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APPENDICES
Please note that appendices are only included in the complete version of this Report which had limited distribution due to the considerable size of the document. Complete versions can be obtained through the City of Hamilton, Open Space Development and Park Planning, Capital Planning and Implementation, Public Works.

Appendix 1 – Summary of Field Notes & Fieldwork Photos (Apr. - Sept. 2002)
Appendix 2 – Summary of Field Notes & Fieldwork Photos (June 2005)
Appendix 3 – Trailhead Signs, Location and Condition Guide
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EXECUTIVE SUMMARY

The City of Hamilton Recreational Trails Master Plan is a comprehensive document which prescribes a multi-use, off-road recreational trail system throughout the City of Hamilton. This system links both the current and proposed off-street as well as on-street systems into a fully integrated, City-wide based system.

The Master Plan completes a process that was started in 1999 by staff of the former City of Hamilton. This document is intended to guide trail systems, development and management throughout the City from the present into the future, providing clear direction and decision making capabilities. The Hamilton Recreational Trails Master Plan is intended to be utilized as a working tool/document providing comprehensive and valuable information in order to make informed decisions on a system wide basis.

Extensive public involvement, which helped to shape and guide the Master Plan, included a series of five (5) public open houses held in May and June 2005; a public questionnaire (Appendix 4), issued in both paper and electronic format; user group meetings; key stakeholders and user interviews; liaison and discussion with key agencies; soliciting direct input for key user and special interest groups; input from the Cycling Committee; input from City staff, departments (Planning, Community Services and Public Works) and individuals; outside public agency input, adjoining municipalities and Conservation Authorities.

This valuable input was utilized to assist the Consultant Team in development of individual ward initiatives as well as specific recommendations. Input was provided by many who gave generously of their time providing input and comments on draft working copies. These people are appropriately acknowledged in this report in Section 1.9, Acknowledgements.

The structure of the Master Plan Report has been organized in a straightforward manner to reflect the intent that this report be utilized as a working tool. The binder format itself, has been set up to allow for cost effective changes and additions over time by City staff, eliminating the need for costly re-printing and unnecessary consumption of paper. Complete electronic copies of the entire document, including text and all maps, were provided to City staff at the conclusion of the study. These were delivered to the Project Manager and Section Manager of Open Space Development and Park Planning at the City of Hamilton.

The report structure proceeds logically and effectively from large scale planning issues and concepts through to detailed implementation. Chapters are organized as follows:

- 1.0, Hamilton Recreational Trails Master Plan System
- 2.0, The Planning Context
- 3.0, Master Plan Organization
- 4.0, Trail Development and Maintenance Standards
- 5.0, Master Plan
- 6.0, Summary of Ward Initiatives
- 7.0, Implementation Strategy
- 8.0, Conclusions
- 9.0, References
- Appendices (separate document)
The recommendations contained in this report reflect a forward thinking, state-of-the-art approach based on extensive research by the consulting team. Many of the concepts are unique to this study and, to the best of our knowledge, are new, groundbreaking concepts intended to improve the overall success and implementation of the Hamilton Master Plan system.

*For example, all projects are organized within each ward under individual initiatives (Section 5.3) with a data sheet and accompanying map of each initiative. This allows Council, staff and the public to clearly understand and consider the individual components in detail that comprise the overall system.*

Another unique concept that is introduced in this Master Plan is the concept of a degree of difficulty rating system for each trail. This degree of difficulty will assist users to make choices for trail use. This is discussed in Section 4.6, Trail Signage/Pictograms and further detailed in Section 5.3, Individual Ward Projects on the individual data sheets.

The intent is to create a multi-purpose system that, to the extent practical, caters to the broadest range of users possible. The system is intended to embrace people of varied levels of health, mobility, skill, age and interests. To further enhance this concept, we have developed a signage and pictogram symbology which builds upon the work of the Cycling Committee, Parks and Open Space and others including our team members.

Throughout the document, the concept of improving health, encouraging healthy lifestyles and increasing activity levels is constantly reinforced. From Provincial Planning Policies through to City Policies, the concept of healthy choices and encouraging fitness is considered and addressed throughout the Master Plan. Many positive legislative changes have occurred in the last few years, which will assist in counteracting current poor health and obesity trends within our society.

*The Hamilton Recreational Trails Master Plan is well suited to meet the City of Hamilton’s challenge to improve community’s quality of life by providing opportunities to participate in outdoor fitness and recreation, helping the City meet it’s corporate goal of creating a “healthy, safe and green City”.*

*The Consultant Team is grateful to have been able to assist the City of Hamilton to improve the quality of life for it’s residents and visitors.*

**CURRENT STATUS AND BREAKING NEWS**

This document is intended as a working tool that will be constantly references and updated. During the summer and fall of 2007, several on-street initiatives, previously shown as “proposed” were completed. To the extent practical, the authors have updated mapping in the Master Plan.

In addition, work is underway in 2007 to update the on-street cycling network and system. This document, together with the Hamilton Recreational Trails Master Plan will form a two-part comprehensive system.
1.0 CITY OF HAMILTON RECREATIONAL TRAILS
MASTER PLAN SYSTEM

1.1 INTRODUCTION

The City of Hamilton Recreational Trails Master Plan prescribes a comprehensive multi-purpose off-road recreational trail system to connect natural areas, cultural features and major land use destinations within the City of Hamilton. This system links to on-road commuter systems and will be fully integrated into a larger regional, provincial and national network of trails. The Master Plan recommends the following measures:

1) the completion of a comprehensive multi-purpose system of trails;
2) the identification and classification of recreation trails in accordance with their use (e.g., commuting, recreational use) and character (e.g., natural, environmental significance or urban areas);
3) recreational trail management and development standards to meet varying commuting needs and opportunities in a manner consistent with municipal land use, transportation, natural/cultural, heritage and sustainable development policies;
4) recreational development and management measures intended to preserve natural and cultural features;
5) design methods intended to create trail gateways and scenic vistas to enhance a positive public image of the City of Hamilton; and
6) implementation of applicable City of Hamilton Official Plan and Transportation Master Plan policies and recommendations.

Where other trail partners and municipal land use and transportation plans are involved, this Plan recommends:

7) co-management strategies and measures to achieve system objectives on trails facilities developed and managed by other public and not-for-profit organizations.

1.2 HAMILTON’S MISSION STATEMENT

The City of Hamilton approved a mission for local government comprising six general goals and implementation commitments in October 2001. The second goal is “to ensure that
Hamilton remains a great city, Council commits to providing quality services that residents can rely on and to support the community’s quality of life.\(^1\)

Specifically, “Council will partner with the Hamilton Conservation Authority and other community agencies to integrate and promote a citywide trail system.”\(^2\) This Master Plan describes how Hamilton partners with the Conservation Authority and other organizations to implement the trail system.

Hamilton’s trails improve residents’ quality of life in many ways. The system provides healthy opportunities for residents to participate in higher levels of physical activity and enjoy distinctive natural and cultural features, thereby helping the City meet its corporate goal of creating a “healthy, safe and green city.”\(^3\) Trail recreation provides opportunities to relax and socialize with family members and friends.

The system interconnects many important natural and cultural features enabling residents and tourists to enjoy and appreciate the City’s built and natural environments.

Trails connect residential, employment, commercial and institutional areas. These connections contribute to attainment of the City’s Municipal land use, sustainable development, transportation, and economic development goals and help implement Vision 2020.

Pedestrians and cyclists account for a high proportion of the trips generated within downtown Hamilton. Multi-use trails, together with the on-street system, provide viable and valuable alternatives to automobile usage throughout the City.

Walking and cycling activities help residents and tourists experience the City’s natural and built environments in a special way and contribute to a collective sense of good health and well being.\(^4\) The trail system will become an increasingly important element within Hamilton’s sustainable community.

In order to guide the development of Hamilton’s trail system in a manner consistent with Federal, Provincial and Municipal legislative, policy and regulatory matters and within resource capability of the City of Hamilton and its trail stakeholders, this Master Plan:

- integrates components of the existing recreational trail system;
- proposes projects which will complete the trail system;
- strengthens partnerships with other trail operators;
- prescribes physical and environmental design standards;

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\(^2\) Ibid, City of Hamilton, page 3.
\(^3\) Ibid, City of Hamilton, page 3.
\(^4\) City of Hamilton, Downtown Master Transportation Plan, “Putting People First”, 2002
This Master Plan was developed with the review and comments of trail users, Hamilton’s trail partners, the public, government agencies and City departments. Consensus was sought wherever possible on the Plan recommendations and specific projects. By implementing the capital works required to complete the trail system, Hamilton residents will “get the best value for taxpayer dollars.”

1.3 TRAILS MASTER PLAN DESIGN PRINCIPLES

The Hamilton Recreational Trails Master Plan utilized the following Design Principles to design this recreation trail system:

- While multi-purpose recreation trails generally service all skill levels, Hamilton’s trails are also oriented to the less experienced trail users so as to encourage higher activity levels among Hamilton’s residents;
- Local air quality trends should be a consideration when planning and developing recreational trails and cycling routes in Hamilton’s urban areas;
- Increased commuting time and physical inactivity can be attributed to sprawling urban form. The shape of urban areas has resulted in people walking less, weighing more and having a higher prevalence to health problems as a result of physical inactivity. The promotion of recreation trails, as 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.
- Urban and rural recreational trails address different needs and opportunities. Urban trails provide an alternative mode of transportation by which users can access work, school and play. Rural trails provide access to recreation and environmental appreciation opportunities and provide linkages to neighbouring municipalities and the TransCanada Trail system which runs through Hamilton.
- Public safety can be addressed in multiple ways. The trail design standards address the needs of specific users and varying skill levels. Conflicts between users may require some trails to be single purpose and seasonal while others will be multiple use and all weather trails. Where multiple uses exist or are anticipated, surface treatment and width standards are addressed accordingly.
- In Hamilton’s urban areas, most existing trail facilities have been developed in the west end of the City. Where these facilities exist, these are heavily used. In the

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5 Ibid, City of Hamilton, page 4
eastern urban area, below the Niagara Escarpment, there is an absence of east/west and north/south trails. More trail facilities are required to better serve this area and to provide an alternative to single occupancy vehicle trips.

- Hamilton is unique within the provincial context balancing the relationship between the built environment and the natural geography of the Niagara Escarpment bisecting the City, Cootes Paradise to the West and a large industrial sector to the north along the south shore of Lake Ontario. The Recreational Trail system should maintain the balance between Built and Natural settings through its guidance in strengthening the overall trail network.

### 1.4 Trails Master Planning Goals

The trails master planning goals were originally established during the phase 1 study and were further refined during the public and stakeholder involvement process and as well as the analysis of work conducted by surrounding trail partners. The following 9 key goals are customized to Hamilton while having regard for the existing trail system and trail partner organizations.

This Trails Master Plan seeks to:

1) **Plan for the development and operation of a trail system within the City of Hamilton that provides for a wide range of recreational opportunities.**

   This Trails Master Plan completes a process begun in 1999 by the Public Works Department, Park Development and Maintenance Office, of the former City of Hamilton. This plan will guide trail systems development and management throughout the new City of Hamilton into the future. This Plan also implements broader municipal transportation, neighbourhood and health plans where these policies involve recreational trails.

2) **Connect significant environmental, cultural features and parks while preserving their natural heritage values and ecological functions enhancing their public appreciation.**

   The City of Hamilton recreational trails interconnect important natural areas, parks and cultural features. This Plan prescribes design and management measures strengthening these interconnections and creating new connections that maintain the natural and cultural values the City seeks to preserve.

   Policy goals within the Natural Heritage System include permitting recreational uses where they do not impact natural heritage values as well as conserve the natural beauty and distinctive character of Hamilton’s landscape.\(^6\)

3) **Connect major urban and rural land uses by providing multi-purpose trails and integrate the system with on-street cycling and sidewalk systems.**

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Hamilton’s Official and Transportation Master Plans provide for urban and rural pedestrian and bicycle facilities. This Master Plan recommends the City’s multi-purpose trails system be linked to these commuter on-road facilities to better interconnect residential, employment, commercial, institutional and industrial areas.

The plan integrates the “off street” recreational trails system with the “on street” cycling facilities. This will enhance cycling and pedestrian traffic and help meet new land use and transportation goals and objectives.

The Recreational Trails Master Plan recognizes the needs and issues around the use of Hydro corridors crossing agricultural lands that link urban and rural areas.

4) **Support public and private transportation demand management plans by providing alternative modal interconnections between residential, employment, commercial and institutional centres.**

In addition to providing recreational benefits, cycling and walking are important alternative transportation modes to single occupancy vehicular traffic, especially where distances are less than 3 to 5 km7.

“Non-motorized modes of travel (walking, bicycling) are also important for short trips: 28% of all 2001 work and school trips with a straight-line distance of 5 km or less in the Central Ontario Zone were made by walking or cycling. The benefits associated with such trips are considerable in terms of public health, the lack of negative environmental impacts, reductions in the load on road and transit systems, and travel costs savings, while the societal costs associated with non-motorized travel are often negligible.”8

New facilities and interconnections between the residential, institutional commercial and employment areas will be provided to help implement commuter trip reduction and transportation demand management plans.

5) **Provide a safe cycling and pedestrian environment.**

Multi-purpose trails accommodate multiple recreational activities including cycling, inline skating, running and walking often within a common right of way. Congestion along trails can be re-mediated through trail width, although conflicts can still occur between activities (e.g.,

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7 “in 2001, 28% of all work and school trips with a straight-line distance of 5 km or less in the Central Ontario Zone were made by walking or cycling”. Travel Demand and Urban Form: An Issues Paper, by Dr. Eric Miller and Dr. Richard Soberman, The Neptus Foundation, December 2002.

8 Page 15, Miller, Dr. Eric J., Soberman, Dr. Richard M., Travel Demand and Urban Form: An Issues Paper, commissioned by the Neptis Foundation for consideration by the Central Ontario Smart Growth Panel.
walking dogs on a leash may prevent cyclists from passing). Safety needs to be addressed where trails intersect with and/or where cyclists and pedestrians enter into or exit from streets. Some safety issues can be addressed through expanded education and policing, while others can be dealt with through design and maintenance standards.

An interconnected system needs to consider how community users will access and use the trails infrastructure. Sidewalks may be required in order to provide safe access to the trails system within local parks and Conservation Areas.

Many of the recreational trails are situated in remote or natural areas were there is limited visibility from surrounding residences (natural surveillance) or other members of the public. In these situations, lighting recreational trails creates a false sense of public safety, and therefore they should not be lit. The exceptions would occur in built up areas where there are large numbers of trail users, good natural surveillance and the trail performs a commuter function such as the Waterfront Trail or the Pipeline Corridor Trail.

Air quality is a concern. There needs to be a dialogue between Clean Air Hamilton and the City on local air quality issues to develop a better understanding of the inter-relationship between strenuous recreational activities and local air quality trends.

6) **Promote Physical Activity and Healthy Lifestyles**

The integration of physical activity into daily lives is one of the 10 most important health challenges we face.9

“Routine physical activity has been engineered out of our daily lives… The result, 70% of Americans do not achieve the goal of 30 minutes of moderately intense activity on five or more days per week as recommended by the Centre for Disease Control (Atlanta).”10

“The links between physical activity and health outcomes are well established. At the time of the (US) Surgeon General’s Report on Physical Activity and health in 1998, hundreds of research studies were amassed providing evidence of these links. Physical inactivity contributes to increased risk of many chronic diseases and conditions including obesity, hypertension, non-insulin dependant diabetes, colon cancer, osteoarthritis, osteoporosis and coronary disease…. One consequence of physical inactivity – obesity – has reached epidemic proportions across age, race/ethnic, and socioeconomic groups.”11

The diseases of the 21st century include heart disease, diabetes, obesity, asthma and depression, all of which respond well to physical activity. The environmental factors that affect personal weight and subsequent health include the lack of sidewalks and walking trails and the lack of the promotion of transportation alternatives such as public transit, walking

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9 Jackson, Richard J., Chris Kochtitzky, Creating a Healthy Environment, Sprawl Watch Clearinghouse Monograph Series, Centres for Disease Control and Prevention.
10 Richard Killingsworth, MPH; JoAnne Earp, PhD; Ralph Moore, Dipl Arch, MCP: “Supporting Health through Design: Challenges and Opportunities, in the American Journal of Health Promotion, Volume 18, No. 1, September/October 2003, page 2.
11 Reid Ewing, Tom Schmid, Richard Killingsworth, Amy Szlot, Stephen Raudensbush, Relationship between Urban Sprawl and Physical Activity, Obesity and Morbidity, in the American Journal of Health Promotion, Volume 18, Number 1, September/October 2003.
This Master Plan helps retrofit our neighbourhoods for trail oriented physical activities and promotes physical activity.

7) **Interconnect the trail system with other trail systems operated by other public and not-for-profit organizations.**

Many important recreational trails traverse the City. Examples include both the Bruce Trail and the Royal Botanical Garden’s public trails in Cootes Paradise. This Master Plan makes recommendations on recreational trails coordination and integration with other agencies.

8) **Connect Hamilton’s trails system to larger Provincial trails systems such as the Bruce Trail, the Rail Trail, Conservation Authority Trails and the Lake Ontario Waterfront Trail.**

Many Hamilton trails connect to distant destinations enabling Hamilton residents and tourists, to move freely to and from the City including the surrounding municipalities for a variety of recreational purposes (e.g. Hamilton/Brantford/Paris/ Cambridge Rail Trail). This Master Plan provides better integration with the Greater Toronto Area and Provincial trail systems.

9) **Interconnect with trails systems operated by the adjoining Regional Municipalities of Niagara, Halton, and Waterloo and the Counties of Haldimand, Norfolk and Wellington.**

Adjoining municipalities have developed, to various degrees off-road trails. The Master Plan provides for inter-linkage with these trail systems and connections with the Trans-Canada Trail system.

### 1.5 MASTER PLANNING PROCESS

This Master Plan proposes trail projects throughout the City of Hamilton. A wide variety of projects of differing sizes and complexity are recommended. Some are significant new facilities requiring further design and analysis while others are smaller expansions or upgrades to existing facilities or inter-connecting links.

**Phase 1: Background Data Collection and Issue Identification**

Phase 1 involved information collection and review with City Departments and trail partners to identify issues, concerns and opportunities to be addressed in the Master Plan. The following tasks were undertaken in this phase:

---

• evaluation and mapping of all routes on a ward-by-ward basis;
• collection and analysis of background trail and transportation reports;
• collection and analysis of applicable land use planning policies;
• review and analysis of Vision 2020 goals and strategies and contribution to the Hamilton Triple Bottom Line: enhancement of Community, Environment and Economic Well-Being;
• collection and analysis of environmentally significant area information;
• creation of a City-wide trails base map with connections to surrounding Municipal, Regional, Provincial and Cross-Canada Trails;
• creation of individual ward trails maps;
• development of draft goals and objectives statements;
• development of a draft issues statement;
• formation of a trail partners committee to review draft goals, objectives and issues statements;
• optional formation of and meetings with an inter-departmental coordinating committee to review draft goals, objectives and issues statements; and
• finalize issues, goals and objectives to be sought in this Master Plan.

