



City of Hamilton

**Development of Policy Papers for Phase Two of the
Transportation Master Plan for the City of Hamilton
WALKING AND CYCLING POLICY PAPER**

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1. INTRODUCTION

1.1 Study Background and Objectives

The City of Hamilton *City-wide Transportation Master Plan* will provide inputs to the *Growth Related Integrated Development Strategy* (GRIDS) and make recommendations to Council on the adoption of a City-wide Transportation Policy that is cognisant of Vision 2020 and other City of Hamilton long-term planning objectives. The project has been divided into three distinct phases. The first phase consisted of the technical calibration of the existing transportation model to reflect current transportation conditions in Hamilton. The second phase, which is the object of this and other policy papers, will focus on the development of 23 policy papers in the following areas: Travel Demand, Urban Development, System Performance, Infrastructure Planning and Infrastructure Financing. Following the completion of the Policy Papers, the City will proceed to develop transportation scenarios (Phase 3 of the project) based upon the results of the policy work performed in Phase 2 and the land use scenarios developed through the broader GRIDS study and will test the efficiency and viability of these scenarios by integrating them into the calibrated model.

This policy paper addresses the issues of **Cycling and Walking** under the category of Travel Demand. The remainder of this section outlines the benefits walking and cycling and the role of government in encouraging non-motorized travel. Section 2 reviews current policies that affect non-motorized travel. Section 3 describes the objectives for increasing non-motorized travel. Section 4 reviews walking and cycling related practices in other jurisdictions. Section 5 outlines policy options for increasing non-motorized travel. Section 6 provides succinct recommendations. Section 7 evaluates the policy recommendations. The policy paper on **Accessibility** elaborates on the special considerations necessary for disabled travelers.

1.2 The Importance of Walking and Bicycling

In healthy communities walking, cycling and other kinds of non-motorized transportation (e.g. roller blades, scooters, skateboards, etc.) are a normal, routine part of daily life. These active modes contribute to the quality of life and public health, provide options for getting around, and are important elements of the integrated transportation solution the City of Hamilton wants to achieve. Specifically, walking and cycling are directly related to the following GRIDS strategic directions:

Four: Design Neighbourhoods to improve access to community life.

Six: Expand transportation options that encourage travel by foot, bicycle and transit and enhance efficient inter-regional transportation connections.

Promoting and encouraging walking and cycling through the provision of facilities and programs helps build active communities, and reduces the dependence on automobile transportation and the associated infrastructure costs, air quality, safety and congestion problems. With the increasing focus on the health costs of our sedentary lifestyles, daily walking and cycling are seen as essential components of a healthy lifestyle. Many communities are attempting to redesign themselves to facilitate non-motorized travel by:

- Providing walkways and bikeways that accommodate and encourage non-motorized travel, rather than only designing communities around the automobile;



- Managing traffic and road design to allow pedestrians, cyclists and other travelers as well as motorists to use the roads. Features that facilitate automobile use such as wide roads and intersections, large parking lots, drive-through businesses can create an uncomfortable and unsafe environment for non-motorists;
- Encouraging walking and cycling within and between communities by managing the shape of urban growth and promoting more compact development.

Within transportation plans, policies that affect walking and cycling involve the planning, design, implementation, operation and maintenance of linear facilities (sidewalks, crosswalks, trails, bikeways, and bicycles on transit) and other amenities (benches, shelters, bicycle parking, etc.), and may also complement policies in other City programs that encourage cycling and walking (safety and education programs, bikeway maps, etc.).

2. EXISTING CITY OF HAMILTON POLICIES

2.1 Downtown Transportation Master Plan

This recently completed (2001) report identifies the elements of downtown's transportation system that hinder pedestrian and cycling movements. Most of these concerns are related to historical changes that made car use easier. The Downtown plan develops recommendations to improve the environment for in downtown Hamilton. These include:

- Identifies crucial pedestrian corridors and connections that should be upgraded with wider sidewalks, improved lighting and other features to make walking more attractive.
- Introduce bicycle lanes on specific streets in downtown to make cycling easier and safer.
- Introduction of two-way streets, which are generally more friendly for walking and cycling.

2.2 Official Plans from the Former Municipalities

Hamilton-Wentworth Official Plan: Towards a Sustainable Region

This report identified strategies for encouraging walking and cycling throughout the former Region of Hamilton-Wentworth. With respect to cycling the report requested that provincial government agencies assist with initiatives to encourage cycling.

