

Municipality of
Chatham-Kent
Ontario, Canada



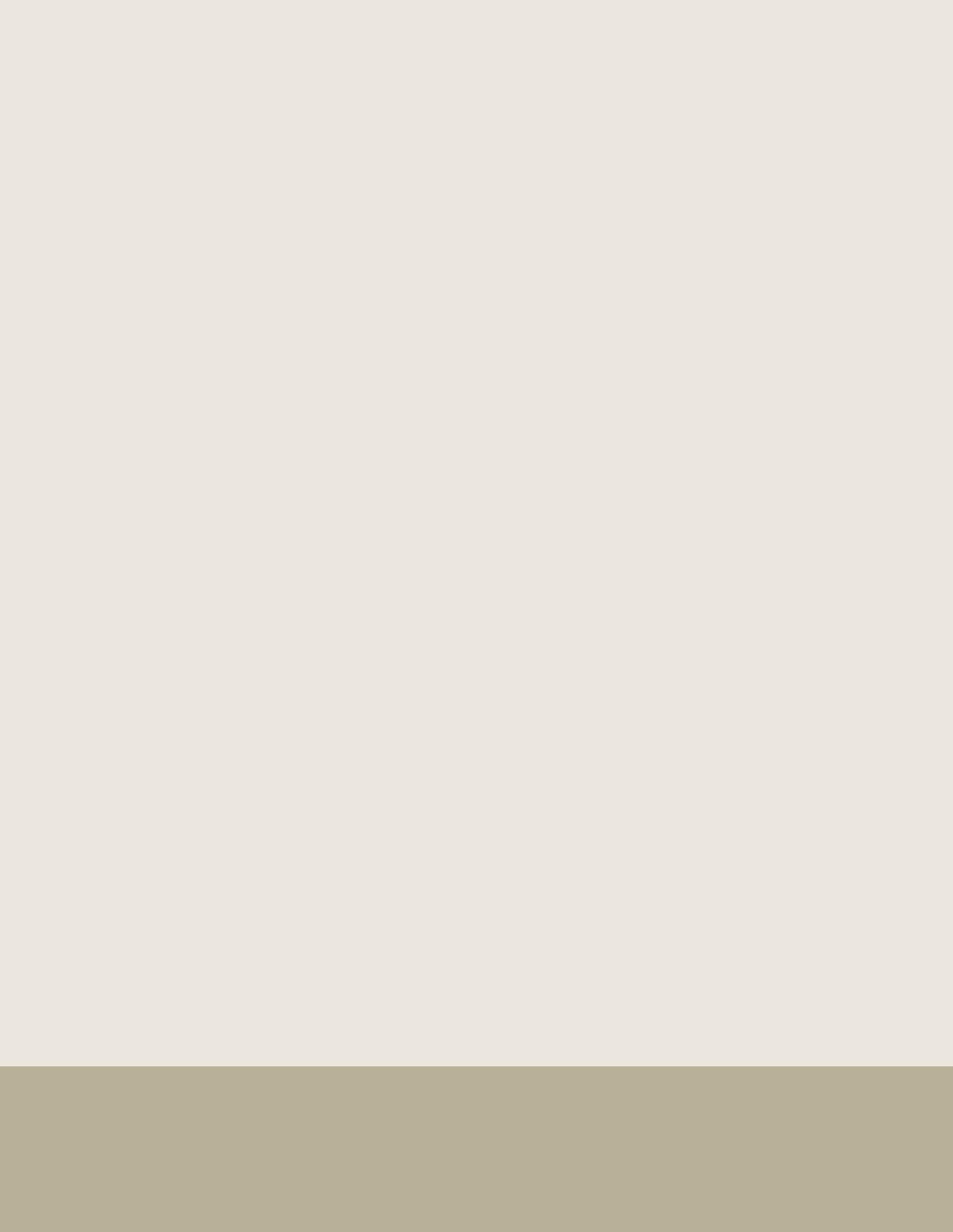
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Chatham-Kent *Trails Master Plan* FINAL REPORT



Contract No. P-07-55 | September 2009

 **MMM GROUP**
TransActive Solutions





ACKNOWLEDGEMENTS

The Chatham-Kent Trails Master Plan is the product of dedicated work by many people. This plan was developed by a Steering Committee and a Consultant Team and was shaped by all those who participated in its creation. The Consultant Team would like to thank the Municipality of Chatham-Kent for the opportunity to develop the Chatham-Kent Trails Master Plan, and would like to extend our sincere appreciation to members of staff, the Steering Committee and the public who gave their time and energy in the development of this plan, especially those who provided input at various points throughout the project.

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1.0 INTRODUCTION

The Municipality of Chatham-Kent has taken the initiative to develop a Trails Master Plan. The plan builds upon past and current trail development efforts, and is intended as the framework to guide the development and operation of trails in the municipality in the short, medium and long term. It defines a strategy for developing a municipal-wide trail network that links communities, neighbourhoods, parks, schools, shopping areas, destination areas and open spaces. It identifies short and long-term trail network priorities; identifies potential partners; makes recommendations regarding trail design, signage and construction; outlines policies to support the implementation of the plan and estimates the cost of the plan over 20 years.

A Study Steering Committee was formed to guide the study and included representatives from a number of trail stakeholder groups, municipal staff and trail planning and design specialists. A team of trail planning specialists that included MMM Group and TransActive Solutions was retained to assist the Steering Committee and municipal staff in the development of this plan.

1.1 TRAILS IN CHATHAM-KENT

A number Chatham-Kent's residents have been actively involved in the development and promotion of trails for several years. They organized themselves into the Chatham-Kent Trails Council, which evolved out of various trail committees in communities throughout Chatham-Kent. Recently Chatham-Kent Municipal Council awarded the Chatham-Kent Trails Council \$17,500 for the construction of Trans Canada Trail between the Bothwell Oil Museum and the Tecumseh Monument.

The Ontario Trails Council (OTC) is a not for profit organization that promotes the development, preservation, management and use of recreational trails in Ontario. In Ontario, Trillium Trail Network (TTN) is the name of the larger connected system of trails. The TTN represents an opportunity for trails to link between regions and communities in Ontario, and consists of OTC member trails registering their trail as a network member. The Chatham-Kent Trails Council is an affiliate of the Trillium Trails Network.

Chatham-Kent has many local communities with both paved and unpaved trails for walking. The municipality is also blessed with trails in provincial parks. Rondeau Provincial Park, for example, has six hiking trails that attract thousands of visitors each year. The Chatham-Kent Trails Master Plan provides an opportunity to build on the existing trails and create a stronger, cohesive network for residents and visitors alike to enjoy.

A "Trail" in the context of the Chatham-Kent Trails Master Plan is defined as: A designated route that connects one point to another. Trails have different characteristics according to their location, intended use(s) and purpose.

Though it may be preferred to have the entire trail network off-road, it is recognized that this will be difficult or impossible to achieve in some locations over the short, medium or even long term. Therefore, trails will be off-road wherever possible and on-road links will be relied upon where the potential for off-road routes does not exist.

"Trails" in the context of the Chatham-Kent Trails Master Plan also refer primarily to routes for "Active Recreation". This plan acknowledges the parallel initiative currently being undertaken within Chatham-Kent to develop and



promote routes and programs for “Active Transportation”. Furthermore, this plan recognizes that the two initiatives are complementary, and recommends that the two initiatives be seamlessly integrated where complementarity exists.

1.1.1 Policy Context

A number of municipal policies and plans are directly relevant to the Chatham-Kent Trails Master Plan, including the municipality’s Official Plan, Transportation Master Plan and Recreation Master Plan.

Official Plan - Chatham-Kent’s Official Plan received Ministry approval in December 2008. It contains a number of policies that support the development of trails for Active Recreation and Active Transportation. Details regarding Official Plan policy and trails are found in Chapter 6 of this report.

The **Community Strategic Plan** envisions Chatham-Kent as a safe and healthy community, and promotes healthy lifestyles. Recreational trails and pedestrian linkages contribute to the development of healthy communities. The Chatham-Kent Trails Master Plan is directly related to the development of healthy communities, and supported by the Municipality’s Official Plan.

Transportation Master Plan – Chatham-Kent’s Transportation Master Plan (TMP) was adopted in January 2008. This comprehensive short and long-term transportation strategy will aid the Municipality in attaining its vision for future growth. The transportation requirements of pedestrians and cyclists are addressed at a general level in the Transportation Master Plan. The current Active Transportation agenda grew out of the TMP. The Chatham-Kent Trails Master Plan integrates work completed in the TMP, and further details trail network needs for pedestrians and cyclists.

Recreation Master Plan – Chatham-Kent is currently undertaking the development of a Master Plan for Parks and Recreation. This Plan looks ahead some twenty years to determine the community’s needs and priorities related to parks, recreation programs, open space and facilities for community residents. The Chatham-Kent Trails Master Plan is directly related to the forthcoming Recreation Master Plan.

There are also policies at the provincial level that have an impact on trails in Chatham-Kent. The Ministry of Health Promotion has a number of initiatives related to trails:

1. A review of legislation affecting trails in Ontario was undertaken by the Ministry of Health. The Draft Report was vetted by the Ontario Trails Council, the Directors’ Working Group on Trails and the Inter-ministerial Working Group for the Review of Legislation and comments were considered in the development of the Final Report.
2. The Ministry of Health Promotion is responsible for the Trails for Life (TFL) Grant Program, which distributes \$440,000 annually to selected applicants. The Ministry also oversees the Communities in Action Fund (CIAF), which operates a \$7.5 million fund with approximately \$2 million dedicated for provincial projects and \$5.5 million for projects with a regional or local scope. CIAF funds a range of activities that address healthy eating and active living including trail initiatives.
3. In October 2005, the Ministry of Health Promotion launched the Ontario Trails Strategy (OTS), along with \$3.5 million over five years for implementation. The OTS was developed by a wide spectrum of interests

including many government ministries and stakeholders through 23 external consultation sessions and a Minister's Advisory Committee. The OTS outlined five strategic directions for trails:

- 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.

Through the OTS and other initiatives affecting trails in Ontario, the Ministry of Health Promotion participates in land-use/built environment inter-ministerial working groups with the Ministry of Transportation, Ministry of Municipal Affairs and Housing, the Disability Directorate, Ministry of Public Infrastructure Renewal, Ministry of Aboriginal Affairs, and the Ministry of Natural Resources.

1.2 WHAT IS A MASTER PLAN?

Master Plans are long-range plans that integrate infrastructure requirements for existing and future land use with environmental assessment principles. These plans examine the entire infrastructure system as a group of related projects, or an overall system, in order to strategically plan out the future needs of the Municipality.

1.3 THE STUDY PROCESS

The approach to the Trails Master Plan was to meet the specific objectives established in the Terms of Reference and reflect the planning initiatives of the Municipality.

The study approach that led to the development of the Chatham Kent Trails Master Plan included the following:

Build on what has already been done

A significant amount of background trail master planning work had been undertaken in Chatham-Kent prior to the initiation of the Chatham Kent Trails Master Plan. Several years ago, a "grass-roots" trail initiative began in the municipality among those individuals and groups that had an interest in trail development. Local trail user groups have undertaken public consultation in recent years, and out of this important body of work came an inventory of existing trails, the formation of the Chatham-Kent Trail Council, recognition of the significance of trails by municipal officials and Council, and the development of a route network concept which included over 500km of potential trail routes.

Work with Stakeholders and Interest Groups

An integral component of the approach of the Chatham Kent Trails Master Plan relied on a consultation process that began with the knowledge of the people who live and work in Chatham-Kent, and those who will have to implement the results of the study. The study engaged all participants in the study: public, private, political and technical. Actively engaging stakeholders and the public to foster an understanding and commitment to the project was a vital element of the approach. The public outreach strategy began with an announcement/advertisement of the master



plan process, followed by the initiation of a web-based trail user survey. Public Open Houses in the municipality helped the study team reach a wide cross-section of the population.

Understand the Geography and Diversity of Chatham-Kent

Chatham-Kent is a large and diverse municipality, with urban centres separated by expanses of rural lands. The master plan provided a unified approach to trail development, while allowing for the unique aspects of the communities that make up the municipality to come through in the Chatham Kent Trails Master Plan.

Develop a Trail Designer's Toolbox

A key deliverable of the Chatham-Kent Trails Master Plan was the comprehensive set of trail design guidelines and standards. It was important to relay how trails should look and how they should be built. This applies not only to the trails themselves, but also to the other components of a trail system including signage and messaging to trail users, drainage, amenities, staging areas and trail access points, access control and road crossings to name a few.

A Hierarchy of Trails

Not all trails will be developed for all trail users in all areas of the municipality. An important component of the master plan is a guideline for a hierarchy of trails intended for different mixes of user groups in a variety of urban and rural settings across Chatham-Kent.

Creating Connections to the Trans Canada Trail

The Trans Canada Trail route has been designated and registered in the municipality. It forms an important spine to the trail network across the municipality and connects many of the urban centres. The Chatham-Kent Trails Master Plan recognizes the need for connections to this spine.

An Effective Implementation Plan

The implementation plan established annual priorities for trail development.

Dovetail with other Work

The approach took into account the objectives set out in the Community Strategic Plan, particularly the objectives of health, economy and environment. Other long-range planning initiatives were considered in the development of the Trails Master Plan, including the Official Plan and the Transportation Master Plan. The Transportation Master Plan considered on-road cycling. Although the Chatham-Kent Trails Master Plan focused primarily on the off-road routes, some connections were proposed using on-road routes. Trails are an important aspect of municipal recreation master plans and the Chatham-Kent Trails Master Plan has considered the importance and integration of recreational aspects. The Master Plan was developed in a manner so that it can be easily integrated with the Parks and Recreation Master Plan.

Develop an Administrative Strategy

Although the municipality currently has an administrative structure through the Active Communities Steering Committee to deal with the delivery of a trail system, the Chatham-Kent Trails Master Plan includes details for an alternative or "back-up" approach should the need arise. This alternative approach is based on an environmental scan of various administrative models currently in use, and was tailored to reflect Chatham-Kent's vast geography in such a way to ensure that local groups are properly represented yet enabled to maintain their local presence, and

also to ensure that trails remain in the forefront of the municipal agenda. The administrative hierarchy may also provide maximum ability and flexibility to access funding for trails at a variety of levels from municipal allocations, land development, as well as provincial, federal and corporate funding.

Promoting Trails

Trails in Chatham-Kent are not just about developing a network of routes. An important aspect to a good trail system is how the owner develops the “soft” side of the program related to trails and trail use. In Chatham-Kent, tourism and economic benefits of trails are important, and health promotion is critical. The Chatham-Kent Trails Master Plan includes recommendations to promote the trails in Chatham-Kent. In particular, it emphasizes the value of Active Transportation in a healthy community.

Monitoring, Maintenance and Risk Management

The municipality’s responsibility for trails does not end with the completion of trail construction. An important part of risk management is ongoing monitoring (inspection) and maintenance, to keep trails in top condition and optimize user safety. All elements of the trail system have an expected life span that can only be reached if they are monitored and cleaned/refinished/repaired/upgraded according to a schedule. A suggested monitoring and maintenance program has been prepared which can be further tailored to meet the needs of the Municipality.

Needs and expectations of various users have been balanced. Municipal resources and programs were investigated and revisions were made thoughtfully. This approach was based on the need to integrate the existing trail networks within the former municipal and county governments that comprise the Municipality of Chatham-Kent.

1.4 ORGANIZATION OF THIS REPORT

The Chatham-Kent Trails Master Plan has been designed to be a living document that is flexible and capable of evolving over time. It is intended to maintain and enhance existing programs and infrastructure, while guiding the development and implementation of new trail facilities and programs.

The Chatham-Kent Trails Master Plan Study Report includes the following chapters, which detail each of these key principles. The objectives and recommendations provide direction as to how each milestone of the plan can be established.

Chapter 1 provides an introduction to the study.

Chapter 2 outlines the need for a Trails Master Plan and provides information on the transportation, health, environmental and economic benefits of trail use.

Chapter 3 addresses the public consultation activities undertaken throughout the study process.

Chapter 4 addresses the trail network.

Chapter 5 provides information on trail design.

Chapter 6 provides the Implementation strategy. This chapter also discusses promotion and education and provides information on risk management.



Chapter 7 is a summary of recommendations from the entire Chatham-Kent Trails Master Plan.



2.0 THE NEED FOR A TRAILS MASTER PLAN

Residents throughout the communities of Chatham-Kent are demanding high quality recreation facilities close to home. In addition to traditional recreation facilities like swimming pools and sports fields, there is an expectation that Chatham-Kent should have a well designed and connected linear recreational trail system. There is also a growing proportion of the population that would like to travel on foot or by bicycle, or must travel by a mobility-assisted device. They too are looking for a linked linear system.