Phase 2: Analysis of Alternative Projects
Using the inventory completed in Phase 1 and applying the goals and objectives to addresses trail development issues, concerns and opportunities, alternative projects were identified to complete the trails system. The following tasks were undertaken in this phase:

• develop draft trail standards and classifications;
• develop new trail and trail link projects required to complete the system and alternatives;
• develop trail upgrade projects and alternatives required to meet trail standards and classifications;
• five (5) public meetings (described in Section 1.7) were held including Waterdown, Ancaster, Hamilton Mountain, Stoney Creek and Hamilton City Hall to obtain public input and comments; and
• additional public user group input was solicited directly through local cycling shops (Neworld Cycle of Burlington, Freewheel Cycle of Dundas and Pierik’s Cycle of West Hamilton) as well as McMaster University Cycling Club.

Phase 3: Master Plan Preparation
The Master Plan documentation was completed using information generated within the previous phases. Implementation partners, short, medium and long term priorities and an implementation strategy were identified and documented (the ranking and summary of initiatives is described in Section 6.0). The following tasks are undertaken in this phase:

• identify short, medium and long term project priorities;
develop inter-agency and interdepartmental implementation and management strategy;
identify those projects requiring further environmental approvals;
draft the Master Plan;
review the Master Plan with the partner and interdepartmental review committees; and
review the Master Plan with the public at a scheduled public meeting; and finalize the Master Plan based on public and stakeholder comments received.

Some projects may be subject to other environmental and planning approvals because of their complexity, cost, environmental significance and public concern (i.e., trails that are subject to the Environmental Assessment Act, or affect the transportation network in ways that trigger the Municipal Class Environmental Assessment process for Roads, Water and Wastewater projects). Where these conditions apply, this Master Plan provides the justification and need for these projects.

Phase 4: Implementation
The City and its trail system partners will implement the Trails Master Plan in phases and update this document every 5 years and review it every 10 years.

1.6 Trail Project Approvals and Implementation
Other legislative approvals may be required to implement projects within this Master Plan.

1.6.1 Planning Act
Planning Act approvals may be required for the designation and zoning of lands for trail open space purposes. In neighbourhood and secondary plans more attention is recommended on the development of pedestrian and bicycling movement trails and facilities. Furthermore, more attention is recommended on the distribution of land uses and transportation facilities to encourage greater cycling and pedestrian activity. New secondary plans and the updating of existing secondary and neighbourhood plans can address these matters. Secondary plans can indicate the potential of utilizing utility corridors, road allowances and open space for planning recreational trails. This strategy is supported within the Greenbelt Plan (section 2.2.3)

1.6.2 Niagara Escarpment Planning and Development Act
Within the Niagara Escarpment Plan, development permits may be required for trail projects within the Development Control Area. The regulations enacted under the Niagara Escarpment Planning and Development Act sets out permit application requirements. Part 2 of the Niagara Escarpment Plan sets out design standards to be achieved.

Part 3 of the Niagara Escarpment Plan provides for the Niagara Escarpment Parks and Open Space System and the administrative interrelationship between the approval of park master plans and the applications of Parts 1 and 2 of the Niagara Escarpment Plan to individual projects. Where Master Plan projects are located within the Escarpment Plan conformity with Parts 1 and 2 can be achieved in this Master Plan’s preparation.
1.6.3 **Greenbelt and Growth Plan Legislation**
The Greenbelt and Growth Plan legislation and approved plans promote greater trail development and use as means by which the environment can be protected and appreciated and human health can be promoted. This Master Plan identifies how these ends can be achieved within Hamilton.

1.6.4 **Environmental Bill of Rights**
The provisions of the Environmental Bill of Rights may apply to selected municipal and conservation authority trail projects. Public consultation and the scope of environmental considerations undertaken during project design are important elements in determining the application of Bill of Rights provisions. The planning procedure and public participation used in the preparation of this Master Plan should address any Bill of Right’s concerns, should these arise.

1.7 **PUBLIC CONSULTATION PROCESS**
Extensive public involvement helped to shape the Master Plan. Direct input was sought out from the public on a variety of occasions, as well as key stakeholders, user groups like the Cycling committee, City of Hamilton staff, and outside public agencies that include: Hamilton Waterfront Trust, Bay Area Restoration Committee, Hamilton Port Authority, Hamilton Conservation Authority, Halton Conservation Authority, Bruce Trail Association, McMaster University Cycling Group, Hamilton Cycling Committee, Royal Botanical Gardens and Niagara Escarpment Commission. This valuable input was utilized to assist in the development of individual ward projects as well as specific recommendations.

In May and June 2005, a series of five (5) public open houses were convened to discuss the emerging trails Master Plan with the public. The meeting dates and locations are as follows:

- Wednesday, May 25th, 2005 – Ancaster Community Centre;
- Monday, May 30th, 2005 – Sackville Hill Seniors Recreation Centre;
- Wednesday, June 1st, 2005 – City Hall;
- Monday, June 6th, 2005 – Waterdown District High School; and
- Thursday, June 9th, 2005 – Stoney Creek Municipal Service Centre.

Maps of existing trails facilities were displayed and attendees were asked to provide verbal comments and provide input by writing on maps to note facilities needed to complete the trails system in their wards. Questionnaires were also distributed and handed in. The public comments are divided into two areas: general recommendations concerning the management and development of the trails system; and site specific recommendations on improvements and new links required to complete the system.
The City of Hamilton placed a questionnaire on the Public Works website requesting public input on activities, trail comments and enhancements. Both electronic and paper questionnaires were completed and their responses are recorded and included in the appendices, Results Summary Public Open House Questionnaire. A June 1, 2005 article in the local newspaper (The Hamilton Spectator) informed the public of the questionnaire on the Public Works website.

Meetings were also convened with Hamilton Conservation Authority and Conservation Halton staff to obtain their comments, concerns and input. Telephone conversations were held with staff of the Grand River and Niagara Peninsula Conservation Authority staff to obtain their comments.

Bruce Trail officials were contacted separately and attended the Ancaster open house. Other local volunteer groups who help manage and use the system were interviewed at the open houses.

Officials from Niagara Region, Haldimand County and Wellington County were interviewed to obtain information on their trails plans and the web sites of the Regions of Waterloo and Halton and Brant County were viewed to obtain trails information to enable Hamilton’s system to inter-connect with existing and planned facilities in neighbouring municipalities. The Niagara Escarpment Commission, Hamilton: Environmentally Significant Areas Impact Evaluation Group (ESAIEG) as well as various City Departments including Parks, Operations and Maintenance and Risk Management Offices were contacted.

Hamilton Bikeways, Trails and Parks maps were provided to three (3) major cycling shops as well as McMaster University’s cycling groups for review by their patrons. Significant comments were generated from these sources and are summarized in the appendices. A Stakeholder’s presentation was held December 8, 2005 at the Stoney Creek Municipal Office.

This valuable information was utilized in the development of individual ward projects and the recommendations of this Master Plan.

1.8 THE MASTER PLAN STUDY TEAM AND PROCESS

The Open Space Development and Park Planning section of the Capital Planning and Implementation Division of Public Works, City of Hamilton, initiated the completion of the original Hamilton Master Plan to include the former municipalities of Ancaster, Dundas, Flamborough and Stoney Creek. G. O’Connor Consultants Inc. led the planning team in the preparation of this Master Plan. Dan Gregory and McKibbon Wakefield Inc. provided ecological and planning expertise. Rob Norman, Marilyn Ridout, Lawrence Stasiuk, Steve Barnhart and Hart Solomon provided project direction from the City of Hamilton. Members of the Parks Operations and Maintenance, Planning and Economic Development, Risk
Management and Strategic and Environmental Planning Departments also assisted and provided information and input.

The first beginning draft of a Trails Master Plan was prepared in 1999 by the former City of Hamilton. Subsequently, a draft report was updated and completed by G. O’Connor Consultants Inc. for Wards 1 through 8 in February 2003 and reviewed internally by the City. Comments received were incorporated into this document. City staff concluded that the Plan should be expanded to include all City Wards (1-15). Work recommenced on this expanded report in the spring of 2005 for all City wards including a thorough review of previous work, completed projects and any proposed projects.

1.9 Acknowledgements

Many people provided invaluable and generous assistance during the preparation of this Master Plan. These include the City of Hamilton Department staff and agencies that provided comments on drafts of this Master Plan.

Various stakeholders also provided comments and information used in the preparation of the Master Plan. Bruce Duncan, Joan Bell, Sandy Bell (Hamilton Region Conservation Authority); John Bush (Conservation Halton); Kathryn Pounder (Niagara Escarpment Commission); John Hall (Canada Centre for Inland Waters); Linda MacDonald (Hamilton Port Authority); Darcy Baker (Niagara Peninsula Conservation Authority) and Barb Veale (Grand River Conservation Authority) provided input on various Conservation Authority initiatives. Steven Langley provided background information from the Bruce Trail Association as did several members of the Iroquoian Club, who maintain the Bruce Trail through the City of Hamilton. Werner Plessl of the Hamilton Waterfront Trust also contributed. Dr. Brian McCarry provided advice on behalf of Clean Air Hamilton.

Municipal staff from adjoining municipalities provided information and advice on the status of and potential inter-connections with trails originating from adjoining municipalities. Ken Forgeron (Niagara Region), Bill Pearce (County of Haldimand), Lawrence Murphy (Wellington Dufferin Guelph Health Unit), Rob Peachey and Ross Stephen (City of Burlington) also provided valuable assistance.

Comments were received from the public at a series of five (5) public meetings held in May and June of 2005 throughout the City following public notice in the Hamilton Spectator and local community newspapers. Many members of the public also provided written and electronic comments using a questionnaire distributed at the public open houses as well as on the City web site.

We acknowledge this assistance and direction with thanks. Any errors or omission are the responsibility of the authors. This report is a result of the efforts and input of numerous people. We wish to specifically thank:

• **Steve Barnhart**, Project Manager, City of Hamilton
• **Robert Norman**, Manager of Open Space Development/Park Planning, City of Hamilton
• **Lawrence Stasiuk**, Phase 1 Project Manager, City of Hamilton
• **Glenn A. O’Connor**, G. O’Connor Consultants Inc. (Author/Photographs)
• **Dan Gregory**, Plant Ecologist (Fieldwork/Photographs)
• **George McKibbon**, McKibbon Wakefield Inc. (Author)
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 Noulau 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.*”

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

![Escarpment Rail Trail lookout area, south of Kenilworth (April 15, 2002)](image)

Hamilton Harbour /Cootes Paradise and the Niagara Escarpment focus trail development along east/west corridors while the Chedoke and Red Hill Ravines provide north/south corridors within Hamilton’s urban area. These natural features provide significant recreational and environmental opportunities for trail usage. The Grindstone, Spencer, Fairchild and Twenty Creeks and the Welland River (Chippewa Creek) together with abandoned Hydro One rights-of-ways focus trail development in Hamilton’s rural areas.

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. 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.

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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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FIGURE 1
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.”

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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.**”\(^{28}\)

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.”\(^{29}\)

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;"


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.³⁰

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.³¹

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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 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.”

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.”

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.

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33 The Niagara Escarpment Plan, June 1 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.
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.

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\(^{38}\) 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.”\(^{43}\) 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.\(^{44}\)

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.”\(^{45}\)

This Master Plan addresses each of these strategic directions.

\(^{42}\) Ministry of Health Promotion, Active 2010, Ontario Trails Strategy, 2005.
\(^{43}\) Ibid, Ministry of Health Promotion, 2005, page 3.
\(^{44}\) Ibid, Ministry of Health Promotion, 2005, page 9.
\(^{45}\) Ibid, Ministry of Health Promotion, 2005, page 12.
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.\textsuperscript{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.

\subsection*{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.

\subsection*{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.

\textsuperscript{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.

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. 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.**

### 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

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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.
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.

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\(^{54}\) 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.”**\(^{58}\)

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.


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.

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\(^{62}\) 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

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63 E-mailed comments from Brian McCary, 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 activity66.

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 potions 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.
3.0 MASTER PLAN ORGANIZATION

3.1 THE MASTER PLAN

The Trails Master Plan is shown on Figure 7, Master Plan. This figure illustrates the composite trail locations, showing all system projects and trailhead sign locations. The Plan displays existing trails and linkages to neighbouring municipalities together with proposed trail projects intended to complete the system. The Master Plan is further subdivided into the individual City Wards (Wards 1 through 15) for the purposes of describing the trail system projects on a ward basis in detail. Individual projects are also described in detail within an accompanying project data sheets.

Significant built and natural environment features, land use and transportation facilities are displayed on the Ward maps. Project details including priority and preliminary cost estimates are provided within the Implementation section of this Plan.

This plan does not address or plan for equestrian and mechanized trail uses such as snowmobiling and All Terrain Vehicles.
FIGURE 7
3.2 Hamilton Regional Setting, Wards 1-15 and Interpretive Themes

The interpretive themes set out below are intended to form the basis of future interpretive displays and information for use at trailhead signs, waterfalls and other noteworthy features.

Introduction: The Niagara Escarpment is the most prominent geological feature in the City of Hamilton. It forms the outer edge of an ancient lake bed centred in the State of Michigan. The City’s physical, biological and cultural development is organized around this physical feature. The regional setting forms the context within which trail design issues are identified and addressed.

Geology: Below the Niagara Escarpment, Queenston shale bedrock underlies urban lands, fruit belt and lower Escarpment slopes. Escarpment outcrops and cliffs comprising Amabel and Lockport dolomite are found in the upper Escarpment slopes and underlie adjacent lands west and south of the Escarpment brow. These limestone formations display karst features in the Waterdown and Tapleytown area. Guelph dolostone underlies the landscape south, north and westwards to the City limits.

Geomorphology: Lake Ontario and glacial landforms left during the retreat of the glaciers are the most prominent geomorphologic features. As the glaciers melted over 12,000 years ago, two distinctive advances and subsequent retreats from ice centred over Lake Ontario and central Ontario formed the Paris/Galt Moraines and the Waterdown/Mt. Hope Moraines.

As this ice formation retreated, ancient lakes covered the lands between the Escarpment and present day Lake Ontario leaving ancient beaches and sand plains at Burlington Heights and the beach strip. These ancient beaches separate Hamilton Harbour from Cootes Paradise and Lake Ontario from Hamilton Harbour.

The Dundas Valley appears to have been an ancient river which cut a broad channel through the Niagara Escarpment from west to east. As the glaciers retreated, this deep and wide channel was filled with glacial debris, end moraines and overlain by the Norfolk sand plain extending to Brantford and beyond.

Till moraines deposited during the second advance/retreat parallel the Niagara Escarpment to the south and west. To the south, the closest lies adjacent to the Escarpment brow and the intervening lands between it and the next moraine are drained by the Red Hill Creek. This watershed in turn is separated by another till moraine from the Twenty Mile Creek watershed which in turn is separated by another moraine south of which lies the Welland River (Chippewa Creek) watershed. In between each moraine lie clay plains. Comparable parallel till moraines interspersed with sand plains are situated northeast of Greensville between which are situated, from south to north, the Borer’s and Grindstone Creek watersheds.

To the west and north of Dundas and the Norfolk sand plain lies extensive limestone bedrock plains with several drumlin fields, an esker, a till plain and large wetland complexes comprised of peat and muck. This limestone plain is bordered by till moraines along the City’s northern boundary. The Spencer Creek rises on the Galt moraine and drains southwards to Cootes Paradise.
Former Lake Iroquois and present day Lake Ontario currents deposited materials which formed Burlington Heights and the beach strip at the foot of the Dundas Valley and Burlington Bay. Drainage into Cootes Paradise and Burlington Bay exited into former Lake Iroquois and present day Lake Ontario through channels at the northern ends of Burlington Heights and the beach strip which have long since been filled and replaced with the Desjardins Canal (1845) and the Burlington Canal (1826).

Soils: Hamilton generally exhibits a wide distribution of reasonably drained gentle sloping productive agricultural soils with the exception of the shallow soiled limestone bedrock plain north of Greensville, floodplains along the City’s main watercourses and wetland complexes, interspersed with drumlin fields, situated to the north and west of Millgrove.

Soils of higher agricultural capability are generally situated in the south while good agricultural soils are interspersed with bedrock outcrops, drumlins and poorly drained organic soils in the north. Other impediments include shallow Escarpment soils and steep terrain associated with the Escarpment face, Dundas Valley and Flamborough drumlin fields.

Drainage: Drainage below the Niagara Escarpment is mostly organized from the Escarpment face to Lake Ontario. Streams and their ravines within the old City have been piped and their ravines filled as has much of the southern shore of Hamilton harbour. Approximately a third of the original harbour was filled and built upon. Remnants of this once majestic shore include Windermere Basin and portions of the Statherne slip.

Drainage over the Niagara Escarpment is impeded by glacial moraines which funnel the drainage parallel to the Escarpment to openings in the Moraine and thence over the Niagara Escarpment. Twenty Mile Creek, the Red Hill Creek, Borer's Creek and Grindstone Creek drain areas parallel to the Niagara Escarpment before passing over Escarpment waterfalls on their way to Lake Ontario. Ancaster and Spencer Creeks drain into Cootes Paradise through the Dundas Valley and Crook’s Hollow. The Spencer Creek rises on the Galt Moraine and flows through the Flamborough Plain through several wetland complexes.

Fletcher’s Creek rises in the glacial sand deposits located at the head of the Dundas valley and flows westwards into the Grand River. The Welland River (Chippewa Creek) rises in the southern limits of these glacial sand deposits in the vicinity of John Munroe International Airport and flows in an easterly direction eventually into the Welland Canal.

Within the City’s urban areas, many watercourses which once flowed over the Escarpment face through steep ravines to the Harbour now drain through sewers and their ravines have been filled and leveled although subsurface flows still follows these ancient channels to the lake.

Biology: The City is situated within a transition zone between three major forest regions: the Carolinian Zone; Deciduous Forest; and the Great Lakes – St. Lawrence Forests. Many of the remaining Carolinian communities are situated on undisturbed and regenerating portions of the Niagara Escarpment, Hamilton Harbour and Cootes Paradise.