To encourage pedestrian activity, the report recommended:

- Design safe, pedestrian-friendly streets that are visually appealing, make walking more inviting, provide weather protection with overhangs at store fronts, discourage the placement of objects that will impede pedestrians, reduce or eliminate vehicle traffic by design in areas of high pedestrian activity, provide exclusive pedestrian links in areas of high pedestrian activity and vehicular traffic, separate vehicular and pedestrian traffic, and provide adequate lighting;
- Encourage Area Municipalities to improve sidewalk construction and design standards to ensure that sidewalks continue into shopping areas, recreation areas and other similar public complexes; sidewalks are of sufficient width to comfortably accommodate pedestrian traffic; and sidewalks can be easily used by disabled persons.

Former City of Hamilton Official Plan

The Plan proposed a pedestrian and bicycle circulation system that would link the various activity nodes throughout the City. The proposed system would complement, and provide an alternative to, vehicular circulation in the Central Policy Area. Key policy recommendations from the Hamilton Official Plan were as follows:

- Promote the development of a "link-node" system that will link major pedestrian destinations such as Schools, Parks and Commercial areas (e.g. the Central Policy Area) by pedestrian paths, sidewalks along certain roads, or bicycle routes.
- Where feasible, co-ordinate the "link-node" system with the development and/or redevelopment of Residential and other areas throughout the City.

- Policies on cycling and walking related to the urban design of the Central Policy Area, include providing a network of parks and pathways throughout and linking the Central Policy Area to provide pedestrians and cyclists with a convenient way to move about;
- Provision of an elevated pedestrian walkway system, “+15”, emanating from Jackson Square, connecting adjacent future development with the Square to the north, south and west, integrated with the transit system and the ground level pedestrian walkways, and incorporating appropriate landscaping measures and other amenities. This concept was removed from later plans.

City of Stoney Creek Official Plan

Policies related to walking in the Stoney Creek Official Plan are with respect to enhancing the character and function of the Downtown:

- Promote the amenity of the sidewalk through the uniform design and distribution of street furniture, information kiosks, receptacles, trees and planting boxes, and public and private signage and lighting;
- Encourage the upgrading of existing pedestrian linkages and/or the implementation of new linkages between the Downtown and nearby residential areas. In this regard, open space areas adjacent to existing water courses shall be utilized wherever feasible.

Town of Ancaster Official Plan

The Ancaster Official Plan states that the transportation goal is to promote circulation systems for motor vehicles, pedestrians and bicycles that will provide for the present and future circulation needs of the Town in a planned, efficient, economic, safe and attractive manner. There are no policies specific to cycling and walking other than those incorporated into the urban design aspects of specific land use designations, i.e., Commercial, Village Core.

Town of Dundas Official Plan

Policies contained in the Dundas Official Plan related to cycling and walking are as follows:

- New development or redevelopment adjacent to open space corridors shall maintain or enhance public access to trails, bikeways and parks within the open space corridors;
- Create a safer pedestrian environment and minimize the inherent conflicts between pedestrian and vehicular traffic;
- Where possible, sidewalks will be provided on at least one side of Local roads and on both sides of Arterial or Collector roads;
- Along major transit routes, provide amenities such as continuous sidewalks, canopies, arcades, shade trees and seating areas to improve the pedestrian environment along major shopping streets.

Township of Glanbrook Official Plan

The Glanbrook Official Plan includes specific cycling and walking policies in the non-motorized movement section of the transportation policies, as follows:

- Whenever possible, pedestrian walkways and bicycle pathways will be provided in new plans of development and in the redevelopment of existing residential areas, to link the residential areas with local commercial and community facilities;

- Schools and other uses that are high pedestrian traffic generators shall be adequately and safely served by pedestrian and bicycle routes;
- Encourage the provision of pedestrian and bicycle pathways through a linking open space system;
- Where linking the pedestrian walkways and bicycle pathways is not possible, provide for the establishment of safe pedestrian walkways and bicycle pathways with designated road right-of-way widths, encourage a design that physically separates the pedestrian walkways and bicycle pathways from the driving portion of the road. Implement on Township roads and encourage for the Regional Roads and Provincial Highways;
- Vehicular parking areas shall be designed such that they are separate from and do not cause conflict with pedestrian and bicycle routes.

Town of Flamborough Official Plan

No specific policies on cycling or walking are contained in the Flamborough Official Plan.

2.3 Technical Documents

Regional Transportation Review: Bicycle and Pedestrian Strategies, Vision 2020

This technical memorandum documents the bicycle and pedestrian components of the 1996 Regional Transportation Review and builds on the strategies set forth in *Vision 2020*, outlining policy directions as summarized below.

Cycling Policies:

- Continue implementation of the Region's Bicycle Commuter Network Study and Five-Year Implementation Plan;
- Establish an extensive network throughout the urban and rural areas of the Region for both utilitarian and recreational cyclists of various skill levels;
- Encourage bicycle safety through a better understanding and compliance with rules of the road and also through a better educated motorist;
- Encourage cycling as a feasible means of transportation;
- Interface bicycle and transit facilities to encourage commuting and other trips by bicycle;
- Provide secure public and private bicycle parking facilities.