Several municipalities in Ontario have already developed trails master plans, and have been taking steps to implement their networks and supporting programs. Chatham-Kent has been doing the same, but with the disadvantage of not having an overall “Master Plan” in place to guide important decisions that will have long-term effects on the entire trail network.

The Chatham-Kent Trails Master Plan described in the chapters that follow, provides that vision. It is a long-range planning document that will guide Municipal Staff, Council, Developers, Agencies and other key stakeholders through the design, implementation and management of a comprehensive multi-use trail system throughout the entire municipality.

The Chatham Kent Trail Master Plan will benefit the community in many ways:

- It provides a communication tool that can be shared among various municipal departments so that implementation of a trail network can be coordinated with other initiatives related to transportation, recreation, tourism, land use and economic growth throughout the municipality;
- It communicates Chatham-Kent’s commitment to public health and active living;
- It communicates Chatham-Kent’s intent with respect to an integrated trail system;
- It sends a message to potential residents and business owners that Chatham-Kent is a desirable place to live, work, and play;
- It provides the basis for communication tools that can be provided to residents with an interest in trails for recreation and utilitarian purposes;
- It provides a vehicle by which points of cultural interest can be connected and highlighted throughout the municipality; and
- It communicates and provides the means to support a municipal objective to reduce the dependence on the automobile and provide viable transportation alternatives that are environmentally friendly and sustainable.

Across North America, the popularity of trails has been steadily increasing, and this trend is expected to continue. Some recent trends in recreation, tourism and transportation contributing to this appeal include:

- Staying healthy through active recreational pursuits;
- A renewed interest in spending “quality time” with family and friends pursuing high quality recreational experiences;



- A strong interest in tourism and recreational activities that respect the natural and cultural environments and offer educational opportunities;
- An interest in “getaway” travel where the goal is to obtain a high quality recreational experience for good value; and
- An increased interest in alternative modes of transportation including walking and cycling, both of which are well served by integrated trail systems.

In response to these trends, municipalities, agencies and independent organizations are planning, designing, implementing and promoting trail systems to meet the demand. Municipal Economic Development Departments are beginning to understand the economic benefit that well-planned trails systems can bring to their communities. Increased tourist traffic, better quality of life for residents, and the additional amenity that can help attract new commercial and industrial business are just a few of the benefits that trails bring to communities.

The Municipality of Chatham-Kent is no exception. There is a desire among staff, politicians and residents to develop a community trail system that is as integral to the community as the road system itself. Planning at this level fosters a good understanding of Chatham-Kent’s expectations regarding new development and provides an excellent marketing tool for the developers of new communities.

2.1 KEEPING PACE WITH THE DEMAND FOR TRAILS

Across Ontario, recreation trail use is recognized as one of the top three recreational pursuits, having a 20% participation rate and estimated annual growth rate of 2.3% (Ministry of Citizenship, Culture and Recreation, 2001). The demand for trail facilities across Ontario is very high. Trail and cycling clubs, conservation authorities, municipal and regional governments are all developing networks to encourage walking and trail use for recreation and transportation. At the provincial level, the Ontario Trails Council has developed the Trillium Trails Network that promotes the integration of community, city and municipal trail systems into a province-wide system. Also at the provincial level, several initiatives clearly indicate strong government support for trails. The Ontario Trails Strategy and the Active 2010 Ontario Trails Strategy by the Ministry of Health Promotion will have a positive impact on both urban and rural trails. At the national level the Trans Canada Trail is a 21,500-kilometre recreational trail winding its way through every province and territory, from the Atlantic to Pacific to Arctic Oceans. When completed, it will be the world’s longest recreational trail, linking close to 1000 communities and over 33 million Canadians. Today almost 70 percent (14,500 kilometres) is developed. Thousands of people are taking to the Trail to walk, hike, cycle, ski, horseback ride, canoe and snowmobile. The Trans Canada Trail provides resource support and funding opportunities for communities enroute.

2.2 VISION OF THE PLAN

The vision for the Chatham-Kent Trails Master Plan is:

“A continuous network of trails connecting people and places of interest in the Municipality of Chatham-Kent.”

2.3 GOAL AND OBJECTIVES

The Goal of the Chatham-Kent Trails Master Plan is:

“To develop a cohesive municipal wide trail system that will connect people and places through a network that is off-road wherever possible and supported by on-road links where necessary.”

A number of objectives have been outlined to support the goal of the Master Plan. They are:

1. Assess the current status of trails, their location, use and level of development.
2. Identify existing and future opportunities to link trails.
3. Provide mapping of existing and proposed trails.
4. Recommend appropriate trail uses/user groups and establish trail design guidelines for different types of trails in different locations.
5. Prioritize and assess trail development potential, and formulate cost estimates for the development and maintenance of the trail system in a manner that is feasible, realistic and affordable.
6. Make policy and process recommendations regarding trail development and acquisition of land for current and future trail development.

2.4 THE BENEFITS OF TRAILS IN CHATHAM-KENT

Promoting walking and cycling through the development of an integrated trail network can provide positive health, environmental and economic impacts. Providing options that will encourage people to reduce the use of personal automobiles, and to walk and cycle more can cut health care costs, help enable Canada to meet Kyoto obligations, and can help create sustainable, more liveable communities. Over the last ten years, the concepts of community trail networks and Active Transportation have been gaining popularity because of health, environmental, and economic benefits.

2.4.1 Active Lifestyles-Healthy Citizens

Sedentary lifestyles have serious health consequences. Almost half of Canadians age 12 and over report being physically inactive and 26% of youth between the ages of 2 and 17 are overweight or obese (Statistics Canada 2005). In Canada, the prevalence of obesity has more than doubled in the last 20 years (Katzmarzyk & Mason, 2006). Obesity is associated with serious health conditions, including increased risks of diabetes and cardiovascular diseases (CVD). Walking and cycling are both popular recreational activities and a means of transportation that are efficient, affordable, and accessible and promote healthy lifestyles. Increasing frequency of walking and cycling and reducing reliance on cars can lower the risk of obesity, lower the risk of hospitalizations from asthma and address other health conditions such as heart disease and Type 2 diabetes caused by inactivity. The following are some specific examples:



- The ability to walk or cycle safely in neighbourhoods is integral to being physically active, maintaining a healthy body weight, and increasing social interaction (Heart and Stroke Foundation of Canada, 2006);
- Trails are considered to be the safest and most preferred location to walk, cycle and use other non-motorized forms of recreation (Go for Green, National Active Transportation Survey, 2005);
- Exercise and health are seen by Canadians as the main benefit to walking and cycling. Practicality, convenience and pleasure are also frequently cited benefits (Go For Green, National Active Transportation Survey, 2005);
- A 5% increase in the walkability of a residential neighbourhood was associated with 32 more minutes of physically active travel per day (Frank, 2006a);
- Individuals who have access to trails increase their recreational activity on average by 44% (Irish Trail Strategy, 2006);
- Policy changes at the local level have the potential to encourage increased physical activity over the long term by making active transportation an easier choice for residents (World Health Organization, 2006);
- One study has estimated that 40% of chronic illness could be prevented by regular physical activity and suggested that urban planning could offer opportunities for increased physical activity by creating walking and cycling alternatives, such as trails, to motorized transportation (Heart & Stroke Foundation of Nova Scotia, 2004);
- Canada's 2005 Physical Activity Monitor found that the top three preferred physical activities among Canadian youth are walking (66%), jogging or running (56%), bicycling (49%) (Canadian Fitness and Lifestyle Research Institute, 2005); and
- Mixed land uses, well-connected streets, trail and sidewalk networks that promote a supportive walking and cycling environment can help to increase resident's health by affecting their travel behaviour to include more active transportation modes (Frank, Kaveage & Litman, 2006).

2.4.2 A Greener Chatham-Kent

Canadians view environmental quality as an important factor influencing their personal health. The transportation sector is a major source of air pollution in Canada. Transport Canada (2006) identified that urban passenger travel created almost half of the greenhouse gas emission of Canada's transportation sector, which in turn produces about one quarter of Canada's total. Providing infrastructure that supports alternative modes of transportation, such as an integrated trail network for walking and cycling, can reduce vehicle traffic volumes. Reducing the amount of vehicle travel will reduce pollution emissions. Roadways can carry 7 to 12 times as many people per lane per hour by bicycle compared to that of motor vehicles in urban areas. Some specific examples include:

- Walking and cycling curb greenhouse gas emissions and global climate change and save valuable green space (National Active Transportation Roundtable, 2003);
- The ecological footprint is a measure of human demands on natural resources such as land, water and air, and is reduced when people choose to travel by walking and cycling. "The greatest contributing factor to a large ecological footprint is carbon intensive fuel supplies for transportation, electricity and heating" (Ontario College

of Family Physicians, 2005, p. 20). Cycling and walking have negligible effects on the size of the ecological footprint;

- The average Greenhouse Gas intensity for light duty vehicles was 295 grams CO₂ per km in 2005. Promoting trail use, especially walking and cycling, can produce significant greenhouse gas emission reductions, approximately 1KT of CO₂ for each 3,500 km of trail use;
- Compact communities with mixed land use serviced by trails will increase active transportation choices, decrease the need to drive to daily destinations and will decrease the vehicle emissions that contribute to air pollution (CMHC, 2006);
- On-road routes as a means of connecting off-road trails, can reduce road congestion and maintenance costs. These connections also allow for an increase in trails use for recreational as well as utilitarian purposes;
- On-road routes may contribute to increased safety for pedestrians by providing a paved shoulder for cyclists. Paved shoulders also prove to be more cost effective as opposed to adding new auto lanes;
- Cycling and walking cause little or no congestion and result in no greenhouse gas emissions. Opportunities to walk and cycle on trails are considered environmentally positive; and
- There is strong evidence that given complete networks of high-quality cycling routes, a significant number of people will cycle, as demonstrated in Davis, California and Boulder, Colorado. With 20% of trips by bicycle, these communities have the highest levels of bicycle usage in North America. This high level of cycling is facilitated by mature networks, which include bike lanes on almost all arterial roads and extensive off-road commuter bicycle paths. Residents can simply get on their bicycles with confidence knowing there will always be a safe route to their destination (British Columbia Cycling Coalition Budget Submission, 2007).

2.5 ECONOMIC DEVELOPMENT AND TOURISM

Trails across North America have created numerous benefits and opportunities for the communities that they pass through. Communities benefit from trail development through increases in business activity, and by providing services to an increasing number of trail users.

In order to identify tourism opportunities, and to recognize the types of businesses, services and amenities that users will demand, it is important to also acknowledge the preferences and characteristics of trail users. Gaining an understanding of these preferences and characteristics could assist in developing a tourism development strategy and plan that markets trail use in Chatham-Kent.

A 2004 comprehensive study completed by PriceWaterhouseCoopers investigated the economic benefits of developing trail systems as part of a study to project the economic benefits of developing the Trans Canada Trail in Ontario. Some of the information collected regarding economic benefits to other jurisdictions included the following:

- A study of the "T" Railway in Newfoundland (2002) found that the total annual economic impacts associated with this trail are estimated to be as high as \$17.4 million in new income generated, upwards of 850 new jobs and millions of dollars in additional taxation revenue for both the provincial and federal governments;
- A survey of users of the Georgian Trail in Collingwood, Ontario estimated that the direct expenditure associated with the trail users was \$5.2 million in 1999; and



- The Economic Impact Study for the Allegheny Trail Alliance (1999) found that trail business accounts for more than 10% of annual receipts for a third of business respondents in the region, and that approximately half of all businesses in the area have plans to expand their business as a result.

There is ample evidence that trails provide significant economic benefits for adjacent landowners and local businesses. Trails provide benefits to the local economy during both construction and operation. Trail construction results in direct benefits such as jobs, including the supply and installation of materials. Following construction, benefits emerge in the form of expenditures by trail users. A few examples include:

- Trails in New Brunswick employ around 1500 people for an average of six months per year;
- 70% of users of the Bruce Trail cite the trail as the main reason for visiting the area. They spend an average of about \$20.00 per user per visit within a 10 km corridor on either side of the trail;
- The Riverwalk is considered the anchor of the tourism industry in San Antonio, Texas and contributes \$1.2 billion annually to the local economy;
- In 1988, users of the Elroy-Sparta Trail in Wisconsin averaged expenditures of USD \$25.14 per day for trip-related expenses for a total of over \$1.2 million annually;
- More than 600,000 Americans took a bicycle vacation in 1985, and when travelling in a group, spent \$17 per day camping or \$50 per day staying in motels. Cyclists travelling alone spent an average of \$22 per day camping or \$60 per day staying in motels;
- In Ontario, the Eastern Ontario Trails Alliance estimated that at the end of a 10 year build-out period, 320 km of their system, constructed at a cost of \$5.4 million will generate approximately \$36 million in annual economic benefits in the communities through which it passes, and create or sustain over 1100 jobs; and
- In Surrey, British Columbia a 2001 study compared the impact to single-family property values over 20 years for properties that bordered a greenway or trail versus properties that did not. The study found that introducing a greenway in four Surrey neighbourhoods increased property values bordering the trail by 1% to 10%, and did not result in any measurable increase in crime (City of Surrey, 2001)

Trail systems can have varied levels of attraction for tourists. They can be travel destinations in themselves, encouraging visitors to extend their stay in the area or enhancing business and pleasure visits. By increasing the “level of tourist draw”, travellers can be expected to stay longer, resulting in an additional night’s lodging and meals, a major direct new benefit to local businesses.

2.5.1 The Role of Trails in Chatham-Kent’s Tourism Strategy

In addition to providing a highly valued amenity to residents of the Chatham-Kent, developing and marketing a trail system forms one part of a broader economic development strategy, as it markets trails as one of the many benefits available to new residents and businesses thinking about locating in Chatham-Kent, and further encourages tourism.

Tourism and recreation are important to the economic development and social fabric of Chatham-Kent. The Municipality is rich in cultural and recreational opportunities. An integrated and linked trail system will help connect cultural and recreational features and continue to attract tourists.

Assisting in the effort to draw in tourists is the Chatham-Kent portion of the Trans Canada Trail. There are 205 kilometres of trails designated through the municipality. The planned Tecumseh Parkway would also further promote tourism in the area, by providing a 70 km (approximately) long parkway with bicycle lanes along roads paralleling the Thames River, ultimately connecting with local trail networks. Chatham-Kent could also create and implement tourist events based on trail use. One such example is the Greater Niagara Circle Route, which draws thousands of participants to the Niagara Region to cycle on an annual basis.

Locally, Chatham-Kent's Economic Development Strategy Update (2007) identified tourism as one avenue for economic diversification in the municipality. Upcoming celebrations related to the War of 1812 along with significant black history are two unique attributes that give visitors a compelling reason to visit Chatham-Kent. Chatham-Kent also possesses some unique strengths related to agri-tourism, world-class fishing and birding.

The concept of **Ecotourism** has become very popular in recent years, and at present the ecotourism market is growing rapidly, perhaps more quickly than any other sector of the tourism industry. Ecotourists often seek out experiences that provide opportunities to learn about an area's natural and cultural history, and they generally stay longer and spend more money at their destinations than more traditional sightseeing tourists. Chatham-Kent is considering developing its ecotourism opportunities, and many if not all ecotourism activities are very well suited to take place on, around, or in association with trails.

At a more regional level Carolinian Canada Coalition is launching "Caring for Our Coast" in October 2009. The goal of this Lake Erie Community Stewardship Trail Project is to promote enjoyment, understanding and stewardship of the coast by engaging residents, communities and visitors in planning and using a Lake Erie Community Stewardship Trail Network. The development of the trail concept will rely on linking existing trails with potential new trails, and the involvement of trail users and trail groups in this project will be key to developing a concept and trail plan which will suit the needs of trail users, communities, and conservation efforts.





3.0 LEARNING FROM CHATHAM-KENT'S CITIZENS

An important aspect in developing the Chatham-Kent Trails Master Plan was to obtain input from stakeholders and the general public. Throughout the course of the study, the study team received many helpful suggestions. Comments regarding the network, maintenance and monitoring, the promotion and encouragement of trail use were evaluated in the context of the objectives and guiding principles. Where possible, suggestions were integrated into the Chatham-Kent Trails Master Plan.