Relative to surrounding communities, the City exhibits a higher proportion of upland wetland and alvar habitats situated between the Paris/Galt Moraines and the Waterdown Moraine on the Flamborough plain where drainage is impeded by flat terrain and drumlin fields and on bedrock plains located on the edge of the Niagara Escarpment.
Early settlement resulted in the clearing of the original forest cover and by 1900, little forested land remained. Early conservation efforts included the establishment of Cootes Paradise as a wildlife sanctuary, King’s Forests in the Red Hill Creek and park development along the Niagara Escarpment. In the late 1950’s, the Hamilton Region Conservation Authority was established on the Spencer Creek watershed while Conservation Halton and the Niagara Peninsula Conservation Authority were established on the Bronte/Grindstone and Welland River/Twenty Mile Creek Watersheds. The Grand River Conservation Authority was established earlier on the Grand River, into which the Fairchild Creek drains from its headwaters located at the head of the Dundas Valley west of the Niagara Escarpment.

In the 1960’s and 70’s the Valens, Christie and Binbrook Conservation Areas were developed based on reservoirs on the Spencer’s Creek and Welland River and significant conservation area development occurred on lands acquired on the Niagara Escarpment before and after the Gertler Report on the Niagara Escarpment.

These Authorities developed regulations under the Conservation Authorities Act which required permits to be issued before buildings could be built on floodplains and fill added or the grades changed on regulated steep slopes, wetlands and floodplains and before watercourses could be modified. These regulations enabled Authorities to become actively involved in municipal planning for sensitive lands.

In 1976, the four Authorities produced an Environmentally Sensitive Areas report for the Region of Hamilton Wentworth. That report identified remnant natural areas and evaluated them for the purposes of designation for preservation within the first Regional Official Plan. Subsequent research updates of these environmentally significant areas occurred in the early 90’s and more recently.

In the 1980’s The Province adopted Provincial Policy Statements on Floodplains and Provincially Significant Wetlands which provided the basis for the management of these natural heritage features. Comprehensive policy statement on these and other natural heritage features (e.g., areas of natural and scientific interest identified by the Ministry of Natural Resources and significant woodlots) were adopted in the 1990’s under the Planning Act with the latest revisions in May 2005.

**Settlement:** Prehistoric settlement commenced approximately 11,000 years ago. Early hunting bands appear to have visited the City between 9,000 and 7,000 BC as the glaciers and tundra like vegetation receded northwards to harvest migrating caribou herds at strategic locations along post-glacial lakes. Between 7,000 and 1,000 BC, intermittent settlements occurred to harvest rich aquatic resources in the spring and summer on present day Cootes Paradise, Hamilton Harbour and Lake Ontario shores and inland hunting camps in the fall and winter.

Between 1,000 BC and 1650 AD, subsistence practices were supplemented with agricultural crops (corn) which enabled more intensively occupied sites, often along major streams. These villages were inter-connected by paths which formed the initial routes along which settlement occurred. Some of these paths were later incorporated into our current road system.

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72 Information contained in this section is taken in part from Archaeological Services Inc., Cultural Heritage Landscape Study, Growth Related Integrated Development Study (GRIDS) December 2004.
European settlement commenced with the Loyalists who began arriving in the 1790’s and built sawmills and grist mills on area creeks. Wentworth County began as part of the Gore District. The District was subdivided into Counties in 1850. At that time, Wentworth and Halton Counties were a single municipality until 1854. Early settlement was based upon occupation of the lands whereby the settler used prominent features to mark out or measure their lands. Formal surveys came later.

Early surveyors used the northern and southern shores of Hamilton Harbour “as baselines from which to project rights angles" to townships. By the 1870’s the landscape was characterized by a uniform distribution of 100 to 200 acre farms with a farm house/barns fronting onto concession roads of 66 ft. in width. Each farmstead was to maintain ½ of this road allowance. Side roads were opened latter. Rural settlements, which serviced the agricultural community, were organized along the main roads and grist and sawmills.

Ridge Road ran easterly to Pelham and Thorold while the Hamilton to Port Dover Road ran south. Garner Road went from Hamilton to Brantford while Govenor’s Road ran from Dundas to London. Sydenham Road, a toll road, rose above the Niagara Escarpment and merges with present day Highway 6 in Millgrove. In 1901, a County roads system was introduced with improvements to construction and maintenance including paving.

The Niagara Escarpment limited physical development from the earliest times to the present. While waterfalls attracted early settlers to develop water powered saw and grist mills along the Escarpment edge (e.g., Crooks Hollow and Ancaster), the terrain discouraged larger settlements. The former City of Hamilton began on flatter well drained lands south of the western shores of Hamilton Harbour at the foot of Burlington Heights between the Niagara Escarpment and the Harbour east of the Chedoke Creek ravine and west of a series of inlets beginning with Lands Inlet.

Other physical limitations in the rural areas included the wetlands and drumlin fields located north and west of the Escarpment. Early agricultural practice involved the use of horses which could be used to cultivate smaller, wetter and more difficult soils and terrain (e.g., Escarpment terraces and Flamborough wetlands). With the introduction of larger, heavier mechanized farm equipment, poorer drained soils and steeper slopes were abandoned and regenerated. Drainage improvements on wetter soils have also been abandoned. Remnant natural habitats have expanded onto these lands. Some have since been designated as environmentally significant areas.

Urban growth after 1900 focused on the former City of Hamilton. Urban growth extended eastwards between the Niagara Escarpment and Hamilton Harbour and westward across the Chedoke Creek ravine after 1920 following completion of the McKittrick Bridge. Beginning with the early mountain access roads and incline railways, urban growth breached the Niagara Escarpment. This early foothold expanded rapidly with wider use of the automobile.

Between 1855 and 1930 Hamilton acted as a hub for a developing network of railways with rail yards centred on the southwestern shore of Hamilton Harbour and Longwood Road. By 1915, two incline railways connected the lower and upper cities at Wentworth and James Streets while radial railways connected the lower city to Ancaster and Brantford, Beamsville, Dundas and Beamsville. Internally, the Hamilton Street Railway (H.S.R.) provided public rail transportation throughout the lower city.

By the early 30’s, the highway system comprised Highways 2 from Hamilton to Toronto, Highway 6 to Guelph in the north and Port Dover in the south, Highways 2 and 8 to London and Kitchener in the west and Niagara in the east, and Highways 53 and 20 to Brantford in the west and Dunville in the southeast. By 2000, the system comprised the QEW to Toronto and St. Catharines, Highway 403 to Brantford and the Lincoln Alexander Parkway/Red Hill Creek Expressway.

Beginning in the 1898 with the development of hydro-electricity at Niagara Falls, the first bulk electricity transmission lines provided electricity to Hamilton. Building upon this beginning, a system of bulk electricity transmission lines and hydro-carbon pipelines has been constructed inter-connecting the City with Ontario’s transmission and pipeline grids. Some of these transmission corridors are owned and operated by easements and others were purchased by Ontario Hydro (now the Ontario Realty Corporation; O.R.C.).

This Trails Master Plan represents another milestone in the physical development of Hamilton’s landscape. It builds upon this landscape and where possible and feasible, highlights individual features for interpretive and educational purposes throughout the system.

3.3 Design Issues

The Master Plan addresses the following design issues:

Design Issue #1: Provincial Legislation and Plans
The Province has enacted several new legislative and policy initiatives affecting municipal planning and facility development. Alternative modes of transportation including off road trail systems are much more important and are given very specific attention. Public health and increased physical activity patterns are more important. Environmental planning and protection is enhanced. Land use intensification using a wider variety of land uses is promoted. A significant shift in policy direction is occurring and this Master Plan has been designed to address the greater importance placed on trails and physical activity patterns. We have reviewed this legislation and Provincial plans to develop trails and trail development standards consistent with emerging policy.

Design Issue #2: Hamilton’s GRIDS and Transportation Master Plan
Hamilton’s GRIDS and Transportation Master Planning Process are nearing completion. The Provincial initiatives noted above will find expression within these planning instruments. We have reviewed and used available background documents and research to develop the trails within this Master Plan to complement emerging City of Hamilton policy.

Design Issue #3: Public Health
Physical activity is a significant component of a healthy lifestyle and can be part of the solution to various health issues. Moderate (as well as intensive) forms of physical activity can be helpful such as hiking, walking, running, cycling and inline skating. Providing a wider variety of opportunities for physical activity, supporting infrastructure and user information is important if the benefits or trail usage is to be achieved. This Master Plan provides for a range of physical activity needs by trail classification, design and provision of specific trails for a variety of needs, skills and fitness levels.
Design Issue #4: Urban and Rural Trails

Urban and rural trails address different needs and opportunities. Urban trails provide an alternative mode of transportation by which users can access work, school and play as well as recreation, cultural and environmental appreciation opportunities. Rural trails interconnect regional environmental features as well as provide recreational opportunities and environmental appreciation. Recreational trails following Hydro corridors on lands owned by the Ontario Realty Corporation have the potential to cross agricultural lands where existing lease agreements exist with agricultural producers. Detailed investigation will be required to determine locations of potential crossing of agricultural fields and impacts to agricultural production. We have designed this system with these different purposes in mind.

Design Issue #5: Physical Barriers

The Niagara Escarpment, the Flamborough wetland complexes and drumlin fields and Highways #403, #6 and the Q.E.W. represent barriers which limit our ability to develop trail opportunities across these natural and built features. These represent significant barriers to our ability to develop an affordable comprehensive system. Furthermore, the built form of many older urban neighbourhoods limit the ability to design and implement an off-road trail system. Where these situations prevail, we have integrated our work with that of the City Public Works planned for on-street trail facilities and showed linkages where necessary.

The Niagara Escarpment bisects the City of Hamilton with a substantial grade separation. Furthermore, the street pattern and Mountain accesses limit the City’s ability to develop and maintain trails along the full length of the urban Escarpment or to cross this steep grade separation.

The Chedoke Rail Trail and the Escarpment Rail Trail provide excellent access to and from the lower and upper City in the east and western wards. No comparable access exists in the central City, nor is one likely to exist without significant facility development and infrastructure.

We are recommending investigating a dedicated inclined railway for pedestrians and cyclists to connect the upper and lower Cities in the vicinity of Wentworth and Concession Streets. A carefully planned incline railway could re-capture part of Hamilton’s past and stimulate tourism, commercial and neighbourhood development on Concession Street. Numerous examples exist in other communities, more commonly these are used year-round in Europe. H.S.R. has considered this concept and has suggested alternative locations. This requires additional study beyond this report, but is worth seriously exploring.

The Chedoke Ravine and Creek as well as Highway #403 pass through the City from the Niagara Escarpment to Cootes Paradise. These natural and built environmental features impede east/west trail development. Trail inter-connections exist along the Hamilton Harbour
Waterfront Trail and the Chedoke Radial Rail Trail to the north and south respectively. On street cycling access exists along King and Main Streets.

No off-street trail access exists in the mid-section of the Chedoke Ravine. This Master Plan proposed to create that access and extend the Hamilton Brantford Rail Trail into the City.

The Red Hill Creek Expressway and associated projects will affect existing and proposed trails from the Niagara Escarpment to the Hamilton Harbour. Some of these changes are summarized in the report entitled “Red Hill Creek Expressway North-South Section, Draft Report, Land Use Assessment.”

These changes are beyond the scope of this Master Plan and are addressed in a Landscape Management Plan produced in conjunction with detailed planning for the Expressway in a report by others. This Master Plan, to the extent practical, provides access points to the valley and considers the proposed expressway Open Space Replacement Strategy at the top of the valley.

**Design Issue #6: Trail Partners**

Hamilton’s trail systems will involve many partners including four Conservation Authorities, the Bruce Trail Association and others. The trail standards and trails recommended in this report will apply to City of Hamilton trail projects and are made as recommendations to other trail partners for their consideration. Where the City of Hamilton provides material or financial support to its trail partners, the partners will be encouraged to use the standards developed to design, construct and maintain the trails recommended in this Master Plan to City of Hamilton Standards.

**Design Issue #7: Public Safety and Education**

Public safety can be addressed in multiple ways. The trail design standards address the needs of specific users at appropriate volumes (e.g., bicycles, inline skating, walking, hiking). Conflicts between users may require some trails to be single purpose while others will be multiple use trails. Where multiple uses exist or are anticipated, surface treatment and width have been addressed. Physical ability also affects safety. For example, younger users need more room to learn cycling or inline skating.

Proposed trails will provide rating, degree of difficulty information and trail furniture needed to help users transition from a sedentary to an active and healthier lifestyle as they build their body strength. Others with physical disabilities may require more room in which to enjoy recreational activities. Heat and air quality advisories are health factors to be considered on those trails requiring significant physical activity. These and other safety concerns have been designed into the trails system.

**Design Issue #8: Trail Design Standards**

The trail design standards have been organized to meet a wide range and ability of users, the physical terrain and the trail activity. Specific provisions are described in the discussion of design standards. For each standard, we have used a numerical and lettering system to indicate the recommended trail uses, the level of activity required and the design standard to which the trail is operated to.

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74 Dillon Consulting Limited, Red Hill Creek Expressway North-South Section, Draft Report Land Use Assessment, October 2002.
Design Issue #9: Creating a “hub” where several trails intersect
Several trails intersect within the City of Hamilton along the waterfront and Niagara Escarpment. No single junction exists, but several potential nodes exist where trails intersect and users interact. Some hubs may provide opportunities for trail users to access public transit at central locations. We identify those nodes which may become more heavily used entrances to the City and trails in order to enhance neighbourhood and tourism development. Facilities required to strengthen and develop these nodes are also proposed (e.g. seating areas, trailhead sign with mapping, parking area).

Design Issue #10: Respecting the Natural Environment
Not all natural features in Hamilton should be publicly accessible. Access to sensitive sites which support endangered species will be restricted. However, Hamilton’s trails system crosses many natural features. Where these facilities may impact these features, the provisions of this Master Plan have been reviewed by the Environmentally Significant Areas Impact Advisory Group (E.S.A.I.A.G.), the applicable Conservation Authority and the Niagara Escarpment Commission for comments and these comments are reflected in the provisions of the proposed Master Plan.

Design Issue #11: Secondary Planning
The new Hamilton Official Plan will implement Secondary Plans for each neighbourhood. The Mountain neighbourhoods from Concession Street southwards are loosely based on a grid system. Further to the south, the neighbourhood pattern evolves into a system of curvilinear streets with collectors organized around a major grid pattern. On street cycling and pedestrian facilities are provided through many of these neighbourhoods, at least in part.

The expansion of the “on street” trails has been addressed in the downtown Transportation Master Plan. These provisions have been identified within this Master Plan. Additional facilities have been provided as required to connect these “on street” trails to “off street” trails and to proposed “trail hubs” and the proposed Escarpment incline railway.

In addition to the existing transportation master plans, a number of recognized references exist which if applied to Greenfield neighbourhood development or to the redevelopment of existing neighbourhoods, would enhance cycling and pedestrian movement. An example of such a reference is footnoted below.

To date, most trail facilities have been developed in the west end of the City. Where these facilities exist, these are heavily used. In the eastern City below the Niagara Escarpment, there is an absence of east/west and north/south trails. More trail facilities are required to better serve this area and to reduce the reliance on single occupancy vehicle trips.

Design Issue #12: Link Trails to City Parks, City Museums, Conservation Areas, the Royal Botanical Gardens and Waterfalls/Cascades
Some of Hamilton Trails link existing City parks. In some cases, trails are nearby parks and can be extended to link to City parks. Where this occurs, recommended links are shown which may include both “on-street” trails and “off-street” trails.

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75 Ewing, Reid., with MaryBeth DeAnna, Christine C. Heflin, and Douglas R. Porter., Best Development Practices, Doing the Right Thing and Making Money at the Same Time., published in co-operation with the Urban Land Institute, the Florida Department of Community Affairs and the Florida Atlantic University/Florida International University Joint Centre for Environmental and Urban Problems, Planners Press, American Planning Association, 1996.
The intention is to form a larger, City-wide system to provide a full range of recreation opportunities where the parks form nodes along the trails and to provide access to City museums, Conservation Areas, the Royal Botanical Gardens and some of the waterfalls/cascades. In some older Wards, where development is built out or complete, parks may only be linked using “on-street” trails.

**Design Issue #13: Site Specific Design Issues**

Hamilton Public Works Department staff identified 10 current site design issues (in 2006) which need to be addressed in the Master Plan in order to develop an integrated, comprehensive on street cycling and off street multi-purpose trails system. The 10 site design issues involve on street and off street facilities in the following areas:

- At the head of the Red Creek Valley above the Niagara Escarpment;
- The Canadian Pacific Rail line over Highway 403 (Ward One);
- York Boulevard to Plains Road (Ward One);
- Hatt Street (Ward Thirteen);
- The Canal Lift Bridge (Ward Five);
- Southcote Road (Ward Fourteen);
- Highland Road (Ward Nine);
- Hunter Street (Ward Two & Three);
- King Street between Longwood and Macklin (Ward One); and
- Longwood Road (Ward One)
- Connections to Windermere Basin and the Sherman Inlet (Ward Three, Four & Five)

Recommended solutions to these design issues are identified in the provisions for the individual Wards initiatives in which these are located.

**3.4 The Master Plan Concept**

The Trails Master Plan design concept provides for:

- integration of the existing trails system;
- creation of new “hubs” where trails intercept for the purposes of facility development;
- new accesses to cross the Niagara Escarpment and the Chedoke Ravine;
- design standards and classifications to be applied to development and management in accordance with the trail use and character of the built and natural environments through which the trail passes; and
- integration of the “on street” and “off street” trail systems to better address broader community land use and transportation goals and objectives;
- creation of new multi-use recreation trails.
3.5 Hamilton’s Trail Partners

Hamilton’s trail partners include several local, provincial and national land owners and trail organizations (see Figure 8, Trail Systems). The Public Works Department is the City Department with major responsibilities for developing and implementing this Master Plan.

The Traffic Engineering and Operations section of the Public Works Department is responsible for the “on street” trail components of this Master Plan and for ensuring that this Plan incorporates and implements the “on street” trail components approved in the City’s transportation Master Plans.

The Planning and Development Department are responsible for reviewing the provisions of this Plan for conformity with City’ built and natural environment policies. The two Departments (Public Works and Planning and Economic Development) have responsibilities for implementing Vision 2020 in the provisions of this Master Plan.

The Hamilton Conservation Authority is an important local owner/manager (i.e., the Dundas Valley Conservation Area) within the City of Hamilton and the Authority having major watershed jurisdiction within Hamilton’s urban area. The Authority owns and/or operates several conservation areas (i.e., Confederation Park) within internal trails’ systems and, together with other trails organizations support trails interconnecting these conservation areas.

Other Authorities throughout the rural area of the City of Hamilton include the Grand River Conservation Authority, Hamilton Waterfront Trust, Conservation Halton and the Niagara Peninsula Conservation Authority.

