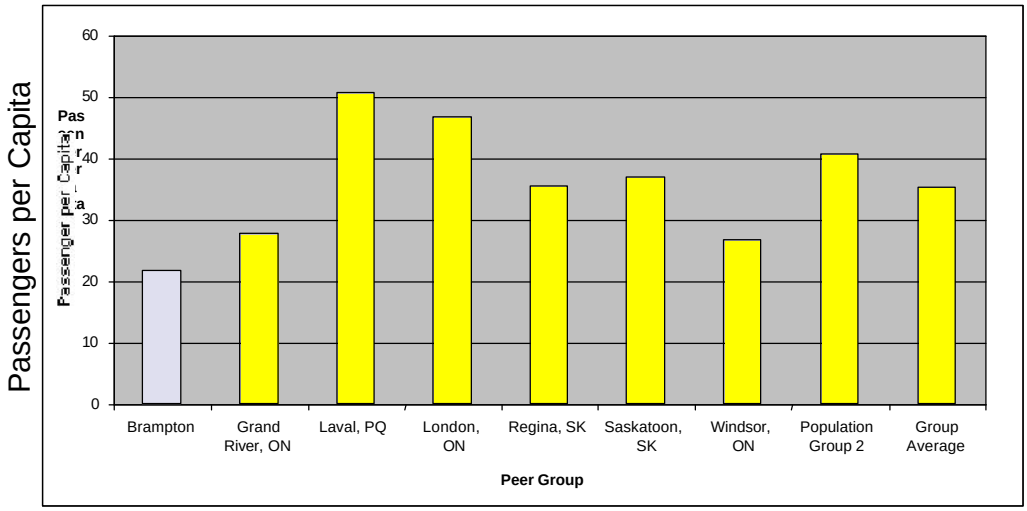


Figure 20 - Passengers per Capita

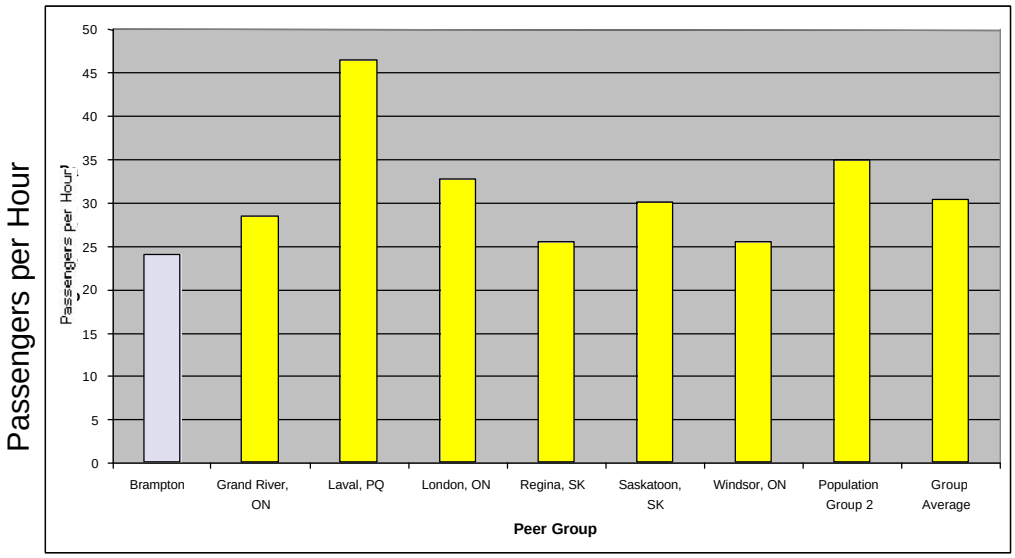


Figure 21 - Passengers per Hour

5. GROWTH TRENDS AND PROJECTIONS

5.1 POPULATION AND EMPLOYMENT FORECASTS

The City of Brampton is experiencing high levels of growth in population and employment. Over the next 30 years, population and employment levels are forecasted to double. Table 9 illustrates population and employment forecasts for Peel Region and the area municipalities, prepared by the City of Brampton.

