2.0 THE PLANNING CONTEXT

2.1 INTRODUCTION

On October 17th, 1917, Noulan Cauchon, a consulting engineer and planner, provided a “Reconnaissance Report on the Development of the Hamilton District” to the Chairman and Members of the City of Hamilton’s Plan Commission. He observed:

“Hamilton has three unrivalled features of health asset and spectacular beauty, jewels in the gift of nature awaiting the acknowledgement of the hand of man: the causeway; the mountain; and the beach.”

The “three unrivalled features” were the western entrance and Dundurn Park; the Niagara Escarpment and the beach strip.

Today, these features still exhibit “spectacular” beauty. By “health asset”, Mr. Cauchon believed these features helped the city “breathe” and enabled its citizen’s to “recreate” themselves through recreational activity.

Cauchon further elaborated on these points in a report entitled “Report on Mountain Highways of Hamilton, Ontario” in 1919. This report provided for park and street development on “the Mountain”, Hamilton’s Niagara Escarpment.

“The topography of the Mountain Park is such that its natural treatment will be one of terraces. The road system proposed for economic purposes so happens to be admirably adapted to further this particular style, for which the Park contains many magnificent opportunities.

As soon as you can see your way to it, the planning of the City should be proceeded with, including, of course, the landscape design of the park and the determination of the foot paths incident to it and away from the roads, saving distance and avoiding dust and noise.”

Mountain Park included the Niagara Escarpment face and table lands above and below.

On November 21, 1946, E.G. Faludi of Town Planning Consultants Limited, presented a 30 year “Master Plan for the Development of the City of Hamilton” to City Council. His

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15 Ibid, Cauchon, March 25, 1919
recommendations built upon those made by Noulan Cauchon 30 years before. Mr. Faludi recommended completion of a green belt system in the Red Hill Ravine and the Chedoke Valley from Hamilton Harbour/Cootes Paradise to the Escarpment and the Niagara Escarpment.

“The acquisition of these natural park lands joining the already owned land under the jurisdiction of the Parks Board would provide Hamilton with a green belt system that will be outstanding within cities of this continent. It will also create a natural barrier between densely built up areas and future development.”17

The Greenbelt Plan accomplishes a modern day equivalent which will perform the same functions of these earlier recommendations.

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In this chapter, the Master Plan describes the built and natural environments and their regulatory and policy frameworks. A well developed trails system can address the issue of improving the health of people living in the community.19 Here is the manner in which this can be accomplished.

2.2 PROVINCIAL PLANNING DOCUMENTS

2.2.1 Provincial Planning Documents

Ontario’s municipal planning system is policy driven and layered from Provincial Plans and the Provincial Policy Statement to local municipal official plans and zoning by-laws. Multi-purpose trails are a component of this system and this Master Plan is, in part, directed by this policy framework. Provincial plans establish the over-riding policy framework within which the Provincial Policy Statement is used by municipalities, ministries and agencies to make land use and transportation planning decisions. The existing Regional and former municipal Official Plans are still applicable until repealed by the new Official Plan.

18 Common discussion of these includes comments in Cauchon and others.
In Hamilton, the applicable approved Provincial plans are the Greenbelt and Niagara Escarpment Plans. The City is a single tier municipality and local planning instruments include a new Official Plan including Secondary Plans and Zoning By-law. A Transportation Master Plan is being prepared to support the new Official Plan and direct future transportation decisions.

A Proposed Growth Plan is under review and, if approved, will add an additional Provincial Plan.

2.2.2 The Proposed Growth Plan
In June 2005, The Places to Grow Act was approved. Bill 136 gives the Minister of Public Infrastructure Renewal with the ability to establish an area in which a growth plan may be prepared and to prepare a draft plan. The purposes of the Act are:

a) “To enable decisions about growth to be made in ways that sustain a robust economy, build strong communities and promote a healthy environment and a culture of conservation;

b) To promote a rational and balanced approach to decisions about growth that builds on community priorities, strengths and opportunities and makes efficient use of infrastructure;

c) To enable planning for growth in a manner that reflects a broad geographical perspective and is integrated across natural and municipal boundaries; and

d) To ensure that a long term vision and long term goals guide decision making about growth and provide for co-ordination of growth policies among levels of government.”

Subsection 14 (4) states in the event of a “conflict between a direction in a growth plan and a direction in a plan or policy… with respect to a matter relating to the natural environment or human health, the direction which provides more protection to the natural environment or human health prevails.” Subsection (15) lists the Provincial Policy Statement, the Greenbelt and Niagara Escarpment Plans and other plans and policies specified in regulation to be enacted in the future. In November 2005, the Proposed Growth Plan for the Greater Golden Horseshoe Area was released which addresses the City of Hamilton (see Figure 1, The Proposed Growth Plan).

Among other matters, the Proposed Growth Plan provides for greater land use intensification and sets specific objectives, policies and procedures whereby a more intense and diverse

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commercial, industrial and residential land use system will be achieved. Emphasis is placed on “reducing dependence on the automobile through development of mixed use, transit supportive, pedestrian friendly urban environments”.  

“The transportation system within the Greater Golden Horseshoe will be planned and managed to:

- offer a balance of transportation choices that reduces reliance upon any single mode and promotes transit, cycling and walking;
- be sustainable, by encouraging the most financially and environmentally appropriate mode for trip making;
- offer multi-modal access to jobs, housing, schools, cultural and recreational opportunities, and goods and services.

“In planning for the development, optimization, and/or expansion of new or existing transportation corridors, the Ministers of Public Infrastructure Renewal and Transportation, other Ministries of the Crown and municipalities will:

- consider separation of modes within corridors, where appropriate.”

Further, “municipalities will ensure that pedestrian and bicycle networks are integrated into transportation planning to:

a) provide safe, comfortable travel for pedestrians and bicyclists within existing communities and new development;

b) provide linkages between intensification areas, adjacent neighbourhoods, and transit stations, including dedicated lane space for bicyclist on the major street network where feasible.”

“Municipalities, conservation authorities, non-governmental organizations, and other interested parties are encouraged to develop a system of publicly accessible parkland, open space and trails, including shoreline areas, within the greater Golden Horseshoe that:

a) clearly demarcates where public access is and is not permitted;

b) is based on a co-ordinated approach to trail planning and development; and

is based on good land stewardship practices for public and private lands.”

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2.2.3 The Greenbelt Plan

The Greenbelt Plan applies to much of Hamilton’s rural lands and the Niagara Escarpment (see Figure 2, The Greenbelt Plan). The new Hamilton Official Plan will conform to the policies of the Greenbelt Plan. The Plan’s land use objectives are set out in the Greenbelt Act, 2005, which also provides for the designation of an area as the Greenbelt planning area and authorizes the Lieutenant Governor in Council to establish the Greenbelt Plan. Applicable objectives to the trails include the following:

- “To establish a network of countryside and open space areas which supports the Oak Ridges Moraine and the Niagara Escarpment;
- To sustain the countryside, rural and small towns and contribute to the economic viability of farming communities;
- To provide protection to the land base needed to maintain, restore and improve the ecological and hydrological functions of the Greenbelt Area;
- To promote connections between the lakes and the Oak Ridges Moraine and the Niagara Escarpment;
- To provide open space and recreational, tourism and cultural heritage opportunities to support the social needs of a rapidly expanding and increasingly urbanized population; and
- To promote linkages between ecosystems and provincial parks or public lands.”

The Greenbelt Plan is comprised of two existing Plans – The Niagara Escarpment Plan and the Oak Ridges Moraine Plan (not applicable in the City of Hamilton) as well as a new designation and policies referred to as Protected Countryside (including Towns and Villages). In addition the Plan establishes a Natural heritage System for the entire Greenbelt Planning Area.