The Royal Botanical Gardens is an important large local public landowner which contains many environmental and cultural features. These include Cootes Paradise, Hamilton Harbour, the Niagara Escarpment and the Grindstone Creek. Walking and multi-purpose trails interconnect these features within the Gardens with destinations within the City of Hamilton and in the surrounding area.

The Waterfront Regeneration Trust is responsible for implementing major waterfront multi-purpose trails interconnecting local Hamilton Waterfront features located throughout the waterfronts in the Greater Toronto Area and the Niagara Peninsula. These popular trails are an important component of Hamilton’s trails system.

The Ontario Trails Council is a not-for-profit advocate for trails in Ontario supportive of the development of municipal trails’ systems. The Council does not operate any trails within the City. The Trans Canada Trail operates throughout the City on right of ways shared with other trail development organizations. Hamilton acts as a “hub” into which several important Provincial trails radiate.
The Bruce Trail Association is one of the oldest hiking organizations. The Iroquoia Bruce Trail Club operates the Bruce Trail and side trails along the Niagara Escarpment through the City. These cross both private and public lands and are managed by a small staff and many local volunteer Bruce Trail Clubs. The Association would link Bruce Trail side trails with existing and proposed trails.

The Hamilton Cycling Committee is a local interest group of members who share an interest in cycling. Other local citizen groups provide volunteer maintenance of local trails. A detailed stakeholder contact list is provided in the appendices.
4.0 TRAIL DEVELOPMENT & MAINTENANCE STANDARDS

4.1 INTRODUCTION

The following development and maintenance standards are intended to apply to City sponsored and co-sponsored “off-road” multi-use recreation trails. Where trails are operated by Hamilton trails systems partners, the standards which apply will be those developed and approved by that partner. The partners will be encouraged to utilize the City standards where appropriate to ensure integration of both systems.

Where multi-use recreation trails connect to or connect through City parks, it is intended to utilize the applicable trail style and standard. However, it is not intended that recreational trail standards be applied on a City-wide basis to other City parks. The recreational trail standard does not imply a change to existing City park trails standards.

4.2 TRAIL DESIGN CONSIDERATIONS

Issues to be addressed include:

1. new trails or upgraded trails
2. trail location (ward)
3. context (urban/rural)
4. trail style (on/off street)
5. trail width
6. trail surface type
7. trail use/users
8. single vs. multiple users
9. seasonal vs. year-round use
10. gradient
11. trail accessibility/barrier free
12. degree of difficulty
13. trail length
14. land ownership
15. trail stewards
16. trail access
17. links to other trails/systems
18. special considerations or site conditions
19. road crossings
20. trail signage
21. level of use

With respect to trail access and equity, many groups face barriers or disadvantaged access to community life.\textsuperscript{76} Ensuring that trails are accessible to all people within the population is necessary to ensure that everyone is about to fully participate in community life.\textsuperscript{77} The design of the trail system should be easily accessible to pedestrians, cyclists and other non-motorized (exception of electric wheelchairs) means of transportation.\textsuperscript{78} This Master Plan recognizes that many electric scooters and wheelchairs utilize trails where surface types and grades permit; the design and trail classification in this Master Plan considers these user groups and provides opportunities for these users.

Other components of a linear park-trail system include:

- rest stops with benches/garbage cans

\textsuperscript{76} Consultation Report for Phase 1 of the City of Hamilton’s Building a Strong Foundation Process. Volume 1, September 2003.
\textsuperscript{77} Ibid.,
\textsuperscript{78} City of Hamilton. Parks, Culture and Recreation Master Plan. May 27, 2002.
• interpretive nodes and points of interest
• benches, comfort stations, bike racks strategically placed
• viewpoints, where applicable
• significant landscape features (e.g. cascades/waterfalls)
• trailhead parking areas
• links to existing and future City parks
• signs for direction, information and interpretation

4.3 TRAIL STYLE

Hamilton’s trails are subdivided into two main classes: on-street bike routes and off-street recreational trails, on the basis of function. Further divisions are made to address multiple uses and design considerations; for example multi-purpose recreational trails, recreational trails, cycling trails, hiking trails, and inline skating. These classifications, technical trail development and maintenance standards contained in this Master Plan apply to City sponsored or co-sponsored components of the trails system.

Hamilton’s trail partners which include the Royal Botanical Gardens, Hamilton Conservation Authority, TransCanada Trail, Waterfront Regeneration Trust, Hamilton Waterfront Trust and Bruce Trail Association operate using different planning and administrative standards and their standards apply to their trails. These trails are identified separately on the Master Plan and individual Ward Plans. Where possible, this Master Plan classifies these trails using the system developed to classify City sponsored and co-sponsored trails.

The trail development and maintenance standards addressed in this Master Plan do not apply to partner operated trails systems. These are the responsibility of the partner organization. Furthermore, projects recommended to be implemented within this Master Plan are intended to implement City sponsored or co-sponsored trails. Further clarifications in responsibilities are provided in the discussion of trail classification.

4.3.1 On-Street Bike Route

Many cycling trails are provided for “on-street” use in a variety of ways. These provide for the efficient, safe cycling movement through City streets and are primarily designed for and intended as commuter trails. Some trails have designated lanes within which cyclists move while others share space with vehicular traffic. These facilities are planned and developed in conjunction with the planning and development of City of Hamilton Transportation Master Plans. Budgeting, project and environmental approvals are administered by the Public Works Department, Operations and Maintenance Division. “On-street” cycling facilities proposed in existing Transportation Master Plans are provided for within this Master Plan where practical, and links to and from cycling facilities are provided to join the “off-street” system.

Bicycles are recognized as vehicles under the legislation applicable to vehicular traffic and may use city streets irrespective of the provisions of this Master Plan. This Master Plan connects/uses these facilities where they have been planned for and developed in order to help implement sustainable transportation and development plans for the City of Hamilton.

4.3.2 Off-Street Recreational Trails
The bulk of Hamilton’s trails system is “off street” and comprises a variety of types of trail, ranging from multi-purpose (hard paved surface, stonedust surface) to recreational and walking/hiking trails (stonedust, woodchip or packed earth).

Trails provide for safe, off-street movement through the City and are primarily intended for recreational purposes. These trails are designed for a wide range of uses and user groups ranging from introductory easy lifestyle health trails, to more challenging levels of physical activity requiring much higher levels of fitness. A wide range of uses are accommodated including, but not limited to: hiking, walking, running, strollers, electric scooters/walkers, in-line skating, and cycling.

These trails are planned and developed in conjunction with the Planning and Development Department of the City of Hamilton. Budgeting, project and environmental approvals are administered by Public Works Department, Capital Planning and Implementation Division.

Where practical, links to and from these systems are provided to join the “on-street” system. Many of these off-street trails are owned, operated or many by others and link to City of Hamilton Trails. Discussion regarding trail partners is provided later in this report within the implementation section.
4.4 TRAIL CLASSIFICATIONS

The standards of many different communities and agencies were researched to assist in developing trail classifications for width, surfaces and uses. Many communities and documents deal with either on or off-street cycling only. Multi-use paths are off-street facilities which share use by pedestrians, runners, cyclists, inline skaters and in some cases, users of motorized scooters. However, many of the documents and communities which were reviewed do not adequately consider a wide range of users using the trail(s) concurrently. Based on field observations, public input and experiences in other communities, the standards recommended in this Master Plan consider in a practical manner, the possibility of numerous types of users utilizing trails simultaneously.

This approach parallels current research which is being conducted with respect to new methodology for the determination of trail width in some jurisdictions of the United States; which has come about as a result of emerging new users as well as increasing numbers of trail users. The AASHTO (American Association of State Highway and Transportation Officials) recommendation of 3.0m has historically been the standard for trail design width for many communities. Trail widths in various jurisdictions have been increasing from 3.6m to much wider. This trend is evident in a number of standards which were reviewed for the purpose of this Master Plan.

“The AASHTO Guide for the Development of Bicycle Facilities. …standards contained therein were developed using the operational characteristics of the bicycle to determine design criteria. While this research is not intended to validate or discredit the AASHTO criteria, comparisons to AASHTO are appropriate because of its status as a national guide.”

<table>
<thead>
<tr>
<th>SUMMARY OF TRAIL WIDTHS</th>
<th>MULTI-USE TRAIL WIDTH</th>
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<tbody>
<tr>
<td>Allegheny County Parks Comprehensive Master Plan</td>
<td>3.0m width (3.0m) plus .6m clear zone either side Qualified that the above is minimum, width must be considered on a case-by-case basis</td>
</tr>
<tr>
<td>Bicycle Facility Planning Suzan Anderson Pinsof/Terri Musser American Planning Association 1995</td>
<td>3.0m width trail, 3.65m in urban areas where heavy use is anticipated</td>
</tr>
<tr>
<td>Design Guidelines for Bikeways Regional Municipality of Hamilton-Wentworth Transportation, Operations and Environment Division, December 1999</td>
<td>Multi-Use Path: absolute minimum: 2.5 minimum: 3.0 desirable: 4.0</td>
</tr>
<tr>
<td>Design, Signage and Maintenance Guidelines Waterfront Trail Victor Ford Associates Inc. 1997 for the Waterfront Regeneration Trust (Design options for single users, such as cyclists only are not included in this summary.)</td>
<td>• Urban/High Use Areas: Travel Width: 4.0-4.5m preferred • Rural/Low Use Areas: Travel Width: 3.0m</td>
</tr>
<tr>
<td>City of Guelph Guelph Trail Master Plan</td>
<td>3.0-3.5m</td>
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<td>DOCUMENT</td>
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<tr>
<td>Guide for the Development of Bicycle Facilities American Association of State Highway and Transportation Officials (AASHTO) 1999</td>
</tr>
<tr>
<td>Definition: Shared Use Path – A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.</td>
</tr>
<tr>
<td>Halton Regional Transportation Master Plan Appendix I – Cycling and Pedestrian Infrastructure Plan</td>
</tr>
<tr>
<td>Mississauga Multi-Use Recreational Trail Study 2001 Review for the Bicycle and Pedestrian Route Study Final Report July 2001 Definitions: Class I Path: completely separate from vehicular network. Designed primarily for the use of wheelchairs, pedestrians, cyclists, in-line skaters and skateboarders. Surface is most often asphalt.</td>
</tr>
<tr>
<td>Ontario Bikeways Planning and Design Guidelines, March 1996 Ministry of Transportation Ontario Definition of Multi-Use Path: A facility which allows shared use by bicycles, pedestrians, roller-bladers, joggers, and other non-motorized forms of transportation, usually excluding horses, and which generally segregates cyclists and is not a sidewalk.</td>
</tr>
<tr>
<td>Region of Waterloo Cycling Master Plan</td>
</tr>
<tr>
<td>Santa Clara County Parks Coyote Creek Parkway County Park: Integrated Natural Resources Management Plan and Master Plan</td>
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</table>
### SUMMARY OF TRAIL WIDTHS

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<tbody>
<tr>
<td>Technical Handbook of Bikeway Design Velo Quebec in collaboration with</td>
<td>Bicycle path with separation from pedestrians: 3.0m + 1.0m separation + 1.5m</td>
</tr>
<tr>
<td>the Ministere des Transports du Quebec and the Canadian International</td>
<td>pedestrian path</td>
</tr>
<tr>
<td>Development Agency</td>
<td>Bicycle path without separation: 3.0m + 1.5m pedestrian path</td>
</tr>
<tr>
<td>Trails for the Twenty-First Century, 2nd Edition Planning, Design and</td>
<td>All non-motorized users: Urban: 14 ft (4.3m)</td>
</tr>
<tr>
<td>Management Manual for Multi-Use Trails RAILS TO TRAILS CONSERVANCY</td>
<td>Suburban: 12 feet (3.65m)</td>
</tr>
<tr>
<td>Charles A. Flink, Kristine Olka, Robert M. Searns</td>
<td>Rural: 10 ft (3.0m)</td>
</tr>
<tr>
<td>U.S. Department of Transportation Federal Highway Administration</td>
<td>Discusses separation of trail users.</td>
</tr>
<tr>
<td>Characteristics of Emerging Road and Trail Users and Their Safety</td>
<td>Current research re: trail design widths based on scientific analysis. Calculator</td>
</tr>
<tr>
<td>“the results of this research will be valuable in either updating or</td>
<td>tool available fall of 2005.</td>
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<tr>
<td>developing new design guidelines for road and shared use path design to</td>
<td></td>
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<tr>
<td>better accommodate emerging user groups”.</td>
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</table>

A calculation tool which was available in the late fall (2005) Shared-Use Path Bicycle Level of Service Calculator, provides the means to calculate trail width based on scientific research. Field data categories upon which the research was based are as follows: physical dimensions of various wheeled devices, space required for three-point turn, lateral operating space (sweep width), turning radii, acceleration capabilities, speed and stopping sight distance (brake reaction time, braking distance. The individual trail initiatives provided in this Master Plan are based on the following recommended trail classifications:

**Class A** – trail width of 6.0 m  
**Class B** – trail width of 4.0 m  
**Class C** – trail width under 2.0 m

As outlined in the section on trail design considerations, many factors must be looked at together in order to finalize trail type, width and surfaces. In general terms, trails can be classified by considering anticipated uses and emerging users. For example: hiking/walking; walking/cycling; walking; cycling/inline skating are anticipated uses; however each of those may be further classified. For example, typical design considerations for a bicycle often do not include bicycle + trailer combinations, tandem bicycles, or adult sized tricycles.

Based on a generalized user profile, trail surfacing and width will need to be selected in conjunction with location and the other design considerations. **Section 4.2, Trail Design Considerations**, has been incorporated for convenience and consistent application of these considerations. A chart is included together with each individual Ward trail initiative using

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these design criteria. The design considerations are clearly shown so that a system wide approach may be utilized based on each trail project.

### 4.5 Trail Surfaces

Trail surfaces have been classified in three categories as follows:

**Type 1** – asphalt/concrete *Year-Round Use*

**Type 2** – granular (limestone on granular) *Seasonal Use*

**Type 3** – native soil/woodchips *Seasonal Use*

Selection of surface types will need to consider uses, user profile, gradient, trail width and maintenance requirements.

**Class A – Type 1, Multi-Use Recreation Trail**

For example, a 6.0 m wide Class A trail with a Type 1 asphalt or concrete surface would allow for the broadest, most inclusive range of uses and users concurrently. The Waterfront Trail is an excellent example of this type of trail. While not appropriate in all locations, this trail appeals to a very broad, inclusive range of concurrent uses and users.

**Class B – Type 1 or 2, Multi-Use Recreation Trail**

For example, a 4.0m wide Class B trail with a Type 1 asphalt or concrete surface would allow for a lower volume of users while limiting concurrent uses such as inline skating. A 4.0m wide Class B trail with granular Type 2 surface would allow for a large number of users, but reduce the number of user types. For example, inline skating, walkers and some motorized scooters would not be able to negotiate a Type 2 granular trail surface.

**Class C – Type 3, Recreation Trail**

At the other end of the range are trails less than 2.0 m wide, Class C trails, with Type 3 native soil or woodchips surface. The Bruce Trail and Royal Botanical Gardens Trails are good examples of this trail type. These trails offer a different type of experience with limitations on the types of uses and users.

### 4.6 Trail Signage/Pictograms

For a trail system as large and complex as Hamilton’s, a wide variety of signs will be required. Many of the types of signs required for use in the trail system are currently in use. Examples of these signs are shown in **Section 7.2.5, Trailhead and Interpretive Signage**.

In addition to those signs already in use, other signs will need to be developed. *The design of a new signage system is beyond the scope of this report, however, some guidance is provided for specialty signage that will be required in the future to assist in design work.*

Existing trailhead signs currently have two sides. In most cases, these signs are installed and intended for viewing both sides. A separate report on trailhead signs was completed which is included in the complete version of this report under **Appendix 3, Trailhead Signs, Location and Condition Guide**.

Trailhead signs generally utilize one side for a trail map, which will require updating from time to time depending on the Ward and degree of change/additions to the trail system. In all likelihood, signs should be updated every 3-5 years. The trailhead maps currently in use on
trailhead signs (2006), utilizes a vinyl based copy of the “Hamilton Bikeway, Trails and Parks” map which were installed in 2002 based on 2001 maps. Since 2002, some maps may have been updated or replaced. However, based on our site work as of 2005, no new signs were found.

On the reverse side of the trailhead sign, existing signage and information varies widely from location to location across the City. This map also contains useful information on signs, safety and rules of the road. As the trail system advances and is implemented, new signage will be required to introduce and provide additional information on the trail(s). This includes, but not limited to trail style, trail use, accessibility, degree of difficulty, length, links to other trails, special considerations, interpretive signage.

We also created and introduced the concept of “Degree of Difficulty” physical fitness rating level utilizing familiar Alpine Ski Symbols, adapted for use on trails; shown as:

- Easy/Lifestyle/Recreational Trail
- Moderate Exercise
- Sustained Exercise and Steep Hill

These pictograms and degree of difficulty ratings should be utilized at each trailhead using only the pictograms appropriate for that trail(s). Information on these is shown for specific Ward initiatives on the individual data sheets in Section 5.3, Individual Ward Projects. In addition to pictograms, interpretive or degree of difficulty ratings, a number of other signs and pictograms are required. These are currently utilized on the City of Hamilton Bikeway, Trails and Parks map, March 2005 edition.82

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82 City of Hamilton Bikeways, Trails & Parks Map, March 2005.
For the purpose of these new signs, we have researched and utilized, where possible, international pictograms. The exceptions are three pictograms that were created by G. O’Connor Consultants Inc. (Running, In-Line Skating, Electric Scooter). The Hamilton Waterfalls Logo was created by Steve Barnhart, City of Hamilton.

It is not intended that all pictograms be utilized in all locations, however, each site/trailhead will require a varied number of pictograms and signs to explain that portion of the system. In this regard, a standardized vocabulary of signs should be utilized City-wide using the range of pictograms shown. In addition, some excellent examples of interpretive signs are illustrated in Section 7.2.5 of this report.

Source: City of Hamilton Bikeways, Trails & Parks Map, March 2005

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83 The International Pictograms Standard. Todd Pierce. Design Pacifica International LLC, Published Cincinnati, Ohio, 1996.
Interpretive signs with “Big Picture thinking” may also be considered on the back of trailhead signs which should be considered when final signs are designed. Individual interpretive signs, like the examples shown, will of course be required at various locations throughout the system and should be utilized as required. Section 3.2 discusses potential interpretive themes.

Under separate cover, the report “Waterfalls & Cascades of Hamilton, Phase 2 – Upgrades and Enhancements”, April 2006 by G. O’Connor Consultants Inc., provides direction on interpretive education related to waterfalls. Ultimately, both system’s, trails and waterfalls, interpretive education should be integrated into one system.