3.1 CONSULTING KEY STAKEHOLDERS

The Project Steering Committee provided guidance to the consulting team throughout the study. Steering Committee meetings were held at critical junctures in the development of the Trails Master Plan. Meetings were used as a venue to present findings, solicit input and conduct working sessions related to specific aspects of the plan. Recognizing that there had been a considerable amount of work already in progress or completed that related to trail planning in Chatham-Kent, individuals who had this knowledge/ high level of involvement were asked to participate on the Steering Committee. Where appropriate, these individuals reported back to their local organizations (i.e. local trail clubs), and municipal departments regarding the master plan study.

The Steering Committee included representation from:

- Chatham-Kent Trails Council;
- South Kent Trails;
- Residents at large from various communities across Chatham-Kent;
- Chatham-Kent Council; and
- Staff representatives from Community Development and Planning, Infrastructure and Engineering, Chatham-Kent Public Health.

3.2 ONLINE SURVEY

In order to better understand public attitudes towards trails and trail usage within Chatham-Kent, an online web-based survey was developed and deployed as part of the public consultation strategy for the Chatham-Kent Trails Master Plan study. The survey sought to engage the public and stakeholders and obtain their views on what an appropriate trail system for Chatham-Kent should look like. The survey was posted in November 2007 and was available to respondents until June 2008. A total of 274 responses were received during this time. This section discusses some of the key findings that support the development of the Trails Master Plan and highlight locations in Chatham-Kent where trail development should be focused.

The survey provided information on general attitudes towards trail use in Chatham-Kent. Although it was not designed to be statistically valid, the survey was very useful for informing the study team and identifying additional candidate routes for investigation in the field. The survey revealed that many residents recognize the benefits of trails and support the municipal investment to improve trail infrastructure in Chatham-Kent, and may be encouraged to use trails more often if improvements were made and more trails were linked. Respondents also recognized some



significant challenges in developing a municipal-wide trail system throughout Chatham-Kent. The survey results provided the study team with useful information including:

- Frequency of use;
- How respondents perceived the trails;
- Types of uses that should be encouraged on Chatham-Kent's trails;
- Perceived challenges and opportunities to improve the trail system; and
- Locations for new trails and missing links.

Several questions required respondents to rank statements related to a similar theme in order of agreement or preference. For example:

“Please rank from most important to least important the reasons why you think a trail system for Chatham-Kent should be developed.”

The choices or statements included:

- To provide places to walk and cycle within communities;
- To improve the quality of life and health of Chatham-Kent residents;
- To provide access to natural areas;
- To connect communities to each other;
- To provide access to historic/cultural destinations and support tourism;
- To provide designated routes for recreational motorized uses such as ATV's;
- To improve walking and cycling routes as transportation options; and
- Other (please specify).

Results were summarized in tabular format indicating response percentages and rating averages. The percentages that are shown in the table are to be read across the rows and relate to the response count (i.e. number of respondents relative to the total number of responses that ranked an individual statement as most important, second most important and so on, to the least important). The rating average gives the statement a score relative to the scores of other statements included in the question and the rating average relates to the levels of agreement presented in the question. The lower the rating average, the higher the relative level of agreement to the statement presented, the higher the score, the lower the relative level of agreement to the statement presented.

3.2.1 Survey Results

Question 1 queried the public's attitude towards expanding the existing Chatham-Kent Trails Network with the following question:

“Are you in support of the Municipality of Chatham-Kent developing an expanded and better connected trail system in Chatham-Kent?”

Ninety eight percent indicated that they either strongly agreed or agreed with the expansion of the trail network while less than one percent disagreed, with a similar amount not having any opinion (refer to Figure 3-1).

Several questions required respondents to rank statements related to a similar theme in order of agreement or preference



Figure 3-1

| 1. Are you in support of the Municipality of Chatham-Kent developing an expanded and better connected trail system in Chatham-Kent? (please select one of the following) | | | Response Percent | Response Count |
|--|--|--|--------------------------|----------------|
| Strongly Agree |  | | 85.4% | 229 |
| Agree |  | | 13.1% | 35 |
| Disagree |  | | 0.4% | 1 |
| Strongly Disagree |  | | 0.4% | 1 |
| No opinion |  | | 0.7% | 2 |
| | | | answered question | 268 |
| | | | skipped question | 3 |



Abandoned railway line along north side of Wheatley Area Community Centre, Wheatley



Trail along Grand Avenue, Chatham



St. Clair Marshes National Wildlife Area



Trail in Tilbury Northside Park, Tilbury



Question 2 examined the frequency of use of the existing trails in the Chatham-Kent Network, and asked respondents the following question:

“How often do you typically use existing trails in Chatham-Kent?”

The results, in Figure 3-2, show that daily usage was reported by 11.9% of respondents, while 24.9% and 26.1% of respondents indicated that they use the existing trails in Chatham-Kent 1 to 2 days a week and month, respectively. In other words, almost 65% of respondents indicated that they currently used Chatham-Kent’s trails at least 1 to 2 days per month.

Figure 3-2

| 2. How often do you typically use existing trails in Chatham-Kent? | | | Response Percent | Response Count |
|--|--|--|------------------|----------------|
| Daily | | | 11.9% | 31 |
| 1 to 2 days a week | | | 24.9% | 65 |
| 1 to 2 days a month | | | 26.1% | 68 |
| 1 to 2 days a year | | | 20.7% | 54 |
| Never | | | 16.5% | 43 |
| answered question | | | | 261 |
| skipped question | | | | 10 |



Trail along Brown’s Drain, Chatham



Pedestrian Bridge, Wallaceburg



Trailhead at the Spicebush Trail, Rondeau Provincial Park



Uncle Tom’s Cabin, Dresden



Question 3 (Figure 3-3) asked respondents to rank types of uses (1 = ‘most important’ to 6 = ‘least important’) that should be considered for Chatham-Kent’s trails. The highest level of agreement was with ‘walking / hiking’ with a rating average of 2.25. In other words, most respondents believe that walking is the first, second or third most important use to be considered on Chatham-Kent’s trails. Cycling received the second highest rating average with a score of 2.72 and ‘cross-country ski/snowshoeing’ was next with a rating average of 3.49. Although ATV use received a rating average of 3.71, a high percentage of respondents chose it as their “#1” or “most important” use. A comparison of “most important” uses (column 1) suggests that ATV is second with 28%, or 67 of 236 respondents indicating it is the most important, whereas walking/hiking is was most important to 103 of 236 (44%) of respondents. A closer look at the ATV rating average (row 3) reveals that respondents were either of the opinion that it was most important (67 of 221), or least important (70 of 221). This divergent opinion results in the lower rating average. Further detail regarding trail users groups and their needs is presented in Chapter 5, the Trail Designer’s Toolbox.

Figure 3-3

| 3. Please rank from most important (1) to least important (6) the types of uses you think should be considered in the development of a comprehensive trail system for Chatham-Kent: | | | | | | | | |
|---|-------------|------------|------------|------------|------------|--------------------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | Rating Average | Response Count |
| Walking/hiking | 48.1% (103) | 22.4% (48) | 11.2% (24) | 3.7% (8) | 3.7% (8) | 10.7% (23) | 2.25 | 214 |
| Equestrian (horsemanship) | 4.2% (8) | 11.1% (21) | 12.6% (24) | 29.5% (56) | 26.3% (50) | 16.3% (31) | 4.12 | 190 |
| All Terrain Vehicles (ATVs) | 30.3% (67) | 6.8% (15) | 4.5% (10) | 10.4% (23) | 16.3% (36) | 31.7% (70) | 3.71 | 221 |
| Cross-Country Ski/Snowshoeing | 2.9% (6) | 10.6% (22) | 45.4% (94) | 21.3% (44) | 15.0% (31) | 4.8% (10) | 3.49 | 207 |
| Cycling | 16.4% (38) | 41.4% (96) | 17.7% (41) | 7.3% (17) | 12.5% (29) | 4.7% (11) | 2.72 | 232 |
| Other (rank) | 17.3% (14) | 3.7% (3) | 12.3% (10) | 17.3% (14) | 14.8% (12) | 34.6% (28) | 4.12 | 81 |
| | | | | | | Other (please specify) | | 44 |
| | | | | | | answered question | | 261 |



Abandoned Railway Line, Ridgetown



Mud Creek Trail, Chatham



Respondents were asked in **Question 4** to rank from most often to least often, the reasons that they would use Chatham-Kent's trails. The top three responses as indicated in Figure 3-4, were 'enjoyment of natural environment' with a rating average of 2.23, 'recreation/ fitness' with a rating average of 2.43 and 'travelling to visit family/friends/ shopping/errands' with a rating average of 3.51. 'Tourism' and 'commuting to work or school' had lower rating averages of 3.59 and 3.91 respectively.

Figure 3-4

| 4. Rank from most often (1) to least often (6) the reasons that you would like to use a trail in Chatham-Kent: | | | | | | | | |
|--|------------|------------|------------|------------|------------|--------------------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | Rating Average | Response Count |
| Enjoyment of natural environment | 41.6% (92) | 27.6% (61) | 13.1% (29) | 7.7% (17) | 4.1% (9) | 5.9% (13) | 2.23 | 221 |
| Tourism | 3.6% (7) | 14.4% (28) | 31.4% (61) | 25.8% (50) | 19.1% (37) | 5.7% (11) | 3.59 | 194 |
| Travel to visit family/friend/shopping/errands | 3.6% (7) | 19.3% (37) | 26.0% (50) | 29.7% (57) | 16.7% (32) | 4.7% (9) | 3.51 | 192 |
| Recreation/fitness | 38.6% (90) | 27.0% (63) | 10.7% (25) | 8.2% (19) | 6.9% (16) | 8.6% (20) | 2.43 | 233 |
| Commute to work/school | 10.9% (20) | 10.9% (20) | 14.2% (26) | 15.8% (29) | 36.1% (66) | 12.0% (22) | 3.91 | 183 |
| Other (please rank) | 16.7% (9) | 3.7% (2) | 3.7% (2) | 5.6% (3) | 13.0% (7) | 57.4% (31) | 4.67 | 54 |
| | | | | | | Other (please specify) | | 12 |
| | | | | | | answered question | | 253 |
| | | | | | | skipped question | | 18 |



Buxton National Historic Site



CSX railway line at Tupperville



Two Creeks Conservation Area, Wheatley



Victoria St., Thamesville

“Trails allow people to get out and appreciate the area’s natural resources”

.....Chatham-Kent Resident

Question 5 asked respondents to rank the 8 reasons why a trail system for Chatham-Kent should be developed (1 = ‘most important’ and 8 = ‘least important’). Figure 3-5, presents the top three reasons as:

- ‘To improve quality of life and health of Chatham-Kent residents’ (rating average of 3.15),
- ‘To provide places to walk and cycle within communities’ with a rating average of 3.17 and
- ‘To provide access to natural areas’ with a rating average of 3.93.

Similar to question 3, when the list of uses for “top reasons” (column #1) are compared among each other, a high percentage of respondents felt that providing designated routes for recreational motorized vehicles such as ATV’s was the most important. Of the 224 responses for “most important”, 68 or 30.3% selected “provide designated routes for recreational motorized vehicles such as ATVs”. This was mirrored by a high percentage of respondents who felt “provide designated routes for recreational motorized vehicles such as ATVs” was “least important” (56 of the 125 who made an entry in column 8, or 44.8%). These strongly polar opinions contribute to the rating average of 4.54.

Figure 3-5

| 5. Please rank from most important (1) to least important (8) the reasons why you think a trail system for Chatham-Kent should be developed: | | | | | | | | | | |
|--|------------|------------|------------|------------|------------|------------|------------|--------------------------|----------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Rating Average | Response Count |
| To provide places to walk and cycle within communities | 29.1% (60) | 23.3% (48) | 13.6% (28) | 6.3% (13) | 7.8% (16) | 8.7% (18) | 5.8% (12) | 5.3% (11) | 3.17 | 206 |
| To improve quality of life and health of Chatham-Kent residents | 25.6% (55) | 27.4% (59) | 13.0% (28) | 9.8% (21) | 7.0% (15) | 5.6% (12) | 5.1% (11) | 6.5% (14) | 3.15 | 215 |
| To provide access to natural areas | 4.4% (9) | 13.3% (27) | 29.1% (59) | 20.2% (41) | 16.3% (33) | 8.9% (18) | 3.9% (8) | 3.9% (8) | 3.93 | 203 |
| To connect communities to each other | 2.6% (5) | 6.7% (13) | 13.5% (26) | 20.2% (39) | 24.9% (48) | 16.6% (32) | 13.0% (25) | 2.6% (5) | 4.73 | 193 |
| To provide access to historic/cultural destinations and support tourism | 1.0% (2) | 6.5% (13) | 10.1% (20) | 22.6% (45) | 19.1% (38) | 28.1% (56) | 11.1% (22) | 1.5% (3) | 4.88 | 199 |
| To provide designated routes for recreational motorized uses, such as ATVs | 31.1% (68) | 5.9% (13) | 3.7% (8) | 6.4% (14) | 7.8% (17) | 5.9% (13) | 13.7% (30) | 25.6% (56) | 4.54 | 219 |
| To improve walking and cycling as transportation options | 9.1% (19) | 16.7% (35) | 17.7% (37) | 13.4% (28) | 12.0% (25) | 14.4% (30) | 14.8% (31) | 1.9% (4) | 4.14 | 209 |
| Other (please rank) | 11.5% (6) | 3.8% (2) | 0.0% (0) | 3.8% (2) | 3.8% (2) | 5.8% (3) | 25.0% (13) | 46.2% (24) | 6.33 | 52 |
| | | | | | | | | Other (please specify) | | 11 |
| | | | | | | | | answered question | | 250 |
| | | | | | | | | skipped question | | 21 |



Question 6 (Figure 3-6) asked respondents to provide their opinion regarding the priority for trail development in Chatham-Kent. Specifically, respondents were asked if trail development priority should be focused on the urban areas, rural areas or balanced between urban and rural. 'Balance of urban/rural' received a rating average of 1.76, followed by rural (1.87), then urban (2.15).

Figure 3-6

| 6. Where do you think Chatham-Kent should initially focus its efforts in developing new trails? Please rank from most important(1) to least important(6): | | | | | |
|---|------------|------------|------------|----------------|----------------|
| | 1 | 2 | 3 | Rating Average | Response Count |
| Urban areas | 30.8% (60) | 23.1% (45) | 46.2% (90) | 2.15 | 195 |
| Rural areas | 39.7% (81) | 33.3% (66) | 27.0% (55) | 1.87 | 204 |
| Balance of Urban/Rural | 43.8% (99) | 36.3% (82) | 19.9% (45) | 1.76 | 226 |
| <i>answered question</i> | | | | | 249 |
| <i>skipped question</i> | | | | | 22 |

Question 7 was open-ended and asked respondents what they thought were the main challenges that needed to be overcome for the successful development of an expanded trail network. Overwhelmingly, the top challenge identified was the cost to implement and maintain the trail system, and the political will to undertake the initiative and subsequent commitment to funding. Other key challenges identified were:

- Difficulty in creating a continuous off-road network, in addressing concerns of adjacent private landowners, and in making arrangements with private landowners where the best/most desirable/only route crosses private land;
- Communicating to the public and gaining support for the development of trails as a worthwhile initiative from a number of points of view including economic benefits, public health and quality of life;
- The ability to get various partners with interests in trails throughout the municipality to work together; and
- Balancing the development of trails effectively across the entire geography of the municipality.

Question 8 was also open-ended and asked respondents to provide suggestions for the three most important locations or corridors where new trails or missing links in existing trail networks should be provided. Suggestions were used to inform the study team of additional candidate routes for investigation in the field, and a number of these were carried through to the proposed Trail Network (Chapter 4), and the Implementation Strategy (Chapter 6) of this report. The list of suggestions varied, both in terms of the extent and geographic location, but some common themes emerged. Common themes included:

- Developing a continuous trail system along the Thames River;
- Creating trails using abandoned railways lines;
- Linking communities within the Chatham-Kent area to one another; and
- Linking existing trails within Chatham-Kent.

3.3 PUBLIC OPEN HOUSE

A Public Open House was held on July 3rd (11am-9pm) and July 4th (12pm-8:30pm) at Chatham-Kent's Rotary Ribfest event in Tecumseh Park, Chatham. A set of displays was prepared which summarized the study process by generally providing highlights from each of the chapters of the draft report. The displays included a set of maps illustrating the existing and proposed routes by facility type for the entire municipality, plus enlargements for each of the urban areas. Each map included a description of key elements of the proposed trail network and potential priorities for implementation. One representative of the consultant team was in attendance for the duration of the event and was accompanied by members of the steering committee at different times. It was estimated that over 300 people reviewed the displays and/or spoke with one or more of the project representatives. Comment forms were available and 128 were filled out and returned. The following is a brief summary of responses:

General Comments

- 125 of 128 (97.6%) agreed that developing trails in Chatham-Kent is a good idea, 2 were unsure (1.6%), 1 disagreed (0.8%).
- Many were of the opinion that Chatham-Kent is behind many municipalities with initiatives to develop trails and cycling routes, and they were very pleased to see that the Master Plan was being undertaken. Several remarked "the sooner the better" and "this should have been done years ago".
- Many were of the opinion that improved trails and cycling facilities will improve safety and that giving children options to get safely to school is important.
- Many expressed a desire for the municipality to develop continuous routes, and noted that linking existing trails should be a priority.
- "Trails allow people to get out and appreciate the area's natural resources" (natural heritage).
- "Trails provide an outlet for fitness and will improve the health of residents".