The data from Table 9 is also illustrated in Figure 22 and Figure 23.

Table 9 - Population and Employment Forecasts

Census Year	Population	% Increase over 1996 value	Employment	% Increase over 1996 value
1996	270,000	-	104,000	-
2001	338,000	25	142,000	37
2006	409,000	52	177,000	70
2011	475,000	76	208,000	100
2021	594,000	120	258,000	148
2031	680,000	152	292,000	181

(Updated as per the data on the City of Brampton's official web page)

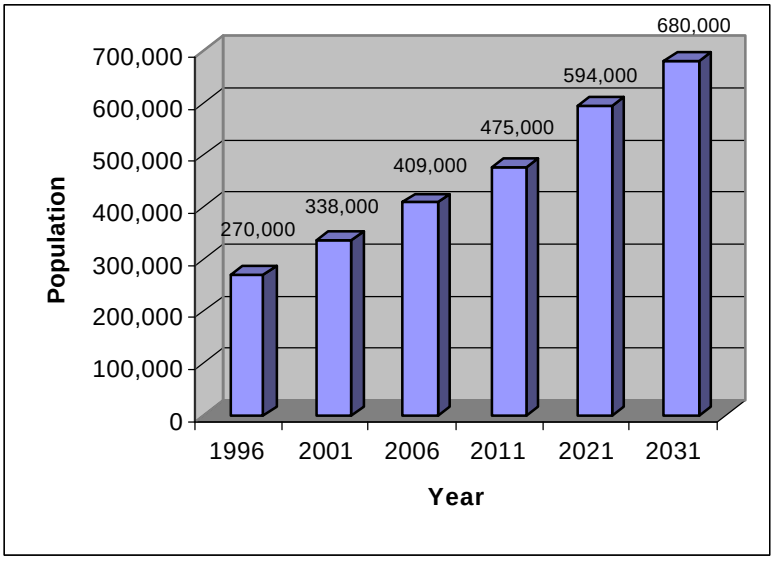


Figure 22 - Population Growth Forecasts (1996-2031)

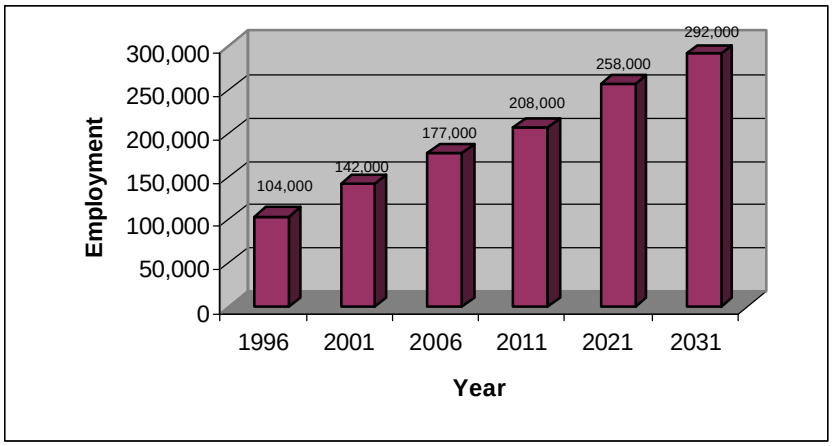


Figure 23 - Employment Growth Forecasts (1996-2031)

The 1999 Office of the Greater Toronto Area (OGTA) Population and Employment Forecast provides similar forecast results. It shows similar levels of both population and employment growth. By the year 2021, the population of Brampton is expected to double to approximately 560,000 and employment is expected to increase by approximately 55 percent to 246,000. Table 10 shows the population and employment figures for years 1996, 2011 and 2021.