### 4.7 TRAIL SAFETY

Where trails are used by older persons or persons with disabilities, the provision of safety measures such as regular patrols should be provided. Passive measures will also be installed such as washrooms, benches, shaded rest areas and emergency phones where appropriate and on a detailed site or trail basis.

A volunteer patrol system may be used similar to the one operating in the Dundas Valley sponsored by the Hamilton Conservation Authority. This would provide assistance where required to trail users. In addition to having some first aid training and equipment, patrol staff would also have a radio which can be used to access the Trail Centre Authority staff.

The general condition does not support the lighting of recreational trails except in the special exceptions listed below. In most instances, recreational trails are located in natural environments which do not allow for natural surveillance by the surrounding communities. Therefore, lighting of these trails would further encourage the public to enter an area that is potentially unsafe at night. Lighting would give the public a false sense of security in these instances. This direction is according to Crime Prevention Through Environmental Design principles (CPTED) which indicates the importance of natural surveillance of public spaces by surrounding land uses. When natural surveillance is not feasible at night, the public should not be encouraged to enter into natural areas through lighted trails. However, an example of lighting of trails has been provided on the waterfront trail. This practice has taken place due to the greater usage of the trail by the public. The trail in this case has been designed with a 6 metre width recognizing the tremendous number of users on the trail; the trail provides a significant connection across the city and generally provides high levels of natural surveillance. Lighting of the pedestrian staircases up the Niagara Escarpment has also taken place, recognizing that the stairway serves a transportation linkage function up and down the Escarpment for pedestrians and lighting assists with climbing the stairs safely.

### 4.8 TRAIL MAINTENANCE

These recommendations augment the standard City of Hamilton parks operations maintenance procedures and are intended as a guide to ensure appropriate and consistent recreation trail maintenance. Maintenance is conducted at two levels: inspection/report and the actual physical maintenance. The objectives behind inspections include:

- To ensure user safety

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• To reduce/limit liability
• To maintain a high standard of quality
• To aid in planning maintenance tasks
• To preserve the aesthetic character of features and ensure user satisfaction.

The trails master plan outlines recommendations for inspections and record keeping and provides an overview of maintenance techniques.

4.8.1 Protecting the Public From Hazards
In the event hazards are identified during inspections, if possible the hazard should be eliminated on discovery or as soon as practical thereafter. Trail maintenance reports provide a means to record and prioritize repairs to be conducted at a later time and in addition provide a means of tracking the history of works conducted at a site specific level.

4.8.2 Risk Management
The responsibility of the City as owner of the lands is defined in the Occupier's Liability Act (Appendix 10). The Act allocates a "common" duty of care owed by all property owners to anyone entering onto the property to ensure that the entrant is reasonably safe while on the premises. In order to encourage public entities to open their land for recreational use, immunity is provided for recreational landowners by allowing them a "reduced duty of care" in which "a person who enters (the) premises ....shall be deemed to have willingly assumed all risks." In order to qualify for this reduced duty of care the following criteria apply:

1. The entry must be for the purpose of a recreational activity;
2. The premises are recreational trails reasonably marked by notice as such.

The option to provide lighting on trails must be taken into careful consideration as a lit trail may create the perception that it is safe to walk at night. A child, teen or even adult who would not normally use an unlit trail may be lulled into a false sense of security and use a trail that is lit.

Trail Owners must decide if the trail lighting is a reasonable precaution to take in terms of ensuring the navigational safety of the trail users. For instance, if the trail serves as a necessary link between two points, which is frequently used as a means of traveling (as opposed to recreational use), then it is reasonable to provide lighting on that trail to ensure safety to the user and prevent them from injury caused by tripping/falling.

4.8.3 Timing and Frequency
Scheduled inspections should occur 3 times a year for all trails: spring, mid-summer and fall. Other inspections will occur – following a report of damage, or a catastrophic event such as a flood or windstorm.

4.8.4 Procedure
Carrying a paper or automated versions of the Maintenance Inspection Form (MIF), the inspector walks the entire route, inspecting every feature along the trail. An automated or paper copy of the trail map should be used to identify the location of every walk feature. This could eventually be linked to the City’s GIS data and provide a valuable and dynamic tool.
Maintenance inspectors will consider issues of safety and trail aesthetics when carrying out their inspections. The safety of the user is of primary importance. The inspections should include visible damage and potential damage and hazards.

Before beginning the inspection, the following information should be recorded on the MIF:

- The trail name, number and Ward
- The date and time of inspection
- The type of inspection (scheduled vs. other)
- The unit of measurement to be used when assessing damages

If damages are identified and repairs are required:

- Note damages on the MIF
- If the damage is not clearly obvious, mark it with spray paint or flagging tape
- Record all measurements necessary to plan and implement repairs
- Indicate the appropriate recommendations
- Indicate the priority of action

While inspecting a trail, note any observations on trail use, such as the number of users encountered, or ATV tracks.

If a problem is minor and it can be solved during the inspection, the inspector should take the appropriated action and record the action he/she has taken (e.g. unclogging a blocked culvert).

### 4.8.5 Recording Data

Inspections of the trail system infrastructure should include all site furnishings and structures along with the trail surface. All walk features are assigned a unique F-code (feature code) so they can be easily identified. Some damages are not associated with actual walk features (e.g. washout, blown down tree). In these cases a trail map and descriptive information should be provided to outline the location of the trail damage. For a complete list and description of feature and feature identifier codes refer to Table 1 within the sample inspection form.

### 4.8.6 Trail Infrastructure Items

**Hard Surfaces** including edges and identification of uneven surfaces that may create tripping hazards such as cracks, humps, ruts, heaving or missing surfaces.

**Soft Surfaces** including mud holes, ruts, damage from washouts or where grading and/or a drainage feature may be required.

**Drainage Structures**, free of debris and note areas that require a drainage feature. Structures include culverts, swales and area drains (soak-away pits).
Boardwalks and Decks including missing boards, protruding nails and damaged or loose wood.

Steps including stability of structure, damage to hardware and damaged or missing boards, Stonework including damaged and missing pieces of stone and/or grout.

Garbage Bins are being emptied as needed and in proper structural condition.

Signage including faded or damaged signs and record any vandalism or graffiti

Benches and Picnic Tables including inspection for splinters and sharp edges that could cause injury, hardware is tight and in good condition and surfaces are stable, secure and free of graffiti

Railings including checking for stability, shake test for loose hardware and footings, locations where elements could be added to improve stability and safety of the rail

Bollards including footing, checking for degree of visibility especially at night, does it require a reflective strip

Lighting including review of cracks or damage to lens, bulb and other fixtures, exposed wires and proper illumination at night

FOR TRAIL MAINTENANCE PLEASE REFER TO THE CITY OF HAMILTON TRAIL MAINTENANCE STANDARDS MANUAL. THE BRUCE TRAIL ASSOCIATION PATROLS THE BRUCE TRAIL REGULARLY AND REMOVES POTENTIAL HAZARDS AND RECORDS ANNUALLY THEIR MAINTENANCE ACTIVITIES. HAMILTON CONSERVATION AUTHORITY AND ROYAL BOTANICAL GARDENS TRAILS UNDERGO REGULAR MAINTENANCE.
5.0 MASTER PLAN

The Master Plan is shown on Figure 8. This Section describes proposed projects on a Ward by Ward basis. These projects are either City of Hamilton sponsored or co-sponsored projects with Hamilton’s trail partners.

Other trails projects may be initiated by Hamilton’s trail partners (i.e. Royal Botanical Gardens, Hamilton Conservation Authority, Bruce Trail Association and the TransCanada Trail) and added to the trail system at a latter time without amendment of this Master Plan.

Where projects require additional analysis, either by way of transportation demand and design analysis or through separate analysis by Hamilton’s trail partners, proposed projects are recommended for consideration and formal approvals upon completion of this analysis.

5.1 FIELDWORK METHODOLOGY

Fieldwork for the Hamilton Recreational Trails Master Plan was completed over two large time periods, Phase 1 of the Study (Wards 1-8) and Phase 2 (Wards 9-15). This fieldwork was completed over many days between April and September 2002 (Phase 1) and in June 2005 (Phase 2). This work was undertaken by Plant Ecologist Dan Gregory and Landscape Architect Glenn A. O’Connor of G. O’Connor Consultants Inc.

To assist in reviewing each site, available mapping and Hamilton Bikeways, Trails and Parks Map were obtained from the City of Hamilton together with other available aerial photographs.

Fieldwork was straightforward and consisted of qualitative written noted and observations, noting existing trail or route conditions, features and photographing all sites with either a S.L.R. or digital camera using a 50 mm equivalent lens. All sites were visited either on foot, by mountain bike or by car or combination of each for efficiency purposes. Distances were recorded using the digital bike trip odometer to the nearest 10 m. Prior to commencing the fieldwork, a draft data sheet was developed by the Consultants based upon available data, desired data required by the City of Hamilton, related information and experience of the Consultants.

The data sheet style, format and content were refined during Phase 2 work and are similar to work completed by the same Consultants for the Waterfalls and Cascades of Hamilton study (April 2006). Given the relationship of these two study initiatives, the ability to relate data was advantageous to both projects and generated better data sheets to allow for future integration.

The data sheets and photographs are contained in the report. All fieldwork notes and site photographs are located in the appendices of the complete document (Appendices 1-4).

Once all data had been recorded in draft, all field notes and data were transferred into electronic format. Data sheets were filled out and a Microsoft Access “database” was created to allow transfer to City staff for future integration and G.I.S. work.
Mapping was updated using electronic data provided by the City and updated by the Consultants as required. Potential alignments were reviewed with aerial photographs where available and verified in the field and discussed with City staff.

5.2 **ANALYSIS OF FIELDWORK**

At the conclusion of the fieldwork and following completion of the data sheets, draft copies were provided to City staff for review and comment. Refinements and corrections were made as required to all data sheets which have been incorporated into the final document on a ward basis.

One of the purposes of the study was to review opportunities for expanding and improving trails on a system wide basis throughout the City. While the primary focus was on off-street, multi-purpose recreation trails, opportunities to improve on-street links were considered where links to off-road trails were possible or required. In this regard, sites were considered using a number of criteria (listed on the datasheets) including, but not limited to, general location/accessibility, degree of difficulty rating, classification, trail gradient, accessibility rating, ownership and links to other trails.

Sites within Hamilton, both new trails or upgrades and enhancements were identified and costed for capital forecasting utilizing 2007 construction prices. These are summarized on a Ward by Ward basis noting Ward # and Initiative #. These are not ranked in order of priority but shown on a mapping order basis. Phases are indicated (1-3) based on the scoring system shown in Section 6.0. This summary chart is shown in **Section 6.0, Summary of Individual Ward Initiatives**.

For each site, a schematic layout design was prepared using the City of Hamilton 2005 digital mapping, as a base. Key alignments are schematically shown on each initiative. The intention of displaying the information for each site on the drawing is to provide the City of Hamilton with site specific data and photographs for each site and provide a design schematic with capital cost in a simple format. This format allows staff to proceed with future work on a project stand alone basis with all information conveniently and readily accessible for each site on a site by site initiative, ward by ward basis.

*NOTE: ITEMS FROM DESIGN ISSUES (SECTION 3.3, ISSUE #13) HAVE BEEN ILLUSTRATED IN THE VARIOUS INDIVIDUAL WARD INITIATIVES.*
5.3 INDIVIDUAL WARD PROJECTS

Read this text together with overall Ward maps and individual Ward Initiatives.

5.3.1 Ward 1 – Chedoke-Cootes

Description
Ward 1 comprises the west end of the old City of Hamilton. It borders the Niagara Escarpment in the south, Dundas Valley in the west, Cootes Paradise/Burlington Heights/Hamilton Harbour in the north, and Queen Street in the east. The existing trails include both “on street” cycling trails and “off street” multipurpose recreational trails as well, portions of the Hamilton Brantford Rail Trail, Chedoke Rail Trail and Hamilton Harbour Waterfront Trail which traverse the Ward.

Built and Natural Features
Ward 1 is situated among a variety of rich natural heritage features including Hamilton Harbour, Cootes Paradise, Burlington Heights, the Chedoke Ravine and the Niagara Escarpment and several waterfalls. Significant built environment features include McMaster University and Medical Centre, the new McMaster Innovation Park centered on Longwood Road, Highway 403, Columbia College, Chedoke Golf Course, Dundurn Castle and Royal
Botanical Gardens facilities including the Aviary, Churchill Park, Victoria Park, the H.A.A.A Grounds, Alexander Park, Kay Drage Park and Princess Point.

These facilities are interspersed with residential neighbourhoods and street commercial uses (e.g., Westdale Village and Locke Street), and a shopping plaza situated on Dundurn Street between Main and King Streets. Highway 403 and the remnants of the Chedoke Ravine separate the west Hamilton component of the Ward from the older City to the east.

East of the Chedoke Ravine, there are no off street corridors along which a recreational trail can be developed from west to east. Further heavy truck and automobile traffic on existing major streets and in the north end make it difficult to route trails into the industrial area. For safety and air quality reasons, it isn’t appropriate to use heavily traveled streets to convey recreational trail users between existing and planned trails. Consideration should be given to a dedicated right of way, perhaps elevated, to address this deficiency where it isn’t possible to route an off road recreational trail or on street cycling lane.

Recreational Trail Design Issues
Examples of specific design issues to be addressed include:

- develop a trail crossing over Highway 403 on the existing Canadian Pacific Rail bridge to connect the Hamilton Brantford Rail Trail into the City of Hamilton and provide a third Highway 403 trail crossing linking residential neighbourhoods and McMaster University campuses (Note in May 2006, agreement was reached with CPR and the City of Hamilton for the 403 link crossing.);
- improve trail inter-connections between Hamilton and Burlington along York Boulevard and along the waterfront and extend the Harbourfront Trail into Burlington along the waters edge on both sides: the Harbour and Cootes Paradise;
- improve inter-connections along King Street between Longwood Road and Macklin Street;
- develop trail/public transit hubs based at the McMaster University Campuses and McMaster University Medical Center on Main Street and Longwood Road to enable users and HSR to provide complimentary services;
- provide alternative access across the Niagara Escarpment to connect the upper and lower City with the development of the Beckett Drive Gondola Project;
- develop recreation trail links to the Hunter Street Station in Ward 2 to integrate Go Transit and trail usage;
- provide facilities which assist in the implementation of transportation demand management strategies for government, civic, commercial and industrial employees; and
- provide looped inter-connections from residential neighbourhoods to the existing and improved trail facilities, to parkland on the Niagara Escarpment, Cootes Paradise, Chedoke Ravine, Hamilton Harbour and neighbourhood parks and to commercial streets and employments centers (i.e. McMaster University, McMaster Medical Center and Longwood Road/Dundurn Street.
**Design Issue Responses**

Responses to each of these design issues are included on **Ward One Map, Figure 9** and the individual ward initiative sheets which follow. Examples of specific design responses include the following:

- The provision of a dedicated recreational trail linkage over the Canadian Pacific Rail bridge makes possible the extension of the Hamilton Brantford Rail Trail across the Chedoke Ravine/Highway 403 into the future Longwood Road McMaster Innovation Park and the creation of a HSR trail hub within the Park.

- With the completion of a class environmental assessment of on and off street commuting improvements on the upper deck of Hamilton Heights, a commuting linkage between Hamilton and Burlington will be available in the immediate future. An inter-connection along the waterfront awaits development and a successful design of trail facilities along the Harbour’s edge to address natural features and sensitive habitat issues.

- Improvements to Macklin and Longwood Road interconnections between the University as part of the redevelopment of the McMaster Innovation Park.
FIGURE 9
5.3.2 Ward 2 – Downtown

Description
Ward 2 comprises Hamilton’s civic center including commercial, office and City Hall, Federal, Provincial Government facilities, City wide recreational facilities associated with Bayfront Park, Hamilton Harbour Waterfront Trail, Gore Park and the Parks Canada Marine Discovery Center, Hamilton Port facilities and heavy industries associated with the Port and rail infrastructure, and the downtown Hunter Street Go Station. This ward extends from Hamilton Harbour in the north to the Niagara Escarpment in the south and from Queen Street in the west to Wentworth Street (north of King) and Wellington Street (south of King) in the east.

Built and Natural Features
The Ward’s natural features include Hamilton Harbour and the Niagara Escarpment. Port facilities and industries occupy much of the Harbour while several transportation facilities have been etched into the Niagara Escarpment limiting public access to both.

Ravines through which streams flowed from the Escarpment to Harbour inlets have been long since filled and surface flows intercepted and piped to the Harbour. There are no natural corridors along which recreational trails can be developed between Hamilton Harbour and the Niagara Escarpment.

Built environment features include the Bayfront Park, the Federal Marine Museum and heavy industries and port/railway facilities. Residential neighbourhoods extend south to Hamilton’s City Center focused on King, Main, James and John Streets and comprising Jackson Square, City Hall, Copps Coliseum, and the new Federal Building. Further south are residential neighbourhoods and St. Joseph’s Hospital between City Hall and the Niagara Escarpment. Neighbourhood parks include Durand Park, Woolverton Park, Corktown Park, Beasley Recreational Center, Central Park and Eastwood Park.

There are no off street corridors along which a recreational trail can be developed from west to east. Further heavy truck and automobile traffic on existing major streets and in the north end make it difficult to route trails into the industrial area. For safety and air quality reasons, it isn’t appropriate to use heavily traveled streets to convey recreational trail users between existing and planned trails. Consideration should be given to a dedicated right of way, perhaps elevated, to address this deficiency where it isn’t possible to route an off road recreational trail.

Recreation Trail Design Issues
Examples of specific design issues to be addressed include:

- provide looped recreational trails from the Niagara Escarpment to Hamilton Harbour along existing on and off street facilities including the existing and proposed Ferguson Street facilities;
- extend the Hamilton Harbour Waterfront Trail eastwards from Bayfront Park through port and industrial facilities into Ward 3;
- develop recreational trail access from Hamilton’s City Centre to the Niagara Escarpment and Bayfront Park;
- develop east/west recreational trails as well as looped interconnections between the Escarpment Rail Trail, the Chedoke Rail Trail and the Hamilton to Brantford Trail and
office/shopping opportunities associated with Jackson Square, the entertainment district and government offices at City Hall and the new Federal Building;

- plan and develop joint HSR/trail commuter incline rail linkages between the lower and upper City in the vicinity of James Street/St. Joseph’s Hospital and planned health care facilities on the Mountain;
- develop cycling and pedestrian routes to the Hunter Street Station and facilities at the Station to better integrate Go Transit and trail usage; and
- provide looped trail facilities which assist the implementation of transportation demand management strategies for Hamilton’s City Centre, Harbour industrial facilities, St. Joseph’s and Hamilton General Hospitals, government offices and their surrounding residential neighbourhoods.