“The Greenbelt is a broad band of permanently protected land which: provides for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation and resource uses.”

Applicable environmental protection goals include the following:

- “Protection, maintenance and enhancement of natural heritage, hydrologic and landform features and functions, including protection of habitat for flora and fauna and particularly species at risk; and
- Protection and restoration of natural and open space connections between the Oak Ridges Moraine, the Niagara Escarpment, Lake Ontario, Lake Simcoe and major river valley lands, while also maintaining connections to the broader natural systems of southern Ontario beyond the Golden Horseshoe such as the Great Lakes Coasts, the Carolinian Zone, the Lake Erie Basin, the Kawartha Highlands and the Algonquin to Adirondacks Corridor.”

Applicable culture, recreation and tourism goals include the following:

- “Provision of a wide range of publicly accessible built and natural settings for recreation including facilities, parklands, open space areas, trails and water based/shoreline uses that support hiking, angling and other recreational activities; and
- **Enabling continued opportunities for sustainable tourism development.**”

With respect to “Parklands, Open Space and Trails”, “a system of parklands, open spaces, water bodies, and trails across the Greenbelt is necessary to provide opportunities for recreation, tourism and cultural/natural heritage appreciation, as well as to support environmental protection. This system currently supports a variety of passive and active uses, as well as health, economic and other quality of life benefits within the Greenbelt.

“It should be recognized that parkland, open space and trails exist within surroundings of predominantly privately held lands. While private land owners may, and do, adopt a collaborative approach with groups such as hiking and snowmobile associations to allow public access across portions of their property, this is only with the consent of the landowner.

“Maintaining and expanding the supply of publicly accessible parkland, open space and trails is encouraged through strategic planning activities that identify, plan for and protect these resources for current and future generations. The planning and activity associated with parkland, open space and trail uses should maximize the opportunity to cooperate with all landowners.

“Throughout the Greenbelt, there is existing public parkland and open space, as well as existing major trails such as the Bruce Trail, the Trans Canada Trail, the Niagara Greenway and the Lake Ontario Waterfront Trail. This system of parks and trails provides significant economic benefits and opportunities for a multitude of uses and activities compatible with the Greenbelt’s vision and goals. This system should serve as a base for future decisions on parkland and open space use and trail development.”

Further, “the Province should in partnership with municipalities, conservation authorities, non-governmental organizations, and other interested parties:

1. “Encourage the development of a system of publicly accessible parkland, open space and trails where people can pursue the types of recreational activities envisaged by this Plan, and to support the connectivity of the natural Heritage System;”

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2. **Encourage the development of a trail plan and a coordinated approach to trail planning and development in the Greenbelt to enhance key existing trail networks and to strategically direct more intensive activities away from sensitive landscapes; and**

3. **Promote good stewardship practices for public and private lands within the Greenbelt, including clear demarcation of where public access is permitted.**

Specific "Municipal Parkland, Open Space and Trails Strategies" include the following policies:

1. "Provide for a full range of publicly accessible, built and natural settings for recreation including facilities, parklands, open space areas, trails and water-based activities;

2. **Develop and incorporate strategies (such as community specific levels of provision) into official plans to guide the adequate provision of municipal recreation facilities, parklands open space areas and trails;**

3. **Include the following consideration in municipal parkland and open space strategies:**
   a) Providing for open space areas for current and future populations and promoting stewardship of open space areas;
   b) Providing facilities, parklands, open space areas and trails that particularly support an active, healthy community lifestyle;
   c) Identifying key areas or sites for the future development of major facilities that avoid sensitive landscapes;
   d) Identifying and targeting under-serviced areas for improved levels of protection; and
   e) Protecting the recreational and tourism values of waterfront areas as a high priority; and

4. **Include the following considerations in municipal trail strategies:**
   a) Preserving the continuous integrity of corridors (e.g., abandoned railway rights-of-way and utility corridors);
   b) Planning trails on a cross-boundary basis to enhance interconnectivity where practical;
   c) Incorporating the existing system of parklands and trails where practical;
   d) Restricting trail uses that are inappropriate to the reasonable capacity of the site (notwithstanding the ability to continue existing trails/uses);
   e) Providing for multi-use trails systems which establish a safe system for both motorized and non-motorized uses;
   f) Supporting and ensuring compatibility with agriculture; and
   g) **Ensuring the protection of the sensitive key natural heritage features and key hydrologic features and functions of the landscape.**

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The Plan goes on to state: “Provincial parks and conservation authority lands are also important components in the development of parkland, open space and trail strategies. Ongoing management of these lands for publicly accessible recreation, in keeping with environmental management plans and strategies for such areas and the policies of the Plan, is important in providing access to this a system. Where geographic-specific park and public land management plans exist, municipalities, agencies and other levels of government must consider such plans when making decisions on land use or infrastructure proposals.”

2.2.4 The Niagara Escarpment Plan

The Niagara Escarpment Plan\(^{33}\) applies to the City’s Niagara Escarpment (see Figure 3, The Niagara Escarpment Plan).

“The purpose of this Plan is to provide for the continuous maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment.”\(^{34}\)

The Niagara Escarpment Plan seeks to achieve the following objectives:

1) “to protect unique ecological and historic areas;
2) to maintain and enhance the quality and character of natural streams and water supplies;
3) to provide adequate opportunities for outdoor recreation;
4) to maintain and enhance the open landscape character of the Niagara Escarpment in so far as possible, by such means as compatible farming or forestry and by preserving the natural scenery;
5) to ensure that all new development is compatible with the purpose of the Plan;
6) to provide for adequate public access to the Niagara Escarpment; and
7) to support municipalities within the Niagara Escarpment Plan Area in their exercise of the planning functions conferred upon them by the Planning Act.”\(^{35}\)

Where a proposed project is not a permitted use within the applicable Niagara Escarpment Plan designation, an amendment to the Plan is required. Where a proposed project is permitted, a development permit may be required unless exempted by the Development Control Regulations. Alternatively, where Hamilton’s urban area has been removed from the Niagara Escarpment Planning and Development Act’s Development Control Regulation, municipal zoning applies.

The Plan is comprised of three parts. Part 1 describes the land use policies within the Niagara Escarpment Plan. Part 2 sets out Development Criteria to be applied when Escarpment development approvals are issued. Part 3 describes the Niagara Escarpment Parks and Open Space System.

\(^{33}\) The Niagara Escarpment Plan, June 1 2005.
\(^{34}\) Ibid, page 4, Niagara Escarpment Plan, 2005.
Part 1 of the Niagara Escarpment Plan sets out the land use designations and policies. Several Niagara Escarpment Plan land use designations apply to Hamilton’s Niagara Escarpment. These designations include, (in order of environmental priority), the Escarpment Natural Area, Escarpment Protection Area and Urban Area designations.

Each designation has a goal, objectives and permitted uses.

Within the Escarpment Natural Area designation, “non-intensive recreation uses such as nature viewing and trail activities except motorized vehicular trails or the use of motorized trail vehicles” are permitted. Furthermore, “the Bruce Trail corridor including the pedestrian footpath and, where necessary, bridges, boardwalks and other trail-related constructions and unserviced Overnight Rest Areas and Access Points for Bruce Trail Users.”