Walking Policies:

- Increase the modal split to the walk mode as a means of reducing motorized trips;
- Increase the walk trips in the Central Area to reduce short auto trips, and increase the on-street activity;
- Make transit more accessible in suburban developments by providing better design and maintenance of pedestrian facilities connecting to transit stops;

- Increase the potential number of walk trips in urban developments by providing more live-work, school, shop and recreation opportunities in closer proximity;
- Increase the safety of pedestrians.

Shifting Gears: A New Cycling Plan for Hamilton-Wentworth

This 1999 report, prepared by the Region of Hamilton-Wentworth updated the 1992 *Hamilton-Wentworth Regional Bicycle Network Study*. The report notes that new directions for transportation described in *Vision 2020* were incorporated into the 1995 *Hamilton-Wentworth Official Plan* and the 1996 *Regional Transportation Review*. The Regional Official Plan acknowledged that cycling is an essential form of transportation for many residents and states that the Region will:

- Ensure the implementation of the 1992 Bicycle Network Study;
- Request that Area Municipalities make provision for cycling in land-use planning processes;
- Ensure that road designs incorporate provisions for cyclists where warranted and appropriate;
- Investigate integration of cycling and public transit;
- Provide adequate bicycle parking at public buildings.

The report noted that although the existing policies appear adequate, their implementation has posed difficulties. In particular, "making provisions for land use patterns and design features that accommodate all types of cycling in a safe and efficient manner" has not become a standard requirement in the various types of land-use decision-making processes regarding neighbourhood or secondary plans, plans of subdivision and site plans.

Design Guidelines for Bikeways, Region of Hamilton-Wentworth

Prepared by the Region of Hamilton-Wentworth in 1999, this guide presents recommended guidelines for the uniform design of bikeways throughout the Region, adopting basic bikeway guidelines recommended by the Transportation Association of Canada and the Ministry of Transportation, Ontario and other agencies, modified to suit local circumstances. The guide is compatible with the fact that bicycles are vehicles under the *Ontario Highway Traffic Act*; they can be ridden on all streets and highways except freeways and, therefore, on-street bikeways must be designed to allow cyclists to ride in a manner consistent with motor vehicle operation.

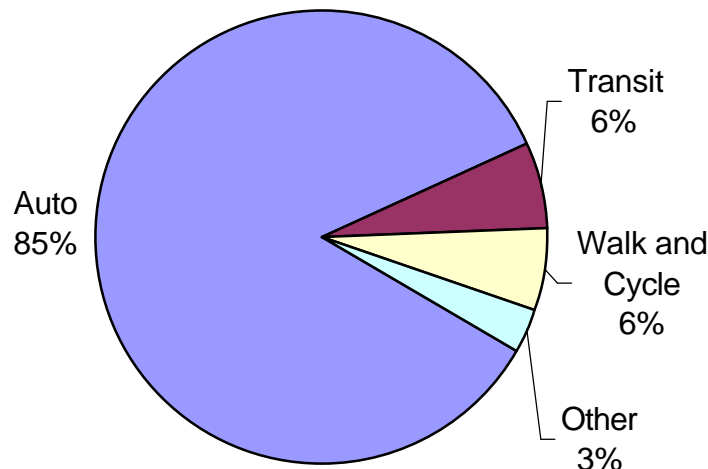
3. SUPPORTING INFORMATION AND ANALYSIS

3.1 Current Walking and Cycling Activity

In 2001, Hamilton residents made over one million trips each day. As shown in Exhibit 3.1, 6% (64,206) of all residential trips were by walking and cycling. This increases to about 11% for trips made in the morning peak period. Since 1986, the share of trips by walking and cycling has decreased only slightly (75 to 6%) whereas transit has seen more significant losses to the auto¹.

In terms of utility walking and cycling trips (i.e. non-recreational trips), walking and cycling mode shares are much higher in downtown than in the lower density suburban areas. For example, for AM Peak Period trips starting and ending in the downtown core, walking accounts for 60% of all trips. In comparison, trips made by walking or cycling in the morning peak hour in outer areas (e.g. Glanbrook, Stoney Creek, etc.) represent less than 1% of all trips. The 1997 Hamilton-Wentworth Community Cycling Survey indicated that most cycling takes place in Dundas/West Hamilton/Downtown Hamilton area on various trails, and to a much lesser extent in Ancaster, Waterdown and other local areas. Participation in cycling is very low in Stoney Creek and on the Mountain. This illustrates the impact that location, density of activities and infrastructure has on travel choices.

