



Policy Paper No. 1

PEDESTRIANS & CYCLING



May 2004



POLICY PAPER NO. 1 PEDESTRIANS & CYCLING

FOREWORD

The City of Brampton has developed a Transportation and Transit Master Plan. The purpose of the Master Plan is to define the long-term transportation vision, policies and infrastructure needs to meet future transportation demands in an affordable and environmentally sustainable manner. In addition, it includes an implementation strategy and priorities for immediate action.

This Policy Paper is intended to provide additional background on the Master Plan. Your comments on this document are important. To provide your input or to learn more about the Transportation Master Plan you can:

- Visit our website at www.brampton.ca and follow the links
- Submit written comments to the address below; or
- Contact us by email, phone, fax or in person at:

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1.0 INTRODUCTION & BACKGROUND

Walking is an integral component of almost all trips, and the relative importance of cycling is on the rise. However, the largest proportion of all travel is still made first by the private automobile and second by public transportation. To develop a Transportation and Transit MasterPlan that maximizes the opportunities for mobility in each all mode, it is important to include a workable plan for the promotion, enhancement and design of walking and cycling facilities, building on the City's past and current successes in this area. Brampton residents already make a substantial proportion of their trips on foot or by bicycle.

This paper reviews the current issues related to walking and cycling, policies, programs and practices in the City of Brampton, and experiences from other jurisdictions to identify policy options, implications and directions for change.

Active Living

“Active living” is a recently coined term, describing a lifestyle which focuses on healthy physical activity as part of a daily routine. It is a reaction to the increasingly sedentary lifestyle of North Americans. People living in sprawling communities are more likely to suffer from weight problems and other related diseases such as hypertension, because of reduced physical activity. A study done by Smart Growth America indicates that in New York County, NY, the most compact county in the US, the weight of the average person was 161.1 pounds. At the other extreme was the most sprawling county in the US (Geauga County, OH), where the weight of the average person was expected to be 167.5 pounds, a difference of six pounds between the two counties.

Researchers suggest routine physical activity in order to lower the body mass index (weight to height ratio). The principle of active living is one which underlies the concepts in this paper, and the entire TTMP.

2.0 CURRENT TRENDS AND ISSUES

The following provides a brief overview of current walking and cycling issues and trends.

2.1 WALKING

Walking is the fundamental mode of transportation. Downtown origin and destination surveys show that, in most cities, about ninety percent of all internal trips within the central business district are by pedestrians. The 2001 Transportation Tomorrow Survey (TTS), reveals that, of all the trips within the downtown Toronto on a typical weekday at morning peak period, 40% are walk trips. Given that almost every trip involves walking at some point, the needs of pedestrians cannot be overlooked in master transportation and land use planning.

Macro-scale plans, such as transportation master plans, generally concentrate on the movement of people and goods between origins and destinations at a range of distances, in order to define major infrastructure needs. Therefore the majority of recommendations facilitate automobile, truck and transit trips through capacity improvements. Recommendations for pedestrian movement are often general, supporting walking through other planning initiatives and design studies.

However, a pleasant and supportive walking environment can promote greater proportions of shorter distance trips to be taken as a pedestrian, as opposed to the private automobile. In addition, the pedestrian environment is highly related to transit use, since the vast majority of transit users are pedestrians at the point they access these facilities. Increased walking will generally reduce the amount of auto travel and provide a more sustainable community.

There are seven generally accepted principles to improve the pedestrian environment:

1. Safety – reducing pedestrian-vehicle conflicts;
2. Security –improving visibility by the pedestrian and visibility of the pedestrian route by the surrounding community;
3. Convenience – facilitating direct and effective pedestrian flow;

4. Continuity – direct and consistent routing;
5. Comfort – complete or partial protection from inclement weather;
6. Coherence – clearly conveying direction, function and purpose; and
7. Attractiveness – creating an aesthetically pleasing walking experience.

2.2 CYCLING

Cycling has evolved to become a practical, cost effective, environmentally sensitive and healthy mode of transportation for both recreation and utilitarian trips across North America. It is widely recognized as an integral and necessary part of a community's transportation system and as an alternative to automobile use.

Across Ontario, recreational cycling is recognized as one of the top three recreational pursuits, having a 20% participation rate and estimated annual growth rate of 2.3% (Ministry of Citizenship, Culture and Recreation, 1998). In the City of Toronto, approximately 20% of the population cycle for utilitarian purposes such as getting to work, school, shopping, and 44% of the population cycle for recreational purposes to follow leisure and fitness pursuits (Decima Research Inc., 1999).

The demand for cycling and walking facilities is high in communities across Ontario. Municipalities such as Toronto, Ottawa, Markham, London, Milton and Windsor, to name a few, are actively developing networks to encourage cycling and walking, and to lower reliance on the personal automobile.

At the provincial level, the Ontario Trails Council is promoting the integration of community and regional trail systems into a province-wide system to be known as the Ontario Trillium Trails Network. At the same time, a national trail system is being developed through the Trans Canada Trail Initiative.

2.2.1 Recreation, Health and Fitness Benefits

The promotion of cycling has significant individual, societal, environmental and economic benefits. Cycling provides an enjoyable, convenient and affordable means of exercise and recreation. The most effective fitness routines are moderate in

intensity, individualized, and can be incorporated into our daily activities. Cycling can accomplish this and at the same time provide mobility. In Ottawa, two-thirds of 1,700 commuter cyclists surveyed in 1991 ranked health and fitness as the primary reason for cycling to work.

Trails pass through a variety of neighbourhoods helping to unite communities. They act as meeting places, and provide for informal interaction between people from a variety of backgrounds. Trail projects (construction, operation, maintenance and promotion) can help to foster partnerships among individuals, government, local business and interest groups. There are many examples of successful private and public-sector partnerships that have developed as a result of the development of trails across the country, such as the Chrysler Greenway through Essex County.

Our health system is shifting from protecting people against hazards present in the environment to developing healthy environments. Increased physical activity such as walking and cycling could help to reduce the risk of coronary heart disease. A more active population can in turn reduce the cost of medical care, decrease workplace absenteeism, maintain the independence of older adults and reduce the cost of institutional care.

Cycling and walking can contribute to reduced urban and suburban dependence on the automobile, which is a target for a healthy city.