Table 10 – Employment & Population Figures (based on OGTA 1999)

	Population			Employment		
	1996	2011	2021	1996	2011	2021
Brampton	279,600	439,000	559,700	96,700	200,700	246,300

The historical and expected growth in housing for Brampton is summarized in Table 11. The data was obtained from the Region of Peel Statistics Department. The data is also shown graphically in Figure 24.

Table 11 – Housing Growth Forecasts for the City of Brampton

Year	Number of Dwelling Units	% Increase over 1996 value
1996	82,000	-
2001	100,000	22
2006	122,000	49
2011	144,500	76
2021	188,000	129
2031	221,000	170

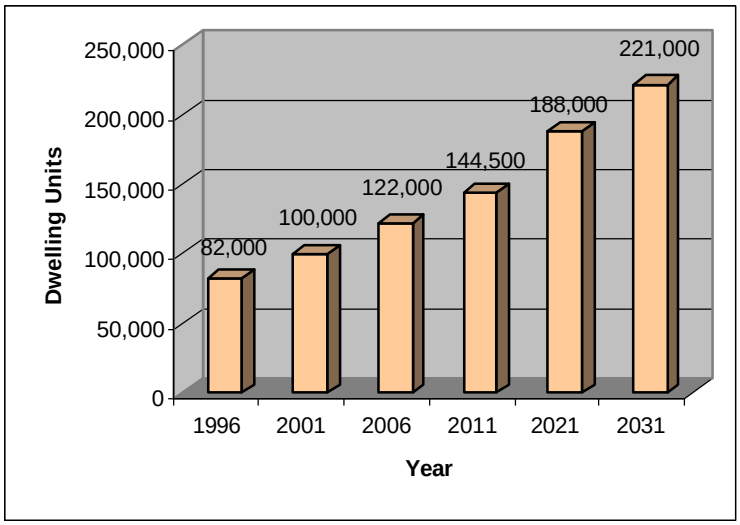


Figure 24 - Housing Growth Forecasts

At a strategic level, these projections of very high population and employment growth, taken in combination with the level of auto dependency and low vehicle occupancy in the City, indicate that there is a high potential for significant growth in travel demand, particularly in the form of single occupant vehicle trips.

5.2 TRAVEL TREND PROJECTIONS

The TTS survey data for the years 1986, 1991 and 1996 constitute the basis of the analysis. The 2001 TTS data is not yet available. Population in the study area has increased by 42 percent over the last 10 years. This has resulted in an increase of approximately 162,300 auto trips, which equates to a 44 percent increase.

Table 12 summarizes the historical trend of population versus trips made to and from Brampton for the 24-hour period. The numbers are from the TTS 1996 Report. As shown in the table, the trips per person ratio remains constant over the years.

The importance of truck travel is anticipated to grow in the east part of the City, based on the industrial-based land uses designated within Brampton and east of Highway 50 in Vaughan.

Table 12 – Trend in Trips per Capita (1986-1996)

Years	Population	Trips made to Brampton	Ratio	Trips made by Residents of Brampton	Ratio
1986	180,000	335,000	1.86	366,600	2.04
1991	232,500	450,500	1.94	494,000	2.13
1996	255,700	472,500	1.85	528,900	2.07

Figure 25 illustrates the change in population, household numbers and trips per household.