Exhibit 3.1: 24-Hour Mode Split, City of Hamilton



Source: Transportation Tomorrow Survey²

Periodically measuring the mode share of walking and cycling can provide quantitative measures to evaluate the effectiveness of policies. Specific targets for travel demand related to walking and cycling were found only in the *Regional Transportation Review*. The target for the peak hour share of travel by walking and cycling was 10% in 1991 and forecast to be 15% in 2011 and 20% in 2021.

Shifting Gears reported that with respect to safety, the average number of police reported collisions per year from 1990 to 1997 is 6,470. On average, approximately 190 of these involved cyclists and

¹ Transportation Tomorrow Survey 2001, 1996 & 1986 Travel Survey Summaries. Fifth Report of the 2001 Series.

² Ibid p. 89

310 involved pedestrians. Assuming there are 1 million trips, 10,000 cycling trips (1%) and 90,000 walking trips (9%) in the City, cyclists are 3 times more likely to be involved in a police reported collision and pedestrians are half as likely to be involved compared to motorists. Teenagers are at the greatest risk for cycling injuries and most cycling collisions occur while they are riding on sidewalks and crosswalks, and at intersections and along major streets such as Main Street, King Street and Barton Street (based on 1994 police records).

Shifting Gears also reported from the 1996 Transportation Tomorrow Survey that nearly 90% of all cycling trips are 5 km or less in length and walking trips are 2 km or less in length. In comparison, 50% of all auto trips are less than 5 km in length and 20% are less than 2 km in length, with the potential of being made on foot or on bicycle.

3.2 Existing Walking and Cycling Infrastructure

The City of Hamilton has a well-established network of cycling routes. A copy of the cycling map can be found on the City's website. Numerous linear trails have been implemented within the City including Chedoke Rail Trail from Hamilton to Ancaster, Hamilton Harbour Waterfront Trail, Beach Trail/The Breezeway and Lake Ontario Waterfront Trail, Escarpment Rail Trail from Hamilton's lower city to the mountain, Red Hill Valley Trail, Hamilton-Brantford Rail Trail, Cootes Drive Trail from Dundas to McMaster University, Rail Trail from the east mountain to Haldimand County, Dofasco Trail in Stoney Creek on the mountain, Bruce Trail, and the TransCanada Trail.

There are elements of Hamilton's successful bicycle network that can continue to be enhanced, such as:

- Creation of on-street bicycle lanes through the downtown core;
- Identification of routes that are not suitable for cycling, but are key links in the overall network. These links were noted as "cautionary on-street bicycle routes" in the City's Bikeways, Trails & Parks map³.

Sidewalks are generally provided along roadways throughout the urban areas of the City, with some exceptions. In particular, rural roadways with fairly recent urban development, such as Rymal Road, or on the fringe of urban development do not have sidewalks. These roadways may exist with a rural design for some time until the pavement warrants reconstruction. This results in a period of inadequate infrastructure that cannot handle increasing non-motorized demands. In rural areas, some destinations that could generate a high pedestrian demand, such as schools or community centres may not be connected to the rural settlement areas.

3.3 Recent Efforts

The City of Hamilton continues to make progress in improving walking and cycling facilities. Examples include:

- Designation of a bicycle lane on Markland Street –this initiative was inexpensive and has had the effect of narrowing the roadway width in effort to calm traffic;
- Potential bicycle lanes on Hunter Street – the Downtown Transportation Master Plan identified Hunter Street as a key cycling route. In 2004, it is expected that Council will approve the funds to implement a new dedicated bicycle lane on Hunter Street;

³ These routes included Charlton Avenue, Herkimer Street, Hunter Street, and sections of York Boulevard, King Street East, Woodward Avenue, Barton Street East, North Service Road, Mount Albion Road, Upper Ottawa Street, Stone Church Road, Upper Wentworth Street, Mohawk Road West, King Street West/Brock Road, and Centre Road

- Ferguson Avenue – the City has identified this a key pedestrian and cycling route. Design work is now proceeding;
- Hess Street – several years ago Hess Street was transformed to include wider sidewalks and other traffic calming measures. Hess Street is now a hub of pedestrian activity.
- Urban Braille - The system is primarily designed for visually impaired persons and users of a variety of mobility devises such as wheelchairs and scooters.

Numerous physical barriers to cycling and walking such as freeways and the Niagara Escarpment have been overcome with investments in infrastructure such as the Chedoke bicycle-friendly stairs, Highway 403 multi-use trail crossing, the LINC tunnel and pedestrian bridge crossings, the contraflow bicycle lanes on King Street at the Highway 403 on-ramp, and the Desjardin Canal bridge under Highway 403, York Boulevard and rail lines.