2.2.2 Transportation Efficiency Benefits

Cycling is a popular recreational activity and a means of transportation that is efficient, affordable and accessible. For distances up to 10 km in urban areas, cycling is the fastest mode from door to door. The National Bicycle and Walking Study: Final Report (1994) shows that 25% of all trips are 1.5 km long or less, and over two-thirds are 8 km long or less in U.S. cities. Approximately 20% of all cycling trips involve travel to and from work in the U.S. This demonstrates the potential for increasing the number of trips by bicycle.

In Edmonton, a survey of 2,400 cyclists in 1989 showed that 75% of the reported bicycle trips were for reasons other than recreation. Almost 20% of the cyclists surveyed rode all year round, indicating that winter cycling is viable even in "winter cities".

Road improvements to increase the safety of cyclists can and should enhance the safety of other road users. For example, the U.S. Federal Highway Administration reports that paved shoulders on two-lane, rural roads have been shown to reduce run-off-the-road, head-on and sideswipe collisions by 30 to 40%. In addition, several municipalities have found that paved shoulders reduce maintenance costs related to shoulder deterioration, grading and snow plowing.

2.2.3 Environmental Benefits

Cycling is an energy-efficient, non-polluting mode of travel. Short distance trips are the least fuel-efficient motor vehicle trips and generate the most pollution per kilometre. These trips have the greatest potential for replacement by cycling trips and integrated cycling-transit trips. Shifting to transit and cycling modes can mitigate ozone depletion, the greenhouse effect, ground-level air pollution, photochemical smog, acid rain and noise pollution. Bicycles take up fewer resources in their production and maintenance than motor vehicles, reducing the demand on materials and energy resources.

2.2.4 Economic Benefits

Following significant investment in bicycle facilities, cities in industrialized countries have experienced dramatic increases in the level of cycling. For example, Copenhagen experienced a cycling increase of 50% in five years; Eugene, Oregon experienced an increase of 75%; and Toronto experienced an increase of 75%.

There is ample evidence that trails provide significant economic benefits for adjacent landowners and local businesses. Trails provide benefits to the local economy during both construction and operation. Trail construction results in direct benefits such as

jobs, including the supply and installation of materials. Following construction, benefits emerge in the form of expenditures by trail users. A few examples include:

- Trails in New Brunswick employ around 1,500 people for an average of 6 months per year;
- 70% of Bruce Trail users cite the trail as the main reason for visiting the area, and they spend an average of about \$20 per visit within a 10km corridor on either side of the trail;
- The San Antonio Riverwalk is considered the anchor of the tourism industry in San Antonio, Texas, and contributes \$1.2 billion annually to the local economy;
- In 1988, users of the Elroy-Sparta Trail in Wisconsin averaged expenditures of US\$25.14 per day for trip-related expenses or over \$1.2 million annually;
- More than 600,000 Americans took a bicycle vacation in 1985, and when travelling in a group spent \$17 per day (camping), and \$50 per day (staying in motels). Cyclists travelling alone spent an average of \$22 per day (camping) and \$60 per day (staying in motels); and
- In Ontario, the Eastern Ontario Trails Alliance estimated that at the end of a ten year build-out period, 320 km of their system, constructed at a cost of \$5.4 million will generate approximately \$36 million in *annual* economic benefits in the communities through which it passes, and create / sustain over 1,100 jobs.

3.0 EXISTING CITY OF BRAMPTON POLICIES, PROGRAMS AND PRACTICES

The following documents were reviewed to determine existing policies, programs and practices in the City of Brampton pertaining to cycling and walking:

- Pedestrian and Cycling Trails (P.A.C.T.) Final Report 1991
- City of Brampton Official Plan 2000
- Brampton's Pathways Master Plan (Volume One) 2002
- City of Brampton Sidewalk Policy

Each of the documents mentioned above served to build upon the findings of their preceding study.

3.1 PEDESTRIAN AND CYCLING TRAILS (P.A.C.T.) FINAL REPORT

The latest P.A.C.T. Report was completed by the City of Brampton Community Services Department in January 1991. The final report was based directly upon the findings of its preceding P.A.C.T. Reports.

The first P.A.C.T Report was produced in 1979, and established the trend towards placing a greater emphasis upon walking and cycling within the community.

The 1986 P.A.C.T. Sheridan College/Parks and Recreation Report proposed a trail network for the City of Brampton. It consisted of a utility network that followed the existing road grid, and a recreational network that essentially followed the north-south waterways and, where possible, looped to connect to other trails.

The 1989 P.A.C.T. Preliminary Report recognized the need to go beyond just the physical layout of the trails and to provide greater insight into the details of the network system. As a result, it recommended that a final report be composed in order to address some of the outstanding issues.

The P.A.C.T. Final Report went further than any previous P.A.C.T study. This Report conforms to the existing recreational network and focuses on the general outline for the utilitarian network. It provides several valuable policies, which would lay the groundwork for future cycling and pedestrian policy documents. The findings of the report are summarized as follows.

- Detailed trail design issues such as composition and dimensions, layout and alignment, trail lighting, site furniture and maintenance are defined
- The majority of the trail system runs through publicly owned lands, specifically: valleyland and linear parks, road rights-of-way and utility corridors

- Integration of bike paths with existing road has been clarified. Due to cross-sectional constraints, drivers and cyclists should share the road right-of-way along local and minor collector roads. For major collector roads, parkways, and arterial roads, separate bike lanes should be provided. Where possible, the lanes are to run through the reserve landscape space, otherwise they are to be on-street laneways. There is a specific mention of bike lanes along Queen Street, in accordance with the more urbanized vision for the downtown core
- Typical cross-sectional diagrams for the bike lanes associated with each specific type of roadway are also mentioned.
- The use of utility corridors, hydro corridors, and the Trans Canada Pipeline corridor for utilitarian pathway routes is emphasized.
- The report investigates pathway crossings, including railroad and waterway. A more in-depth look is taken at roadway crossings, addressing the need for underpasses and overpasses. Typical cross-sections for waterways and underpasses (rail and roadway) are also provided. Pedestrian crosswalks are identified as the least favourable crossing mechanism, due to their impediment of vehicular flow.
- The P.A.C.T. report also addresses the importance of the marketing the proposed bicycle and pedestrian routes. The importance of signage, for the purposes of safety and advertising is emphasized, providing depictions of some possible signs. Other promotional aides recommended are: a trail map, the mailing of an information brochure to all Brampton residents, and various media and promotion events.