Within the Escarpment Protection Areas, “in non-agricultural areas, recreational uses oriented towards the lands which require minimal modification of the existing natural, topographic and landscape features and which do not require the building of major structures (e.g., picnic sites, day use sites, unserviced camp sites, trail uses)” are permitted. Furthermore, the Bruce Trail corridor including the pedestrian footpath and, where necessary, bridges, boardwalks and other trail related constructions and unserviced Overnight Rest Areas and Access Points for Bruce Trail users.”

Within the Escarpment Rural Areas, “in non-agricultural areas, recreational uses such as campgrounds, golf courses, country clubs and trail uses” are permitted “provided that a detrimental impact of these uses on the Escarpment scenic qualities and natural environment is kept to a minimum.” Furthermore, the Bruce Trail corridor including the pedestrian footpath and, where necessary, bridges, boardwalks and other trail related constructions and unserviced Overnight Rest Areas and Access Points for Bruce Trail users.”

Within the Urban Area, “uses… may be permitted subject to conformity with Part 2, Development Criteria, the following development Objectives as incorporated into official plans and/or secondary plans and, where applicable. Zoning bylaws that are not in conflict with the Niagara Escarpment Plan.”

Part 2 prescribes development criteria which may be applied to trail development where a development permit is required. These criteria apply to specific circumstances, (i.e., a stream crossing) or are more general in application (i.e., erosion). Existing use policies may also apply to redevelopment of Escarpment trails.

Where new trails are proposed, development criteria intended to address “Recreation” (Part 2.13), “Areas of Natural and Scientific Interest” (Part 2.14) and “The Bruce Trail” (Part 2.16) may apply depending on the circumstances.

The municipality commits to plan and manage the lands in conformity with the policies of the Niagara Escarpment Parks and Open Space System.

Where a trails project is situated within the Niagara Escarpment Plan, the City will review the projects design and approval requirements arising from the Niagara Escarpment Planning and Development Act with Niagara Escarpment Commission.
As part of the condition of approval for requiring an NEC development permit, the NEC circulates their notice of decision to surrounding residents within 120 metres of the proposed development. Before a permit is issued the NEC allow a mandatory 14 day appeal period during which time the approval may be challenged. This regulatory matter will override any public process held prior to the development permit application. For trail development within the regulated escarpment area the City should prepare a similar circulation to seek public comment prior to applying for a development permit.

**Part 3** contains the Niagara Escarpment Parks and Open Space System. Parks are classified into six classes: Nature Reserve; Natural Environment; Recreation; Historical; Escarpment Access; and Resource Management Area for park planning purposes. Within each park, lands may be zoned for the following purposes: Nature Reserve Zones; Natural Zones; Access Zones; Historical Zones; Development Zones; and Resource Management Zones.

Within the City of Hamilton, the Royal Botanical Gardens, Clappison Corners Area, Spencer Gorge Wilderness Area, Dundas Valley Conservation Area, the Iroquoia Heights Conservation Area, the Mount Albion Conservation Area, the Felker’s Falls Conservation Area, the Devil’s Punch Bowl, the Vinemount Conservation Area and the Winona Conservation Area are Natural Environment Parks. Waterdown Woods is a Nature Reserve. Furthermore, the Dundas Valley Conservation Area is a Nodal Park with special park and open space access functions within the Niagara Escarpment Parks and Open Space System.

Webster’s Falls and Tiffany Falls Conservation Area are Escarpment Access Parks. Crook's Hollow and Battlefield Park are Historical Parks while Summit Bog Muskeg Preserve is a Nature Reserve. Christie Conservation Area is a Recreation Park.

If the Trails Master Plan uses Parts 1 and 2 of the Niagara Escarpment Plan as a guide in its development, trail development should conform to the land use policy designations and development criteria of the Niagara Escarpment Plan. Subject to review with the Niagara Escarpment Commission, some trail projects may require development permits.

Provision exists within the Niagara Escarpment Plan to include municipal parks and open space within the Niagara Escarpment Parks and Open Space System. This may occur upon municipal request and agreement by the Ministry of Natural Resources and the Niagara Escarpment Commission. No Niagara Escarpment Plan amendment is required to accomplish this end.

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36 Park zoning is not to be confused with municipal zoning under the Planning Act.
FIGURE 3
2.2.5 The Provincial Policy Statement
The Provincial Policy Statement provides policy direction on matters of provincial interest where municipal decisions are made. Ontario’s vision for efficient development patterns “promotes a mix of housing, employment, parks and open spaces and transportation choices that facilitate pedestrian mobility and other modes of travel.”\(^{37}\)

With respect to healthy communities (Policy 1.5, Public Spaces, parks and open Space), these “should be promoted by:

a) planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, and facilitate pedestrian and non-motorized movement, including but not limited to, walking and cycling;

b) providing for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parklands, open space areas, trails and. Where practical, water-based resources;

c) providing opportunities for public access to shorelines; and

d) considering the impacts of planning decisions on Provincial Parks, conservation reserves and conservation areas.\(^{38}\)

Long term prosperity (1.7 Long-Term Economic Prosperity) involves “providing for an efficient, cost-effective, reliable multi-modal transportation system that is integrated with the adjacent systems and those of other jurisdictions, and is appropriate to address projected needs.”\(^{39}\)

A multi-modal transportation system “means a transportation system which may include several forms of transportation such as automobiles, walking, trucks, cycling, buses, rapid transit (such as commuter and freight), air and marine.\(^{40}\)

2.2.6 The Parkway Belt West Plan
The Parkway Belt West Plan\(^{41}\) was prepared under the provisions of the Parkway Belt West Planning and Development Act 1973. This plan is comprised of 6 parts and 8 maps. Plan policies are constructed in a hierarchy beginning with four goals and four objectives intended to be applied in varying degrees to all development within the Plan depending upon the circumstances which apply to the situation.

Two general land uses are provided for. These are Public Use Areas and Complimentary Use Areas. The Public Use Areas are further subdivided into: Public Open Space and Buffer Area; Utility; Electric Power Facility; Road and Inter-Urban Transit. Complementary Use Areas are further subdivided into General Complementary and Special Complementary Use Areas.

\(^{38}\) Ibid, Ministry of Municipal Affairs and Housing, 2005, page 10.
\(^{40}\) Ibid, Ministry of Municipal Affairs and Housing, 2005, page 33.
The Parkway Belt West Plan was approved in 1978. In the mid-70’s, both the Niagara Escarpment Planning and Parkway Belt West Planning areas overlapped resulting in the preparation of two Provincial Plans for the same area. In order to avoid duplication, the Province and the Plan authors agreed that the Niagara Escarpment Plan area would be removed and the Escarpment Link within the Parkway Belt West Plan would proceed to approval in 1978 as part of that Plan.

The practical effect was two Provincial Plans address portions of the Niagara Escarpment in the City of Hamilton and Region of Halton. The matter was further complicated because the approval processes resulted in lands being removed from the Escarpment Link of the Parkway Belt West Plan between the Niagara Escarpment Plan and the Parkway Belt West Plan resulting in areas on the Niagara Escarpment which were in neither the Escarpment Link or the Niagara Escarpment Plan.

In the early 1990’s, the Province initiated steps to address this situation. Recently these steps came to fruition with the return of part of the Escarpment Link to the Niagara Escarpment Plan. In Hamilton, prominent Escarpment slopes and features and the Royal Botanical Gardens lands around Cootes Paradise have been transferred to the Niagara Escarpment Plan while the land used for utility and transportation corridors between Cootes Paradise and the Escarpment face remain within the Parkway Belt West Plan. Multi-purpose recreational trails are contemplated by the Plan and exist presently subject to meeting the requirements of other transportation and utility corridor requirements.
2.2.7 Ontario Trails Strategy

“The Ontario Trails Strategy” is a long term plan that establishes strategic directions for planning, managing, promoting and using trails in Ontario.”