Future linear trail enhancements include extensions of the Hamilton Harbour Waterfront Trail easterly to the new Discovery Centre and beyond and northerly to Burlington, and improvements to the Lake Ontario Waterfront Trail connection across Burlington Canal.

4. REVIEW OF PRACTICES IN OTHER JURISDICTIONS⁴

4.1 City of Toronto

The City of Toronto has integrated walking and cycling issues into its larger planning process. As a result walking and cycling are recognized as important components of mobility, access and recreation. Walking and cycling are examined and promoted in the City Official Plan and the Cycling Master Plan of 2002.

In addition, the City has created a distinct Bike Plan and a standing citizen's advisory committee. The City's vision for biking is:

*“...to create a safe, comfortable and bicycle friendly environment in Toronto,
which encourages people of all ages to use bicycles for everyday
transportation and enjoyment.”*

The primary goals for the Bike Plan are to increase the number of trips made by bicycle and reduce the number of cycling collisions and injuries. The recommendations for the bike plan are to:

- **Make city streets safer and more amenable to bicycle riders.** The City of Toronto proposes to improve bicycle detection at traffic signals, amend by-laws to exempt bicycles, use traffic calming to enhance safety and maintain access, investigate two-way bicycle access on one-way streets, provide wide curb lanes on arterial roadways, develop a pavement repair reporting system, ensure street cleaning practices, respond to cyclists' needs, continue catch basin grate replacement program, and review practices for cyclist safety during road construction;
- **Develop a safe bicycle network.** The City of Toronto proposes to develop a inter-municipal cycling network while incorporating innovative design and information systems, enhancing safety through proper maintenance, identification of dangerous intersections, increasing police resources and by lobbying the Ontario Ministry of Transportation to adopt safety policies for bicyclists;
- **Promote cycling.** The City of Toronto should expand the Bike Week program, develop a bike-to-school program, create cycling guides, maps and special events, use the City's website to provide cycling information, support educational campaigns, encourage cycling by City and private employees and tourists;
- **Coordinate cycling and transit.** The City of Toronto should gather information on the needs of cycling transit users, provide bicycle racks on buses, improve bicycle access to stations, and develop Bike-and-Ride promotion strategies;
- **Improve bicycle parking throughout the City.** Develop a city-wide bicycle parking strategy, install new bicycle racks, investigate alternative bicycle parking tools, review zoning laws to facilitate bicycle parking, produce bicycle parking guidelines for developers, and develop a strategy for reducing bicycle theft.

⁴ In addition to the policies examined below, The Pedestrian and Bicycle Information Center, <www.pedbikeinfo.org>, maintains a list of exemplary bicycle and pedestrian plans.

4.2 City of Ottawa

The City of Ottawa has incorporated walking and cycling into its Official Plan, *Ottawa 2020*, as well as the supporting *Transportation Master Plan*. The City recognizes several factors that influence non-motorized trip making including: suitable distances between origins and destinations, positive individual attitudes toward walking and cycling, safe direct routes, adequate maintenance especially for snow removal, as well as parking and personal facilities for cyclists.

The Transportation Master Plan commits the City to develop comprehensive pedestrian and cycling plans, implement and maintain a cycling network, provide sidewalks, high quality rapid transit stations, and pedestrian connections across hazardous transportation facilities, develop level of service indicators to assess pedestrian and cycling facilities, and coordinate transit priority and bicycle facilities.

The City also agrees to address several measures that support pedestrian and cycling improvements which include:

- Building public awareness of the environmental, health and economic benefits of walking and cycling;
- Create partnerships with private and public institutions to encourage non-motorized travel;
- Provide maps and other information for non-motorized networks;
- Promote safety and fair access for all road users;
- Develop a bicycle parking plan;
- Coordinate transit service and infrastructure with walking and cycling initiatives;
- Develop safe non-motorized pathway systems for recreation and travel; and
- Remove snow from non-motorized facilities.

4.3 U.S. Department of Transportation

The U.S. Department of Transportation's Policy Statement—Integrating Bicycling and Walking into Transportation provides some additional international insight into the role of non-motorized transportation and American efforts to integrate it with their road system.

The paper established criteria for requiring bicycle and pedestrian facilities in urban areas. It stated that sidewalks and bicycles will be accommodated in all new construction and reconstruction projects in urbanized areas unless one or more of three conditions are met:

- Bicyclists and pedestrians are prohibited from using the roadway.
- The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use.
- Where scarcity of population or other factors indicate an absence of need.

In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.