The report outlines the recreational trails now existing within the City of Brampton. However, a focus is placed on a utilitarian grid network. The plan essentially mirrors the existing road grid network, with little detail provided regarding utilitarian off-road routes, including those that could potentially run through the utility, hydro, and Trans Canada Pipeline corridors. It also does not define the specific types of trails being proposed along specific routes (i.e. paved, on-street, etc.). The report does not detail the inter-relationships between the utility road grid network and the off-street existing pathways.

3.2 CITY OF BRAMPTON OFFICIAL PLAN

The policies and objectives outlined within the City of Brampton's Official Plan are all aimed at achieving the City's ultimate transportation goal: *"To provide a safe, economical, and efficient system for transporting people and goods which supports the Official Plan land use designations and encourages the appropriate development of the City Center, the Central Commercial Corridor and Gateway activity centers, while protecting established neighbourhoods, and promoting orderly growth"*.

The recommendations of the P.A.C.T. Final Report had favourable influence on the pedestrian and cycling policies set out in the Official Plan. Several of the recommendations were adopted as official policy by their inclusion into the Plan. The most relevant sections of the Official Plan are identified in Table 1.

Table 1: Walking and Cycling Related Sections in the City of Brampton Official Plan	
Reference	Statement
4.1.8 Residential Design / 4.2.6 [Economic Base – Industrial Dominant Sector]	Policy 3. Through its review and approval of site plans for residential / [industrial] developments pursuant to the <u>Planning Act</u> and in accordance with the Urban Form and Environmental Management sections of this Plan, the City shall: ii) endeavour to achieve satisfactory access for public transit, automobiles, pedestrians and cyclists.
4.2.6 Economic Base – Retail Dominant Sector	Objective: To encourage pedestrian-oriented neighbourhood retail establishments in order to reduce automobile dependency. Policies (Design): 6. Through its review and approval of site plans for commercial developments pursuant to the <u>Planning Act</u> and in accordance with the Urban Form of Environmental and Management sections of this Plan, the City shall: ii) endeavour to achieve satisfactory access for public transit, automobiles, pedestrians and cyclists
4.3.1 Transportation – General Policies	Objectives: To provide safe and efficient movement of people, goods and services within an integrated automobile, transit, cyclist and pedestrian supportive transportation system. To ensure the provision of adequate road, transit, pedestrian and bicycle links between Brampton and adjacent municipalities. Policy: 4. The City shall, on a regular basis, monitor the efficiency and effectiveness of all major elements of the transportation system including the road facilities, local and regional services, the commuter rail system, the Pedestrian and Cycling Trail system and parking.
4.3.2 Transportation – Roads	Policy (Road Planning): 12. The City shall encourage the design of roads to incorporate elements such as tree planting, landscaping, buffers, hedgerows, pedestrian facilities, transit stops, bicycle paths, median strips and boulevards where appropriate and in accordance with the Urban Form and Environmental Management sections of this Plan.
4.3.3 Transportation - Traffic Circulation	Policy (Improve Traffic Circulation): 3. The City shall support pedestrians and transit users in the design of new subdivisions by encouraging, where feasible, intersections of local streets with minor arterials and collectors, supplemented by the provision of sufficient walkway access points so as to achieve a maximum spacing of pedestrian points along transit routes of 400 metres.
4.3.4 Transportation - Public Transit	Policy (Transit and Urban Form): 7. The City shall encourage development along provincial highways and arterial roads that facilitates direct pedestrian access from the roadway (e.g. by constructing buildings that are oriented towards the streets and close to the street line). Policy (Transit and Land Use): 10. The City shall encourage the location of major trip generators (residential, office,

Table 1: Walking and Cycling Related Sections in the City of Brampton Official Plan

	<p>and retail uses developed at densities above 0.5 FSI) within a convenient walking distance from a transit stop (200 metres or less).</p> <p>12. The City shall, in the Subdivision Plan and Site Plan Control processes, ensure the provision of convenient pedestrian access and walking distance to transit facilities.</p>
<p>4.3.6 Transportation - Pedestrian and Cycling Trails</p>	<p>Objectives:</p> <p>To provide an overall bicycle circulation system that will safely and efficiently accommodate both recreational and journey to work cyclist trips.</p> <p>To promote the use of the bicycle for purposes other than recreation and specifically for journey-to-work, shopping, and entertainment trips.</p> <p>To promote walking as a healthy, environmentally friendly and preferred mode of trip making for short trips.</p> <p>To ensure safe and convenient movement of pedestrians throughout the city.</p> <p>Policies (Cycling Trails):</p> <ol style="list-style-type: none"> 1. The City shall ensure that all P.A.C.T. trails be designed to be continuous, safe and attractively landscaped. 2. The City shall, in the Secondary Planning process, ensure the provision of wide curb lanes or other types of special shoulder lanes or dedicated bike paths on all arterial and parkway roads as designated in the P.A.C.T. Report. 3. The City shall provide signage that indicates the beginning and end of Cycling trails and provides directional information and warnings at all turns and intersections as per the P.A.C.T. Report. 4. The City shall periodically monitor the implementation feasibility and update the bicycle trail component of the P.A.C.T. Report in conjunction with the applicable secondary plans. 5. The City shall co-ordinate the interconnections of major bicycle paths with adjacent municipalities. 6. The City shall provide publicity for future bicycle events within the Region and shall sponsor annual awareness programs which promote safe and responsible cycling. 7. The City shall encourage Brampton Transit, developers, and employers to include secure bicycle parking at transit transfer stations and employment nodes. 8. The City shall encourage the commercial and business communities to provide facilities that promote cycling as a transportation form. <p>Policies (Pedestrian Paths):</p> <ol style="list-style-type: none"> 9. The City shall consider the provision of sidewalks to improve pedestrian safety and convenience for all urban road segments. 10. The City shall, in reviewing subdivision plans, ensure that pedestrian walkways are designed in such a manner so as to reduce the walking distance from dwelling units to transit, park, elementary school and convenience commercial facilities; and between residential neighbourhoods, particularly when it is not feasible or appropriate to provide sufficient connections by means of local or collector roads. 11. The City shall encourage street patterns which minimize the need for walkways. However, walkways may still be required where such amenities would substantially improve pedestrian access to local facilities and to transit stops. 12. The city shall require, where appropriate and feasible, the provision of traffic control signals or pedestrian grade separations at points in the transportation system where the exposure of pedestrians to vehicles or trains is considered to be