Trail Planning and Design

- "Follow examples from other cities that have done a good job like London, Ontario".
- Signage should include information about trail length, where one is along the trail and where the next off road link is located.
- Rest areas and washrooms should be included along the trail.
- Trails should be located close to plazas and restaurants.
- Trails should be included in the development of all new subdivisions.
- Trails should highlight community features.
- A trail is needed in every community, it promotes healthy living, attracts tourists and creates a connection between communities.
- Some trails should be developed for in-line skaters with a smooth asphalt surface.
- Make rural trails available to ATV's, snowmobiles and equestrians as well as hikers and cyclists.
- Take ownership of abandoned rail lines before they are broken up and sold to individual land owners.
- If abandoned railway lines are used in rural areas, make sure that adjacent landowners' rights are respected, and make sure that access is maintained along or across the rail line where it has been available in the past.



Priorities for Trail Implementation

- Water routes could be easily incorporated.
- Current trails are discontinuous and linking and upgrading existing trails should be a priority.
- Priority should be put on routes to schools where no sidewalks currently exist.
- Make sure trail and/or cycling facilities are built when new roads are being constructed or roads are being upgraded so that opportunities aren't lost.

Promoting Trails and Encouraging Trail Use

- Trails provide a good alternative to transportation by car. A number of respondents noted that they would ride to work more if there were better facilities such as more paved shoulders and bike lanes, especially on main roads.
- Provide a dedicated website that encompasses all trails and cycling routes in Chatham-Kent with useful links to other sites.
- Utilize signs, websites, brochures, maps, local shops (bike shops), advertising, special events, competitions, and corporate sponsorship to promote trails.
- Develop a database of contact information for people who are interested in becoming involved as volunteers.
- Education is required where bikes use crowded streets.
- A well developed trail system may help to attract more young people to settle in the area and help retain current residents.



Open House in Tecumseh Park, Chatham (July 3 and 4, 2009)



Trails in Ridgetown



South Point Trail, Rondeau Provincial Park



4.0 THE TRAIL NETWORK PLAN

4.1 INTRODUCTION

This chapter of the Chatham-Kent Trails Master Plan describes the details of the proposed trail network. It provides a summary of the inventory of existing trails, trail opportunities and barriers, the network development approach, guiding principles for route selection, the proposed network, the network hierarchy and facility types. This chapter is complemented by [Chapter 5](#) which provides details regarding proposed trail types, and [Chapter 6](#) which outlines a recommended phasing and implementation plan for the network.

4.2 NETWORK DEVELOPMENT PROCESS

An iterative process was used to develop and refine the trail network recommended in the Master Plan. This process included the following steps.

- 1) **Inventory of Existing Conditions:** using the Municipality's Geographic Information System (GIS) database, this included a compilation of digital mapping and background documents for existing or previously planned trails, existing walking routes, future development areas etc. within the municipality.
- 2) **Develop Network Guiding Principles:** Guiding Principles were established, which help to translate the vision into the trail hierarchy concept, and the trail design guidelines for the various types of trails in different locations.
- 3) **Consultation** with the Project Steering Committee, stakeholders and the public to receive feedback on the network vision, guiding principles, existing trail resources, trail user needs and potential trail routes.
- 4) **Develop a Network of Candidate Routes** to be examined in the field and considered for inclusion in the recommended network.
- 5) **Network Analysis** which involved studying the Municipality's high resolution aerial imagery and field investigation of potential routes.
- 6) **Recommend Facility Types** for each of the on and off-road route segments that together form the comprehensive network.
- 7) **Develop the Phasing Plan** for the staged implementation of the trail network.
- 8) **Review and Consultation** with the Steering Committee and with the public to receive feedback on the recommended network, facility types and implementation plan.
- 9) **Finalize the Network, Facility Types and Phasing** based on feedback from the Steering Committee and public.



4.3 INVENTORY AND ANALYSIS

This section describes the current status of trails in Chatham-Kent. It provides a summary of observations and data collected by the study team regarding existing trails, trail uses and users, destinations and barriers. This information was gathered from existing reports, tourism mapping, and detailed field investigations. In addition, the public provided the study team with input throughout the study regarding the condition of trails, the positive and negative aspects of the existing trail system, and opinions regarding improvements that should be made. As the network was developed, stakeholders and the general public provided opinions about route preferences and construction priorities.

Preliminary investigations of existing and potential trails were completed using aerial imagery and GIS mapping data provided by Chatham-Kent. Field work to confirm the status of existing trails, and to identify future trail opportunities and potential connections to adjacent municipalities, was then conducted. Communities across the municipality have been developing their own trails over time and the Master Plan represents the first step in bringing the variety of trails and trail experiences together. As part of the Master Plan field work, a photographic inventory was undertaken to document many of the aspects of Chatham-Kent's existing trails, potential trail opportunities and challenges. **Figures 4-1 and 4-2** illustrate just a few of these.



Figure 4.1 Existing Trails in Chatham-Kent

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| <p>A portion of Chatham-Kent's Trans-Canada Trail passes through Fairfield, a site of national historic significance. The site is also envisioned as an important node along the Tecumseh Parkway, a cultural heritage initiative that is currently in the feasibility planning stages.</p> | <p>The existing multi-use trail along parts of Grand Avenue in Chatham is a well used route that provides convenient access to many of the commercial and institutional destinations in the area. It is also one of several locations in the city where users can experience the Thames River waterfront.</p> |
| | |
| <p>The Erieau Marsh Trail was formally opened in 2008. This trail link follows the long-abandoned railway line between Erieau and Blenheim. The trail provides some excellent wildlife viewing opportunities on the north side of Rondeau Bay and represents many hours of negotiations with local land owners and hard work by the local trail organization.</p> | <p>The Trillium Trail in Dresden is located in downtown parkland that abuts the Sydenham River. The combination of an off-road trail and a route following Dresden's quiet neighbourhood streets offers an excellent self-guided interpretive walk that profiles the community's interesting history.</p> |



Figure 4.2 Opportunities and Challenges to Developing a Trail Network in Chatham-Kent



Railway lines such as the main CN line through Chatham are often significant barriers to trail users. The well-worn footpath over the CN line at the foot of Merritt Avenue has evolved informally over time, and is heavily used today. This mid block point between Keil Drive and Lacroix Street is a strong “desire-line” connection between the residential neighbourhood off Wedgewood Avenue and the Richmond Street commercial area. Formalizing this trail connection would greatly improve safety and create a strong link in the local network.



If it were developed into a continuous loop, a waterfront promenade in Wallaceburg could become the central feature of the local trail system, and an attraction for residents on an evening stroll as well as visitors to the community.



The abandoned CSX railway is being used by pedestrians and cyclists today as indicated by a well worn footpath along the side of the tracks. The trestle over the Thames River has a service walkway integrated into the structure that, with some adaptive engineering could become the key trail connection in east Chatham, and part of a city-wide trail loop. It is the only link over the Thames between downtown (Fifth Street) and Communication Road.



The Talbot Trail, pictured here west of Port Alma, is a popular cycling route for local and touring cyclists. The route hugs the north shoreline of Lake Erie, providing some spectacular scenery, access to significant cultural resources, and numerous small markets featuring locally grown fruits, vegetables and baked goods. The addition of a paved shoulder and strong promotion of this route could make the area part of an international cycling destination, not unlike routes along the Welland Canal and Niagara River in Niagara Region.



Trail routes that were in existence at the time the study was undertaken and included in the recommended trail network are illustrated in [Figures 4-3 through 4-10](#). This information was gathered from a number of sources including background digital data, plans for newly constructed and registered subdivisions, information gathered during field reviews, and additional routes identified by municipal staff, stakeholders and the public. The information was organized according to the following categories:

Existing Trails or Walkways consisting of those routes that are formally recognized by the Municipality as trail and designated walking routes. This includes trails that have been designed and constructed in municipal parks, and scenic or historic walking routes identified in the urban centres. Examples include the Brown Drain and Mud Creek trails in Chatham, trails in Memorial and Odette Park in Tilbury and the Millennium Trail in Dresden. Also included within this group are trails on public lands (other than those owned by the Municipality), and privately owned lands where public access is permitted. Examples of these include the trails in Rondeau Provincial Park, the St. Clair National Wildlife Area and Wheatley Provincial Park. Finally, existing public trails in adjacent municipalities which connect to Chatham-Kent are included in this group, such as the Trans Canada Trail where it enters the municipality near Clearville and exits the municipality in Wheatley.

Existing and Proposed On-road Bicycle Routes includes on-road cycling facilities that were in place or formally approved when fieldwork for the Trail Master Plan was conducted. There were no existing on-road bicycle routes within Chatham-Kent when the inventory was conducted and planned routes used in the analysis were derived from the recently approved Transportation Master Plan.

Trail Development Opportunities include unopened road rights-of-way and abandoned railway corridors under public ownership. Examples of these include the abandoned CSX Line running north out of Chatham to Dresden and Wallaceburg, the abandoned rail line in Wheatley which provides the opportunity for a connection to Two Creeks Conservation Area, informal trail routes such as the walking loop around the sewage lagoons west of Blenheim, and crossings of key barriers, such as the informal crossing of the Thames River in east Chatham between Stanley and Grand Avenue. The ownership of some of the abandoned railway corridors was uncertain at the time the study was undertaken, therefore further investigation will be required before they can be identified for public trails. Public parks and open spaces also provide opportunities for trail development.

Trail Development Barriers are natural and constructed features that create a physical impediment to the development of an interconnected trail system. Active railways, major waterways such as the Thames and Sydenham Rivers, and Highway 401 are the most significant barriers to trail development in Chatham-Kent. To a lesser extent, some of the arterial roads in Chatham-Kent's urban centres can be a barrier to trail connectivity. For example, the hydro corridor in the south-central part of the City of Chatham provides a trail opportunity, however, crossing major streets such as Lacroix and Queen may be difficult for users and crossing improvements should be considered.

Other legend items include:

- Lands in public ownership including parks and open spaces;
- Areas/sites of natural interest such as the St. Clair Marshes National Wildlife Area and Thames Grove Conservation Area;
- Major parks and open space such as Kingston Park in Chatham;
- Beaches, campgrounds, fishing access and boat launches;



- Elementary and secondary schools; and
- Significant cultural destinations/landmarks such as museums, monuments, public libraries, downtown core areas, churches and heritage buildings.

4.4 GUIDING PRINCIPLES FOR ROUTE SELECTION

Guiding principles help to define the character of the trail system. The following is a list of guiding principles that were used to identify candidate trail routes and missing links that together with existing trails form the Master Plan network. These principles should also be referred to in the future if/when network changes are proposed, new opportunities are identified and when individual trails are entering into the detailed planning and design stage.

The principles have been grouped around several main themes:

- Planning and Design;
- Cultural Heritage;
- Economic Development and Tourism;
- Natural Heritage and Environment; and
- Risk Management and Asset Management.

4.4.1 Planning and Design

Accessibility: Trails should be accessible from strategic locations throughout the municipality. In general, trails should be available to all users and levels of ability. However, not all trails will be accessible by all users in all places. A hierarchy of trail types will be employed to define appropriate uses and cater to various levels of physical ability. For example, the hierarchy may include multi-use trails and single-use trails along with a range of design standards for fully accessible trails through to trails for “expert” users.

Appealing: Trails should appeal to a variety of trail users, abilities and interests; therefore the network should consist of a variety of trail types and trail experiences.

Integration with other Modes of Travel:

- Trail routing will focus primarily on off-road routes. On-road routes will be utilized to provide links between off-road routes where alternatives do not exist.
- Trails will be located so that they provide opportunities to develop links with other modes of travel (i.e. public transit in urban areas).

Public vs. Private Lands:

- Trails will be located on lands in the public domain. Private lands will only be considered where a mutually acceptable agreement can be reached between the Municipality and the land owner.
- Linear corridors such as unopened road allowances, closed roads, transportation corridors, abandoned railway corridors and utility corridors on public lands/with public easements will be sought as important “spines” for the trail system.



Direct / Connections: The trails network should connect existing trail segments and add new trails to provide connections to destinations such as natural and cultural heritage features, tourist attractions, service facilities, as well as routes to schools, community and neighbourhood parks and shopping facilities.

Unimpeded: Trails should provide connectivity across major barriers (i.e. Highway 401, Thames River, arterial roads, and railways).

Expandable:

- Trail routing will consider future opportunities within the municipality (i.e. new development areas) as well as provide links to surrounding municipalities, regional, provincial, and national trails.
- In areas of new development, planning for trails will be an integral part of the land use planning process.

Route Density: Route density should generally respond to population density. For example, it is generally anticipated that route density will be highest in urban residential areas.

Supporting Services and Facilities: Supportive services and facilities such as benches and bicycle parking should be available along trails and at destinations. Trail routes should be selected which provide opportunities to develop supporting facilities.

4.4.2 Cultural Heritage

The trail network should link and/or provide access to cultural heritage features in Chatham-Kent. Such features may include historic buildings and sites, historic bridges, mills, rivers and canals, historic cores of villages and towns, and significant cultural landscapes.

4.4.3 Economic Development and Tourism

In addition to serving the needs of Chatham-Kent's residents, trails should also be considered a valuable tourism asset and catalyst for economic development. Therefore trail routing and marketing should:

- Include access to popular tourist destinations; and
- Be part of strategies that promote Chatham-Kent as a great place to "live, work, and play".

4.4.4 Natural Heritage and Environment

The trail network should take advantage of natural features that persist within the municipality and that constitute the natural legacy from pre-settlement conditions. Natural features include plant and animal life, wetlands, woodlands, valley lands, surface water features and groundwater features. The provision of, and location of, trail routes should be based on the objective to create a balance between the need to provide recreation opportunities and the need to preserve natural heritage resources. In some locations preservation may take precedence over recreation, therefore trail access may be limited. Some areas may be accessible only for research and monitoring.



Specific considerations include:

Minimize / Avoid Sensitive Areas: The trails network should minimize intrusion into core natural areas and avoid known locations of rare or sensitive species.

Hazard Lands: Where possible and practical, trails should avoid areas that are prone to flooding and erosion, such as valley corridors and floodplains. In some cases making trail connections via floodplains and hazard lands will be necessary to create a connected system. Where this is necessary, the details of the trail design should respond to the conditions of the site.

Soil Conditions: Trails should be routed in areas where soils are well drained and stable, and wet, boggy or organic soils should be avoided. Where this is not possible or where controlled access will provide excellent educational opportunities, trail hardening (i.e. boardwalks) should be considered to clearly define the route and encourage users to stay on the trail.

Topography: Trail routing should avoid steeply sloped areas. If this is not possible, appropriately designed structures to provide necessary access will be provided.

Environmental Buffers: Trails may be located in environmental buffer zones provided that the width and condition of the buffer can support the trail without compromising its intended function.

Existing Disturbances: Where possible, practical and appropriate, trails in natural areas should make use of existing corridors and disturbances such as existing informal trails, sanitary sewer easements and gas pipelines, rather than impacting undisturbed areas.

4.4.5 Risk Management and Asset Management

User Safety: To the extent that it is possible, trail routing and design should minimize users' exposure to potentially hazardous situations. Safety will not be compromised in the interest of minimizing cost. Current and widely accepted guidelines will be used as the basis for design.