Design Issue Responses
Responses to each of these design issues are included on Ward 2 Map, Figure 10, and on the individual ward initiative sheets which follow. Examples of specific design responses include the following:

- The provision of a Ferguson Street bridge over CNR tracks will inter-connect on street cycling facilities from the Niagara Escarpment to Bayfront Park and create a cycling loop with the Bayfront Trail. (Note: As of 2007, much of this system is completed)
- The provision of an incline rail facility providing trail access over the Niagara Escarpment will also help link HSR facilities above and below the Niagara Escarpment and link health care facilities at the General Hospital with new health care facilities being planned on the Mountain.
5.3.3 Ward 3 – Hamilton Centre

Description
Ward 3 comprises the City between the Niagara Escarpment and Hamilton Harbour and between Wellington/Wentworth and Ottawa Streets in the west and east. The Escarpment Rail Trail is situated on the Niagara Escarpment.

Built and Natural Features
The Niagara Escarpment and remnants of the Sherman Inlet are the remaining natural features while port facilities, heavy industries, residential neighbourhoods and community parks including Gage Park, Ivor Wynne Stadium and Woodland Park are significant built features. Mixed commercial and residential uses are found along major east west streets and some north south streets (i.e., the garment district centered on Ottawa Street). Burlington Street, heavy industries, port facilities and rail infrastructure separate the harbour from the remainder of the City.

Ravines through which streams flowed from the Escarpment to Harbour inlets have long since been filled and surface flows intercepted and piped to the Harbour. There are no natural corridors along which recreational trails can be developed between Hamilton Harbour and the Niagara Escarpment. However, remnants of some inlets remain where ecological habitat restoration may be possible to re-create habitat which previously existed along these waterways.

There are no off street corridors along which a recreational trail can be developed from west to east. Further heavy truck and automobile traffic on existing major streets and in the north end make it difficult to route trails into the industrial area. For safety and air quality reasons, it isn’t appropriate to use heavily traveled streets to convey recreational trail users between existing and planned trails. Consideration should be given to a dedicated right of way, perhaps elevated, to address this deficiency where it isn’t possible to route an off road recreational trail.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- develop recreation trails to the Hunter Street Station in Ward 2 to integrate Go Transit and trail usage;
- upgrade the Escarpment Rail Trail surface and width to improve use and broaden the range of users;
- provide looped recreational trail inter-connections to Windermere Basin and remnant inlets (i.e., the Sherman Inlet) in Ward 4, where possible, in conjunction with civic and industrial efforts to re-establish and restore remnant Harbour features and proposed trail projects in Ward 4;
- provide east/west recreational trail linkages through the City’s residential and commercial neighbourhoods (i.e., Ottawa Street’s garment district);
- provide recreational trail linkages across rail and heavy truck traffic infrastructure centered on Burlington Street to local industries; and
- to the extent possible, provide looped trail facilities which assist the implementation of transportation demand management strategies for Hamilton’s City Centre, Harbour.
industrial facilities, St. Joseph's and Hamilton General Hospitals, government offices and the residential neighbourhoods in Ward 3.

**Design Issue Responses**

Responses to these design issues are included in the **Ward 3 Map, Figure 11**, and on the individual ward initiative sheets which follow. Examples of specific design responses include the following:

- The development of a trail along the Hydro corridor between Birch Park (Barton Street) to Burlington Street will provide access to Harbour industries and the remaining Harbour inlet opposite Burlington Street.

- The development of a trail from the foot of Ottawa Street to the Rail Trail will provide an additional access to the Niagara Escarpment.
FIGURE 11
5.3.4 Ward 4 – East Hamilton

Description
Ward 4 comprises the City between the Niagara Escarpment/Lawrence Avenue and Hamilton Harbour/Windermere Basin in the south and north and Ottawa Street and the Red Hill Creek Valley in the west and east. The Escarpment Rail Trail and Red Hill Creek trail facilities border the Ward.

Built and Natural Features
Ward 4 is bounded by three natural features: the Niagara Escarpment; the Red Hill Creek Valley; and Hamilton Harbour/Windermere Basin. Ravines through which streams flowed from the Escarpment to Harbour inlets have long since been filled and surface flows intercepted and piped to the Harbour.

There are no natural corridors along which recreational trails can be developed between Hamilton Harbour and the Niagara Escarpment. However, remnants of some inlets remain where ecological restoration may be possible to re-create habitat which previously existed along these waterways.

Built features include the industrialized harbour and port facilities, Burlington Street and associated rail facilities, Center Mall, neighbourhood parks (i.e., Montgomery, Parkdale, Mahoney and Red Hill Parks), Brock University’s Hamilton Campus, Hamilton Health Science facilities and residential neighbourhoods extending south to the Niagara Escarpment and Lawrence Avenue.

There are no off street corridors along which a recreational trail can be developed from west to east. Further heavy truck and automobile traffic on existing major streets and in the north end make it difficult to route trails into the industrial area. For safety and air quality reasons, it isn’t appropriate to use heavily traveled streets to convey recreational trail users between existing and planned trails. Consideration should be given to a dedicated right of way, perhaps elevated, to address this deficiency where it isn’t possible to route an off road recreational trail.

West of the Red Hill Creek Valley lies an electrical transmission line which extends from the Niagara Escarpment to the Beach Strip. In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province subsequently is actively seeking other uses for these transmission corridors and these corridors should be considered for recreational trail purposes because they provide important linkages unavailable otherwise.

Where the corridor is owned by the Province, often the lands underneath the transmission lines are used by adjoining property owners. In this instance, many adjoining landowners use the corridor for parking. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor and to access their properties from the street. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct and maintain transmission towers.
Properly constructed recreational trails can co-exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. In this instance, the transmission corridor provides access to the Windermere Basin and the Harbour industrial lands that is unavailable otherwise and provides looped service to trail users within the Red Hill Creek Valley and cross town access to Gage Park through a pipeline corridor trail.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- provide looped trail inter-connections to Windermere Basin and remnant inlets (i.e., the Sherman Inlet), where possible, in conjunction with civic and industrial efforts to re-establish and restore these remnant Harbour features;
- provide east/west recreational trail linkages through the Ward’s residential and commercial neighbourhoods to the Red Hill Creek Valley in the east and downtown in the west;
- expand and extend the Pipeline trail from Gage Park to the Red Hill Valley and Windermere Basin;
- expand recreational trails running from Barton St. to Kings Forests Park along the existing Hydro corridor west of Stratherne Avenue;
- develop recreation trails to the Hunter Street Station in Ward 2 to integrate Go Transit and trail usage; and
- provide looped trail facilities which assist the implementation of transportation demand management strategies for Hamilton’s City Centre, Harbour industrial facilities, St. Joseph’s and Hamilton General Hospitals, government offices and the residential neighbourhoods in Ward 4.

Design Issue Responses
Responses to each of these design issues are included on Ward 4 Map, Figure 12, and the individual ward initiatives that follow. Examples of specific design responses include the following:

- Development of a recreation trail along a Hydro corridor extending along Stratherne from Kings Forest Park to Barton Street will link with the Pipeline Walkway and help create an almost complete loop to Gage Park.
- Development of a recreational trail along Woodward Avenue from the Red Hill Valley to Windermere Basin creates the potential for a looped trail back into the Red Hill Valley.
5.3.5 Ward 5 – Red Hill

Description
Ward 5 extends from the Hamilton Harbour/Windermere Basin/Lake Ontario shores southwards to above the Niagara Escarpment and from the western edge of the Red Hill Valley to Centennial Parkway (south of Queenston Road) and Gray's Road (north of Queenston Road).

Built and Natural Features
Ward 5 includes the beach strip between Hamilton Harbour and Lake Ontario, Windermere Basin and Confederation Park, Red Hill Creek Valley and two major tributary ravines, King's Forest Park and the Niagara Escarpment including Felker's and Mt. Albion Falls. Two major tributaries of the Red Hill Creek and their ravines have been traversed by multiple streets on fill with culverts which block the ability to create linked trails through these valleys to the Niagara Escarpment.

The head of the Red Hill Creek Valley is a focal point for the confluence of the Niagara Escarpment, the Red Hill Creek and tributaries, the Kings Forest and the Lincoln Alexander Parkway and the Red Hill Creek Expressway. In addition, the Bruce Trail, the Escarpment Rail Trail and its extension to Caledonia together with local trails above and below the Escarpment converge on this area. Specific provisions are required to provide for a trail hub and to provide for trail access over the Niagara Escarpment, the Red Hill Creek and the Lincoln Alexander Parkway/Red Hill Creek Expressway.

Built features include the Red Hill Creek Expressway, former land fills situated within the Red Hill Creek Valley closer to the Windermere Basin, the Woodward Street Sewage Treatment Plant, Confederation Park, the QEW, industrial neighbourhoods, residential neighbourhoods, Glendale Golf and Country and Kings Forest Golf Clubs and neighbourhood parks (i.e., Sam Manson, Glendale, Sisters of St. Joseph and Father Sean O'Sullivan Memorial Parks).

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- provision of looped trail inter-connections to Windermere Basin and remnant inlets (i.e., the Sherman Inlet), where possible, in conjunction with efforts to re-establish and restore these remnant Harbour features;
- provide for trail access over the Canal Lift Bridge to connect Waterfront Trail facilities in Hamilton with those provided for in Burlington;
- provide facilities at the head of the Red Hill Creek Valley which will provide for the design and implementation of a trail hub in Ward 6; and
- provide looped trail facilities which assist the implementation of transportation demand management strategies for Hamilton’s City Centre, Harbour industrial facilities, St. Joseph’s and Hamilton General Hospitals, government offices and the residential neighbourhoods in Ward 5.

Design Issue Responses
Responses to each of these design issues are included on Ward 5 Map, Figure 13, and the individual ward initiatives which follow. Examples of specific design responses include the following:
• Provision is made for looped recreational trails along the Niagara Escarpment and Red Hill Creek tributaries where significant valleys exist. At such time as when bridge or culvert repairs are completed, consideration should be given to building trail corridors through street crossings to enable free movement along the waters edge.

• Trail facilities provided in the Red Hill Creek Valley have been linked to trails throughout the Ward.
FIGURE 13
5.3.6 Ward 6 – East Mountain

Description
Ward 6 includes residential, industrial lands and open space lands above the Niagara Escarpment extending from the Niagara Escarpment south to includes lands south of Rymal Road and from Upper Gage (south of Mohawk) and Upper Sherman (north of Mohawk) to the Niagara Escarpment and Pritchard Road.

Built and Natural Features
Natural features include the Niagara Escarpment, Mt. Albion Falls, and open channel portions of the Red Hill Creek above the Niagara Escarpment. Built features include residential and industrial neighbourhoods, Mt. Albion and Felker's Falls Conservation Areas, Mohawk Sports Park, Upper Kings Forest Park, the former City Sanitary Landfill and several neighbourhood parks (i.e., Bobby Kerr, Templemead, and Fernwood Parks). The Lincoln Alexander Parkway traverses the Ward and connects with the Red Hill Creek Expressway. The neighbourhood drains into the Red Hill Creek.

The head of the Red Hill Creek Valley is a focal point for the confluence of the Niagara Escarpment, the Red Hill Creek and tributaries, the Kings Forest and the Lincoln Alexander Parkway and the Red Hill Creek Expressway. In addition, the Bruce Trail, the Escarpment Rail Trail and its extension to Caledonia together with local trails above and below the Escarpment converge on this area. Specific provisions are required to provide for a trail hub and for trail access over the Niagara Escarpment, the Red Hill Creek and the Lincoln Alexander Parkway/Red Hill Creek Expressway.

The older residential neighbourhoods near the Niagara Escarpment exhibit a rectangular organization of streets. Vehicular traffic flows along multiple routes and it is easier to organize a trail system, especially where there are natural features. Newer southern neighbourhoods are designed with interior curvilinear streets which direct through traffic to heavier collector streets which border the exterior and preclude the organization of trails through the interior.

This is further complicated by the absence of natural features and surface drainage along the tributaries of the Red Hill Creek which have been piped from Upper Ottawa Street westwards. Unfortunately, the opportunity to design trails along natural corridors following these streams has been lost.

There may be opportunity to develop trails along the lands owned by the City under which these streams have been piped where these are outside street allowances. The corridor from the former Upper Ottawa Street Landfill to T. B. McQuesten Park is one example. Where industrial and residential neighbourhoods are undeveloped, Red Hill Creek tributaries should be maintained as naturalized drainage corridors with potential use for recreational trails.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from east to west south of Rymal Road. The east/west inter-connections also follow the southern limits of Hamilton's Wards 5, 7 and 8 and continue eastward to Niagara Falls following the alignment of the first transmission facilities constructed from Niagara Falls to service Toronto and urban areas between.
In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province subsequently is actively seeking other uses for these transmission corridors should be considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.

Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through land which continues to be farmed, or allowed to be left fallow with periodic management. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers.

Properly constructed recreational trails can co-exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. There do not appear to be comparable examples within rural municipalities and more infrastructure may be required such as gating through agricultural fields. There is, however, no practical reason why trails could not be developed within these corridors. These trails are situated in locations which could provide access to major trails such as the Rail Trail to Caledonia to form part of a larger system.

**Recreational Trail design Issues**
Examples of specific design issues to be addressed include:

- provision of a trail hub and Lincoln Alexander Parkway crossing at the head of the Red Hill Creek Valley;
- review storm drainage alignments for Red Hill Creek tributaries to determine whether off street recreational trails can be developed on these alignments; and
- consider within undeveloped neighbourhoods, where surface drainage exists, consider maintaining natural drainage corridors along which recreational trails may be developed.

**Design Issue Responses**
Responses to each of these design issues are included on Ward 6 Map, Figure 14, and the individual ward initiatives which follow. Examples of specific design responses include the following:

- By maintaining surface natural drainage corridors for the remaining Red Hill Creek tributaries through developing neighbourhoods and provide recreational trails along these corridors where appropriate, a better system of recreational trails can be created.
- Where the Red Hill Creek have been sewered, the corridors should be considered for trail design and development in order to overlay an off road system of trails.
5.3.7 Ward 7 – Central Mountain

Description
Ward 7 comprises residential neighbourhoods extending south from the Niagara Escarpment to the old City of Hamilton boundaries south of Rymal Road and from Upper James Street east to Upper Sherman (north of Mohawk Road) and Upper Gage (south of Mohawk Road).

Built and Natural Features
Built features include Limeridge Plaza, Henderson Hospital, the Upper James commercial strip, residential neighbourhoods, the older Concession Street commercial area, neighbourhood parks (i.e., T. B. McQueston, Turner, Sackville Hill Memorial, Inch and Sam Lawrence Parks), the Lincoln Alexander Parkway and the Jolley Cut. Natural features include the Niagara Escarpment, secondary geological features associated with the Niagara Escarpment in the Limeridge Road area and the corridor within which the Red Hill Creek has been piped along the southern limit of the Lincoln Alexander Parkway. The neighbourhood drains into the Red Hill Creek.

The older residential neighbourhoods between the Niagara Escarpment and Mohawk Road exhibit a rectangular organization of streets. Vehicular traffic flows along multiple routes and it is easier to organize a trail system through this pattern, especially where there are natural features. Newer southern residential neighbourhoods are designed with interior curvilinear streets which direct through traffic to heavier collector streets which border the exterior and preclude the organization of trails through the interior.

This is further complicated by the absence of natural features and surface drainage along the tributaries of the Red Hill Creek which have been piped from Upper Ottawa Street westwards. Unfortunately, the opportunity to design trails along natural corridors following these streams has been lost. There may be opportunity to develop trails along the lands owned by the City under which these streams have been piped where these are outside street allowances. The corridor from the former Upper Ottawa Street Landfill to T. B. McQuesten Park is one example.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from east to west south of Rymal Road. The east/west inter-connections also follow the southern limits of Hamilton’s Wards 6, 8 and 9 and continue eastward to Niagara Falls following the alignment of the first transmission facilities constructed from Niagara Falls to service Toronto and urban areas between.

In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province is actively seeking other uses for these transmission corridors should be considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.

Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through land which continues to be farmed, or allowed left fallow with periodic management. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor. From time to time, construction and
maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers.

We believe properly constructed recreational trail can exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. There do not appear to be comparable examples within rural municipalities and more infra-structure may be required such as gating through agricultural fields. There is, however, no practical reason why trails could not be developed within these corridors. These trails are situated in locations which could provide access to major trails such as the Rail Trail to Caledonia.

**Recreational Trail design Issues**
Examples of specific design issues to be addressed include:

- Review storm drainage alignments for Red Hill Creek tributaries to determine whether off street recreational trails can be developed on these alignments; and
- Consider within undeveloped neighbourhoods, where surface drainage exists, maintaining natural drainage corridors along which recreational trails may be developed.

**Design Issue Responses**
Responses to these design issues are included on Ward Map 7, Figure 15, and individual ward initiatives which follow. Examples of specific design responses include the following:

- By maintaining surface natural drainage corridors for the remaining Red Hill Creek tributaries through developing neighbourhoods and provide recreational trails along these corridors where appropriate, a better system of recreational trails can be created.
- Where Red Hill Creek have been seweried, the corridors should be considered for trail design and development in order to overlay an off road system of trails.
- Develop in conjunction with HSR an inclined rail service over the Niagara Escarpment to end in the Upper James area.
FIGURE 15
5.3.8 Ward 8 – West Mountain

Description
Ward 8 comprises the west end of the old City of Hamilton above the Niagara Escarpment. It borders the Niagara Escarpment on the north and extends south to include lands south of Rymal Road. It extends from Upper James Street in the east to the old municipal boundary between the former municipalities of Ancaster and Hamilton in the west (Scenic Drive and Upper Horning Road). Portions of the neighbourhood are drained by the Chedoke Creek, Tiffany Creek, Twenty Mile Creek and the Red Hill Creek.

Built and Natural Features
Built features include residential neighbourhoods, Mohawk College Fennell and Chedoke Campuses, Chedoke Hospital, Hamilton Psychiatric Hospital, Hillfield Strathallan, Recreation Centres and the Lincoln Alexander Parkway. Natural features include the Niagara Escarpment and portions of the Tiffany Creek and Twenty Mile Creek which will be integrated into an open space system. The ward is drained by the Chedoke, Tiffany, Red Hill and Twenty Mile Creeks.

The older residential neighbourhoods between the Niagara Escarpment and Mohawk Road exhibit a rectangular organization of streets. Vehicular traffic flows along multiple routes and it is easier to organize a trail system through this pattern, especially where there are natural features. Newer southern residential neighbourhoods are designed with interior curvilinear streets which direct through traffic to heavier collector streets which border the exterior and preclude the organization of trails through the interior.