Trends affecting trails are identified as the following:

- “Stakeholders report that the cost of liability insurance for trail organizations is becoming prohibitive.
- Although ownership of all-terrain vehicles (ATV) in Ontario has increased, the development of ATV trails has not kept pace with the growth in demand. With few designated ATV trails, many ATV users frequent trails that are not suitable for their vehicles.
- Fifty-two per cent of Ontarians are still not active enough to realize optimum health benefits.
- A 2001 study found that 28 per cent of Ontarians cited lack of pleasant places to walk and/or bicycle as a barrier to participation in physical activity.
- While Ontario’s trails have traditionally been developed independently, trails organizations increasingly recognize that they must work together to use their resources more efficiently, make the most of their investment in trails and effectively educate the public and trail users.
- There are increasing pressures on the natural and cultural features of trails because of growing population and densities around the Province and increasing numbers of off road vehicles, many of which are used off trail as well.”

Five strategic directions are identified which comprise the Ontario Trails Strategy. These are:

- improving collaboration among stakeholders;
- enhancing the sustainability of Ontario’s trails;
- enhancing the trail experience;
- educating Ontarians about trails; and
- fostering better health and a strong economy through trails.

This Master Plan addresses each of these strategic directions.

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2.3 OTHER PROVINCIAL/MUNICIPAL PLANNING CONSIDERATIONS

2.3.1 The Niagara Escarpment UNESCO Biosphere

The World Network of Biosphere Reserves is governed by a Statutory Framework. The statutory framework provides guidance as to how to undertake planning within a Biosphere Reserve and has been applied to the preparation of this Trails Master Plan.

The Statutory Framework includes an introduction which describes UNESCO’s Man and the Biosphere Program. Article 1 states “biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO’s programme on Man and the Biosphere, in accordance with the present Statutory Framework”.

Article 2 sets out general guidance. “The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its component”. Individual reserves remain under the jurisdiction of the countries in which they are found and “states take the measures which they deem necessary according to their national legislation”.

Article 3 sets out the functions reserves are intended to accomplish. “In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale:

- conservation – contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- development – foster economic and human development which is socio-culturally and ecologically sustainable;
- logistical support – support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.”

The Escarpment Natural Area represents the landscape and ecosystems set aside for conservation. The Trails Master Plan makes provision for sustainable recreation development while the trail management provisions provide logistical support.

Article 4 addresses criteria against which an area is to be evaluated before selection as a Biosphere Reserve; Articles 6 and 7 address implementation. “Organizational arrangements should be provided for involvement and participation of a suitable range of public authorities, local communities and private interests (where these exist) in carrying out the functions of a biosphere reserve.”

2.3.2 The Hamilton Waterfront Trust

The Hamilton Waterfront Trust was organized to find ways to make it easier for residents and visitors to experience the waterfront of the City of Hamilton. Both the Hamilton Harbour Waterfront Trail extension and the Hamilton Beach Recreational Trail are projects of the Trust, the City of Hamilton and the Waterfront Regeneration Trust who assisted with obtaining Canada Ontario Infrastructure Program funding, which help connect the City of

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46 The Statutory Framework of the World Network of Biosphere Reserves, http://www.unesco.org/mab/frameuk.htm 22/01/01
Hamilton with other municipalities and surrounding trail networks. Such goals and objects laid out by the Trust include creating trails and linkages which include the development, expansion and refinement of public access and linkages to Hamilton’s Waterfront as well as a strongly connected integrated trail system including a direct connection with the Lake Ontario Waterfront Trail. Other goals include the promotion of health and enjoyment which can be achieved by providing opportunities for the enjoyment of recreational and leisure activities and a healthy lifestyle.48

The benefits of the goals and objectives stipulated in the Trust include easy access to the water’s edge and the enhanced quality of life through recreation, leisure and a healthier lifestyle.

2.3.3 Hamilton Harbour Remedial Action Plan
The HHRAP is a community-based plan developed to restore the environmental quality of Hamilton Harbour. While the plan’s focus is on improvements to water quality, toxic sediment remediation and fish and wildlife restoration, it contains specific recommendations with respect to public access to the harbour. The RAP has been a significant catalyst for the development of parks and trails. In 1990, less than 5% of the harbour shoreline was accessible. The HHRAP recommends that by 2015, approximately 35% of the shoreline should be publicly accessible. New park and trail initiatives include:

- at the east end of the harbour, Windermere Basin Parkland and a 4.5km trail connecting Windermere Basin to the Burlington Ship Canal, and along the west side of East Port Drive with connections to the Red Hill Valley Trail System and the Lake Ontario Shoreline Trail; and
- at the west end of the harbour, a 2.5km – 5km trail connecting Hamilton to Burlington.

2.3.4 Hamilton Port Authority Land Use Plan
The Hamilton Port Authority Land Use Plan was completed by the Hamilton Port Authority in 2002 in compliance with the requirements of the Canada Marine Act. It contains objectives and policies for the development of property the Port Authority manages, holds or occupies.

In addition to providing for the Port’s industrial and transportation uses, the Port Authority is a stakeholder the Hamilton Harbour Remedial Action Plan to restore the Harbour’s environmental assets. The west Harbour is primarily used for recreational and public uses. Recently the recent waterfront trail was extended through Pier 8 to the HMCS Haida at Pier 9. The Port Authority continues to support efforts to develop a safe and fully connected multi-use trail around the Harbour, recognizing that public access cannot be always be accommodated to the water’s edge.

For example, restoration of relatively natural portions of the Sherman Inlet will benefit wildlife habitat and trail development as well as help attract development to Harbour oriented business uses. Windermere Basin will be remediated for passive recreational uses and wildlife habitat. Gateway streets with sidewalks, pedestrian scale lighting, bicycle lanes and street level landscaping would encourage public use and access, within the context of the new port security regulations.

48 Ibid.
2.3.5 Utility Corridors

A number of utility corridors exist throughout the City of Hamilton. Some may be used to contribute to development of recreational trails. Normally, petrochemical pipeline corridors are held by easements from the properties under which the facilities have been constructed. Many bulk hydro-electric transmission lines have been constructed over easements. Where this is the case, opportunity may exist to use these corridors for recreational trails, provided the easement holder agrees and public consultation occurs with adjacent land owners.

Some of the bulk transmission lines were owned by Ontario Hydro. These are now held by the Ontario Realty Corporation and used by Hydro One Networks. Where these lines traverse farmland, often the land is leased or rented to local farmers for agricultural purposes. In addition, there may be easements provided to enable farmers whose farms are intersected by these facilities to access lands on either side for agricultural purposes.

Some of the corridors, where publicly owned, may be good candidates for recreational trail development. This is especially true where these traverse interesting countryside and few, if any, off road opportunities exist. Where possible, these will be considered as candidate routes within those wards in which these opportunities present themselves. Environmental Assessment Act requirements may apply, depending upon the circumstances, and further consultation and agreements may be required from landowners whose properties are bisected by these utility facilities.

2.4 Municipal Planning

2.4.1 Introduction

The City of Hamilton is preparing a new official plan and zoning by-law. Parallel supporting planning studies include the preparation of a transportation master plan (see Section 2.4.5). Many background studies are being prepared in support of these planning efforts. The new official plan and zoning by-law will replace the former Regional Official Plan and local municipal official plans and zoning by-laws. Here are important municipal planning considerations to be addressed as they relate to trail planning.