Sustainable Design:

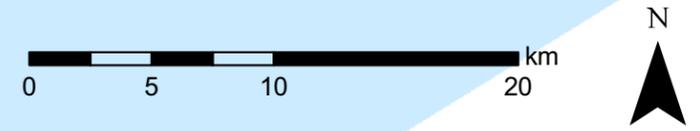
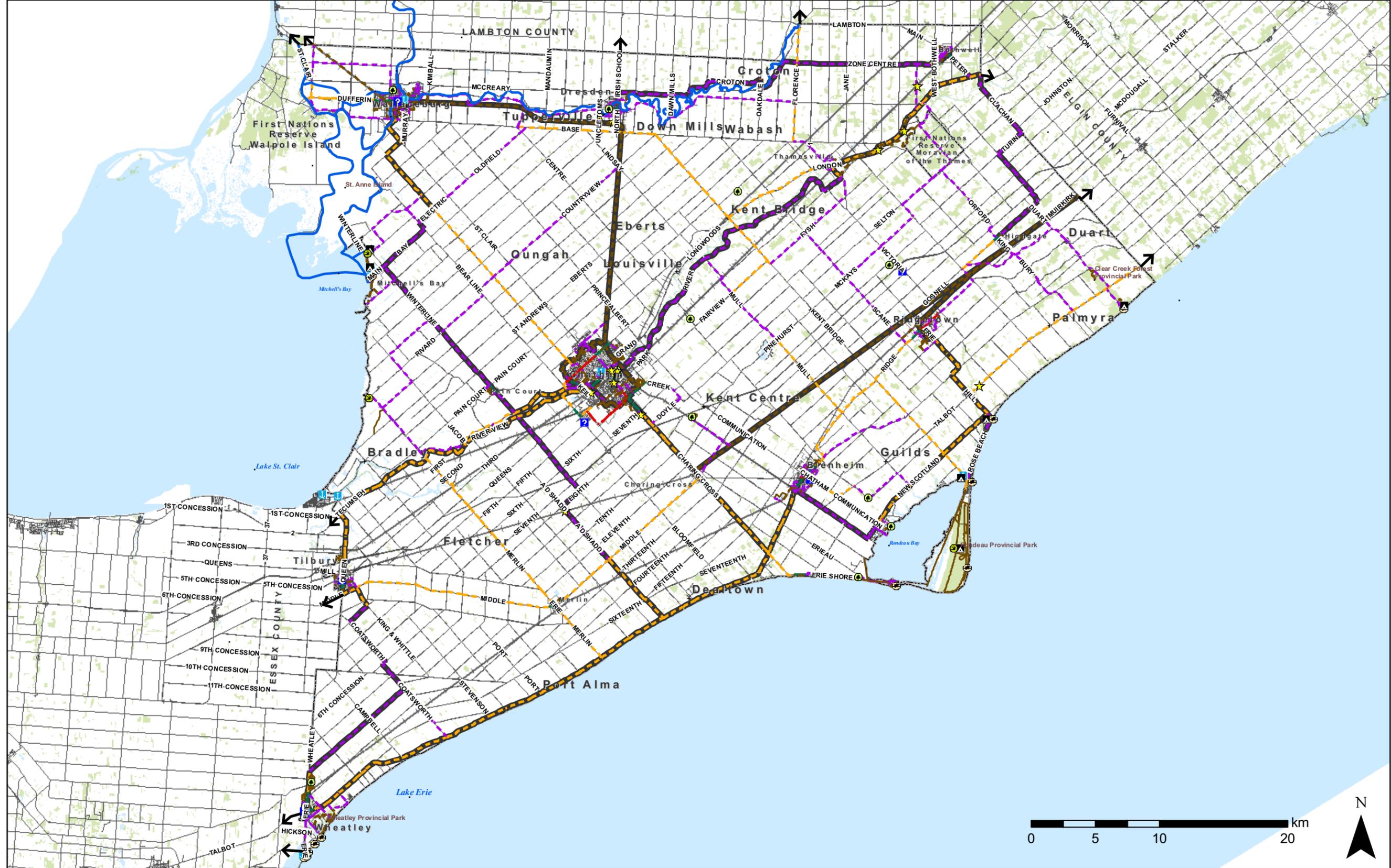
- Trails should be routed and designed to minimize or reduce the need for extensive maintenance over and above what is considered normal.
- Materials that are sustainable and/or renewable and sympathetic to the location should be considered wherever practical and possible.
- Layout, details and materials may be used strategically to encourage appropriate uses.

Trail Management:

- Trails will be implemented and maintained to acceptable standards. Facilities will be monitored in an appropriate manner and initial capital costs will not be considered in isolation of long-term maintenance costs.
- Signing and other wayfinding elements will be developed as an integral part of the trail system. Wayfinding elements should be designed to be easily recognizable, clear and concise, to inform users about permitted and restricted uses and to identify locations where access is permitted and/or restricted.

Table 4.1 Trail Network Hierarchy

| Designation in Hierarchy | Purpose/Definition | Permitted Uses | Location | Trail Type/Route Type | | | | | |
|------------------------------------|--|---|---|--|---|--|---|---------------------------|--|
| | | | | On-Road Route Type | Comments | Off-Road Trail Type | Comments | | |
| Municipal-wide Spine Routes | Municipal-wide Spine Routes form the primary or main spines of the trail network. They provide the connections to neighbouring municipalities and provide the most direct routes through Chatham Kent, and usually coincide with national, provincial or regional trails. Municipal – wide Spine routes are the main connections between Chatham Kent’s urban centres. Through urban centres the Municipal-wide Spine routes are clearly identified so that their continuity is maintained/easily recognizable. Local Routes and in some cases Special Use Routes will be directly connected to Municipal - wide Spine Routes. | Pedestrian/Walking (includes wheelchair and other small wheeled uses) | Rural | Paved or Granular Road Shoulders. | On higher volume, higher speed roads, shoulders may be paved to accommodate other uses (most notably cycling). | Multi-use trail | Widest of the multi-use trails and typically granular surfaced as they may be shared with user groups that prefer or require a granular surface. | | |
| | | | Urban | Not applicable. | Pedestrians, wheelchair and other small wheeled uses are directed to use sidewalks. Consider installing sidewalks along these routes where none currently exist. | Multi-use trail, sidewalk | Widest of the multi-use trails, often granular surfaced however asphalt or other hard surfacing should be considered, depending on the individual trail’s location. | | |
| | | Cycling | Rural | Paved Shoulder, Signed Bike Route. | Paving of shoulders should be considered where motor vehicle volume and speed are higher (refer to design guidelines-Chapter 5) and truck percentages are higher than average. | Multi-use trail | See notes above for pedestrians. | | |
| | | | Urban | Bike Lane, Wide Shared Use Lane, Signed Route, Bicycle Boulevards/ Bicycle Priority Streets. | Bike lanes are designated on main arterials, wide shared use lanes and shared use arrows “Sharrows” can be used in circumstances where space does not permit the addition of bike lanes. Signed routes and bicycle priority streets are typically used on lower volume, low speed routes. Cyclists must be educated to not ride on sidewalks. | Multi-use trail | See notes above for pedestrians. | | |
| | | All-Terrain Vehicle (ATV) | Rural | Road Shoulders (where permitted). | Designated Provincial Highway shoulders and municipal roads if bylaw enacted. (vehicles and operators must meet specific requirements). | Multi-use trail | Typically would be shared with non-motorized users, either on a common trailbed, or as separated trail beds within the same corridor or right of way. In both cases user education and yield protocols are keys to successful coexistence of users. | | |
| | | | Urban | Road Shoulders (where permitted). | Designated Provincial Highway shoulders and municipal roads if bylaw enacted. (vehicles and operators must meet specific requirements). | Multi-use trail | Where the route forms part of a key corridor and suitable design and management standards can be developed, would require enactment of by-laws. | | |
| | | Equestrian | Rural | Road Shoulders or shared use routes. | Typically use granular shoulders on busier roads, can share space with vehicles on low volume granular surfaced roads. | Multi-use trail | Shared with other users, either on a common trailbed or separated trailbeds within the same corridor where space permits. | | |
| | | | Urban | Not applicable. | | Multi-use trail | Where the route forms part of a key corridor and suitable design and management standards can be developed, would require enactment of by-laws. | | |
| | | Local Routes | Local Routes (secondary routes) provide connections to community destinations within the urban centres including parks, sites of heritage/cultural interest, schools, recreation centres etc. By virtue of their location and purpose, local routes may be more circuitous than the Municipal-wide Spine Routes wide routes. Local routes form loops within the urban centres and/or provide links to the Municipal - wide Spine system and Special-use routes. | Pedestrian/Walking (includes wheelchair and other small wheeled uses) | Urban | Generally not applicable. | Pedestrians are directed to use sidewalks or trails where they exist. Pedestrians can safely use low volume, low speed streets where sidewalks do not exist. On busier streets and/or critical connections, consideration should be given to installing sidewalks along these routes where none currently exist. | Multi-use trail, sidewalk | |
| | | | | | Urban and Rural | Bike Lane, Paved Shoulder, Wide Shared Use Lane, Signed Route, Bicycle Boulevards/ Bicycle Priority Streets. | Facility type depends on roadway characteristics. Bike lanes are designated on main arterials, wide shared use lanes and shared use arrows “Sharrows” can be used in circumstances where space does not permit the addition of bike lanes. Signed routes and bicycle priority streets are typically used on lower volume, low speed routes. Cyclists must be educated to not ride on sidewalks. | Multi-use trail | |
| Special-use Routes | Special-use Routes may be located in either the urban or rural areas of the Chatham-Kent. They are located and designed in response to the need for “exclusive” or limited uses such as hiking, equestrian and canoeing, and/or to respond environmental conditions of a particular location. | Pedestrian/Walking (may include wheelchair and other small wheeled uses in certain locations) | Urban | Not applicable. | | Multi-use or single/limited use trails | Trails are located and designed to meet designated use(s) and location. Some examples may include: an earth surfaced or woodchip trail in a woodlots, a boardwalk through a wetland, an asphalt loop surrounding a community centre that provides opportunities for in-line skating. | | |
| | | | Rural | Exclusive Special –use routes for pedestrians on roads not applicable. | May include scenic walking routes shared with motor vehicles on low volume, low speed rural roads. | Hiking/walking only trail | See note above for urban special-use pedestrian trails. | | |
| | | Cycling | Urban | Not applicable. | | BMX/Freestyle / Mountain Biking Course | | | |
| | | | Rural | Exclusive special –use routes for cyclists on roads not applicable | May include scenic cycling routes shared with motor vehicles on low volume, low speed rural roads. | BMX/Freestyle / Mountain Biking Course | | | |
| | | All-Terrain Vehicle (ATV) | Rural | Exclusive special –use routes for ATV users on roads not applicable. | Designated Provincial Highway shoulders and municipal roads if bylaw enacted. (vehicles and operators must meet specific requirements). | ATV only trail | Typically these are trails that are being developed by through private agreements (acknowledged in the Chatham-Kent Trails Master Plan, but not typically supported through funding etc.). | | |
| | | Equestrian | Rural | Not applicable. | Where equestrians are using roads in the rural area these are shared with motor vehicles by virtue of the facility type. | Equestrian only trail | Typically includes trails that are developed and managed by equestrian groups, often through agreements with private landowners. These routes may link with and be accessible from Municipal-wide Spine routes. | | |
| | | Canoeing | Urban | Not applicable. | | Appropriate body of water | | | |
| | | | Rural | Not applicable. | | Appropriate body of water | | | |



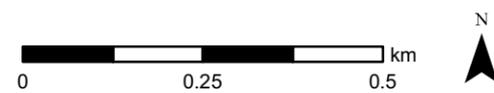
Trail Network August 2009

Figure 4 - 3:
Municipal Wide

- | | | | |
|---------------------|-----------------------|--|-------------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail | --- Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | - - - Proposed Bike Lane |
| 🐦 Bird Watching | 🚤 Marina | — Existing Water Route | - · - · - Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | - · - · - Proposed Paved Shoulder |
| 🌳 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | - · - · - Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



Bothwell



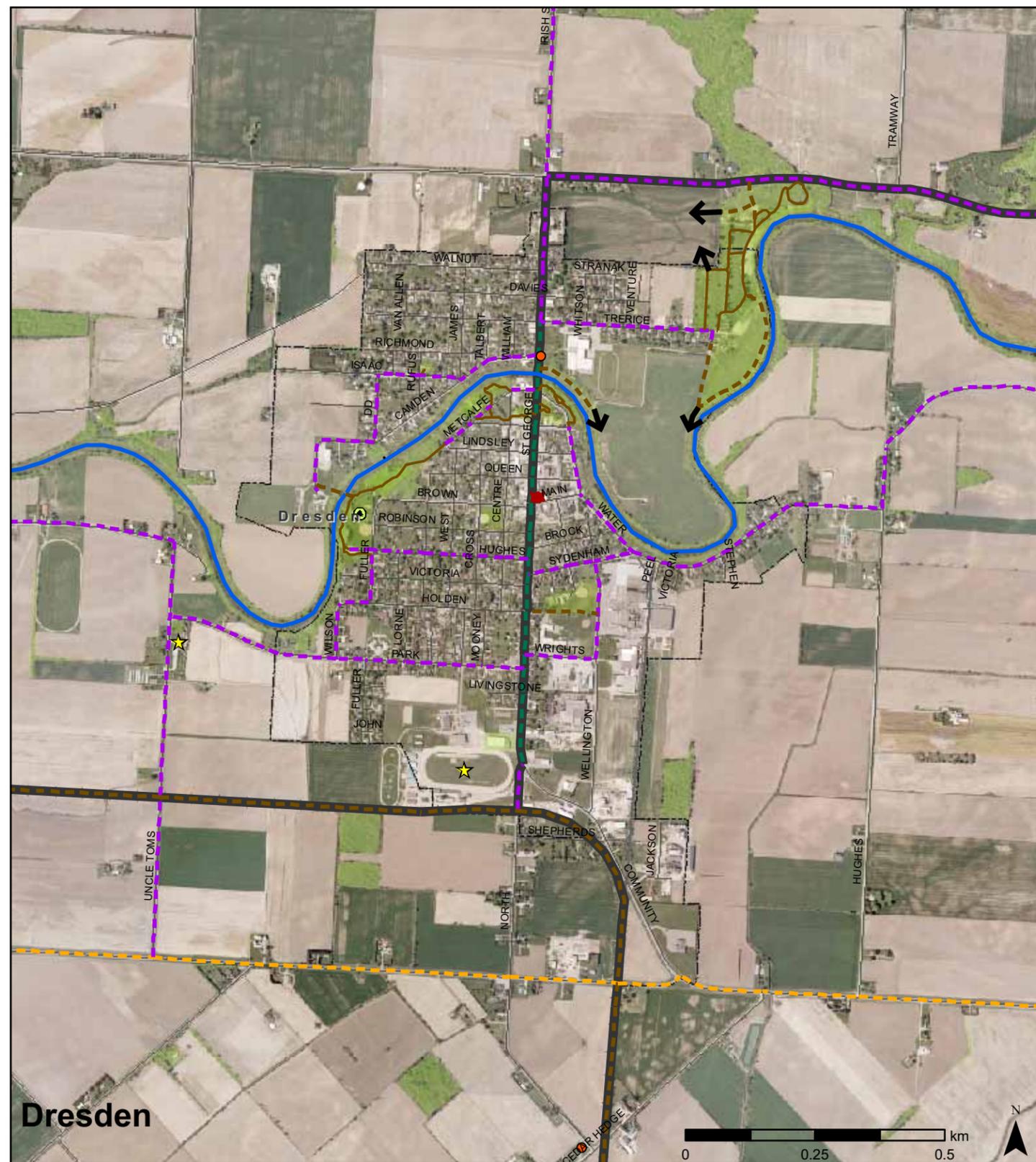
Thamesville



**Trail Network
August 2009**

**Figure 4 - 4:
Bothwell & Thamesville**

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|---------------------|-----------------------|--|-----------------------------|
| ★ Attraction | 🏥 Hospital | — Existing Trail | — Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | — Proposed Bike Lane |
| 🐦 Bird Watching | ⚓ Marina | — Existing Water Route | — Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | — Proposed Paved Shoulder |
| 🌿 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | — Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