Sidewalks, shared use paths, street crossings (including over- and under-crossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

The design and development of the transportation infrastructure shall improve conditions for cycling and walking through the following additional steps:

- Planning projects for the long-term. The design and construction of new facilities should anticipate likely future demand for cycling and walking facilities and not preclude the provision of future improvements.
- Addressing the need for bicyclists and pedestrians to traverse corridors as well as travel along them. Therefore, the design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient

5. IDENTIFICATION OF POLICY OPTIONS

This section outlines the areas for policies and the major concerns with developing and implementing walking and bicycling policies. The residents of the City of Hamilton have a long established interest in using local policy to promote walking and cycling. The former plans discussed earlier in Section Two provide an excellent starting point for the City to develop new policies.

All new policies for the City of Hamilton must consider the limits of available resources and the benefits of proposed policies. Although some level of cost/benefit analysis is warranted when establishing new walking and cycling policies, such an analysis is beyond the scope of this paper. In addition to the easily identifiable monetary costs of construction, the City should make certain to identify the unquantifiable benefits that accrue to the entire community through improved sustainability, health and quality of life.

5.1 Public Information

Providing the public with information about walking and cycling can increase public awareness of these modes as means of traveling. The City can increase awareness of walking and cycling by providing information on the following topics:

- **Safety** – Publish and distribute information about safe use of the transportation system. This can include information about the importance of wearing bicycle helmets, securing bicycles, crossing streets at designated crosswalks, and information to drivers about how to share the road with pedestrians and cyclists.
- **User Information** – This can include user information such as maps of recreational trail networks and bicycle parking locations.
- **Promotional Information** – The City can encourage walking and cycling among residents with pamphlets discussing the personal benefits of walking and cycling.

Information should be targeted to particular groups to help messages reach the residents who are most likely to walk or ride a bicycle. Information to schoolchildren should put strong emphasis on safety and identifying the best routes to school. Information for commuters can identify bicycle locker and shower facilities. Information to drivers should focus on announcing the arrival of other road users, and safety information about sharing road space with bicycle lanes.

5.2 Developing Useful Networks

Hamilton should continue to develop and expand dedicated facilities pedestrians and cyclists. A safe, convenient network of sidewalks, trails, and bicycle lanes will make travel by foot and bicycle more attractive for Hamilton residents. The new City of Hamilton is well positioned to continue developing these networks. The recent amalgamation also puts the new City in a good position to coordinate these networks at a community-wide level.

- **Safety** – Safety and security are prerequisites to encourage people to walk and cycle. If an area does not feel safe, people will not use it. Safe facilities require reasonable shelter from traffic, lighting for evening use, snow clearance in the winter, and other measures. Pedestrians, cyclists and motorists will necessarily share some portions of the road network. Sharing the road system will require infrastructure and training to ensure safety for all users while avoiding unreasonable automobile congestion.

- **Connectivity** – Building useful networks requires a general plan for connectivity. Isolated bicycle trails and sidewalks that suddenly stop are of limited use and can make travel unsafe. To create walking and cycling *networks*, recreational trails should be knitted together with utilitarian travel corridors to make citywide travel by foot or bicycle easy. Trails should link neighbourhoods with parks and recreation facilities, waterfronts, conservation areas, schools and other public buildings, cultural and historic sites, business areas and transit facilities. The City can also adopt basic standards for new or reconstructed infrastructure, such as requiring sidewalks along all surface streets, which will open new corridors to non-motorized travelers.

Walking requires a relatively simple network of interconnected pathways. While pedestrian facilities are less complicated than railways or motorized corridors, making them truly useful does require basic amenities. A designated walking surface, such as a sidewalk, pathway or boardwalk, as well as ramps for disabled access should be provided. Pedestrians also require highly visible crosswalks to traverse roads and a pleasant environment in which to walk. These areas must be safe and should be well lit and quickly cleared of snow.

A citywide network of bicycling trails, bicycle lanes, bicycle parking and shower facilities will provide the supporting network for cycling to become a reasonable means of travel for short to medium distances. The community already has already moved forward on this issue with plans from former municipalities. The new City can work to combine these various plans into a new bicycle plan.

In addition to the physical infrastructure, these non-motorized networks require ongoing legal, financial and maintenance support from the City to remain attractive. Sidewalks must be cleared of snow. Parking in bicycle lanes should be discouraged with regular enforcement and ticketing.

- **Interconnectivity** – To get the most out of each transportation network, they should be integrated to make connections between modes as easy as possible. Making sure all bus stops have certain non-motorized amenities, such as hardtop surfaces, benches, shelters, lighting and bicycle lockers can encourage walking cycling and transit trips. Providing bicycle racks on buses can also encourage bike-transit trips.

Additional guidance on the above considerations is readily available. For example, Walkable Communities Inc., is a U.S. non-profit organization that provides additional guidance for improving pedestrian accessibility and developing walking and cycling infrastructure. They provide on-site audits of communities to identify strengths and potential directions for future initiatives.