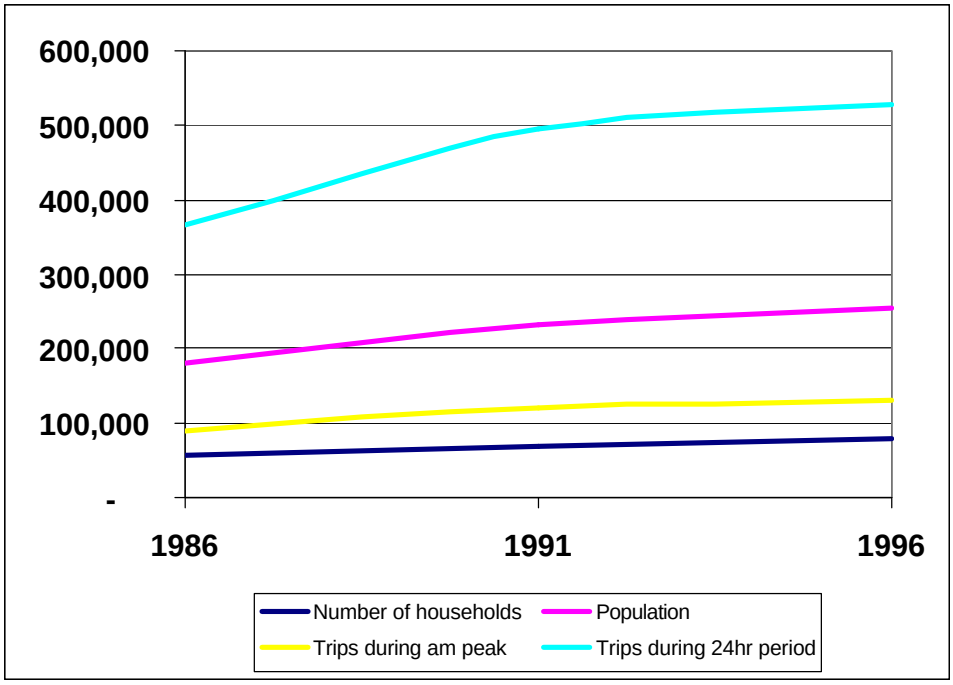


Figure 25 - Comparison of Population, Household and Trips per Household

5.3 SOCIO-ECONOMIC CHARACTERISTICS

Population and employment are primary factors used in determining travel demand and travel patterns. According to 1996 Census data, the City of Brampton has a population of approximately 270,000, which is 5.8% of the entire population of the Greater Toronto Area (GTA). The City provides approximately 104,000 jobs, which equates to approximately 4.1 percent of GTA employment.

The jobs per capita ratio in the City of Brampton is 0.36, compared to the GTA average of 0.50 (including the City of Toronto). The number of Brampton residents working outside of the city is higher than the case in the rest of GTA. This indicates that effectively serving home-work trips by local transit will be a challenge that the City must address.

6. PUBLIC INPUT FROM THE MAYOR'S TOWN HALL MEETING ON TRANSPORTATION

A public consultation meeting was held in the City Hall on Wednesday, October 23, 2002. An open house was held in the atrium, where questionnaire and comment sheets were distributed to the attendees. Over 200 people attended. Forty-eight completed comment sheets were collected. The open house was followed by a Town Hall meeting, hosted by Mayor Susan Fennell. Mr. John Corbett, Director of Planning and Land Development Services, Planning, Design and Development, presented the current status of the study and illustrated various opportunities and challenges.

Detailed meeting minutes for the Town Hall meeting can be found in the Appendix, together with a detailed tabulation of the questionnaire results. The questionnaire results indicate that:

- **Brampton residents prefer to drive.** Almost ninety percent of recipients indicated that they drive more than four times per week, which is almost seven times more than transit usage for the same period. The most frequent cited reasons for driving were convenience, in terms of the length of trip, weather, and location of destination. Other reasons include the need of carrying purchases and business use.

- **Despite having access to public transit, the majority of residents do not use it.** While more than three in four recipients (77%) have access to public transit, less than one in five (17%) use it in an average month. The main reasons that prevent recipients from taking transit are convenience, in terms of location of destination(s), duration and length of trip. Other reasons include poor transit connection and accessibility.

- **Walking and cycling are important modes of travel in Brampton.** About three quarters of recipients (73%) indicated they walk to destinations in the past month and one-quarter (25%) include they cycle. While recipients stated a preference for transit use over cycling, they rode a bicycle more often than transit.