Trail Network August 2009

Figure 4 - 5:
Dresden, Mitchell's Bay & Pain Court

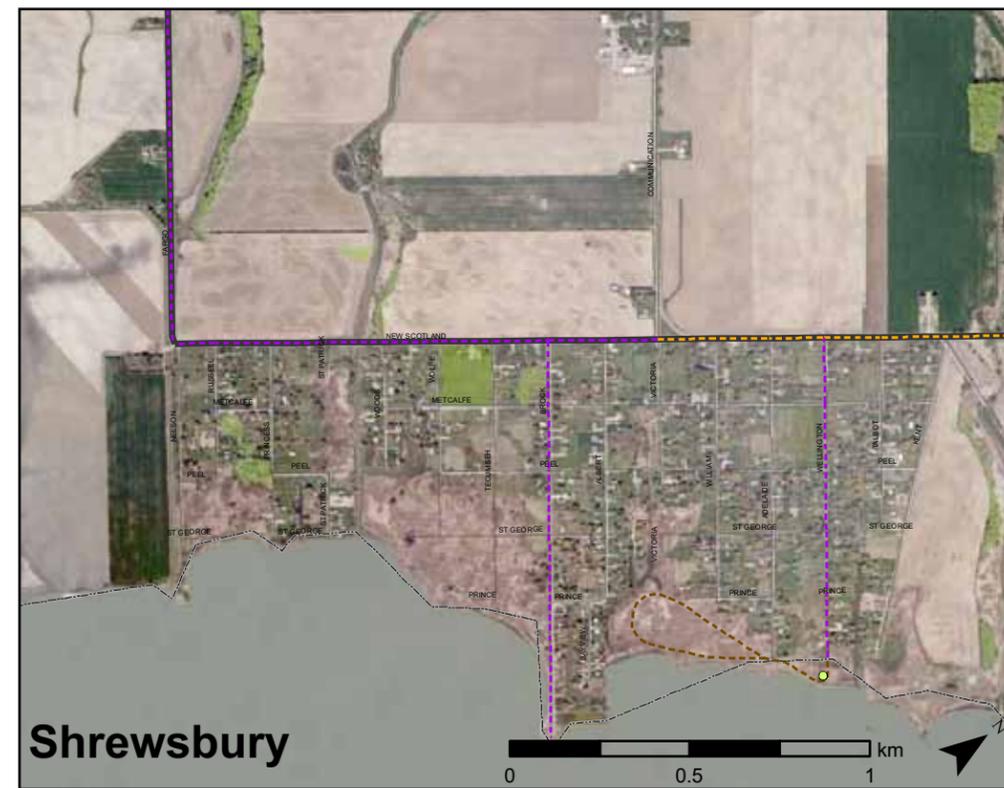
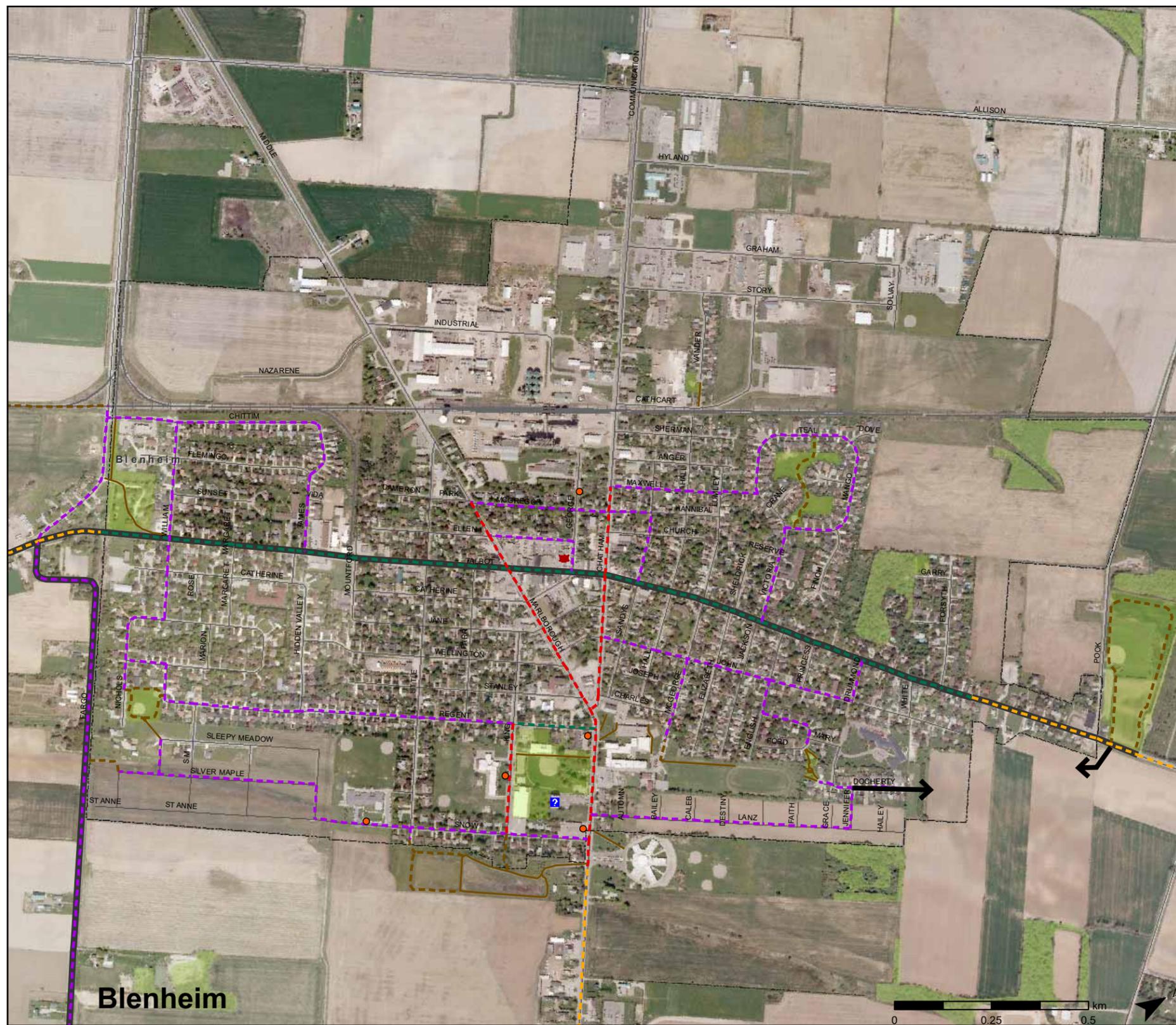
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|---------------------|-----------------------|--|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail | --- Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | --- Proposed Bike Lane |
| 🐦 Bird Watching | 🚤 Marina | — Existing Water Route | --- Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | --- Proposed Paved Shoulder |
| 🌿 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | --- Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



Trail Network August 2009

Figure 4 - 6:
Wallaceburg

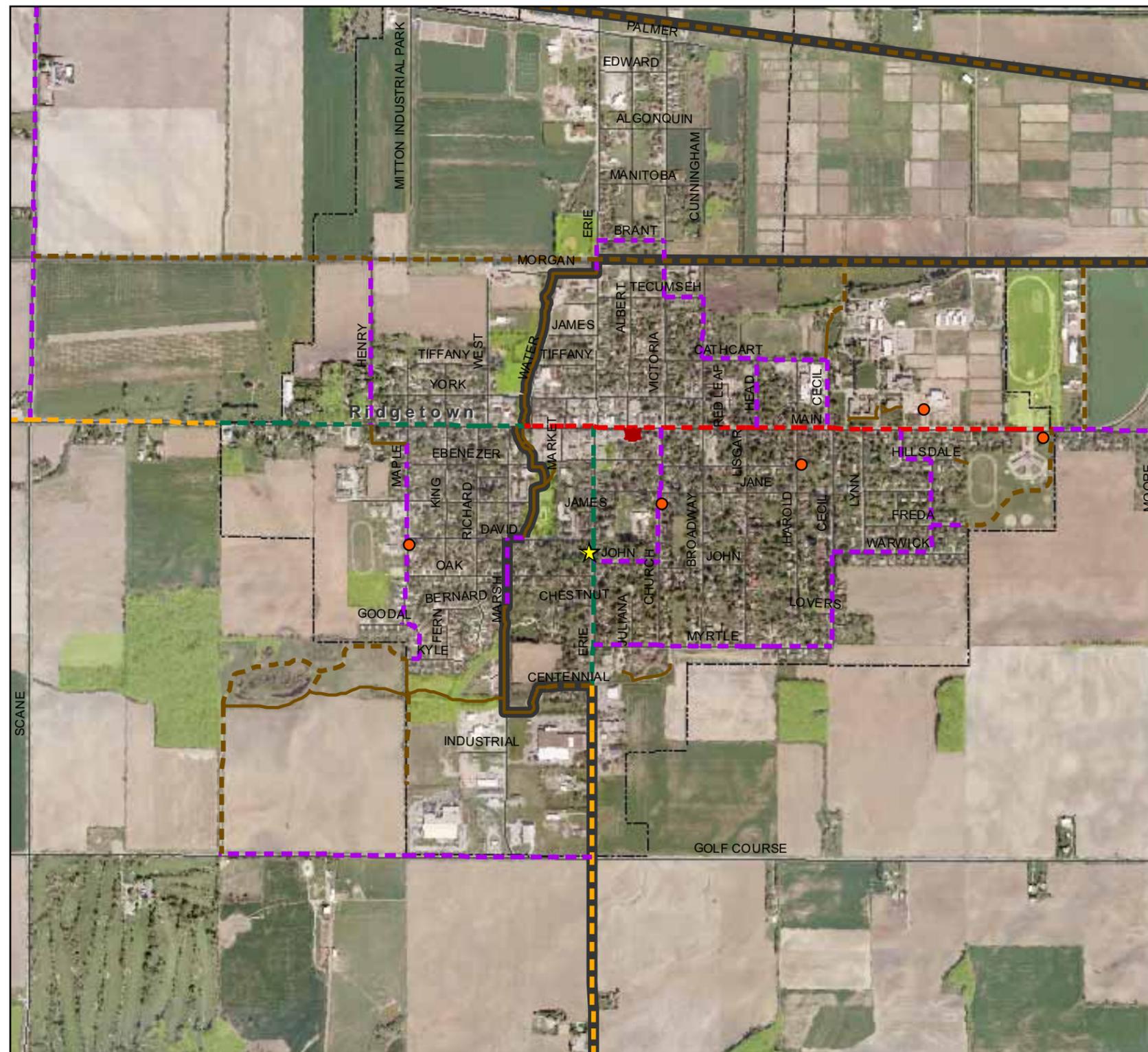
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|---------------------|-----------------------|--|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail | --- Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | --- Proposed Bike Lane |
| 🐦 Bird Watching | 🚢 Marina | — Existing Water Route | --- Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | --- Proposed Paved Shoulder |
| 🌳 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | --- Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



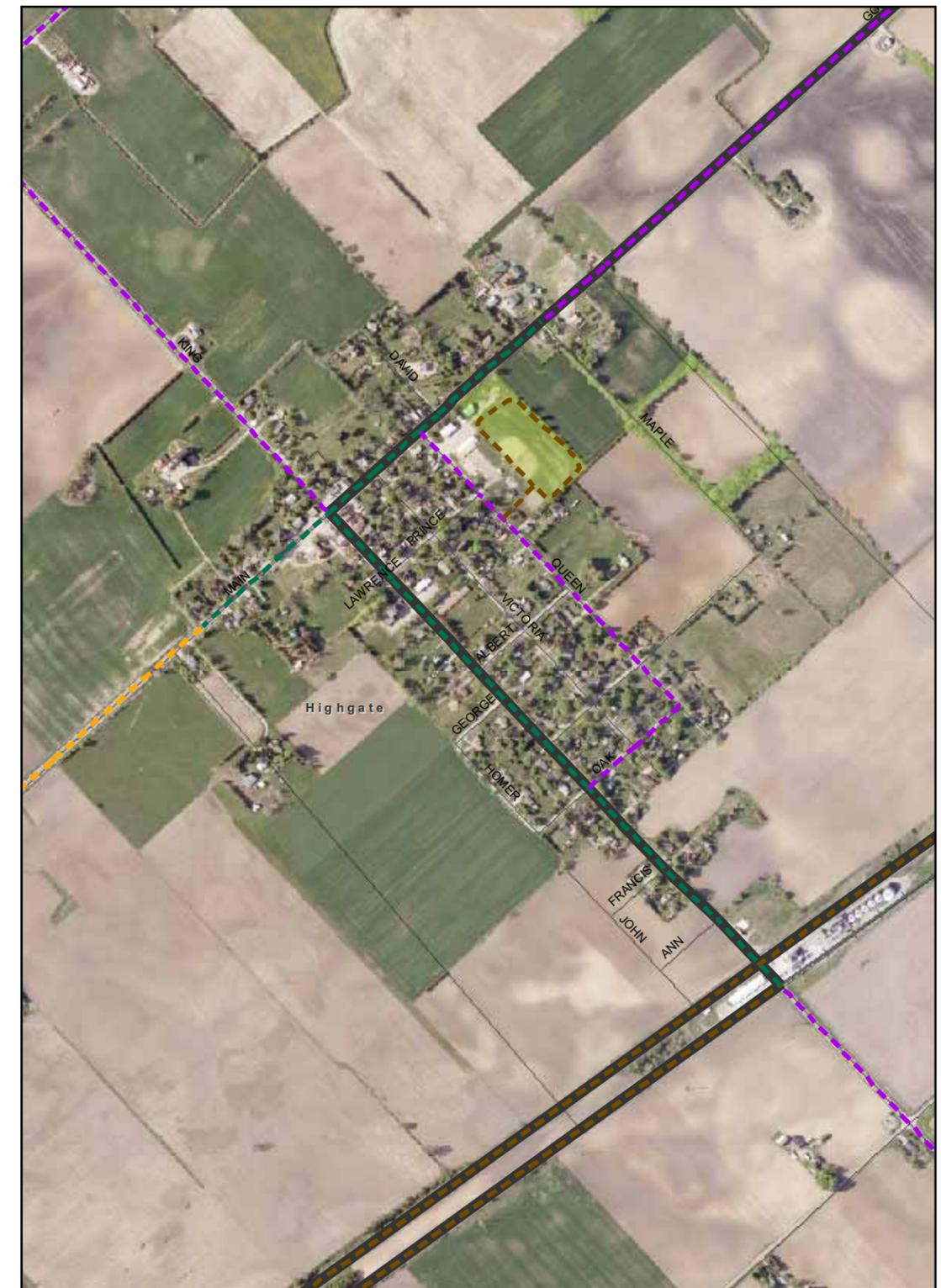
Trail Network August 2009

Figure 4 - 7:
Blenheim, Erieau & Shrewsbury

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|---------------------|-----------------------|--|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail | --- Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | --- Proposed Bike Lane |
| 🐦 Bird Watching | 🚤 Marina | — Existing Water Route | --- Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | --- Proposed Paved Shoulder |
| 🌳 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | --- Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



Ridgetown



Highgate

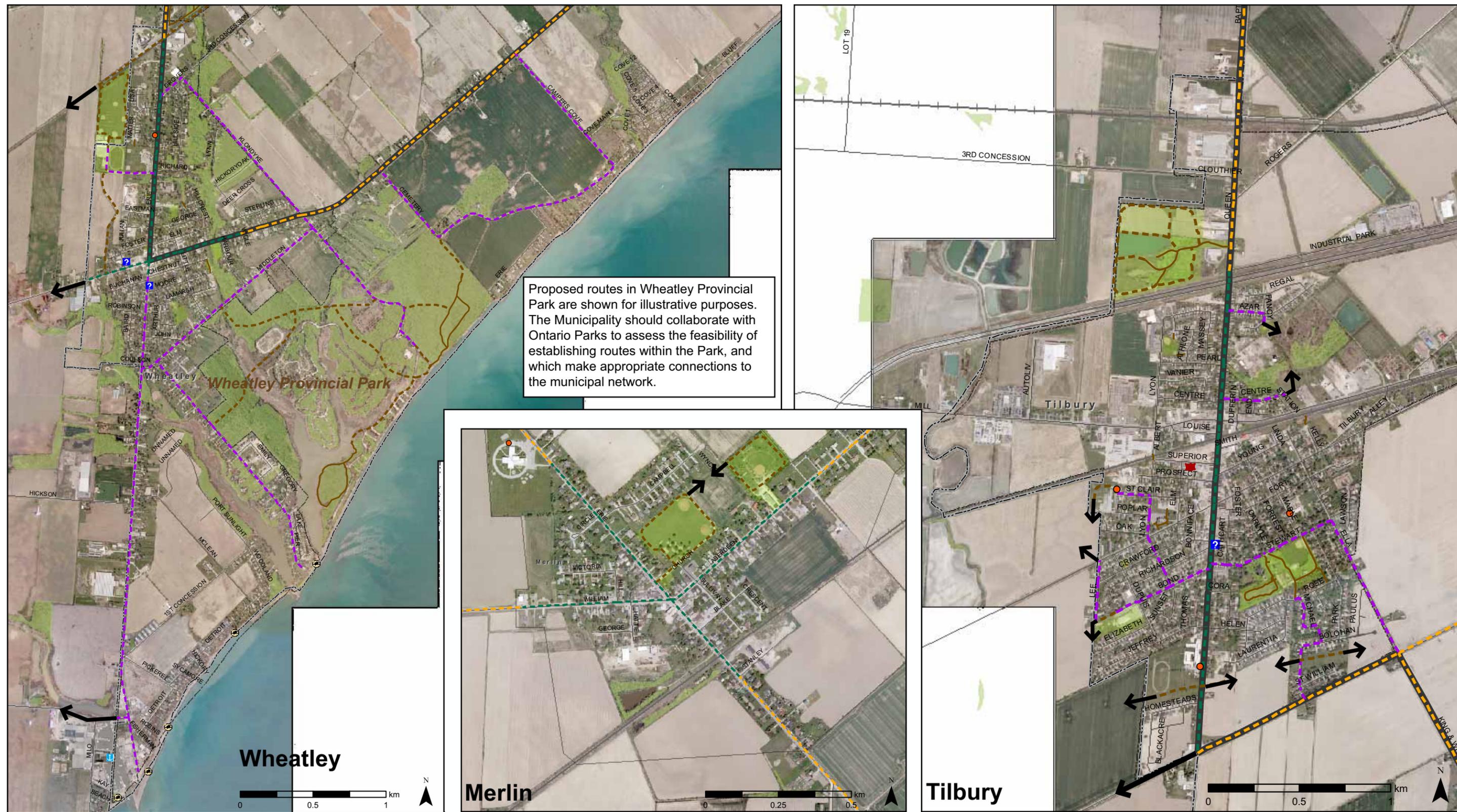
Trail Network
August 2009

Figure 4 - 8:
Highgate & Ridgetown

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|---------------------|-----------------------|------------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route |
| 🐦 Bird Watching | ⚓ Marina | — Existing Water Route |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* |
| 🌳 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement |
- * All other routes are designated Secondary Routes in the Network Hierarchy.