5.3 Land Use

The land-use patterns in a community can have a profound effect on the attractiveness of walking and cycling. Walking and cycling are best suited for trips that are short to medium distances and the more destinations that can be brought within walking/cycling distance of each other, the more attractive these modes will become. By encouraging more compact, street-oriented development through appropriate zoning, the City can help make walking and cycling more attractive to a larger number of residents. The concept of more **Urban Structure** is discussed thoroughly in its own policy paper.

In addition, the appearance of the area surrounding walking and cycling facilities also has an impact on the attractiveness of these modes. Surrounding activities, architecture, and urban planning (collectively called urban design) can create environments that can encourage or discourage non-motorized travel. Many of these principals are already part of the downtown transportation master plan. **Urban Design** elements are discussed further in their own policy paper.

5.4 Municipal Corporate Leadership

The City of Hamilton can promote walking and cycling in the community by setting an example as a employer and facility owner.

- **Employees** - The City can encourage walking and cycling among its own employees with incentives and appropriate infrastructure at all municipal work sites (bicycle parking, showers, sidewalks, coordination with transit).
- **Public Facilities** – As the owner and manager of a significant number of public facilities, the City can make certain that all public facilities and pedestrian and bicycle friendly. This can encourage non-motorized travel to those facilities and set a leading example for other property owners for how to make their facilities accessible for pedestrians and cyclists.

6. RECOMMENDED POLICIES

Based on the above review, the following policies are recommended for consideration in the Transportation Master Plan:

Recommended Policy
Provide user-oriented information for all pedestrians, cyclists and other road users to increase awareness of non-motorized networks, user guidelines and safety requirements.
Implementation
<ul style="list-style-type: none"> • Develop and distribute a combined walking/bicycling map to illustrate all recreational and utilitarian travel corridors in the City, as well as additional facilities such as bicycle parking sites. • Develop and distribute safety information to pedestrians and bicyclists concerning safe use of the transportation network. • Develop and distribute information for motorists on how to safely share road space with cyclists and pedestrians. • Consider disabled persons and persons using mobility aids in all aspects of planning for pedestrians.

Recommended Policy
Build awareness and promote the benefits of walking and cycling.
Implementation
<ul style="list-style-type: none"> ▪ Create and fill the position of TDM Coordinator within the city staffing structure, who will also assist in promoting walking and cycling. • Provide information on the environmental and personal benefits of walking and cycling. • Support the implementation of recognized pedestrian and cyclists safety education programs such as CAN-BIKE. Consider creating a cycling education program for children and adults similar to the City's swimming program to promote the development of non-motorized travel as a life skill. • Work with school boards and other agencies and community groups to support and develop safe-routes-to-school programs for walking and cycling. • Support a Bicycle-Friendly and Pedestrian-Friendly Business Awards program • Continue to support the Hamilton Cycling Committee as a Citizen Volunteer Committee reporting to Council through a Committee of Council to assist in implementing and monitoring the policies.

Recommended Policy
Continue to improve and expand the existing network of pedestrian and bicycle infrastructure.
Implementation
<ul style="list-style-type: none"> • Continue to move towards the 2008 Ultimate Bicycle Network Master Plan as outlined in <i>Shifting Gears</i>. Initial goals should be to address missing links of major on-street routes, improvements in corridors of high or expected demand, and projects identified in current studies such as in the Downtown. • Establish bikeways and sidewalks in all new transportation construction and reconstruction projects as provided for in the Road Classification Policy Paper, unless significant justification is provided otherwise. In rural areas, include paved shoulders in all construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. • Support the police practice of patrol on foot and by bicycle with training through a

- recognized safe-cycling program, and establishing enforcement priorities based on collision research.
- Create a senior staff level pedestrian and cycling coordinator position to monitor and assist in the implementation of the policies until such time that the policies are integrated into the everyday practises of the City administration.
 - Provide bicycle parking at all municipal facilities and endeavour to make bicycle parking available at important activity centres throughout the city.
 - Improve safety and attractiveness of cycling by providing and maintaining appropriate signage for current and future cycling routes.
 - Implement a non-motorized maintenance program. Expand programs to clean and remove snow from pedestrian and bicycle facilities. Develop a program for quick repair of infrastructure such as street/sidewalk repair, catch basin repair, removal of road hazards, signage repairs, traffic signal modifications, etc. Place priority on safety-related spot improvements.
 - As a major employer in Hamilton, take a leadership role in encouraging and supporting cycling and walking by staff by providing appropriate access to buildings, bicycle parking, change/shower facilities based on updated zoning by-laws.
 - Monitor levels of service and safety for non-motorized users of the transportation infrastructure and adjust policies, programs and practises as needed.