Recipients expressed their **major transportation challenges** as follows:

- Congestion, time of travel and stress
- Traffic (mostly in terms of access and signals)
- Public transit improvement
- Highway 410 improvement
- Bovaird Drive improvement

Recipients expressed their preferred **major transportation improvements** as follows:

- Roads widenings and extensions
- Brampton Transit/GO Transit service improvements
- Traffic (mostly in terms of signal coordination, access and traffic calming)

- Development hold-backs and better relationship between planning of transportation infrastructure and development
- Bike lane and carpool/bus lanes

The questionnaire results were believed to represent concerns of the majority of Brampton residents. These issues will be addressed through the Transportation and Transit Master Plan, in terms of both the Short-Term Action Plan and the long term planning.

7. SUMMARY OF NEEDS, DEFICIENCIES AND OPPORTUNITIES: DRAFT SHORT-TERM ACTION PLAN

7.1 SHORT-TERM ROADS AND TRANSIT NEEDS AND OPPORTUNITIES

Roads and transit needs and opportunities should be considered in an integrated manner, in keeping with the study goals, the City and Regional Official Plans, and the City's Growth Management program and Strategic Plan. Accordingly, the discussion below focuses where appropriate on moving persons, not simply vehicles. There are locations where short-term solutions may focus on one mode or another, but that should not preclude consideration for a longer-term multi-modal vision. The public input received has also been taken into consideration.

It should first be noted that Brampton Transit continues to be pro-active in terms of servicing new areas as they develop, in order to build a transit orientation to trip-making.

Needs and opportunities are as follows:

a. Increased capacity across the Highway 410, Steeles Avenue, Brampton/Vaughan and Brampton/Halton Hills screenlines is needed. These and other locations of congestion need to be addressed, primarily by road improvements in the short term. The Highway 410 extension should be considered as the highest priority road improvement required in Brampton. This would permit the Sandalwood Parkway extension to be completed, and together these two projects would provide a better distribution of traffic around Trinity Common and along Bovaird Drive;

b. A strategy to move people and vehicles through and/or around the Four Corners is needed. This could take the form of road improvements around old Brampton, transit improvements through this area, and operational strategies to improve the flow of traffic and transit vehicles;

c. A goods movement strategy is needed. The safe and efficient movement of goods and services within and through City of Brampton is crucial to industry and commerce, and thus key to the City's economy. Goods movement is closely integrated with the structure of the city transportation system, urban form and the location and manner in which businesses and industries operate;

d. There is both a need and an opportunity for improved inter-regional transit links. These are needed to cope with current deficiencies and projected growth. There is also the opportunity to pro-actively define a transit program which can shift some of the City's travel demands away from auto dependency. There are opportunities to link with the initiative proposed by York Region and Mississauga Transit for a rapid transit network serving the "905" area, and also to seize the day to define "made in Brampton" ideas for new service initiatives;

e. Within Brampton, there is also the need to balance vehicular and transit demands, to set the stage for coping with projected growth. This will involve operational strategies, transit service enhancements, intelligent transportation system initiatives, and supporting policies and programs;

f. The issues surrounding Trinity Common (and other auto-dominated areas of the City, such as Queen Street East, Main Street/Steeles Avenue, etc.) suggest a need and opportunity to re-focus thinking with respect to nodes and corridors, in terms of the integration of land use, urban design and transportation. The TTMP study must come to grips with this issue, in order to achieve the basic goal of developing a future for the City which is economically and environmentally responsible, and which supports continued growth;

g. Improved transit services, with transit priority measures, in the Highway 7/Queen Street and Highway 10/Main Street corridors;

h. Improved connections and integration with Mississauga Transit;

i. Re-introduction of express bus services, linking Brampton Transit and GO Transit terminals to major residential areas;

j. Continued transit service expansion in the north-east; and

k. Improved transit connections to employment zones in the airport area.

7.2 DRAFT SHORT-TERM ACTION PLAN

A draft short-term action plan has been identified in recognition of the needs and opportunities cited above. In defining the need for future improvements, it is important to first understand what has already been programmed by the City, the Region, MTO and 407ETR.