2.4.2 Vision 2020

On June 16, 1992, the Region of Hamilton-Wentworth Council adopted “Vision 2020 – The Sustainable Region” as a basis for decision making in the Region of Hamilton-Wentworth. “Sustainable development and Vision 2020 are a challenge to every citizen to think about how their actions can move our community towards a sustainable future.” In September 2003, the City of Hamilton adopted a renewed Vision 2020.

“As citizens, businesses and government of the City of Hamilton we accept responsibility for making decisions that lead to a healthy, sustainable future. We celebrate our strengths as a vibrant, diverse City of natural beauty nestled around the Niagara Escarpment and Hamilton Harbour. We are able to achieve our full potential through safe access to clean air and water, food, shelter, education, satisfying employment, spirituality and culture. We weigh social/health, economic and environmental costs, benefits and risks equally when making decisions.”

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49 Page 9, Vision 2020 Progress Team, Strategies for a Sustainable Community, Regional Environment Department, Region of Hamilton-Wentworth, November 1998.

The Vision includes a statement concerning transportation.

“Getting Around”
“We have many transportation choices. We are not dependent on automobiles and trucks. An integrated transportation system serves the entire city in an affordable, efficient, and accessible way. Our transportation system improves community health by reducing the need for automobile use and making it easy and attractive to walk, cycle, skateboard or inline skate.

Public streets are designed and managed to safely and comfortably accommodate public transit, cyclists, pedestrians, and automobiles as complementary forms of transportation. The integrated transportation system gives access to all basic needs. Public transit provides all citizens with easy access to activity areas. Most people walk or cycle to work because jobs and housing are near one another.

Rail service brings people to Hamilton for recreation and work, and makes travel to other cities and regions easy and affordable. Our regional transportation system supports both our economy and environment. Rail and marine services offer efficient movement of goods and services, giving our businesses and industries a competitive edge. Major roads have a minimal noise and pollution impacts on lands, and follow routes that cause little damage to the natural and human environment.51

In September 2003, Council adopted nine directions developed in conjunction with the renewed vision to guide development decisions within the GRIDS process and the development of a new City Official Plan.52 Three of the directions address this Trails Master Plan:

“Direction #1 – Encourage a compatible mix of uses in neighbourhoods that provide opportunities to live, work and play.

Direction #6 – Expand transportation options that encourage travel by foot, bike and transit and enhance efficient inter-regional transportation connections.

Direction #9 – Maintain and create attractive public and private spaces and respect the unique character of existing buildings, neighbourhoods and settlements.”53

2.4.3 Triple Bottom Line
As part of an internal City of Hamilton staff reporting process, both short and long-term implementations of recommendations to Council are evaluated against sustainability indicators. The Triple Bottom Line check list converts the objective from the Provincial Policy Statement that "long-term prosperity, environmental health and social well-being should take precedence over short-term considerations (PPS 2005 Part IV)” into a made for Hamilton evaluation tool. By evaluating the triple bottom line (community, environment and economic implications) City staff can make choices that create value across all three bottom lines, enabling the City to move closer to fulfilling the strategic plan for a sustainable community as

52 City of Hamilton, Vibrant, Healthy, Sustainable Hamilton, Consultation Report for Phase 1 of the City of Hamilton’s Building a Strong Foundation Process, Volume 1, September 2003.
well as targeting Provincial interests. All staff reports include answers to whether or not the option being recommended creates value across all three bottom lines.

2.4.4 Official Plan and Zoning Bylaw Preparation Process
The Trails Master Plan will contribute to the City’s new official plan by providing a trail system upon which to build an intensified mix of urban land uses. Trail policies will be incorporated into the new Official Plan to implement this Master Plan. Ongoing secondary planning efforts can utilize this basic system to plan for neighbourhood trails.

2.4.5 Transportation Master Plan
The Trails Master Plan will contribute to the City’s transportation Master Plan by providing a system which provides alternative modal opportunities with which people can move. Ongoing, more detailed transportation master planning efforts can use this basic trails system to plan for neighbourhood trails. As Hamilton’s more detailed area specific transportation master plans are undertaken, Hamilton’s Trails Master Plan electronic database can be updated with more detailed trails information.

Earlier versions of the Transportation Master Plan provided more prescriptive information on the on street cycling routes. Since 1999, on street cycling routes have received more focused attention as an alternative transportation mode along with public transit and the automobile. Planning for on street cycling as an alternative mode is best addressed through the transportation planning analyses. Therefore, this Master Plan incorporates the on street system developed to date and provides, where possible, supporting off street inter-connections to link this system. Some on-street routes are also recommended to mutually support both the on- and off-street systems. These are indicated as possible on-street links.

Recommendations from the Transportation Master Plan suggest that future improvements to the off-street network address the following weaknesses:

- The many linear trails are not well interconnected, particularly in the urban area;
- Some linear trails (e.g., Lake Ontario Waterfront Trail, Chedoke Rail Trail, Dofasco Trail) are not continuous;
- There are few bicycle-friendly access points to the Escarpment Rail Trail, particularly from the lower City and particularly in the central portion of the City;
- More links across the LINC and Highway 403 are required; and
- Several significant natural amenities are not well served by the off-street system including the Royal Botanical Gardens, Coote’s Paradise, and Borer’s Falls Conservation Area.

The transportation master plan criteria or decision factors for proposed bicycle infrastructure improvements include:

- Connectivity and Continuity;
• Directness of Route; and,
• Safety and Comfort.

In addition to these categories, a forth consideration was Ease of Implementation, which takes into account the presence of on-street parking, available space and the need to adjust lane widths, traffic impacts, and co-ordination potential with planned capital projects. These principles are reflected in the Recreational Trails Master Planning Goals.

2.4.6 Parks, Culture and Recreation Master Plan
The newly amalgamated City created a Parks, Culture and Recreation Master Plan in 2001. The Plan aims to:

"establish a collective community vision for parks, culture and recreation in the new City of Hamilton, and to set a comprehensive planning framework inclusive of strategic directions, implementation strategies, policy implications and financing strategies…. The end product will be regarded as a critical community resource document that will clearly articulate what, where, when and how future facilities and services will be constructed, implemented, financed and maintained."\(^{54}\)

Within the Parks, Culture and Recreation Master Plan, the development and improvement of trails was identified as necessary for the improvement of outdoor recreational facilities. The master plan outlined service objectives that can be achieved through the implementation of trail networks. The objectives contribute to the public good, economically, environmentally, personally and socially.

Such objectives include protecting and enhancing the natural environment, protecting and celebrating our heritage resources, beautifying the community and supporting family oriented leisure opportunities. The plan also intends to promote individual growth through fostering and promoting fitness and overall well being, provide opportunities for reflection and escape from daily pressures, and educate individuals about the wise use of leisure time.\(^{55}\)

Objectives that provide a sense of community include:

1. To protect and enhance the natural environment: the protection of natural aesthetic features, vistas and natural phenomenon and the provision of public access will contribute to the pride of the community.

2. To protect and celebrate our heritage resources: the protection and celebration of the community’s history will connect citizens closely with the community.

\(^{54}\) City of Hamilton. Parks, Culture and Recreation Master Plan. May 27, 2002.
\(^{55}\) Ibid.
3. To beautify the community: to ensure that the community is seen as being visually pleasing is related to the community identity, spirit and culture.

4. Economic benefits though tourism: to ensure that tourists are drawn to Hamilton for the parks, culture or recreation activities and leave behind money that stimulates the economy.

Objectives that promote individual growth include:

1. Fostering and Promoting Fitness and Overall well-being: allow for opportunities to exist for citizens to enhance their emotional, mental and physical fitness well-being.

2. To Interpret the Environment: opportunities need to be available for residents to learn, understand and relate to their surrounding natural environment.