Table 1: Walking and Cycling Related Sections in the City of Brampton Official Plan	
	<p>hazardous or where a direct connection would significantly reduce pedestrian trip lengths.</p> <p>13. The City shall ensure that all new sidewalks and reconstructed sidewalks be ramped at intersections where safe and practical.</p>
4.5.4 Open Space – Secondary Plan Considerations	<p>Policies:</p> <p>4. The City will require that a pedestrian/cycling circulation system analysis will form part of the Secondary Plan transportation component study to address the mechanisms for the future development of the system and its integration into the planned land use fabric.</p> <p>5. The City shall require a Master Open Space Landscaping and Pedestrian Concept Plan study as a component of each Secondary Plan study and shall ensure that it addresses the following matters:</p> <p>ii) the appropriate detailed means of providing pedestrian and cycling access to all school sites, libraries, commercial sites and other key destination points within and adjacent to the Secondary Plan area, in conjunction with the findings of the pedestrian/cycling analysis component of the transportation study</p> <p>6. The Master Open Space Landscaping and Pedestrian Concept Plan study for each Secondary Plan will be undertaken by a single consultant or study team to ensure proper continuity and integration in the use, design and landscaping of the open space area and pedestrian links throughout the Secondary Plan area.</p>
4.5.5 Open Space – The Park System	<p>Policies:</p> <p>4. The City recognizes that connecting walkways, pedestrian grade separations, valleylands, channelized storm drainage and protective buffer areas between conflicting land uses may provide opportunities for passive and selected recreational pursuits while achieving an overall connected public open space system. Accordingly, the City shall require that all such areas shall be conveyed to the City, in appropriate circumstances, to the relevant Conservation Authority in connection with all forms of development.</p>
4.5.7 Open Space – Open Space Linkages	<p>Objective:</p> <p>To promote the development of a continuous uninterrupted system of open space to provide physical and visual linkages and to provide opportunities for walking, hiking and cycling in a pleasant safe environment separated from vehicular traffic where feasible.</p> <p>Policies:</p> <p>1. The City shall, where practical and consistent with public safety and environmental management, utilize pedestrian underpasses, acquire, maintain and enhance valleys, swales and other linear natural features as open space links between parks.</p> <p>2. The City may acquire land above the top of valley bank by dedication or purchase where necessary to provide safe and convenient pedestrian or bicycle movement along a valley, provide property access to a valley or to protect the visual amenities or ecosystem function of a valley.</p> <p>3. The City may develop a system of pedestrian and bicycle trails along open space links for recreational walking, jogging and cycling, and to provide safe and convenient access to parks, schools and other facilities.</p> <p>4. The City shall provide, where necessary, walkways which can accommodate two-way pedestrian and bicycle traffic to provide safe and convenient access from the</p>

Table 1: Walking and Cycling Related Sections in the City of Brampton Official Plan

	<p>road system to parks and open space links.</p> <p>5. The City shall utilize, where appropriate, utility rights-of-way, easements across private lands and similar means to establish open space links.</p>
4.5.8 Open Space –Bikeway Systems	<p>Objectives:</p> <p>To promote the development of safe and efficient road and path system that accommodates bicycles for recreational and utilitarian trips as referred to in the City’s Pedestrian and Cyclist Trail Report (P.A.C.T.) Report.</p> <p>Policies:</p> <ol style="list-style-type: none"> 1. The City may, in co-operation with other levels of government and private organizations, consider the establishment of a system of bikeways. 2. The City shall, in the Parks and Recreation Master Plan, set out a bikeway system plan for Open Space lands. 3. The City shall design the network of bicycle paths with due regard for the desirability of selecting routes: <ol style="list-style-type: none"> i) along major open space links and utility corridors; ii) along major arterial roads particularly in areas of high traffic volumes and congestion; iii) along the perimeter of parks, golf courses, school and other institutional sites, and commercial centres; or iv) in other appropriate locations given circumstances. 4. To achieve a complete bikeway system, the City may: <ol style="list-style-type: none"> i) provide special improvements (such as signage, separate lanes and safe catch basin covers) to safely accommodate bicycle traffic on selected road segments where practical and feasible; ii) construct or require the construction of grade separated intersections of bicycle-pedestrian paths with roadways where practical and financially feasible; and iii) require the construction of bicycle path links in new areas as a condition of subdivision approval. 5. Notwithstanding the preceding, the City recognizes that it is not intended to provide a completely continuous and separate bikeway system, and that a cyclist may have to become a pedestrian at various points in the system.
4.10.2. Urban Form – General Urban Form Principles	<p>Policy:</p> <ol style="list-style-type: none"> 1. The City shall encourage all physical development in Brampton to reflect the following set of urban form principles or combinations thereof: <ol style="list-style-type: none"> vii) Circulation: Development which supports public transit, pedestrian and bicycle transportation in conjunction with the efficient accommodation private automobiles.
4.10.3. Urban Form – Element Specific Design Principles	<p>Policies:</p> <ol style="list-style-type: none"> 1. The City may, in considering all forms and scales of development, require the identification and enhancement of any combination of the following specific design elements: <ol style="list-style-type: none"> iv) Open Space and Natural Features: Open Space and Natural Features may be identified for the purpose of encouraging public use and enjoyment of such natural features where appropriate, by improving views to them, and by creating or improving pedestrian and cycle access points of connection between natural features and City streets, in accordance with the Open Space

Table 1: Walking and Cycling Related Sections in the City of Brampton Official Plan	
	and Environmental Management sections of this Plan. 5. The City shall strive to guide development surrounding open spaces to ensure that: v) Streets function as safe, comfortable and attractive linkages for walking, jogging and cycling.
4.10.4 Urban Form – Other Design Considerations	Policy (Parking): 5. The City shall encourage parking areas to be organized into small units separated by landscaping and pedestrian facilities to provide safe, attractive pedestrian environments and visual enhancement.
4.10.5 Urban Form – Implementation	Policy: 5. The City shall, in accordance with the Urban Form Management Strategy, prepare district design plans for the purpose of recognizing district character and to recommend policies that respond to existing conditions with appropriate reinforcement or adjustment as necessary. Such district design plans shall have regard for matters including, but not limited to, the following: v) the locations of pedestrian, cycling, vehicular, and service circulation access to buildings and/or open spaces

From the policy perspective, the Official Plan adequately addresses the concepts of safety, accessibility and linkages for pedestrians and cyclists. It is evident that the City of Brampton places importance on pedestrian and cycling movements in many of its policies. These policies include residential, commercial and industrial development, general transportation principles, specific trail developments, open space developments, and general urban design. However, the Official Plan policies address walking and cycling in more of a recreational context, particularly in the planning of communities and centres and hamlets.