Currently Programmed and Identified Improvements

MTO

In Brampton's Strategic Plan, the following MTO projects are cited as goals:

- Complete the construction of Highway 410 from Bovaird Drive to Highway 10 by 2001
- Initiate the Planning and Environmental Assessment studies for the extension of Highway 427
- Plan, design and construct the interchange of the Bramwest industrial major arterial road with Highway 407 (between Heritage Road and Winston Churchill Boulevard)

None of these projects has been realized to date. The City continues to press MTO for the first two projects to be completed. The City and MMM are working with 407ETR and MTO to achieve approval for the third project.

407ETR

407ETR is planning to widen Highway 407 by one lane per direction between Pine Valley Drive and Highway 27 in 2003. While not in the City of Brampton, this would relieve congestion in the east end of the City. A widening from Highway 401 to Hurontario Street is also under consideration.

City of Brampton/Region of Peel

Two sources have been consulted to define programmed or previously identified improvements. These are the City's Ten-Year Construction Plan and the Region of Peel's City of Brampton Road Improvement Priorities Study (Phase 2: 2003-06).

Table 13 summarizes those projects in relation to the areas of concern identified through this and other relevant studies. Table 13 also identifies potential additional initiatives that should be included in the Short-Term Action Plan.

Table 13 - Areas of Concern and Improvement Initiatives

Area of Concern	Currently Programmed Actions / 10-Year Capital Plan	Potential Additional Initiatives
Roads:		
Queen Street (*)	• Widening to 6 lanes, between Hwy 410 and Centre Street • Widening to 6 lanes between Hwy 50 and Hwy 410 • Widening to 4 lanes, between McLaughlin Road and Chinguacousy Road	• Transit priority service ("branding" of service, signal priority, queue jump lanes, etc.)
Bovaird Drive / Castlemore Road (*)	• Widening to 6 lanes between Hwy 50 and Airport Road • Widening to 4 lanes between Main Street and Mississauga Road	• Transit priority (signal priority, queue jump lanes, etc.)
Steeles Avenue	• Widening to 6 lanes between Chinguacousy Road and Main Street • Widening to 4 lanes between Mississauga Road and Winston Churchill Boulevard	• Transit priority (signal priority, queue jump lanes, etc.)
Williams Parkway	• Widening to 6 lanes between Torbram Road and Humberwest Parkway • Construction of eastern extension as 4-lane roadway (as extension of North Park Drive). • Construction of 4-lane extension from Chinguacousy Road to Mississauga Road	
Sandalwood Parkway	• Completion of the missing link, connection to the northern extension of Hwy 410	• Advance completion of the missing link before

Area of Concern	Currently Programmed Actions / 10-Year Capital Plan	Potential Additional Initiatives
	• Widening to 4 lanes first, then to 6 lanes between Torbram Road and Dixie Road • Construction of 4-lane extension from Chinguacousy Road to Mississauga Road	completion of the Highway 410 extension
Wanless Drive	• Widening to 4 lanes between Hurontario Street and Chinguacousy Road	
Humberwest Parkway (Goreway Drive) (*)	• Construction of the southern extension to Williams Parkway and widening to 6 lanes between Queen Street and Hwy 407	
Highway 410	• Construction of the extension, north of Bovaird Drive reaching Hwy 10	Consider express bus services
Highway 50	• Widening to 6 lanes between Castlemore Road and Queen Street East	
Chinguacousy Road (*)	• Widening to 4 lanes between Williams Parkway and Wanless Drive • Widening to 6 lanes between Queen Street West and Steeles Avenue	
McVean Road	• Widening to 4 lanes between Queen Street and Castlemore Road	
Gore Road	• Widening to 4 lanes between Queen Street East and Mayfield Road	
Mississauga Road (*)	• Widening to 4 lanes between Queen Street West and Hwy 407	
Kennedy Road	• Widening to 4 lanes south of Steeles Avenue	
Bramalea Road	• Widening to 4 lanes between Sandalwood Parkway and Countryside Drive	
Torbram Road	• Widening to 4 lanes between Sandalwood Parkway and Countryside Drive	
Creditview Road	• New 2-lane Creditview Road between Queen Street West and Sandalwood Parkway	
Bramwest Parkway	• Construction of the road between Steeles Avenue and Embleton Road	