Recommended Policy
Promote the coordination of transit trips with walking and cycling trips so multi-modal trips are convenient, safe and comfortable.
Implementation
<ul style="list-style-type: none"> • Continue to provide and maintain benches, shelters and bicycle parking at key transit nodes. Develop a program to install and maintain bicycle lockers at the Downtown GO Terminal. • Explore opportunities and issues related to providing bicycle racks on buses, particularly buses that cross the Escarpment, and those serving student populations, and large employment centres. • Bicycles should be permitted on buses outside of peak hours and on underutilized routes during peak hours at the discretion of the driver based on bus occupancy. • Promote cycling and walking connections with public transportation in transit marketing programs including partnership programs with employers.

Recommended Policy
Plan communities to make walking and cycling convenient, safe and comfortable, lessening the demand for auto trips and improving community health.
Implementation
<ul style="list-style-type: none"> • Recognize the importance of non-motorized transportation in the Transportation Master Plan. • Facilitate pedestrian and cycling trips by promoting compact development. • As a long-term strategy, use zoning regulations to create more compact and mixed-use neighbourhoods as a means of allowing trips to become shorter, making walking and cycling more attractive and convenient. Specific policies are outlined in more detail in the <i>Urban Structure Policy Paper</i>.

<i>Recommended Policy</i>
Use conditions of development to provide for and enhance cycling and walking.
<i>Implementation</i>
<ul style="list-style-type: none">• Require all new developments to provide safe and convenient pedestrian and cycling environments and access through building orientation, site layout, traffic management, and the provision of facilities such as sidewalks, crosswalks, bikeways, bicycle parking and connections to transit service.• Encourage secure bicycle parking for all new multi-family residential buildings and bicycle parking and shower/change facilities for larger non-residential developments (e.g. more than 50 employees).• Work with developers to provide pedestrian amenities such as street lighting, benches, and parks.• Create a cash-in-lieu program so developers can chose to provide money to a municipal fund for non-motorized trail if on-site non-motorized facilities are unreasonable.

7. IMPACTS OF POLICY OPTIONS

7.1 Assessment Factors

Assessment of policy options is based on factors for achieving sustainable growth and development across all of the policy papers developed in this project. They fall under the three major categories of **social, economic and environmental** impacts, and they are described briefly below.

Exhibit 7.1: Assessment Factors

Impact	Acts on	Description (or examples)
Social	Residential communities	Improves quality of life in neighbourhoods
	Safety and security	Reduces collisions; improves personal safety and security
	Ease of implementation & governance	Provides clarity, measurability, accountability
Economic	Development	Attracts employment, capital, optimal use of transportation infrastructure capacity, and future land use
	Land value	Increases land value, or does not decrease land values
	Operating and capital costs	Reduces or defers public and private costs of transportation capital (construction or acquisition of fixed infrastructure and rolling stock) and operations (maintenance, enforcement, delay, fuel, etc.)
	Congestion	Maintains traffic flow at acceptable level
Environmental	Air quality	Reduction of Criteria Air Contaminants
	Noise and vibration	Minimizes noise impacts
	Natural environment	Improves water quality, green spaces, flora and fauna, etc.

The rating system that will be used to apply these criteria is a visual five-point scale, to reflect a range from strong positive impact to strong negative impact. **(+, +, o, --, --)**

+ Represents the strong positive impact, **o** represents absence of significant impact either way, and **--** represents strong negative impact.

7.2 Summary of Evaluation

The factors described in Section 7.1 are applied to the policy options described in Section 6. The results of a preliminary qualitative assessment using the rating scheme described previously are provided in Exhibit 7-2.

Exhibit 7.2: Impacts of Policy Options

Policy Option	Social			Economic				Environmental		
	Residential Communities	Safety and Security	Ease of Implementation and Governance	Development	Land Value	Operating and Capital Costs	Congestion	Air Quality	Noise and Vibration	Natural Environment
Provide user-oriented information for all pedestrians, cyclists and other road users to increase awareness of non-motorized networks, user guidelines and safety requirements.	+	+	+	o	o	o	+	+	+	+
Build awareness and promote the benefits of walking and cycling.	+	+	+	o	o	o	+	+	+	+
Continue to improve and expand the existing network of pedestrian and bicycle infrastructure.	+	+	-	+	+	-	+	+	+	+
Promote the coordination of transit trips with walking and cycling trips so multi-modal trips are convenient, safe and comfortable.	+	+	+	+	+	-	+	+	+	+
Plan communities to make walking and cycling convenient, safe and comfortable, lessening the demand for auto trips and improving community health.	+	+	-	o	o	o	+	+	+	+
Use conditions of development to provide for and enhance cycling and walking	+	+	-	o	+	+	+	+	+	+