3.3 BRAMPTON'S PATHWAYS MASTER PLAN (VOLUME ONE)

Brampton's Pathways Master Plan builds upon the guidelines and objectives of the Official Plan to provide a more detailed analysis pertaining to a proposed pathway system.

The Brampton Pathways Master Plan was completed by MMM in June 2002. The report provides a detailed outline for significant policies pertaining to the development of a successful pathway system. It provides a more detailed and inter-related pathway network design that builds upon the P.A.C.T. Final Report. The significant advancements and contributions proposed to improve Brampton's cycling and pedestrian network are outlined within this section.

Based on the public process conducted, “walkers, cyclists and in-line skaters actively use the existing 89 km of pathways. In 2001 alone, an estimated two-thirds of Brampton residents used pathways for recreation, exercise and practical purposes”. The primary mode of choice among recreational and practical users is walking, followed by cycling, jogging, and in-line skating.

An effective pathway system must be customer driven, responding to residents’ needs and desires. A major step in meeting this guideline is to ensure that pathways will be accessible to all residents within a 5-minute bike ride or 15-minute walk. The trails should accommodate all uses, including walking, jogging, cycling and in-line skating. This result is achieved by considering the uses to be accommodated by the specific paths during the design process. These types include multi-use paths (class 1), bike lanes (class 2), and signed routes (class 3). Class 1 trails are off-road routes that accommodate cyclists, pedestrians and in-line skaters. Class 2 trails accommodate only cyclists and involve pavement markings along a roadway which separate drivers from cyclists. Class 3 routes are roads that are specifically signed to encourage cycling use. For Class 2 and 3 routes, pedestrians and in-line skaters are expected to use the sidewalk.

The Pathways Plan outlines a detailed pathway network, outlining the orientation and specific type of route proposed along each corridor. The proposed system builds upon the existing network, satisfying utility and recreational concerns. It gives consideration to the key staging areas within the city (i.e. parks, community centres, schools, and commercial areas) and links to neighbouring municipalities. **Figure 1** illustrates the recommended pathway network. Preferred corridors were located to connect and extend existing pathway segments, so as to ensure a seamless system and overcome the major barriers of Highway 410 and railway links. In addition, the routes are visible, so as to ensure that residents are aware of the system. A detailed diagram showing the recommended facility types is provided in **Figure 2**. Based on community input, residents would like to see the existing pathways improved prior to the network expansion. A staging process, with this in mind, is expected to have a full build-out period of 20 years. **Figure 3** conveys the proposed phasing process.