3. To create opportunities for reflection and escape from daily pressures: opportunities should be available to allow residents to experience nature and allow for personal growth through escape, reflection and relaxation in a serene natural environment.

4. Educate Individuals about the wise use of leisure time: residents should be educated as to the best use of leisure time and the results that occur from physical activity.

### 2.4.7 Waterfalls and Cascades of Hamilton

The City of Hamilton is fortunate to have over 80 waterfalls within the city limits, 65% (52 waterfalls) are accessible by trail or roadway with 31% (25 waterfalls) accessible along the Bruce Trail. 20% (16 waterfalls) of the total 80 waterfalls are inaccessible due to private landownership, or environmental constraints that would prevent the construction of a safe publicly accessible route. Waterfalls were rated and categorized into 3 classes: Excellent, A (16); Good, B (27); or Satisfactory, C (35). Twenty-seven (27) waterfalls fall within City of Hamilton ownership with seventeen (17) of those having aesthetics or public safety issues warranting development of formal public access. See Figure 5, Waterfalls and Cascades of Hamilton.

Proper interpretive and directional signage as well as new or upgraded all-weather or seasonal trails are required to ensure access to the waterfalls is maintained and safety is of the utmost concern. In April 2006, Waterfalls and Cascades of Hamilton, Phase 2 – Upgrades and Enhancements Study was completed for the City of Hamilton. This report provides specific direction on City-owned waterfalls and cascades. In a 2005 report prepared by the Hamilton Conservation Authority on the Waterfalls and Cascades of Hamilton it was concluded:

“waterfalls are very popular and appealing to both residents and tourists, and as such will be attractive to funding partners. Chasing waterfalls can be a strong element in developing the outdoor tourism business and image in Hamilton, especially when coupled with the extensive trail network, waterfronts and natural lands.”

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The City of Hamilton, Hamilton Conservation Authority and the Bruce Trail Association are working together in investigating access to the area’s waterfalls. Hamilton City Council on June 29th, 2005 accepted the recommendations of the Hamilton Waterfalls and Cascades Research and Inventory Report presented by Joan Bell, Manager, Grants and Special Projects, Hamilton Conservation Authority. Staff were directed to undertake the following actions:

a) that senior staff work with the Hamilton Conservation Authority and the Bruce Trail Association to examine the existing and potential linkages between the Bruce Trail, the waterfalls, and the Hamilton Conservation Authority and City owned lands, in order to develop a plan for raising funds and phasing trail improvements and report back to Committee with recommendations respecting financing including the possibility of using hydro dividends for this endeavour;

b) that staff work jointly with the Hamilton Conservation Authority to complete site plans and cost estimates for the waterfall clusters, and include them in annual capital budget planning;

c) that the waterfalls research and inventory report be circulated and considered by relevant City departments, to address such issues as improving public transit to waterfalls and conservation areas, recognizing high priority for outdoor tourism strategic planning, integrating waterfall signage recommendations into City sign policy;

d) that a timeline be established for Hamilton Conservation Area and City staff to return with a joint capital works plan, phasing and cost estimates for improving visitor facilities and waterfall access; and

e) that public meetings be held in the surrounding areas in order that the local communities are updated and are given the opportunity to participate.
2.4.8 Natural Heritage System
The City of Hamilton’s Natural Heritage System adopts the Natural Heritage System contained within the Provincial Greenbelt Plan as the core of its Natural Heritage System and adds additional policy where that system overlaps features of interest to the City of Hamilton. These features include:

- life science areas of natural and scientific interest;
- significant wetlands;
- alvar and tall grass prairie;
- evaluated wetlands;
- lakes and littoral zones;
- environmentally significant areas;
- earth science areas of natural and scientific interest; and
- unevaluated wetlands.

Linkage areas are to be identified latter and adopted by amendment to the Official Plan. See Figure 6, City of Hamilton Official Plan, Schedule B, Natural Heritage System.

These areas were considered in the development of this Trails Master Plan in two ways. Where trails are proposed close to or within the System, these have been designed so as to minimize negative impact. Further, where possible, the interpretive and education potential of these crossings is used to broaden the trail’s recreational appeal.
2.5 OTHER PLANNING CONSIDERATIONS

2.5.1 Shifting Gears

“Shifting Gears, A New Cycling Plan for Hamilton-Wentworth”\(^{57}\) updates the 1992 Bicycle Network Study and assess further improvements, proposes a capital improvement program and addresses education and promotional issues. It also brings together the various bicycle oriented provisions made in the Regional Official Plan and the 1996 Regional Transportation Review.

In 1997, the Hamilton-Wentworth Community Cycling Survey was undertaken. Highlights from this survey include the following:

- “Forty percent of the 18 and over population cycles when weather permits. Bicycles are used for both recreation and transportation purposes.”

- It is estimated that by 2006, the Region’s residents will make 40,000 cycling trips daily when weather is favourable. This is a 60% increase over the 1997 level of 25,000. Much of this growth will influence recreational cycling meaning that demand for trails will grow.

- Weather conditions in Hamilton-Wentworth are favourable for cycling for seven or eight months a year.

- The most collision-prone age group is 10 – 14 followed by 15 – 19 and 20 – 24. (Figures adjusted to reflect percentage of the population in each age group.

- Over half of all reported bicycle-car collisions result from bikes being ridden on the crosswalks and/or sidewalk.

- Most bicycle trips are made in the Dundas – Westdale – Central Lower Hamilton areas and substantially fewer trips are made in Stoney Creek and on the Mountain.

- The Niagara Escarpment (central portion) and major highways are considered significant barriers to cyclists.

- Whether recreation cyclists or bicycle commuters, all cyclists want improvements to an integrated network of on-street bike lanes and/or wider curb lanes and recreation trails.”\(^{68}\)

Two interlinked priorities exist. These include the needs of recreational and transportation oriented cyclists. The former accesses recreational opportunities while the latter accesses work, education, and shopping opportunities.

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Recreational cyclists seek to access the natural features associated with the Niagara Escarpment, Hamilton Harbour and the Beach Strip. Transportation cyclists seek access to land use destinations such as work, home education and shopping.

“Land use diversity in and around a person’s neighbourhood (e.g., the presence of neighbourhood retail) was the strongest predictor of walking. Bicycling, on the other hand, was equally influenced by density, diversity and design, and especially at the origin (i.e., the residential end) of the trip.”

“Similarly, walking and bicycling must be encouraged for short-distance trip-making, wherever possible. Measures that would promote non-motorized travel must include the adoption of design principles for new developments that encourage walking or cycling through:

- Insisting upon mixed uses within new developments, to provide the opportunity to satisfy at least some of people’s needs through short, neighbourhood trips;
- Requiring neighbourhood street patterns that facilitate and encourage walking and cycling through the creation of short, rectilinear blocks, wider sidewalks, pedestrian pathways, bicycle paths and lanes, and other features;
- Requiring parking lots to be placed at the rear, rather than in front of commercial establishments (and other similar design measures), so that they do not act as an intimidating barrier to pedestrian access;
- More generally, requiring that streetscapes and roadways be explicitly designed with the pedestrian and cyclist in mind, not just the car.

Similarly, municipalities should be aggressively looking for retrofit opportunities in existing developments and street systems to increase land use mix, widen sidewalks, introduce pedestrian walkways and bicycle paths or lanes, remove or relocate parking lots and other barriers to pedestrian travel, and improve streetscapes.”

The opportunities available for transportation cyclists in Hamilton are constrained by the existing street pattern. In some locations, off-street recreational trails complement the street pattern and in other locations, the two systems inter-connect or cross.