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|---------------------------------|
| - - - Proposed Trail |
| - - - Proposed Bike Lane |
| - - - Proposed Wide Shared Lane |
| - - - Proposed Paved Shoulder |
| - - - Proposed Signed Route |
| ← Desired Connection |





Trail Network August 2009

Figure 4 - 10:
Merlin, Tilbury & Wheatley

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|---------------------|-----------------------|--|-------------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing Trail | --- Proposed Trail |
| 🏖 Beach | 🚏 Transit | — Existing Signed Route | - - - Proposed Bike Lane |
| 🐦 Bird Watching | 🚢 Marina | — Existing Water Route | - · - · - Proposed Wide Shared Lane |
| 🏕 Camping | ℹ Visitor Information | — Municipal Wide Spine Route* | - · - · - Proposed Paved Shoulder |
| 🌿 Conservation Area | 🎓 School | ▲ Recommended Crossing Enhancement | - · - · - Proposed Signed Route |
| | | * All other routes are designated Secondary Routes in the Network Hierarchy. | ← Desired Connection |



4.5 THE TRAIL NETWORK HIERARCHY

To accommodate the wide range of expectations of trail users throughout Chatham-Kent, a hierarchy of trails is envisioned as an organizational structure for the proposed network. The concept of a trail hierarchy builds on the “Accessibility” principle.

Accessibility: Trails should be accessible from strategic locations throughout the Chatham-Kent. In general, trails should be available to all users and levels of ability. However, not all trails will be accessible to all users in all places. A hierarchy of trail types will be employed to define appropriate uses and cater to various levels of physical ability. For example, the hierarchy may include multiple use trails and single use trails along with a range of design standards for fully accessible trails through to trails for “expert” users.

In keeping with the vision established for the Chatham-Kent Trails Master Plan, the focus of the trail network is off-road, with on-road segments being used as connectors where necessary. In areas where there is extensive linear public open space the development of continuous off-road multi-use trails to serve a wide range of users may be possible and in some cases achieved with relative ease. However, in some locations, especially older neighbourhoods in urban centres, public open space (other than roadways) is limited. In these areas it is difficult if not impossible to achieve an exclusively off-road multi-use trail network to serve all users. Therefore pedestrians and small-wheeled users are directed to use sidewalks, and cyclists are expected to use roads, as they are prohibited from using sidewalks. In appropriate locations it may be possible to create off-road multi-use trails within boulevards or short sections of sidewalk appropriately signed for “shared use”.

The hierarchy consists of three levels: a municipal-wide spine system, a local system, and special-use system. The intent of the hierarchy is to create a variety of trail types to serve the variety of users and levels of experience, and to assist in defining appropriate trail uses and trail types in different locations throughout the Chatham-Kent. It is important to note that the trail system is not intended to be “all things to all users in all locations”, meaning that some trails may not be accessible to all user groups in some locations. The following sections describe the hierarchy concept for off and on-road components of the network. Included with **Figures 4-3 through 4-10** is an illustration of the recommended hierarchy on a route by route basis, and **Table 4-1** provides further details regarding trail characteristics and design guidelines for different types of settings.

4.5.1 Municipal-wide Spine Trails

The municipal-wide spine routes act as the “skeleton” of the network offering opportunities to move throughout Chatham-Kent along major corridors that provide the principle access between urban centres, connections/gateways to Chatham-Kent’s neighbours and links to/from major origins and destinations within urban centres. The primary system consists of off-road trails and on-road bicycle routes (where links are needed). The municipal-wide system is expected to accommodate:

- Potential high volumes of use, particularly near urban centres;
- Trail user traffic that may be more destination-oriented than those using local or special-use trails;
- The widest range of trail users;
- Links to major destinations such as community centres, schools, significant commercial nodes, municipal and provincial parks, conservation areas, and significant tourist destinations; and



- Special or unique high standard trail types.

Characteristics:

Off-road facilities

- Depending on volume and type of use; some sections may be maintained for year-round use;
- Would be designed to accommodate multiple uses such as cycling, walking, users with mobility-assisted devices, strollers, small wheeled uses such as skateboarding, in-line skating and scooters (where appropriate), cross country skiing (where possible and appropriate);
- Motorized and equestrian uses may be restricted or prohibited depending on location;
- Would offer the highest density of trailside amenities including benches, signing, washrooms, and trail access nodes (staging areas);
- May include boulevard trails and shared use sidewalks in appropriate locations.

On-road facilities

- Would typically consist of delineated bike lanes or wide-shared lanes on urban arterials and collectors, and paved shoulders on rural roads;
- Where traffic volume and speed is low, signed routes are sufficient;
- Would be maintained as part of road maintenance policies and practices.

4.5.2 Local Trails

The local (secondary) system links with the municipal-wide system, creates access to local points of interest, and offers neighbourhood or community recreational loop opportunities. The local system will be designed to accommodate:

- Potentially high volumes of use;
- Trail traffic that tends to be more locally oriented; and,
- Connecting routes for users wanting to access the primary system.

Characteristics:

Off-road facilities

- Would typically consist of a compacted granular surface;
- May include hard surfacing on slopes where erosion is a problem;
- Could include hard surfacing where this is requested by local neighbourhoods, and the need is justified;
- Would be designed to accommodate multiple uses such as cycling, walking, and running;
- Other uses such as mobility-assisted devices/strollers, skateboarding, in-line skating and scooters will be accommodated where possible and appropriate;
- Motorized and equestrian uses may be restricted or prohibited depending on location;
- Would offer a moderate density of trailside amenities including benches, signing, and trail access nodes (staging areas);



- May include boulevard trails and shared use sidewalks in appropriate locations.

On-road facilities

- May include delineated bike lanes and wide-shared lanes where warranted by roadway characteristics;
- Would typically consist of signed routes on low volume, low speed roads;
- Would be maintained as part of current road maintenance policies and practices.

4.5.3 Special Use Trails

The special use trail system includes routes in special locations or catering to specific uses. They are directly connected to local and, in some cases, municipal-wide routes. These routes may have a local neighbourhood focus, but more often are a destination for specific user groups, and are typically found in rural locations.

The special-use system consists of only off-road trails and will typically be designed to accommodate:

- Single or restricted use(s);
- Moderate to low volumes of use;
- Components of the special-use system may not all be linked, potentially including “stand-alone” loops or solitary trail segments for specific purposes.

Off-road facilities

- Typically are narrower (0.75m to 1.5m) and consist of a natural earth or woodchip surface;
- Hard surfacing with appropriate trail hardeners only where necessary;
- Trail obstructions such as deadfall trees and rocks may remain in place, depending on the setting and intended nature of the trail;
- Would be designed to accommodate single or limited uses such as hiking, and other uses such as mobility-assisted device users/strollers, skateboarders, in-line skaters and scooter users are typically restricted by the nature of trail alignment, width and surface type;
- Motorized and equestrian uses may be restricted or prohibited depending on location;
- Typically would offer a low density of trailside amenities including benches, signing, and trail access nodes (staging areas). Site/route specific interpretive signing programs may be implemented where deemed appropriate;
- Typically use “low-tech” design techniques that are appropriate for the location and volume of use;
- Include minor nodes at junction points that typically include bicycle parking, and information signage to inform users of permitted and restricted uses.

It is important to note that a special-use trail is narrower than both municipal-wide and local trails, in an effort to keep the facility in scale and context with the area through which it passes. This creates a challenge from a maintenance point of view as it is not possible to travel these routes with much of the equipment that Chatham-Kent is likely to currently have. Local partners will be invaluable in assisting with maintenance of special-use trails.



4.6 THE RECOMMENDED TRAIL NETWORK

The recommended trail network, including facility types across the municipality is also illustrated in Figures 4-3 through 4-10. Table 4-2 provides a summary of network facilities by type and length for both the short term (2010-2015), medium term (2016-2026) and long term (beyond 2026). The estimated costs of developing the network and other details related to implementation are discussed in Chapter 6 of this report. Infrastructure priorities were assigned based on a logical build-out of the network over time, input by the Steering Committee and public, and field observations with the following objectives in mind:

- Developing or enhancing the trail network in urban areas, and in specific locations where a greater number of users are anticipated;
- Establishing main corridors between the municipality's largest urban centres;
- Making or completing key connections that form part of regional, provincial or national trail system;
- Making connections between existing facilities in locations where the completion of a small missing link results in the creation of a continuous section of trail;
- Providing trail connections to important community destinations such as schools, community centres and recreation complexes, major sports fields, key points of interest;
- Developing loops in urban areas; and
- Scheduling implementation with planned municipal capital road and servicing projects where possible so that on and off-road facilities are constructed as part of new road construction or road reconstruction.

Table 4.2 Summary of Network Lengths by Type and Phase.

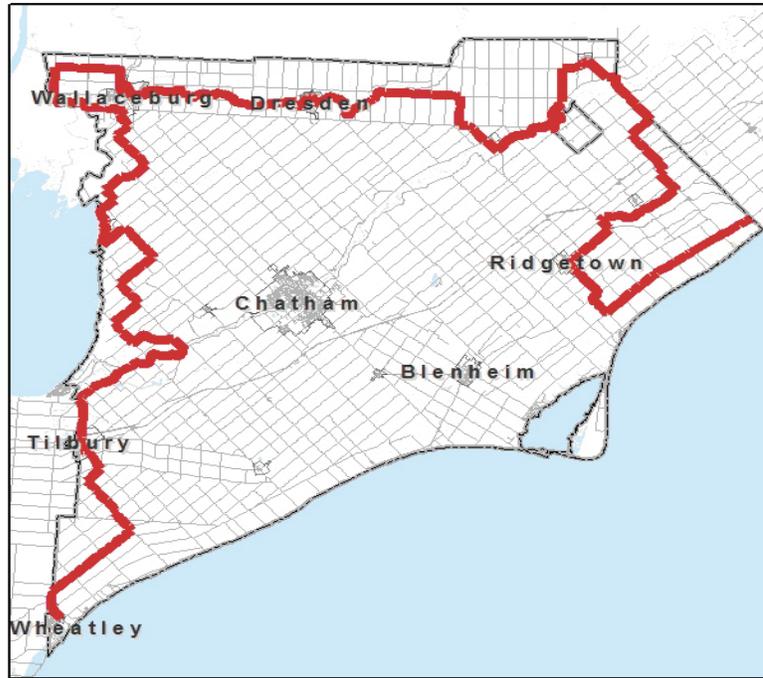
| | Off-Road | | On-Road ² | | | | Totals |
|-------------------------|--------------------|-------------|----------------------|----------------|------------------|--------------|---------|
| | Trail ¹ | Water Route | Bike Lane | Paved Shoulder | Wide Shared Lane | Signed Route | |
| Existing ³ | 111 km | 136 km | 0 km | 0 km | 0 km | 0 km | 247 km |
| Short Term (2010-2015) | 18 km | 0 km | 2 km | 47 km | 8 km | 43 km | 118 km |
| Medium Term (2016-2026) | 68 km | 0 km | 6 km | 153 km | 22 km | 304 km | 553 km |
| Long Term (Beyond 2026) | 83 km | 0 km | 4 km | 138 km | 3 km | 142 km | 370 km |
| Totals | 280 km | 136 km | 12 km | 338 km | 33 km | 493 km | 1274 km |

Notes

1. Off-road trails are multi-use and all user groups can be accommodated with a single facility.
2. On-road routes include (a) bicycle facilities on the road as cyclists are not permitted to ride on sidewalks except in limited circumstances, and (b) existing sidewalks within the road right-of-way for pedestrians and other similar users.
3. 55 km of the total 111km of existing trails are municipally owned, the remaining 56 km are located in Provincial Parks and Conservation Areas.



4.6.1 The Trans-Canada Trail and the Tecumseh Parkway



The Trans Canada Trail

Chatham-Kent's designated Trans Canada Trail route, illustrated on the left, is envisioned primarily as a driving and cycling route that serves to connect many of the communities across the municipality and provide access to local trails and points of interest. The Trans Canada Trail route through Chatham-Kent was designated in 2003.



The Tecumseh Parkway

The Tecumseh Parkway concept which was introduced earlier in Chapter 2, is in the early planning stages. It is envisioned as a scenic driving and cycling route that would profile Chatham-Kent's rich cultural history. The 70km (approximately) long route as illustrated to the left generally follows the Thames River from Baptist Creek, through Chatham and on to Lighthouse Cove with many points of cultural interest directly on the route or nearby such as Black Mecca, the Oil Museum, Milner House, and the Capitol Theatre to name a few. According to its proponents, the parkway would be "giant 74-kilometre long outdoor museum." ¹

1 Quote from Dave Benson, Chatham-Kent's Heritage Coordinator, in Chatham This Week, October 2008 <http://www.chathamthisweek.com/PrintArticle.aspx?e=1280284>



- Recommendation 4-1:** Implement the Chatham-Kent Trails Network as illustrated and described in the Chatham-Kent Trails Master Plan. (On-going)
- Recommendation 4-2:** Include the Recommended Trail Network as a schedule(s) in the Chatham-Kent Official Plan. (with the next Official Plan update)
- Recommendation 4-3** Given the Tecumseh Parkway initiative as a major tourist corridor, and that the potential for new funding for this project may become available, the Municipality and the Chatham-Kent Trails Council should review the alignment of the Trans Canada Trail in Chatham-Kent. (Short Term)



5.0 TRAIL DESIGNER'S TOOLBOX

5.1 ABOUT THESE GUIDELINES

A well-designed and properly maintained trail system is a critical part of the users' experience and enjoyment. For some users, the way a trail has been designed and maintained will significantly influence their decision to return and use that trail at a later date. Trails that have been thoughtfully designed and constructed also perform better over their lifespan, are easier to maintain and may result in few concerns or issues of liability. The better the quality of the trail design and construction, the more attractive it will be to users, the more it will be used, and the longer it will be before requiring upgrades.

Trail users vary widely in terms of age and physical ability, and have a their own sense of what the trail experience should be, depending on the type of use they are interested in or what user group they consider themselves to be a part of. A "one size fits all" design approach does not apply to trails, and it is important to try and match the trail type and design with the type of experience that is desired. A recognizable and consistent high quality design will create a community asset where user experience, enjoyment and safety are maximized.

5.1.1 How to Use These Guidelines

The purpose of these guidelines is to assist trail planners, designers and managers in making informed decisions about trail design. The guidelines provide general information about trail users and their needs. Where appropriate, summary tables are provided to highlight recommended design treatments and/or considerations in addressing key features associated with various trail types.

Information included in these guidelines is based on currently accepted design practices in North America, and ongoing research and experience gained during the initial years of trail implementation. The guidelines are not intended to be prescriptive, rather they are suggested guidelines which should be treated as a reference to be consulted during the development and construction of the trail network. They are not meant to be inclusive of all design considerations for all locations, nor are they meant to replace "sound engineering judgment". These guidelines are not intended as detailed solutions to specific problem areas. For example, a site-specific design exercise involving a detailed site inventory and, in the case of alignments associated with roadway rights-of-way, the application of the criteria for evaluating existing roadways later in this chapter should be applied as part of the analysis to arrive at final decisions for any section of the trail.