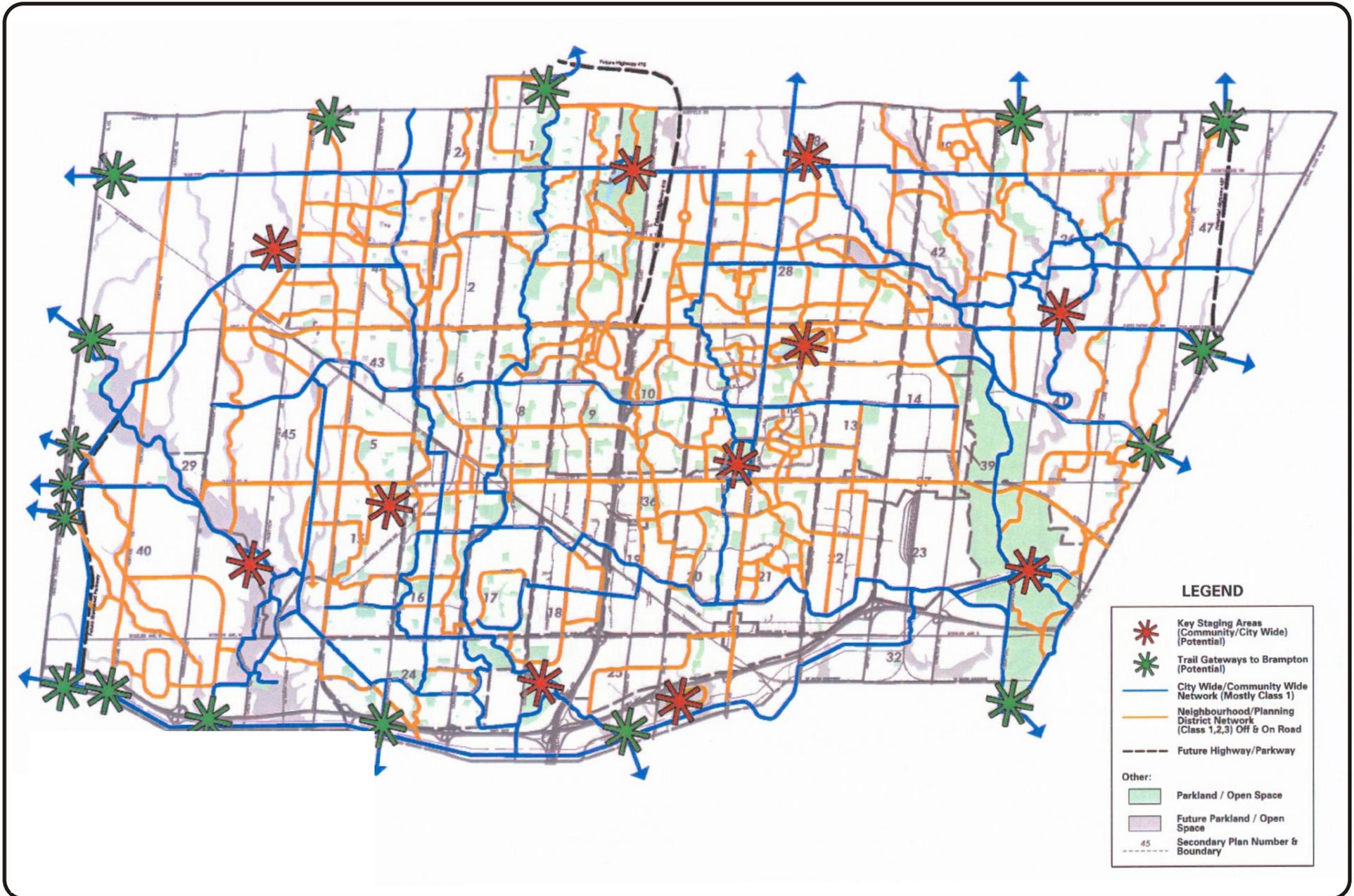


FIGURE 1
RECOMMENDED PATHWAY NETWORK

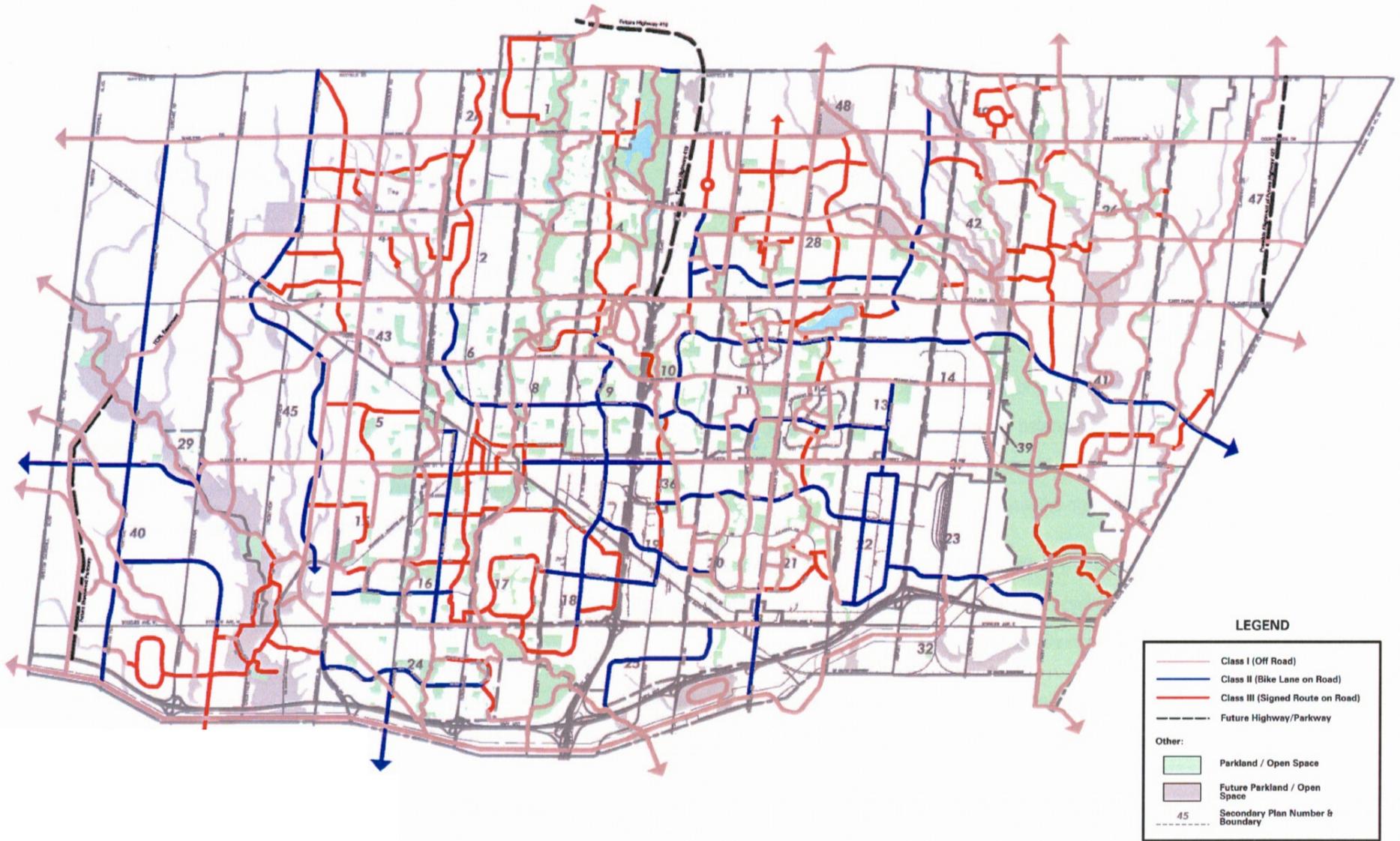


FIGURE 2
RECOMMENDED PATHWAY FACILITY TYPES



FIGURE 3
RECOMMENDED PHASING PROGRAM



In order to promote the use of these pathways, the network must be enjoyable and aesthetically pleasing. To achieve this goal, the path should incorporate amenities such as thematic gateways and bridges. In order to further encourage trail use, where the system over-laps sidewalks, or is paired with another component of the transportation network, the trail should not be de-emphasized.

Users support the safety of well-designed pathways. The Master Plan conveys cross-sectional design standards, for each type of trail, that serve to enhance the safety level. Signage is also recognized as a method of enhancing the level of safety. In building upon the recommendations of the P.A.C.T. Final Report, the Master Plan advises designation/directional, regulatory, warning, information, and interpretative signage.

In order to further promote the use of the existing and proposed facilities, the Master Plan, like the P.A.C.T. report, recognizes the importance of encouraging pathway use within the community. It also suggests educating pathway users about proper trail etiquette, for safety and efficiency purposes. The success of the pathways also requires promoting stewardship and fostering partnerships. Essentially, the pathways should be promoted as a community effort, incorporating the involvement of businesses and volunteers.

Brampton's Pathways Master Plan serves to build upon the P.A.C.T. and the policies of the Official Plan to provide a detailed pathway network, along with valuable policy guidelines.

3.4 CITY OF BRAMPTON SIDEWALK POLICY

There are no formal detailed City guidelines that can be used to determine whether or not a sidewalk is warranted. A new Sidewalk Priority Evaluation Warrant (located on the following page) has been designed in order to formalize this decision making process. The Evaluation Warrant is based on pedestrian and vehicular traffic volumes, physical characteristics of the roadway, and whether or not the proposed sidewalk represents the completion of a sidewalk route. Each factor is assigned a specific rating. If the site satisfies the required rating, then the sidewalk is warranted for installation. The City of Brampton hopes to have this Sidewalk Warrant Evaluation process officially approved and implemented as early as 2004.

4.0 EXPERIENCES OF OTHER JURISDICTIONS IN ONTARIO

Every municipality recognizes the importance of walking and cycling through their policies, programs and practices. However, their approach to providing walking and cycling facilities varies greatly from one to another. The following paragraphs provides a general overview of cycling and walking policies, programs and practices in various municipalities across Ontario.

Mature urban municipalities place more emphasis on cycling and walking as a viable transportation mode. Consequently, their policies, programs, and practices focus on developing an integrated transportation system, and expanding walking and cycling facilities.