Different skill levels also differentiate cyclists. Less experienced cyclists may not feel comfortable using city streets while more experiences cyclists do. While multi-purpose trails generally service all skill levels, these facilities are generally oriented to the less experienced and recreational cyclists. Currently, the bicycle network is oriented to the more experienced and transportation oriented cyclists. Gradually, less experienced and recreational oriented cyclists will begin to graduate to the bicycle network by gaining experience on recreational trails.

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60 Page 56, Miller, Dr. Eric, Soberman, Dr. Richard M., “Travel Demand and Urban Form: An Issues Paper, (Draft)” One of a series of issues papers commissioned by the Neptis Foundation for the Central Ontario Smart Growth Panel.
2.5.2 Air Quality

"Air pollution threatens human health in four principal ways. The two most important are by increasing mortality and by threatening respiratory health. In addition, air pollution can damage cardiovascular function and increase cancer risk."\(^{61}\) In the City of Hamilton, air pollution originates from three sources: stationary industrial sources; dispersed multiple land use and transportation sources; and trans-boundary sources. Depending upon one's location within the City, the relative proportion of each may vary.

The chemical constituents of air pollution are different and include: gases such as carbon monoxide and dioxide, oxides of nitrogen, sulphur dioxide, volatile organics, and benzene; and particulate matter such as total suspended solids, PM10 and PM2.5. In the summer when conditions are appropriate, these chemicals can react to form ozone. In urban areas, mobile gasoline and diesel cars, trucks and busses can comprise the most significant sources of these various air pollution constituents.

Research conducted in Hamilton and Toronto indicates that living close to a major highway (100 meters) or street (50 meters) results in increased risk of circulatory disease hospital admissions and mortality. Of obvious interest is the application of these results to on and off street trails. Clean Air Hamilton provides advice to the City of Hamilton on air quality issues and reviewed a draft of this report.

"From Clean Air Hamilton’s perspective, we have a major long term goal of getting people out of their cars by developing strategies for getting Hamiltonians to use alternative methods of transportation for getting to work, shopping etc. We are very interested in seeing the establishment of a linked network of urban bike trails and urban bike lanes to promote the use of bikes as an alternative to cars for day-to-day activities, not just recreation. It is well documented that cities that have established accessible and user-friendly bike networks have found that there is a pent-up demand for such a network and that people will use such a network. The Waterfront Trail is a local success story that proves this point.

"Bike networks need to provide safe and healthy environments for everyone. Your report discusses issues related to bike trail design which are geared to encourage as many people as possible to use the system,. I am writing to encourage you and your committee to consider the health effects impacts of exposure to combustion emissions as a key parameter in the design and placement of bike trails and bike lanes.

"The discussion on bike lanes and bike trails last Wednesday followed a presentation by Denis Corr\(^{62}\) who is in the middle of conducting a mobile air quality monitoring network survey in Hamilton. His presentation was based on an interim report submitted to Clean Air Hamilton. While he is only halfway through the project at this time, the preliminary results clearly point to mobile emissions (i.e., care and truck emissions) as being truly significant sources of particulate matter, oxides of nitrogen and carbon monoxide on urban streets. Continuous exposures to individuals near major roads are nothing short of spectacular.


\(^{62}\) Rotec Environmental Inc., Health Impacting Pollutants: Mobile Monitoring to Identify and rank Hamilton Sources, for Clean Air Hamilton, the City of Hamilton, the Ministry of the Environment and Environment Canada, 2006.
“The levels of variety of combustion emission contaminants were measured across the City. The levels of these contaminants along major City streets were many fold higher than expected and many fold higher than the average 1 hour real time data provided by the Ministry of the Environment’s AQI stations. The latter stations tend to be set back from major roadways to mitigate the impacts of mobile sources. Measurements made downwind of two major intersections (Mohawk and Upper James, Barton and Centennial Parkway) were very high and were found to rise and fall with the idling of cars at the traffic lights. Indeed, the levels of key contaminants doubled and tripled in a cyclic fashion on a minute by minute basis. This means that exposures of bike riders to these contaminants when riding with cars and trucks on these major roads must be at least as high as the measurements made by Dr. Corr.

“These findings have significant implications for the design of an urban bike trails system. Specifically, from a health perspective it is important not to have bike lanes proximate to 4 lane or wider streets. It would be useful to have bike lanes parallel to, but not coincident with major traffic arteries. While there are obvious safety issues for bike riders in dealing with and sharing the road with cars and bikes on major roads, we would like to point out that the exposures to vehicle exhaust emissions will be very high for bike riders on major arteries. In some instances (such as the bridge across the 403 Highway), it may not be possible to avoid the proximity to cars and trucks. In general, bike routes should be set away from major roads where the contaminant levels will be considerably lower than levels measured on a major street. For example, a bike lane on a street parallel to a major artery would be favourable to having a bike lane on the major artery.

“Many people work along the bayfront. It is my understanding that there is a significant lack of bike lanes north of Barton Street. Employees who would like to bike to one of the many bayfront companies are forced to ride on very busy, major arteries with many trucks and to cross numerous sets of railroad tracks. It would be interesting to plan a safe bike path for workers along the bayfront. It may be useful to approach the Hamilton Industrial Environmental Association (HIEA) on this issue and to see what they may be prepared to do along the lines of providing some funding or access to company lands for a bike path. A bayfront commuter bike trails would need to be linked to other commuter bike paths in the City.”

2.5.3 Urban Form, Activity Patterns and Public Health

“Sedentary lifestyles have emerged as a pressing physical health challenge, because some of the consequences – overweight, type 2 diabetes, and other conditions – have reached epidemic proportions. Public health advocates have worked hard to promote more physical activity, and researchers have worked hard to identify what factors will help in this effort.”

Physical environments which are conducive to walking contribute to higher levels of physical activity.

“Brisk walking, bicycling, and even gardening qualify as moderate physical activities. Current recommendations are for a half hour of moderate physical activity on at least five days per week.... Moderate physical activity is as beneficial as vigorous exercise in preventing cardiovascular disease, assuming that equivalent levels of energy are expended... Multiple episodes during the day, as short as eight or ten minutes, offer the same benefit. This has implications for built environment design; places designed so that people walk on multiple

63 E-mailed comments from Brian McCarry, Clean Air Hamilton, January 8 2006.
occasions during the day may go a long way toward helping them reach recommended levels of physical activity."65

Activity patterns are differentiated into two types. Moderate activity raises the heart rate to 50-69% of its capacity while vigorous activity raises the heart rate to at least 70% of its capacity. Brisk walking, cycling and gardening qualify as moderate activity.66

The effects of excess weight and physical inactivity have resulted in over 300,000 premature deaths each year.67 The physical inactivity is often a result of more time spent in cars traveling to and from work and shopping trips. The increased time spent driving is associated with an increased probability of being obese.68

The increased commuting time and physical inactivity of people can be attributed to the sprawling urban form. The shape of urban areas have resulted in people walking less, weighing more and having a higher prevalence of health problems as a result of inactivity.69 The promotion of trails, alternative modes of transportation and mixed land uses are necessary to bridge the gap between urban form and health thus creating healthy and sustainable communities.