This is further complicated by the absence of natural features and surface drainage along the tributaries of the Red Hill Creek which have been piped from Upper Ottawa Street westwards. Unfortunately, the opportunity to design trails along natural corridors following these streams has been lost. There is one exception and that is the upper reaches of the Tiffany Creek which has been maintained as an open space link and along which a recreational trail is planned.

In other neighbourhoods which have not been fully developed, where possible, natural surface drainage should be maintained and recreational trails should be provided along these corridors. In addition, there may be opportunity to develop trails along the lands owned by the City under which these streams have been piped where these are outside street allowances.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from east to west south of Rymal Road. The east/west inter-connections also follow the southern limits of Hamilton’s Wards 5, 6 and 7 and continue eastward to Niagara Falls following the alignment of the first transmission facilities constructed from Niagara Falls to service Toronto and urban areas between.

In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province subsequently is actively seeking other uses for these transmission corridors should be considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.
Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through land which continues to be farmed, or allowed left fallow with periodic management. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers.

We believe properly constructed recreational trail can exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- review storm drainage alignments for Red Hill Creek tributaries to determine whether off street recreational trails can be developed on these alignments; and
- consider within undeveloped neighbourhoods, where surface drainage exists, maintaining natural drainage corridors along which recreational trails may be developed comparable to the open space corridor provided for along the Tiffany Creek.

Design Issue Responses
Responses to each of these design issues are included on the Ward 8 Map, Figure 16, and individual project sheets which follow. Examples of specific design responses include the following:

- By maintaining surface natural drainage corridors for the remaining Red Hill, Tiffany and Twenty Mile Creek tributaries through developing neighbourhoods and provide recreational trails along these corridors where appropriate, a better system of recreational trails can be created.
- Where Red Hill Creek have been seweried, the corridors should be considered for trail design and development in order to overlay an off road system of trails.
5.3.9 Ward 9 – Heritage Stoney Creek

Ward 9 includes the older Stoney Creek community centered on Battlefield Park and Highway 8 below the Niagara Escarpment and the Saltfleet Community above the Niagara Escarpment.

Built and Natural Features
Built features include the planned Saltfleet Community and the older Stoney Creek Village, Highway 20, Taro landfills (active and inactive) and Battlefield Park. Natural heritage features include the Niagara Escarpment, Felker’s Falls and the Devil’s Punchbowl, Red Hill Creek tributaries and karst features. These karst features, Felker’s Falls and the Devil’s Punchbowl together with other Escarpment lands make up three Conservation Areas.

The City of Hamilton is fortunate to have over sixty-nine (69) waterfalls and counting along the Niagara Escarpment, both privately and publicly held. These are important for tourism, public health and recreation. Many of these waterfalls are, or will be accessible by multi-use recreation trails. Work is currently underway with the City of Hamilton, Hamilton Conservation Authority and Bruce Trail Association to improve access to these waterfalls.

The Growth Related Development Strategy: Growth Report (May 2006) contains a Neighbourhood Concept Plan which is similar to that which was used to plan the growth of residential neighbourhoods in Wards 6, 7 and 8 south of Mohawk Road. While it is different in that provision is made for through vehicular traffic, there is no provision for off street recreational trails and on street cycling routes will compete with vehicular traffic and experience air quality issues. As new Greenfield expansion is planned for lands within this Ward, the Neighbourhood Concept Plan needs to be re-considered to provide better trail design opportunities and connections.

Generally, neighbourhoods planned and developed in the Saltfleet Community closer to the Niagara Escarpment have maintained open space corridors along the Red Hill Creek tributaries and these can be used for recreational trails through these neighbourhoods. In undeveloped neighbourhoods, where possible, natural surface drainage should be maintained and recreational trails should be provided along these corridors. In addition, there may be opportunity to develop trails along the lands owned by the City under which these streams have been piped where these are outside street allowances.

Below the Niagara Escarpment, little opportunity exists to provide recreational trails along the surface drainage between the Niagara Escarpment to Lake Ontario because houses have developed rear yards over the surface drainage.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- Provide trail access from the Niagara Escarpment to Lake Ontario via the Red Hill Valley Trail System;
- Plan for recreational trails through neighbourhoods which are yet to be planned and Greenfield lands proposed to be added to the City’s urban area; and
- Loop recreational trails into selected waterfalls.
Design Issue Responses
Responses to each of these design issues are included on the Ward 9 Map, Figure 17, and the individual ward initiatives which follow. Examples of specific design responses include the following:

- By maintaining surface natural drainage corridors for the remaining Red Hill tributaries through developing neighbourhoods and provide recreational trails along these corridors where appropriate, a better system of recreational trails can be created.
- Where Red Hill Creek have been sewered, the corridors should be considered for trail design and development in order to overlay an off road system of trails.
- Provide recreational trail linkages through neighbourhoods which have not been developed and Greenfield lands proposed to be added to Hamilton’s urban lands.
5.3.10 Ward 10 – Stoney Creek

Description
Ward 10 extends from the Lake Ontario shore south to the Niagara Escarpment and from Gray’s Road in the west to Fruitland Road in the east.

Built and Natural Features
Built features are organized as layers extending south from Lake Ontario to the Niagara Escarpment. The layers from north to south include:

- residential uses bordering Lake Ontario;
- the Queen Elizabeth Way;
- industrial neighbourhoods;
- rail lines running east/west;
- residential neighbourhoods;
- old Highway 8;
- the Niagara Escarpment (including the Escarpment bench and associated residential development); and
- the Bruce Trail.

Natural features include the Lake Ontario shore and the Niagara Escarpment. Intermittent unnamed watercourses which drain northwards from the Niagara Escarpment to Lake Ontario have been or will be piped. Where the larger streams drain into Lake Ontario, at least one wave action created pond exists.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- the absence of surface drainage connecting the Niagara Escarpment to Lake Ontario along which recreational trails can be developed;
- the layered pattern of land uses and transportation corridors between Lake Ontario and the Niagara Escarpment which creates barriers to recreational trails interconnecting the two natural features; and
- the pattern of residential and land ownership along Lake Ontario and the juxtaposition of the lake shore with the Q.E.W makes extending a lakeshore/waterfront trail difficult.

Design Issue Responses
Responses to each of these design issues are included on the Ward 10 Map, Figure 18, and the individual ward initiatives that follow. Examples of specific responses include the following:

- Where possible consideration should be given to using subsurface drainage corridors where surface drainage has been sewered and easements or municipal ownership of the corridor exists as possible recreational trails.
- A route which uses on street and off street trails, where possible, has been identified along the Lake shore north of the Q.E.W.
5.3.11 Ward 11 – Glanbrook, Stoney Creek, Winona

Description
Ward 11 is an irregularly shaped large and diverse ward extending from Lake Ontario to Haldimand County in south and from Glancaster Road in the west to Niagara Region in the east.

Built and Natural Features
Below the Escarpment, built and natural features are organized as layers extending south from Lake Ontario to the Niagara Escarpment. The layers from north to south include:

- residential uses bordering Lake Ontario;
- the Queen Elizabeth Way;
- industrial neighbourhoods;
- residential neighbourhoods;
- old Highway 8;
- the Niagara Escarpment (including the Escarpment bench); and
- the Bruce Trail.

South of the Escarpment, lies a predominantly agricultural landscape used for livestock and cash cropping is drained by the Twenty Mile and Red Hill Creeks and the Welland River. Remnant woodlots alone rear lot lines and stream valleys together and wetlands long the creek beds are the remaining natural features. The Welland River occupies a valley sufficiently well defined to be able to accommodate a recreational trail along its length.

Provincial Highways #20, #56 and #6 traverse the ward together with new Highway 6 which accesses the John C. Munroe International Airport. Urban areas include Mt. Hope, Binbrook, new and proposed urban expansions in the Elfrida area, around the airport and the Glanbrook Industrial Park. Conservation Areas include Fifty Point and the Binbrook Lake Conservation Areas. The Hamilton to Caledonia Rail Trail traverses the Ward.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from east to west and north to south. The east west inter-connections follow the southern limits of Hamilton’s Wards 5, 6, 7 and 8. These continue eastward to Niagara Falls following the alignment of the first transmission facilities constructed from Niagara Falls to service Toronto and urban areas between. The north south corridor contains a pipeline but no electrical transmission facilities and connects Hamilton’s urban areas to Lake Niapenco and the Grand River downstream of Caledonia roughly parallel to Rail Trail.

In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province is actively seeking other uses for these transmission corridors should be considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.

Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through productive farmland, or allowed to regenerate naturally with periodic management. Easements to
adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers.

We believe properly constructed recreational trails can co-exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. There do not appear to be comparable examples within rural municipalities and more infrastructure may be required such as gating through agricultural fields. There is, however, no practical reason why trails could not be developed within these corridors.

Together with existing Rail Trail, an opportunity exists to create looped, off road recreational trails which inter-connect residential areas to Lake Niapenco in Ward 11 and thence into a future system of public lands to be acquired along the Welland River by the Niagara Peninsula Conservation Authority.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- the layered pattern of land uses and transportation corridors between Lake Ontario and the Niagara Escarpment which creates barriers to recreational trails inter-connecting the two natural features; and
- the pattern of residential and land ownership along Lake Ontario and the juxtaposition of the lake shore with the QEW makes creating a lakeshore trail difficult.

Design Issue Responses
Responses to each of these design issues are included on the Ward 11 Map, Figure 19, and the individual ward initiatives that follow. Examples of specific responses include the following:

- A future study area is provided for along the Welland River corridor wherein a program initiated by the Niagara Peninsula Conservation Authority to acquire wetlands and Carolinian forests can be linked with off road and on road trails to create a corridor along the Welland River from the John Munroe International Airport east into Niagara Region.
- Where possible, drainage ways between the Niagara Escarpment and lake Ontario should be maintained as surface corridors along which recreational trails can be planned, especially in the Fifty Point Area where a large Conservation Area exists along the Lake shore.
- Hydro corridors are proposed to be used for recreational trails to create looped systems to the Lake Binbrook Conservation Area and along Power Line Road (the Dofasco Trail) and Ridge Road.
5.3.12 Ward 12 – Ancaster

Description
Ward 12 comprises the former Town of Ancaster and extends from Brant County in the south and west to Highway 403, Shaver Road and the Dundas Valley in the north and Glancaster Road and the former City of Hamilton in the east.

Built and Natural Features
Built features include the old village of Ancaster and newer residential neighbourhoods, an industrial park, the Meadowlands Power Center, Redeemer College, Highway 403, the new Highway 6 and the Lincoln Alexander Parkway. Future development includes lands within the Areotropolis Project. In the rural areas, farm complexes are located on former County Roads and Township side roads with former rural communities in Alberton and Carluke. Conservation Areas include the Iroquoia Heights, Tiffany Falls and Dundas Valley Conservation Areas.

Natural features include the Niagara Escarpment and the Dundas Valley. The ward is drained by the Fairchild Creek into the Grand River, the Welland River which drains into the Niagara River and the Tiffany and Ancaster Creeks which drain into Cootes Paradise. The sandier soils associated with the moraines above the Dundas Valley are excellent vegetable growing soils. Woodlots and hedgerows together with remnant wetlands found along creek beds comprise the remaining natural features.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from north to south from the Westover area in the north to Middleport along the Grand River in Brant County and from London in the west to the Waterdown area in the east. In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province is actively seeking other uses for these transmission corridors should be considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.

Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through productive farmland, or allowed to regenerate naturally with periodic management. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor.

Visually, agricultural operations continue through the corridors giving the appearance that except for the transmission towers, the lands are within the farm’s ownership. But that is not the case particularly with the corridor extending south to Middleport which occupies substantial land. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers. More recently, an Imperial Oil products pipeline was installed within this corridor (need to check).

Properly constructed recreational trails can co-exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. There do not appear
to be comparable examples within rural municipalities and more infra-structure may be required such as gating through agricultural fields.

There is, however, no practical reason why trails could not be developed within these corridors. Together with existing Brantford to Hamilton Rail Trail, the LaFarge Trail and unopened road allowances/public lands and conservation areas, substantial opportunities exist to create looped, off road recreational trails which inter-connect residential areas to the major Conservation Areas in Ward 12.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- Develop a rural trail system where there are no Conservation Areas or natural features to link into a trail system;
- Incorporate Hydro One Network’s transmission corridors; and
- Provide linkages and strengthen existing trail linkages to sites beyond the City of Hamilton (i.e., Brantford and the Grand River).

Design Issue Responses
Responses to each of these design issues are included on the Ward 12 Map, Figure 20, and the individual ward initiatives that follow. Examples of specific design responses include the following:

- Existing Hydro corridors have been used to provide trail linkages to the Grand River in the Middleport area and east to link and create looped systems with existing trails in Wards 5, 6, 7 and 8.
5.3.13 Ward 13 – Community of Dundas

Description
Ward 13 covers the “valley town” situated at the head of the Desjardins Canal below the Niagara Escarpment on Spencer's Creek.

Built and Natural Features
Built features include the original scenic Town of Dundas of which commercial, institutional and residential uses are centered on Highway 8 and the Spencer's Creek and surrounding suburban residential subdivisions and University Plaza on Main Street. The Spencer Creek was the focal point for earlier water power developments and industrial development. Some of these industries are being replaced with residential complexes. Cootes Drive links the downtown to Hamilton and McMaster University while Governor’s Road and Highway 8 link the Town to the west and north.

Borer’s Creek, Webster's Falls, Tew’s Falls, Spring Creek and the Dundas Valley Conservation Areas and the Royal Botanical Gardens border or cover lands and waters within the Ward. The road and street pattern uses culverts with fill to span there creeks as opposed to clear spans thereby preventing recreational trail development at stream level. At the foot of the Niagara Escarpment, Spencer's Creek flows through an unusual device constructed, in part by rail authorities and by former mill owners, to direct water under the CNR line to the Creek’s natural bed downstream, effectively blocking access from Dundas to Webster's Falls in Greensville and Tew’s Falls along the creek.

Natural features include the Niagara Escarpment, the Dundas Valley, a number of creeks and associated substantial ravines and floodplains including the Spencer’s, Borer’s, Ann Street, Spring, Spencer's and Ancaster Creeks. Most street crossings utilize fill and culvert designs which effectively limit the ability to route recreational trails along the water’s edge. The Bruce Trail follows the Niagara Escarpment.

The City of Hamilton is fortunate to have over eighty (80) waterfalls and counting along the Niagara Escarpment, both privately and publicly held. These are important for tourism, public health and recreation. Many of these waterfalls are, or will be accessible by multi-use recreation trails. Work is currently underway with the City of Hamilton, Hamilton Conservation Authority and Bruce Trail Association to improve access to these waterfalls.

Recreational Trail design Issues
Examples of specific Design issues to be addressed include:

- Develop a trail system within steep ravines of the Ancaster and Spring Creeks or where urban encroachment within the Spencer Creek flood plains leaves little space for a recreational trail;
- Develop a trails system along the Ancaster, Spring and Spencer Creeks where bridges have used fill and culverts to block access along the water’s edge; and
- Link Dundas to Borer’s, Webster’s and Tew’s Falls.
Design Issue Responses
Responses to each of these design issues are included in the Ward 13 Map, Figure 21, and the individual ward initiatives which follow. Examples of specific design responses include the following:

- Provision has been made to provide for a trail along the Spencer Creek from Cootes Paradise to the Niagara Escarpment and to access Webster’s and Tew’s Falls.
5.3.14 Ward 14 – Wentworth

Description
Ward 14 includes lands bordered by Wellington and Brant Counties is the north and west, Highway 403 and the Niagara Escarpment in the south, Ofield Road and Highway 6 in the east.

Built and Natural Features
Built features include farmsteads spaced at regular intervals throughout the better agricultural lands on original township lots along County roads and Township side roads, scattered residences created by severances, Highways 8 and 6 and Governor’s Road, bulk electrical transmission facilities and pipeline stations.

Interesting sites include Conservation Areas (i.e., Christie, Valen’s, Crook’s Hollow, Webster’s Falls and Tew’s Falls Conservation Areas organized on the Spencer and Borer’s Creeks watersheds by the Hamilton Region Conservation Authority), Westfield Heritage Village and African Lion Safari. Rural communities such as Greensville, Millgrove, Freelton, Valens, Hayesland, Strabane, Westover, Kirkwall, Sheffield, Rockton, Troy and Copetown serve the rural community. Several limestone quarries are situated north of Greensville.

The Fairchild (Grand River) and Spencer Creek watersheds traverse the ward. While both creeks and their tributaries are discernable features in the landscape neither is large enough to route recreational trails along its length. Other natural features include wetlands (i.e., Beverly Swamp, Fletcher’s Creek Swamp) interspersed with drumlins. These extensive pattern of wetlands and drumlin fields throughout the northern and central portions of the ward result in an incomplete grid of county and township side roads where the road allowance exists but isn’t opened or maintained and an irregular pattern of farmsteads. A higher percentage of these lands are forested.

The irregular terrain (i.e., steep slopes associated with the drumlins and poor drainage associated with the wetlands) has limited agricultural production in the past and further limits the use of larger machinery presently. Farmers are abandoning some fields and drainage improvements on poorer agricultural soils and, consequently, wetlands and forest cover are expanding. The combined result is an expanding rich and interesting natural heritage system interspersed among producing farms.

Flat lands with very shallow overburden and soils over the limestone bedrock lie north of Greensville. This terrain produces unusually drier alvar plains (prairie ecosystems) and karst topography within which little rural development has occurred other than residences on scattered severances and large limestone quarries. Farming isn’t viable on these thinly soiled plains.

Hydro-electric transmission and hydrocarbon pipeline facilities and corridors traverse the Ward from north to south from the Westover area in the north to Middleport along the Grand River and from London in the west to Waterdown area in the east. In the 1990’s, Ontario Hydro was broken up into Ontario Power Generation (OPG) and Hydro One Networks. The former operated Ontario’s public electricity generation system while the latter operates electrical transmission facilities. But the ownership and leases for land on which the transmission system exists was assumed by Ontario Realty Corporation. The Province subsequently is actively seeking other uses for these transmission corridors should be
considered for recreational trail purposes because these corridors could provide important linkages unavailable otherwise.

Where the corridor is owned by the Province and used by Hydro One Networks for transmission facilities, the corridors are farmed, where these cross through productive farmland, or allowed to regenerate naturally with periodic management. Easements to adjoining property owners where corridors traverse properties enable owners to maintain their properties on either side of the corridor. From time to time, construction and maintenance may require Hydro One Networks to enter the corridor to construct access lanes to build and maintain transmission towers.