Area of Concern	Currently Programmed Actions / 10-Year Capital Plan	Potential Additional Initiatives
Intersections:		
Queen Street & Main Street	• Left turns have recently been prohibited in all directions	
Bovaird Dr. & Main Street	• Widening of Bovaird Drive	• Transit improvement, priority signaling along Bovaird Dr.
Bovaird Dr. & Hwy 410 (Trinity Common Shopping Centre)	• Completion of the missing link of Sandalwood Parkway • Extension of Highway 410 to Sandalwood Parkway (first phase) • Construction of a by-pass link between Bovaird Drive and Heart Lake Road	• Advance completion of the missing link before completion of the Highway 410 extension

(*) These improvements are included in "Road Improvement Priorities Study Phase-2" Report

Transit initiatives that should be included in the Short-Term Action Plan include:

- Introducing express services on Queen Street East and Main Street as the first stage in Bus Rapid Transit (BRT), "branded" as separate enhanced services to encourage commuter usage

- Working with Peel Region to implement transit priority on the following streets:
  - Queen Street East connecting to York Region
  - Main Street/Hurontario Street, connecting to Mississauga City Centre
  - Airport Road south of Queen Street, connecting to Pearson Airport and the Airport Corporate Centre
  - Steeles Avenue east of Shoppers World, connecting to York Region and Toronto

- Improving transit access to and from transit terminals in the City (including GO Stations). This would include changes to signals, pavement markings and signing to give transit vehicles priority

- Working with York Region and their private sector partner and Mississauga Transit to introduce improved inter-regional transit and develop a plan for long-term expansion of this concept

- Reintroducing express services linking key residential areas to GO and Brampton Transit terminals in the City

- Improving service connections and integration with Mississauga Transit

- Continuing transit service expansion in the north-east, and

- Improving service connections to employment zones in the airport area.

Policy and program initiatives that should be included in the Short-Term Action Plan are as follows:

- Continuing implementation of the City's cycling plan, to enhance bike and pedestrian accessibility. Providing secure bike parking and shower/change facilities at City Hall could be a way of leading by example in support of alternate modes

- Introduce a Travel Demand Management program for City staff. Elements of the TDM plan could include facilitating carpools through a rider matching services, providing preferred parking for high occupancy vehicles, subsidizing Brampton Transit passes for employees and permitting transit pass purchase through payroll deduction. Carpools can be supported by providing transit vouchers for employees who must miss their ride home due to scheduling conflicts

- Enhanced marketing of Brampton Transit and GO Transit services

- Review parking policies in the City Centre (both on and off-street together) and define a staged plan for the adjustment of rates and rate structures to encourage transit use and discourage long-term parking on-street. This could include limiting the permitted parking duration in metered spaces to one hour. They could also include promoting shared-use of parking, which would limit parking over-supply, a key factor in auto dependence

- Definition of a "Connectivity Index" for development applications, and implementation of this Index in the site plan review process as a tool for staff. This Index would be intended to measure the connectivity to (existing or planned) transit services, pedestrian and bike facilities. This Index would be defined to address the design of plans of subdivision as well as applications for commercial and industrial uses. As time goes by and the Index is used on a series of applications, staff will come to a better understanding of what works and what doesn't in terms of accessibility for alternate modes

- Provide support for car-sharing programs. The City could provide subsidized space for a trial program until it becomes established. Car-sharing programs in other Ontario cities have been quite successful

- Consider setting up Travel Management Associations (TMA's) in areas of high commercial/industrial activity. The TMA can act as joint public-private forum for development and implementation of programs that are locally appropriate. For example, they can arrange carpools among neighbouring businesses

- Make a TDM plan a required component of site plan application for major developments. For example, any employer with a staff complement of over 200 could be required to submit a TDM plan showing how they will contribute to minimizing single occupant vehicle trips

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