Three physical design dimensions help people become more active. “Land use patterns operate at a large spatial scale and determine the arrangement of physical activities across the metropolis. Design characteristics operate at a smaller spatial scale. Examples include the architecture or buildings, the width, tree canopy and placement of sidewalks; and the vistas in a park; which when taken collectively create a sense of feeling of a place. Transportation systems connect different land uses and define the relative ease and convenience of walking, bicycling, transit and driving.”70

Other factors may apply:

- “Functional factors relate to the physical attributes of the street or path, such as continuity and design, street type and width, and traffic volume;
- Safety factors include crossing aids, lighting, and the level of passive surveillance of the path or sidewalk;

• Aesthetic factors include cleanliness, maintenance, the presence of trees, and architecture;
• And destinations are such places as parks, transit nodes, stores, and restaurants.”71

Given the health care costs associated with sedentary lifestyles and obesity, health care providers looking at prevention increasingly are looking at land use and transportation planning and design measures to help people address these health outcomes. We need to build into the trail system measures which will assist in creating a more active and healthy community.

2.5.4 Hamilton Street Railway
Public Transit officials reviewed a draft of this Master Plan and provided the following comments:

• Development of urban trails is transit supportive because a trails system provides Hamilton Street Railway (HSR) customers with travel options either before or after their bus ride, which contributes to making transit use more attractive.

• The extension of the Hamilton Brantford Rail trail may provide an opportunity for a multi-modal transfer point (walk/bike/bus) in conjunction with possible route/service changes that may be implemented to service the future McMaster Innovation Park on Longwood Road.

Note: As of May 2006, Hamilton and the Canadian Pacific Railway (CPR) have agreed to link the Chedoke Radial Trail and the Hamilton-Brantford Rail Trail. CPR will sell a portion of a spur line for conversion use to a trail. Work will allow for a public route through the Aberdeen Avenue rail yard, over the 403 overpass to link to the Brantford Rail Trail. The project is estimated at approximately $1 million.

• The re-introduction of the inclined railway to provide an alternative means for pedestrians and cyclists to travel between upper and lower Hamilton would also provide a boost for tourism. The location proposed is somewhat off the beaten track with no notable tourist type features existing at the lower terminus. The proposed inclined railway will likely require an Individual Environmental Assessment (Part II of the EA Act).

• HSR would consider supporting the inclined plane (railway) concept, if the location and design facilitates an improvement in year round cross Escarpment travel options for the worker, student, shopper and non-tourist.

71 Ibid, as referred to by Pikora and colleagues in Frumkin, 2005, page 99.
• Locating the inclined plane (railway) at the foot of James Street provides an historical context and may serve as an alternative link between St. Joseph’s Health Care Central Campus and the Centre for Mountain Health Services.

• In addition to pedestrians, the concept of accommodating an 18 metre long transit bus may be worth exploring, especially if the inclined plane (railway) operates as two high speed, counter balanced units which would take approximately 1 minute to traverse the Escarpment.

• James Street South is seen as a primary transit corridor linking the Downtown Transit Terminal and the central mountain and Upper James Street shows good potential (with transit supportive density and zoning changes) to become a major north/south transit corridor linking the downtown population and employment node with the Airport employment and transportation node, via a major health care facility and, with slight routing deviation, the Fennel campus of Mohawk College.

• An inclined plane (railway) at James Street could, with careful planning and design, become an integral part of the plan for a future shift away from the private automobile, providing year round benefits for regular commuters, along with tourist appeal during the summer.

2.5.5 Chedoke Mountain Bike Park
One of the issues identified by user and special interest groups at the public meetings was the lack of mountain bike opportunities or facilities. Both the special interest groups and the Hamilton Conservation Authority identified existing conflicts with mountain bike users impacting sensitive lands along the escarpment and portions of Conservation lands in the Dundas Valley and elsewhere in the City.
An opportunity exists to help correct this lack of mountain bike facilities by utilizing lands at the City of Hamilton former Chedoke Ski Hill adjoining the Chedoke Golf course.

A further design review of this site should be completed in more detail to consider a range of opportunities. For example, downhill mountain biking, trail riding, links to the Chedoke Rail Trail, a lift to the top of the brow at the old lift “bull wheel” site, bike rentals, lessons, clinics, cross country bike riding and training. Given the history of past disturbances and previously cleared runs, a number of logical trail areas exist. This review must of course, look at the existing holes of the golf course and consider potential modification, realignment and use conflicts to be addressed between users and uses.

An example of a similar, but larger scale facility exists at Blue Mountain in Collingwood, Ont. (Town of the Blue Mountains). The Chedoke Mountain Bike Park has potential to work as a public / private partnership or privately operated venue. Further design review is recommended to consider this concept in detail.
Other examples of an adventure mountain bike park in the Bruce Peninsula include single and double track riding features. Topographic features including rock drop-off, elevated boardwalks, suspension bridges, ramps to challenge riders personal skills and limits.

2.5.6 Beckett Drive Gondola
An opportunity to connect the upper and lower City for both transportation and tourism could be achieved with a closed (or open) air gondola at Highland Gardens Park, over Beckett Dr. to the St. Joseph’s Health Care lands/O.R.C. property. As part of the O.R.C. land’s future redevelopment, a 30 m buffer open space will ultimately be established along the brow of the escarpment from West 5th westerly to approximately Auchmar Rd. This buffer will also provide a potential brow trail link from West 5th to the neighbourhood which will link off-street multi-use trails and on-street cycling systems.

A gondola, approximately 300 m long, with a small terminal point within Highland Gardens Park could be potentially equipped with carrying brackets for bikes to link the upper and lower City. Given the close proximity to Mohawk College, the hospital lands, Hillfield Strathallan College, residential and other major uses, the link should be explored in more detail. This could potentially be operated as a public/private partnership as part of both a transportation and tourism link. Further design review and consultation with the NEC will be required in order to develop this concept further.

2.5.7 Environmental Assessment Studies
Federal and Provincial Environmental Assessment Act requirements may apply to trail projects. The City of Hamilton and its trail stakeholders are encouraged to review all trails projects for Federal and Ontario Environmental Assessment Act and Class Environmental Assessment Act requirements before implementation.

The Canadian Environmental Assessment Act applies when triggered by other Federal legislative requirements (e.g., Fisheries and Migratory Birds Acts), projects are situated on
Federal Crown lands (e.g., Hamilton Harbour), projects initiated by the Federal Government or projects use Federal funds.

Trails are subject to the Ontario Environmental Assessment Act when the total cost of constructing a new trail or a system of trails at one time exceeds $3,500,000. The $3,500,000 trigger does not include land acquisition, studies and associated fees for services, or buildings. Most of the trail projects in this Master Plan do not exceed this amount and therefore will not require Environmental Assessment Act approvals. Conservation Authority trail projects located on and off Authority lands do not require Environmental Assessment Act approval if their trail projects do not exceed $1,000,000. The Master Plan will serve to document the need and justification for those projects which require further Environmental Assessment Act approval.

Potential Assessment triggers under the Class EA, include:

- Installation of road safety projects (e.g. lighting, safety barriers) where the construction cost is estimated to be greater than $1.5 million;
- Reconstruction or widening where the reconstructed road or other linear paved facilities (e.g. HOV lanes, bus lanes or transit lanes) will not be for the same purpose, use, capacity;
- Reconstruction of a water crossing where the reconstructed facility will not be for the purpose, use, capacity or at the same location;
- Construction of new water crossings;
- Construction of underpasses or overpasses for pedestrian, recreational or agricultural use;
- Retirement of existing roads and road related facilities;
- Construction of a berm along a watercourse for purposes of flood control in areas subject to damage by flooding;
- Modification of existing water crossings for the purposes of flood control;
- Works undertaken in a watercourse for the purposes of flood control or erosion control, which may include: bank or slope re-grading; deepening the watercourse; relocation, realignment or channelization of watercourse; revetment including soil bio-engineering techniques; reconstruction of a weir or dam.