Properly constructed recreational trails can co-exist within these corridors, subject to obtaining the necessary approvals (i.e., Environmental Assessment Act). Many urban municipalities provide recreational trails within transmission corridors. There do not appear to be comparable examples within rural municipalities and more infrastructure may be required such as gating through agricultural fields. There is, however, no practical reason why trails could not be developed within these corridors. Together with existing Brantford to Hamilton Rail Trail, the LaFarge Trail and unopened road allowances/public lands and conservation areas, substantial opportunities exist to create looped, off road recreational trails which inter-connect residential areas to the major Conservation Areas in Ward 14.

The LaFarge Trail inter-connects Christie Conservation Area along opened and un-opened road allowances through agricultural lands, alvar ecosystems to drumlins and wetlands associated with the Beverly Swamp north to the Galt Moraine and Highway 6. The Hamilton to Brantford Rail Trail inter-connects the Grand River with Hamilton and through the Rail Trail to Caledonia, eventually the Grand River downstream of Brantford.

Recreational Trail design Issues
Examples of specific design issues to be addressed include:

- provide better and more sustainable recreational trail design and upgrades for the LaFarge Trail especially where the trail crosses drumlins;
- using where possible, lands purchased for conservation purposes, electrical and utility corridors or easements and unopened municipal right of ways, inter-connect the LaFarge Trail with Valens, Fletcher’s Creek and Mountsberg Conservation Areas;
- provide local inter-connections between Christie, Crook’s Hollow and Webster’s/Tew’s Falls Conservation Areas and Greensville settlement area with Dundas; and
- use hydro-electric utility corridors owned by the Province to inter-connect with the Grand River in the Middleport area, northwards to the Westover area and south of Hamilton to create looped rural systems within Wards 14 and 13.

Design Issue Responses
Responses to each of these design issues are included on the Ward 14 map, Figure 22 and individual ward initiatives which follow. Examples of specific design responses include the following:
• Provision has been made for a looped system which inter-connects with Valen's Conservation Area through on road and unused municipal right of ways through the Beverly Swamp and the LaFarge Trail.

• Linkages have been created using Hydro One Network’s corridors to connect trails into Ward 12 to the Grand River and east into Mountain wards.

• Inter-connections have been provided between Greensville and Crook’s Hollow and Christie Conservation Areas.
5.3.15 Ward 15 – Flamborough

Description
Ward 15 is bound by the Regional Municipality of Niagara in the north, Wellington County, Highway 6 and Ofield Road in the west and the Niagara Escarpment and Halton Region in the east and south.

Built and Natural Features
Built features include the Waterdown urban area and the Carslisle, Mountsberg and Millgrove settlement areas. Farmsteads are spaced at regular intervals along the original county and township side roads while scattered residences are found in an irregular pattern where severances have occurred in the past.

With the exception of that portion of the Ward situated west of Highway #6, Concession road and lot lines are organized at regular intervals right angles to the north shore of Hamilton Harbour. The spacing of concession and side roads is consistent with that found in Burlington in Halton Region to the east and inconsistent with that found west of Highway 6. West of Highway 6, concession and lot lines are aligned on an angle to those situated east of Highway 6.

Rear agricultural lots are usually occupied by farm woodlots and hedgerows. Where surface drainage and wetlands are found, a more extensive natural heritage system exists. Closer to the Galt Moraine, steeper slopes associated with the moraine and Bronte Creek tributaries are more forested than the sandier soiled agricultural lands closer to Waterdown and the original township fabric of concession and side roads is discontinuous owing to drainage and wetland patterns and irregular slopes associated with the Galt Moraine. Unopened road allowances may provide opportunities for recreational trail access to Mountsberg Conservation Area to Carlisle and subsequently to Lake Medad east of Waterdown.

Natural features include Niagara Escarpment related features in Carlisle (Bronte Creek), Waterdown (Grindstone Creek/valley and Medad Valley). These features are situated primarily within Halton Region and recreational trails associated with the Bruce Trail and other organizations are focused on these features in Halton Region.

Presently, secondary, master drainage plan, subwatershed and transportation planning studies are underway in Waterdown to accommodate new urban development. Looped recreational trails linking both new and existing residential areas with the existing and proposed recreational trails along the Niagara Escarpment, the Grindstone Creek and Borer’s Creek to commercial, employment, institutional uses, Waterdown’s heritage district and newly developing areas should be an integral result of these planning and development efforts.

The Borer’s, Grindstone and Bronte Creek and tributaries flow through the Ward. While these creeks in the rural areas are definable features in the landscape, individually, they are not large enough to plan recreational trail corridors within their limits except where these are situated within urban areas and are used for storm water management, flood plain management and other servicing/recreational purposes. Bronte Creek tributaries occupy much of the northern portion and rise on the Galt Moraine.

Borer’s Creek falls within the Hamilton Conservation Authority watershed while Grindstone and Bronte Creeks fall within the Conservation Halton watershed.
Mountsberg Conservation Area is situated in the north. The combination of Highway #401 situated in Puslinch Township to the north, Highway #6 and the irregular topography associated with the Galt Moraine isolate this conservation area. If the Lowndes quarry proposals go forward to approval, one component of that planning approval should include off road recreational trails which interconnect Mountsberg with Carlisle and lands to the south through the Lowndes properties in the future.

Recreational Trail Design Issues
Specific design issues to be addressed include:

- link developed and developing Waterdown neighbourhoods to the emerging recreational trail system being developed by the City of Burlington and Conservation Halton in the Aldershot area through municipal secondary and transportation planning efforts underway currently in Waterdown;
- plan and develop recreational trail systems along the Borer’s and Grindstone Creek valleys in conjunction with stormwater and servicing projects to service Waterdown’s development;
- develop accesses under Highway #6 in the Waterdown area (Borer’s Creek) and over Highway #6 in the Mountsberg area;
- provide recreational trail linkages into and from Halton Region;
- provide on-street trail linkages into and from Halton Region; and
- future trail connection opportunity in the vicinity of the Cartwright Nature Sanctuary and the bike route along Patterson Side Road.

Design Issue Responses
Responses to each of these design issues are included on Ward 15 Map, Figure 23 and individual ward initiatives that follow. Examples of specific design responses include the following:

- Provision is made to link the Niagara Escarpment in the Lake Medad area to Mountsberg Conservation Area in the north.
- Recommendations are made to seek recreation trails in the detailed planning for Greenfield neighbourhoods in Waterdown to link residential, the heritage district, commercial and employment areas with the Niagara Escarpment and Borer’s Creek.
- The extensions of the Bruce Trail at Highway #6 will be provided within an underground tunnel as part of the MTO improvements on the Clappison Hill in the location of the existing crossing of the trail at Patterson Road and Highway #6.
FIGURE 23 B
6.0 SCORING SYSTEM

Hamilton City Council has adopted commitments to sustainability in their Strategic Plan as well as in Vision 2020 which are consistent with the 2005 Ontario Provincial Policy statement. The implementation of trail development projects will be evaluated in a similar fashion to these commitments with the long term benefits to the community of a strong community, a clean and healthy environment and a strong economy. For the purposes of this report comments from the public were combined with generalized field observations to categorize trail alignments according to alignment, function and use.

The Trail Scoring Criteria are based on the alignment functions within the context of the overall trail system. Individual trail initiatives and alignments are scored utilizing the five (5) scoring criteria shown below. The five criteria are all equally weighted in the evaluation. Projects with a high score, i.e. 5, have a higher priority in the system than projects with a low score, i.e. 1 or 2.

The Trail Scoring Criteria were also evaluated against the eight (8) issues of consideration for the City Triple Bottom Line sustainability indicators. See Appendix 9, Scoring Criteria, comparison to the City of Hamilton Triple Bottom Line.

Trail Scoring Criteria include:

1) **Link Hierarchy** –

   a. a recreational trail that provides a critical segment or link that supports the completion of the larger trail system, may perform the function of a City-wide connection, or complete a larger Provincial trail system.

   b. connects residential neighbourhoods (multi-ward) with employment lands and commercial,

   c. government, recreational and institutional uses as well as provides linkages to public transit such as Hamilton’s Go Station (multi-neighbourhood).

2) **Waterfront Connection** – a recreational trail providing a connection to the Waterfront Trail, public open space adjacent to the waterfront shoreline or one of the public right of ways that create views to Hamilton’s waterfront.

3) **East of Red Hill Valley Trail** – a recreational trail that is located east of the Red Hill Valley where there is a recorded deficit of outdoor recreational opportunities as identified through the parkland classification system and public process.

4) **Barrier Free** – a recreational trail that can be constructed with sustained grades of less than 1:20 (5%) slope and have adequate width to support universal accessibility will be categorized as a Barrier Free Route.

5) **Recreational Loop Trail** – a recreational trail that performs a looped route or completes a recreation loop within a neighbourhood providing fitness opportunities.

**Note:** Costing was not part of the Scoring Criteria.
### 6.1 SUMMARY OF INDIVIDUAL WARD INITIATIVES (WARDS 1-15)

#### TRAIL DATA

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<td>Style</td>
<td>Class/Type</td>
<td>Proposed Length (m)</td>
<td>City Wide (2 pts.)</td>
<td>Multi-Ward</td>
<td>Multi-Neighbourhood</td>
<td>Waterfront Connection</td>
<td>East of Red Hill</td>
<td>Barrier Free</td>
<td>Completes a Loop</td>
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<td>9</td>
<td>Middletown Rd. / Safari Rd. to Strabane (6°)</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>1,500</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>3</td>
<td>2</td>
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<tr>
<td></td>
<td>10</td>
<td>Hydro Corridor, Hwy. #5 to Hwy. #403</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>1,800</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>11</td>
<td>Hydro Corridor, Powerline Road West to Hwy. #403</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>1,300</td>
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<td>1</td>
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<td>2</td>
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</tr>
<tr>
<td></td>
<td>12</td>
<td>10° Concession West, Valens Link</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>980</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>13</td>
<td>Middletown Rd. / Safari Rd. to Strabane (6°)</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>1,800</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>10° Concession West, Valens Link</td>
<td>Upgrade</td>
<td>On-Street</td>
<td>-</td>
<td>1,800</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
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<td>15</td>
<td>Middletown Rd. / Safari Rd. to Strabane (6°)</td>
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<td>On-Street</td>
<td>-</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
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</table>

Read this chart together with individual project data sheets and schematic layouts in Section 5.0.
7.0 IMPLEMENTATION STRATEGY

7.1 INTRODUCTION

The implementation strategy is intended to illustrate the recommended range of elements required and found on a system wide basis.

Section 4.0, Trail Development and Maintenance Standards, sets out the detailed design principles and design criteria for the trail system. Throughout the fieldwork in both 2002 and 2005, a wide range of elements were documented. Given the amalgamation of former municipalities (Wards 9-15) into the City of Hamilton, various standards were historically utilized. The examples noted below illustrate the range of elements intended for future use in the overall trail system. While these are not the complete range of elements, they do cover the primary elements required. For example, reference is made in Section 4.6 to Trail Signage/Pictograms. Examples are shown in this section to assist in further developing the required signage system.

7.2 TRAIL DEVELOPMENT

7.2.1 Trail Bridges and Railings

Throughout the City-wide trail system, there are and will be crossings of drainage ditches, creeks or shallow ravines. Examples of some of these crossing types are shown below as references within the system. Other types may be required depending on the application which may be reviewed on an individual basis.
Cootes Drive and Spencer Creek (Urban Example)

Wood deck/boardwalk elevated over a wooded swamp (Rural Example)

Escarpment Rail Trail lookout area, south of Kenilworth Avenue (Example Wood/Rural Railing)

Chedoke Rail Trail at lookout 350 m east of parking lot at Scenic (Example Metal Railing, Urban/Rural)

York Blvd. looking south across Hamilton Harbour to Bayfront Park at High Level Bridge (Example Urban Railing)
7.2.2 Stairs
In many situations throughout the system, access is required to connect areas of trails separated vertically by topography. Examples of low vertical separation and large vertical separation escarpment pedestrian/bicycle access are shown.

Chedoke Rail Trail near Beddoe Drive, Metal Stairs with Bike Trough and Lights
Top of metal stairs, south of Beddoe Drive looking over City and Chedoke Golf Course
Beddoe Drive at top of stairs looking north/east to City below over Chedoke Golf Course.

Churchill Park from Parkview at Kipling, concrete steps.
7.2.3 Site Furniture

Desjardins Trail, barrier free portable washrooms, standard light and litter container.

Metal Bike Rack

Wood and Metal Bench

Metal Litter Container
7.2.4 Lighting
Where applicable, trail lighting on high-use trails and stairs has been utilized. Lighting placement is subject to level of service, location and risk management analysis and is discussed in the risk management analysis. Lighting is only provided subject to high-use trails and stairs, level of service, location risk management.

7.2.5 Trailhead and Interpretive Signage

[Images of trailhead signs and interpretive signage examples]
7.3 UPGRADED TRAILS

All existing trails, whether designated or developed on site, have been reviewed in the context of the new Master Plan trail system together including their classification and surface type. This includes an overview of on-street systems where linkages are required for the off-street network as well as multi-purpose recreation trails.

In this regard, recommended upgrades to existing trails may include revised classification (width) and surface type. Given the amalgamation of all wards into the New City of Hamilton, as expected, variations in standards were noted throughout the Wards. This review will standardize the entire system utilizing the standards proposed in the report. Upgrades were noted in the data sheets within Section 5.3, Individual Ward Projects and are shown as appropriate to reflect improved linkages, noted increased trail usage, importance within the system or to correct observed operational deficiencies. Detailed field observations are contained for reference purposes in the appendices; see Summary of Field Notes and Photographs for both 2002 and 2005 (Appendix 1 and 2). Staff can utilize these observations as a snapshot in time or baseline data to work from when completing system work.

Given the anticipated timelines from publishing the Trails Master Plan to implementation, changes are expected which should be considered (if necessary) during detail design, prior to implementation of the initiative. With the anticipated success of the overall system, it is fair to say, further future upgrades to the system will be required over time to address the anticipated success of the system.

7.4 PROPOSED TRAILS

The Hamilton Recreational Trails Master Plan primarily focused on a comprehensive, multi-use off-road trail system. During the course of study, it became clear that further on-street links/trails were required to connect off-street systems or create loop systems. On-street trails are primarily directed at commuter, transportation based systems.

Recommended trails, both on- and off-street are shown at three levels throughout the report.

1) Overall System, Network Basis
2) Ward Basis
3) Individual Ward Initiatives
Individual ward initiatives are displayed in drawings and data sheets. Each ward was broken down into data sheets and individual initiatives to provide, to the extent possible, individual initiatives which become components of the overall system. The intent is to provide staff with manageable projects for implementation. All initiatives are summarized on a ward initiative basis on the chart in Section 6.0, Summary of Individual Ward Initiatives.

In addition to this summary, scoring criteria help to rank relative levels or priorities of the initiatives in terms of importance within the system. Note, the ward initiatives are not organized by rank of importance; rather they are displayed from a logical, communication system basis. Staff will note that ward initiatives and data sheets do not form part of the report pagination. This allows for the seamless addition (or deletion) of initiatives over time. This also allows for printing and distribution of the document at varied degrees of detail as staff require.

7.5 Lease Agreement and Land Acquisition

Within the overall trail system, a concerted effort has been made to implement all proposed trails within public ownership or on public property, specifically, City of Hamilton ownership.

In some circumstances, the ownership within particular alignments will need to be verified to confirm whether or not lands are currently publicly owned, i.e. RBG, Conservation Authorities, Hydro One / O.R.C. etc., or have lease agreements or are privately held.

Specifically, these areas in question are noted on the individual ward data sheets under individual ward initiatives. Areas requiring further ownership investigation by the City are noted as follows:

- **Ward 1, Initiative 6** – Kay Drage Park Trail
- **Ward 1, Initiative 8** – Hamilton-Brantford Rail Trail Link (Owen Jacques Industrial Fortinos)
- **Ward 3, Initiative 3** – Burlington Street Link (review R.O.W. and potential for off street trail, appears numerous encroachments)
- **Ward 3, Initiative 4** – Sherman Inlet Loop
- **Ward 3, Initiative 5** – Birch Avenue, Burlington Street to Barton Street
- **Ward 5, Initiative 3** – Lake/Gray’s Road Trail Extension (railway R.O.W.)
- **Ward 12, Initiative 2** – Filman Road Link
- **Ward 12, Initiative 4** – Iroquoia Heights Access Upgrade
- **Ward 13, Initiative 2** – Hydro Corridor, Olympic Drive (review ownership hydro to York Road)
- **Ward 13, Initiative 3** – Spencer Creek, Main Street / Thorpe Street Link
- **Ward 13, Initiative 6** – Cascade Trail Link (west end)
- **Ward 13, Initiative 7** – Dundas Valley Link
• **Ward 14, Initiative 4** – 10th Concession West / Valens Link (unopened road allowance?)
• **Ward 15, Initiative 1** – Boer’s Creek Trail Link (west end at Golf Course)

### 7.6 Maintenance Partnerships

As previously noted, many of the trails within the Hamilton Trails System are owned, operated or maintained by other trails partners. These partners include the Hamilton Conservation Authority, Bruce Trail Association, Royal Botanical Gardens, Waterfront Trust and to some degree Hydro One / O.R.C. for hydro corridors.

Where trails cross partner properties, standards of those partners shall apply. However, those partners, together with the City of Hamilton, are encouraged to adopt the City of Hamilton trail wide system standards in order to achieve the objectives and standards on a system wide basis. In some cases, long term operating leases or agreements may be required to achieve that objective.
The Hamilton Recreational Trails Master Plan presents a comprehensive review of the City of Hamilton Multi-Purpose Recreational Trail System linking the on-road commuter systems and off-road systems, including regional, provincial and national trails.

This Master Plan provides an in-depth review and analysis of the overall system, the planning context and detailed implementation strategies. The trail system links opportunities for natural, historic, cultural education as part of an overall public education program. These trails tie into other opportunities for tourism including the Waterfalls and Cascades of Hamilton, as part of an overall large scale eco-tourism program.

This report provides City staff, agencies and allied trail partners with a clear vision of the existing system and the recommended upgrades and additions to complete and enhance the total system. Using the ward initiatives, the reader can clearly see what work is recommended and how it ties into an overall, system wide basis.

This document is intended to be utilized as a working tool which will allow staff to review individual, phased trail initiatives while integrating those trails within the context of the entire system at any given location.

Digital files and records have been provided to City of Hamilton staff which will allow work and data to be integrated with existing and future GIS database system for future planning and marketing/eco-tourism efforts.

Throughout the report, recommendations are made for various initiatives which are integrated to strengthen and improve the City trail system and improve links to surrounding communities.

In addition, this document will allow staff from various departments including planning, public works to review development/redevelopment applications or land in the City. In this regard, the principles of the system can be integrated into those applications where appropriate to allow the City to fully develop over a period of years.
9.0 REFERENCES


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