The City of Windsor has a policy that all forms of development be designed to accommodate pedestrian and cycling access. Sidewalks are required on both sides of all scenic drives and arterial and collector roads, and on at least one side of every local road. The Official Plan provides extensive urban design policies directed toward enhancing pedestrian access, safety and comfort. The City is also aggressively expanding its existing cycling network to encourage more commuter cyclists.

In the City of Toronto, the Directions Report for the new Official Plan and the corresponding Transportation Vision emphasize the need to have fewer and shorter vehicle trips, and traffic engineering and street designs that encourage walking and cycling.

In rapidly expanding municipalities, the emphasis is more on establishing a viable recreation network for cycling and walking, and a feeder service for public transportation. As a result, their policies, programs and practices tend to focus on developing recreational trail plans, while deferring the provision of cycling and walking facilities to the development approval process with limited guidance.

Milton is in the process of defining a town-wide trail network that is largely geared toward recreational users. Its Official Plan does not specifically provide for sidewalks or cycling

lanes within road rights-of-way, and refers the planning for such travel modes to secondary plans and plans of subdivision.

5.0 POLICY OPTIONS AND IMPLICATIONS

Three policy options for cycling and walking are presented in Table 2.

Table 2: Cycling and Walking Policy Options and Implications		
Option	Policy Implications	Comments
Walking		
Option 1 Promote walking as the preferred mode for person trips.	<ul style="list-style-type: none"> Increased densities and mixed land use to bring origins and destinations closer together thereby increasing the potential for transit, walking and cycling trips; Design and construct public rights-of-way to actively encourage pedestrian use and not just motor vehicle use (e.g. adequate provision and maintenance of inter-connected sidewalks and footpaths); Protection from inclement weather; Adequate lighting for safety and security; Accessibility for the physically challenged; Street level establishments close to the sidewalk; and Identification of a primary utilitarian and recreational pedestrian network in the Official Plan and/or secondary plans. 	Realizing this option requires: <ul style="list-style-type: none"> Capital investment in upgrading existing pedestrian facilities; Capital investment and stringent development requirements for the construction on new pedestrian facilities as a part of the up front stages of development; Regional and municipal Official Plan amendments and incentives that actively encourage mixed-use, high density development; and Long-term commitments to realize a significant change in travel behaviour.
Option 2 Promote walking in selected urbanized areas and through a recreational trail system	<ul style="list-style-type: none"> Increase densities and mixed land uses only in selected areas (e.g. nodes and corridors); Design of public rights-of-way to accommodate pedestrian use only where necessary; Adequate lighting for safety and security; Accessibility for the physically challenged; Identification of a municipal-wide recreation network in the Official Plan; and Identification of a primary utilitarian pedestrian network in secondary plans. 	Realizing this option requires: <ul style="list-style-type: none"> Moderate capital investment in upgrading existing pedestrian facilities; Moderate capital investment and flexible development requirements for the construction of new pedestrian facilities; Regional and municipal Official Plan amendments to identify a planned recreation network; and Medium-long term commitment to realize a significant change in travel behaviour.
Option 3 Promote walking for leisure and recreation.	<ul style="list-style-type: none"> Lower densities and separated homogeneous land uses; Design of public rights-of-way to accommodate pedestrian use only where necessary (e.g. shopping areas, schools, etc.); Emphasis on the development of recreational trails and paths; Adequate lighting for safety and security; Accessibility for the physically challenged; and 	Realizing this option requires: <ul style="list-style-type: none"> Low capital investment in pedestrian facilities; and Short term commitment to realize modal split.

Table 2: Cycling and Walking Policy Options and Implications		
Option	Policy Implications	Comments
	<ul style="list-style-type: none"> • Identification of a recreation network in secondary plans. 	
Cycling		
Option 1 Increase opportunities for cycling as an optional mode of travel.	<ul style="list-style-type: none"> • Increased densities and mixed land use to bring origins and destinations closer together thereby increasing the potential for transit, walking and cycling trips; • Cycling lanes on the public right-of-way and separated cycle networks; • The needs of cyclists considered in the preparation of community/neighbourhood plans; • Storage facilities at transit stations and on transit vehicles to encourage bike and ride; • Storage facilities in the downtown core, suburban town centres and other key locations; • Provision of cycling facilities as a condition of development; and • Identification of a primary utilitarian cycling network in the Official Plan and secondary plans 	Realizing this option requires: <ul style="list-style-type: none"> • High capital investment in upgrading existing cycling facilities; • High capital investment and stringent development requirements for the construction of new cycling facilities as a part of up front stages of development; • Official Plan amendments and incentives that actively encourage mixed-use, high density development and identify a cycling network; and • Long-term commitments to realize a significant change in travel behaviour.
Option 2 Provide cycling in selected urbanized areas and through a recreational trail system	<ul style="list-style-type: none"> • Increase densities and mixed land uses only in selected areas (e.g. nodes and corridors); • Cycling paths and trails as a priority over on-street facilities; and • Identification of a municipal-wide recreation network in the Official Plan. 	Realizing this option requires: <ul style="list-style-type: none"> • Moderate capital investment in upgrading existing cycling facilities; • Moderate capital investment and flexible development requirements for the construction of new pedestrian facilities; • Official Plan amendments to identify a planned recreation network; and • Medium-long term commitment to realize a significant change in travel behaviour.
Option 3 Promote cycling for leisure and recreation pursuits.	<ul style="list-style-type: none"> • Lower densities and separated homogeneous land uses; • Cycling paths and trails separated from public rights-of-way; • The need of cyclists considered in the development of parks and trail systems; and • Identification of a recreation network in secondary plans. 	Realizing this option requires: <ul style="list-style-type: none"> • Moderate capital investment in cycling facilities; and • Short term commitment to realize modal split.

Option 1 is based on the Transportation Association of Canada's (TAC) new vision for urban transportation. This vision is premised on the belief that current trends are leading to urban transportation systems that are not sustainable. TAC's vision is for communities to have more mixed-use, higher density development in nodes and along corridors to increase transit, walking and cycling. The implications of this option are policies, programs and practices that emphasize walking and cycling as a priority in the planning and design of communities and transportation systems.

Option 2 is based on the premise that walking and cycling will support other more dominant modes of travel for utilitarian purposes and be promoted for recreational pursuits. This option requires policies, programs and practices that emphasize walking and cycling systems in selected urban areas and the development of recreational paths and trails.

Option 3 is based on the premise that the private automobile will dominate personal travel and that walking and cycling will be pursued largely for leisure and recreation. The implications of this option are policies, programs and practices that emphasize the separation of motorized vehicle and walking and cycling systems and the development of recreational paths and trails.

Presently the City of Brampton's policies, programs and practices represent a combination of Options 2 and 3. The City does promote utilitarian walking to support transit, however, the pedestrian and cycling emphasis is largely focused on separated recreational systems, with no set policy pertaining to utility based trips.

6.0 DIRECTIONS FOR CHANGE

Walking and cycling are important elements of an integrated, intermodal transportation system and have a significant bearing on a city's vision for urban street design. The City of Brampton must be more aggressive in promoting, requiring and constructing facilities for pedestrians and bicycles to increase the safety and number of trips being made by these modes. An effective pedestrian network is an essential component of a transit-supportive

transportation plan. It should be noted that any initiatives should be cognisant of streetscape opportunities, and should conform to the city's Streetscape Design Guidelines, in order to achieve a high level of urban design quality.

6.1 IMPLEMENTATION OF BRAMPTON'S PATHWAYS MASTER PLAN

Brampton's Pathways Master Plan represents the most comprehensive and detailed documentation of policies, objectives, and implementation strategies pertaining to pedestrians and cycling undertaken by the City to date. The Pathways Master Plan was approved by City Council in 2002. In order to incorporate the key aspects of the Plan's policies, it is recommended that amendments be made to the Official Plan to contain revised objectives and policies that incorporate the key directions outlined within the Pathways Master Plan. In addition to the refinement of the design of the proposed pathways, the adaptation of the plan should encompass the following policy additions/amendments:

- The City shall require all proposed developments and infrastructure undertakings to provide facilities for Pathways wherever appropriate, in keeping with the provisions of this Plan and the Brampton Pathways Plan.

- The City shall provide for the development of Pathways by:
 - (i) Designating Pathways on a new Schedule in the Official Plan and in secondary plans, where appropriate;
 - (ii) Implementing, monitoring and updating the Brampton Pathways Plan;
 - (iii) Providing for the development and maintenance of Pathways facilities;
 - (iv) Ensuring that the design of Pathways complement and connect with the City's open space infrastructure, key destinations and transit stations, where feasible; and
 - (v) Ensuring that all new development proposals and infrastructure undertakings include extensions and improvements to Pathways as part of the up-front stages of construction wherever appropriate.

- The City may require the installation of Pathways features, elements and supportive facilities, such as bicycle racks, as part of a residential, commercial and industrial developments.
- The City shall co-ordinate the development and expansion of Pathways with adjacent municipalities and other agencies as appropriate.
- The City shall minimize the risk to pedestrians, cyclists and motorists through the appropriate design of Pathways facilities, the provision of signage and support of educational activities and programs.

6.2 SIDEWALK POLICY RECOMMENDATIONS

There is currently no standard evaluation process available to determine whether or not the installation of a sidewalk within the City of Brampton is warranted. It is recommended that the Sidewalk Priority Evaluation Warrant be incorporated into official City of Brampton policy. The policy should state that, outside of extenuating circumstances, any sidewalk warranted under this evaluation should be installed. This will provide a more standard and definitive means for determining whether or not a sidewalk should be developed along a given stretch of roadway.

Regardless of whether or not they are warranted under the proposed Sidewalk Priority Evaluation Warrant, sidewalks should be provided on both sides of all arterial and collector roads and on at least one side of all local roads, excluding cul-de-sacs, in both new and existing areas

The developed sidewalks and walkways should be viewed as “pedestrian lanes”, providing people with space to travel within a public right-of-way that is separated from roadway vehicles. The Institute of Transportation Engineers (ITE) recommends a minimum sidewalk width of 1.5 m (5ft.). Wider sidewalks should be installed near schools, at transit stops, in downtown areas and any other areas where there are high concentrations of pedestrians. Bicycle parking racks, water fountains, benches and other urban design elements should be

provided in areas with high pedestrian traffic, but should be carefully placed so that they do not obstruct the path for pedestrians. Sidewalks should form a continuous network, and be part of a system that provides access to goods, services, transit and homes.

Sidewalks should be kept clear of poles, signposts, newspaper racks, and other obstacles that could block the path, become a tripping hazard, or obscure a driver's view. According to the Federal Highway Administration (2002), a "buffer" zone should also be provided where applicable to separate pedestrians from the street. Buffer zones may vary depending on the nature of the area they serve. In downtown areas, parked cars, bicycle lanes or street furniture can act as an acceptable buffer zone. In suburban areas, a buffer zone may consist of trees or shrubs or a landscaped strip.

6.3 PROMOTION OF URBANIZED GROWTH IN KEY AREAS

The City of Brampton has recently approved policies to increase land-use densities and mixed-land uses for development within the downtown core, specifically the Queen Street Corridor.

Currently, Brampton's programs, policies, and practices reflect Options 2 and 3. It is suggested that a shift be made towards Options 1 and 2 with respect to the City's policies, focusing more upon the aspects of Option 2. Option 2 allows a greater density of urban-development around specific nodes, which would still leave Brampton's valuable Open Space intact. The greater density of development will encourage shorter, pedestrian and cycling oriented utility trips, while still promoting recreational trips within the unaltered green space areas. Although emphasis will be placed on the off-street pathways, as a suggested by Option 2, aspects of Option 1, such as the importance on-street utility networks, should also be given significant consideration. The implementation of bike racks at transit stations and on transit vehicles, along with pedestrian protection from inclement weather, as suggested by Option 1, would also serve to promote pedestrian and cycling trips.

There may be points in the transportation network as it matures towards a balance between transit, cycling and vehicular access where choices between cycling and transit-related improvements are necessary. For example, the introduction of Bus Rapid Transit in the downtown may preclude the introduction of exclusive bicycle lanes on certain streets. These

choices should encompass consideration for the network continuity of each mode, within a decision-making framework that reflects the City's and communities needs, objectives and concerns.

6.4 FURTHER DIRECTIONS FOR CHANGE

Several further options are also available to increase the number of pedestrian and cycling trips generated within the City, including:

- Development of low-income housing in proximity to retail/commercial areas. This will also balance modal splits and increase support for transit. “People from low-income households are nearly twice as likely to walk as people in other income groups” (Murukami 1997);
- Adequate lighting provided along trails that have a high volume of evening use;
- Addition of side ramps to public stairways that impede cyclists; and
- Reductions of automobile speeds within nodal areas.

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