A number of the individual guidelines contained in the Trail Designer's Toolbox provide an indication of "minimum" and "preferred" conditions or dimensions for proposed trail alignments and facilities.

"Minimum recommended" conditions typically reflect a situation that is at the lower end of the spectrum in terms of user level of service and in some cases user safety. The minimum recommended condition may be considered a threshold that the design or condition should not fall below, and the minimum recommended condition may be considered in locations where anticipated use is very low, and/or significant constraints do not enable the provision of the preferred condition.



“Preferred” conditions or treatments reflect conditions that typically serve a broader range of uses and a greater number of trail users. Achieving the preferred condition or treatment may also provide a longer service life span.

The application of these guidelines in the development, implementation, and operation of individual sites will require specific consideration of a number of factors including public safety, local and/or provincial jurisdiction requirements, building codes and by-laws.

Where existing on and off-road trails and facilities are to be incorporated as part of the Chatham-Kent Trail system but do not meet the minimum recommended conditions described in these Guidelines, the following approach should be considered:

1. Examine the trail or route to identify any design issues, or areas that may be seen as a potential risk to trail users.
2. Assess whether the trail is reasonably capable of handling anticipated levels of use.
3. Set up a monitoring program to identify emerging problems.
4. If necessary, establish an upgrading program to addresses areas of risk and/or emerging problems, as this helps to create awareness and appreciation towards the issue(s), and determines ways in which they can be resolved so that at least the minimum recommended guidelines can be achieved over time.

Recommendation 5-1: Adopt the trail design guidelines presented in Chapter 5 of the Chatham-Kent Trails Master Plan as the basis for the design of trails in the Municipality. (Ongoing)

Recommendation 5-2: Municipal staff responsible for trail design (on and off-road) should be encouraged to remain current with best industry design practices. (Ongoing)

5.2 TRAIL USERS AND NEEDS

When developing and applying guidelines, it is important to consider the characteristics and preferences of potential users. In Chatham-Kent the potential user groups include pedestrians, cyclists, in-line skaters, users with mobility aids, all of which are self-propelled, and All-Terrain Vehicles (ATV), snowmobiles and equestrians, which are propelled. Propelled uses tend to be more localized and restricted to rural areas.

The following sections briefly describe each of these user groups, how they tend to use the trails and some of the design parameters/needs that should be considered.

5.2.1 Pedestrians

Pedestrians can generally be divided into several sub categories:

- Walkers;

A “one size fits all” design approach does not apply to trails, and it is important to try and match the trail type and design with the type of experience that is desired



- Hikers; and
- Joggers and runners.

Walkers

A study conducted by Environics International on behalf of Go for Green (1998) reported the following top five reasons for walking in Canada:

- Exercise / health (62%);
- Pleasure (30%);
- Practicality / convenience (24%);
- Environmental concern (10%); and
- Saving money (9%) ¹.

Because walking is such a basic activity and a freedom that is enjoyed by most people, guidelines that facilitate this activity must be established for all potential trail users. Planners and designers should also consider the needs of walkers with baby strollers or walking aids, carrying picnic baskets or other equipment, and walkers in pairs or in groups, such as a class of school children. Planners and designers need to be aware that potential users may have sensory, cognitive or ambulatory difficulties.

Walkers represent a wide range of interests and motives such as leisure, relaxation, socializing, exploring, making contact with nature, meditation, fitness, or dog walking. It is also important to consider pedestrians who walk for utilitarian or transportation purposes. This group tends to be more urban-focused, with trips focusing on shopping and errands and walking to work and school. In addition to using sidewalks, parking lots and urban plazas, the utilitarian walker will use trails where they are convenient, well designed and properly maintained. In many cases trails may provide a convenient “short cut” to traveling the sidewalk network to get to their destination. This group may represent a significant portion of trail users in the urban areas of Chatham-Kent. Where no sidewalks are provided and there are no road shoulders, the Ontario Highway Traffic Act allows pedestrians to walk on the edge of the roadway, facing oncoming traffic². Signs warning motorists of pedestrians ahead are recommended.

95% of all pedestrian trips are less than 2.5 km in length (Transportation Tomorrow Survey, in Hamilton Cycling Master Plan 1996)³, though it is reasonable to expect that some walkers who are out for exercise/health/fitness purposes might make trips that are between 5 and 10 km in length.

Hikers

Hikers are often considered more of the elite of the recreational walking group and may challenge themselves to cover long distances and be willing to walk on sections of rural roadway shoulder considered less safe or less interesting by the majority of leisure walkers. Trail planners should assume that there will be keen pedestrian

¹ Environics International, 1998, p. 4-5

² Ministry of Transportation (MTO), 1990



users, even in remote or highway environments, despite the fact that the frequency may be very low. Some of the characteristics of this group include:

- Day trips that may range between 5 and 30 km in length;
- They may be more keenly interested in natural features;
- They are often more adept at map reading;
- Are more self sufficient than leisure walkers;
- May expect fewer amenities; and
- Are often attracted to challenging terrain and rural areas.

Runners and Joggers

Although the motive for runners and joggers is primarily fitness and exercise, they may share more in terms of profile characteristics with distance hikers than they do with leisure walkers. They tend to be accomplishment oriented and often enjoy the trails at higher speed and over distances between 3 and 15 km or more. They will often avoid hard surfaces such as asphalt and concrete and prefer to run on granular, natural (earth) and turf surfaces as they provide more cushioning effect.

5.2.2 Cyclists

Recreational cyclists would be considered to have the similar motives as leisure or fitness walkers. The mechanical efficiency of bicycles allows users of all ages to significantly increase their travel speed and distance, often allowing them to experience much more countryside by cycling rather than walking.

Some bicycles, including the “mountain” or “hybrid”, can travel easily over stonedust and gravel surfaces, whereas traditional narrow-tired touring and racing bicycles require well compacted granular surfaces or asphalt pavement. Distances covered vary widely from a few kilometers to well over 100, depending on the fitness level and motivation of the individual cyclist. Although cyclists have the right to access the extensive existing public roadway system, with the exception of the 400-series and major highways, many inexperienced cyclists feel unsafe sharing the road with automobiles. Some do not have the desire or skill level to ride in traffic. Off-road trails, shared with pedestrians, may offer recreational cyclists a more secure environment to enjoy the use of their bicycles. Those that travel the longer distances are more likely to focus a significant portion of their route on the roadway network, and often seek out quieter, scenic routes over busier roads.

When using roads, cyclists generally travel 0.5-1.0 m from the curb or other obstruction because of the possibility of accumulated debris, uneven longitudinal joints, catch basins, steep cross slopes, or concern over hitting a pedal on the curb or handlebar on vertical obstacles. However, when cyclists use or cross a public roadway they are considered vehicles by law and are expected to follow the same traffic laws as motorized vehicles.⁴

Although the average travel speed for a cyclist on a trail is in the range of 15-20 km/hr and on a road 18-30 km/hr, speeds in excess of 50 km/hr can be attained on descents on roads and some hard surface trails. Speed limits and warnings should be posted along the trail to discourage fast riding and aggressive behaviour. Cyclists other than

4 <https://www.hpl.ca/>



Careful consideration should be given to the physical, aesthetic and environmental requirements for each trail type

young children should be discouraged from cycling on sidewalks because of potential conflicts with pedestrians and dangerous conditions resulting from driveways and intersections. Many municipalities have prohibited sidewalk cycling through by-laws.

5.2.3 In-Line Skaters, Skateboarders and Non-Motorized Scooter Users

In-line skating, skateboarding and the use of non-motorized scooters are becoming increasingly popular among all age groups, particularly in urban areas. Although in-line skaters may have more in common with cyclists than pedestrians when considering travel motive and speed, they are not considered “vehicles” by the Ministry of Transportation for Ontario (MTO). Some municipalities have responded on an individual basis to the question of where to allow in-line skaters to travel through by-laws. No obvious solutions have emerged, and no standards have been widely adopted. In some municipalities, in-line skaters, skateboarders and scooter users have been prohibited from using either roadways or sidewalks by local by-laws. Consequently, they are avid users of hard-surface off-road facilities and may travel some distance to reach a facility that suits their needs.

This user group prefers a very smooth, hard surface, and loose sand, gravel, twigs, branches, fallen leaves and puddles can be significant hazards. Though skateboarders and scooter users can quickly become pedestrians by dismounting, they too are vulnerable to the effect of grades (both up and downhill) and require ample maneuvering space. An inability to come quickly to a complete stop can be a significant concern for all but the most experienced users in this group. Long or steep hills with limited visibility may be viewed as either challenging or terrifying depending on an individual’s level of experience.

5.2.4 All-Terrain Vehicles

Rapidly expanding recreational All-Terrain Vehicle (ATV) use in Ontario has created an increased demand for trails. While many ATV clubs develop their trail networks on privately owned land through agreements with landowners, there are occasions when access to public trails and road rights-of-way is desired, potentially bringing ATV users into conflict with other trail users. Safety of all trail users is of particular concern, as ATVs can reach high speeds on straight and flat trail sections. Nevertheless, with proper design to reduce ATV travel speeds, and adequate enforcement of trail regulations, it is possible for non-motorized and motorized trail uses to coexist on some trails.

ATV interest and use tends to be higher in communities where there are large rural areas. During the development of the Chatham-Kent Trails Master Plan there was very little input received regarding ATV use. However, it is known that ATV users have contributed to volunteer efforts related to Chatham-Kent’s trails on a number of occasions, so it is assumed that at some point there will be a demonstrated interest by ATV users to access some municipal trails in the rural areas. In other communities where ATV use on public trails is more prevalent, the desire to access public trails is often focused on those corridors that provide important connections between ATV networks that organized clubs have developed on private lands through agreement with landowners. It is recommended therefore, that when organized ATV clubs do come forward with a demonstrated interest in accessing municipal trails in the rural areas, that they are embraced as a bonafide user group and they be granted access to key rural off-road trail corridors, provided they can be suitably designed for shared use. It may also be appropriate for the municipality to assist organized local ATV groups from time to time in identifying and developing opportunities for exclusive ATV facilities as one possible way to relieve pressure/demand on shared use facilities. Similar consideration may be given to



snowmobile use, recognizing that very little input was received during the development of the Chatham-Kent Trails Master Plan, and weather conditions that support this activity are not consistent in the area.

Speed limits should be posted along all trails where ATV use is permitted. At 40 km/hr, an ATV rider has a minimum sight stopping distance of 34 m, thus all potential hazards, including trail intersections, should be signed well in advance. Slower speeds can be encouraged by including curves, grade changes and trail narrowing, although these design features should be accompanied by signage indicating that the ATV rider should reduce speed. The horizontal clear zone should be at least 0.6 m on either side of the vehicle. To allow safe passing of other trail users, pull-out sections of at least 8 m in length should be added at regular intervals along the trail.

An additional characteristic of ATV's to consider when designing shared trails is weight of the vehicle. The combined weight of an ATV and rider can exceed 350 kg, placing significant wear on the trail bed and surface. In abandoned rail corridors where the rail bed is in place, the trail bed can generally be assumed to be capable of supporting the weight of an ATV, however the trail surface should be sufficiently compacted and stable to resist deformation and erosion. Although small rocks and roots can usually be navigated by an experienced ATV rider, the trail surface should be regularly inspected and maintained to prevent ruts, protruding rocks and roots from becoming a hazard, especially when trails are shared with other users.

5.2.5 Equestrians

Trail riding on horseback is most desirable in quiet, wildland settings, however there are occasions when equestrian users require access to public roads, trails and road right-of-ways. Furthermore, under Ontario's Highway Traffic Act, equestrians are permitted on provincial roads, although many municipalities place restrictions on riding in urban areas. Similar to ATV use, there was very little input received regarding trail use by equestrians during the development of the Chatham-Kent Trails Master Plan. It is recommended that if/when organized equestrian clubs come forward with a demonstrated interest in accessing municipal trails in the rural areas, they are embraced as a bonafide user group and they be granted access to key rural off-road trail corridors, provided that they can be suitably designed for shared use. It may also be appropriate for the municipality to assist organized local equestrian groups from time to time in identifying and developing opportunities for exclusive ATV facilities as one possible way to relieve pressure/demand on shared use facilities.

Safety is a significant consideration when horses must mix with motorized vehicles and other trail users. Trail width should accommodate a shy distance of 0.6 m, to allow for uneasy horses to shy to one side of the trail, and pull-out sections should be regularly located to allow for passing of other equestrians or other trail users. Visual barriers such as vegetation or solid fences are also recommended where trails are adjacent to roadways or areas of high activity (i.e. sports fields) where the motion may alarm the horse.

Where bollards are used to limit trail access, it should be noted that mounted riders generally cannot pass through bollards spaced less than 1.5 m apart, unless they are less than 0.9 m high. This spacing allows ATV users to access trails as well. If ATV use is to be restricted, but equestrian use permitted, a "step-over" gate design can be used.

5.3 GENERAL DESIGN PARAMETERS

Careful consideration should be given to the physical, aesthetic and environmental requirements for each trail type. In many instances physical design criteria related to operating space, design speed, alignment and clear zones are often governed by the needs of the fastest, most common user group on the majority of the trails, that being the cyclist. Therefore, many of the physical design criteria outlined in the following sections are recommended in relation to cycling. This is not to say that all trails need to be designed to meet the requirements for cyclists, however when multi-use trails are being designed it is prudent to use parameters for the cyclist. When considering single or specialty uses where part of the trail experience involves maneuvering through challenging conditions, such as BMX or freestyle biking, the parameters outlined below may not apply. In these instances designers should consult directly with the user group and/or design manuals that are specific for that use.

Trail user operating space is a measurement of the horizontal space that the user requires. In the case of in-line skating and cycling, the space includes room required for side to side body motion used to maintain balance and generate momentum. **Table 5.1** outlines minimum and preferred operating space for different uses.

Table 5.1 Trail User Operating Space

| Operating Condition by Trail User Type | Minimum (metres) | Preferred (metres) |
|--|--------------------------------|--------------------|
| One-way travel (one wheelchair user) | 1.2 | 1.5 |
| One-way travel (two pedestrians) | 1.5 | 2.0 |
| One way travel (one ATV) | 1.5 | 2.0+ |
| One way travel (one cyclist) | 1.2 (in constrained locations) | 1.5+ |
| One way travel (one in-line skater) | 2.3 | 3.0 |
| One way travel (one equestrian) | 1.5 | 2.0+ |
| Two way travel (two cyclists) | 3.0 | 3.0+ |
| Two way travel (two wheelchair users) | 3.0 | 3.0+ |

Horizontal clear distance is the space beside the trail bed that should be kept clear of protruding objects. **Vertical clear distance** is the space above the head of the user while using the trail (i.e. walking or mounted on their bicycle etc). **Table 5.2** provides minimum and preferred horizontal and vertical clear distance.

Table 5.2 Horizontal and Vertical Clear Distance

| Clearance Condition | Minimum (metres) | Preferred (metres) |
|--|------------------|-------------------------------|
| Horizontal clearance to stationary objects | 0.5 | 1.0 |
| Vertical clearance to stationary objects | 2.5 | 3.0 (3.5 min for equestrians) |



Slope refers to both the measured fall over a given distance and both the centerline (**longitudinal slope**) and perpendicular to the centerline (**cross slope**). Cross slope can be configured so that all runoff is directed to one side of the trail, or so that there is centre crown and runoff is shed to either side of the trail.

Table 5.3 Longitudinal and Cross Slope

| Longitudinal Grade or Slope | |
|-----------------------------|---|
| 0 to 3% | Preferred |
| 5%-10% | Provide additional trail width where trail segments are greater than 100m in length Introduce level rest areas every 100 to 150m of horizontal distance Consider design strategies such as switchbacks Install signing to alert users of upcoming steep grades Avoid grades over 5% for off road trails. Where steeper slopes are necessary “trail hardening” should be considered Note: 12:1 (horizontal distance or run: vertical distance or rise), or 8.3% over a distance of 9.0m is the maximum permissible slope for meeting accessibility standards. Level landings or rest areas are required as a minimum every 9.0m where the slope exceeds 8.3%. |
| Greater than 10% | Consider the use of structures such as steps, step and ramp combinations, stairways Consider locating the trail elsewhere |
| Cross Slope | |
| 0.5 to 2% | Minimal, acceptable on hard surfaced trails, may not provide adequate drainage on granular surfaced trails |
| 2 to 4% | Preferred range for both hard and granular surfaced trails |
| Greater than 4% | Avoid wherever possible as excessive cross slopes can be difficult, and potentially dangerous for some levels of physical ability and certain user groups as they can result in difficulty maintaining balance, especially among user groups with a high centre of gravity. |

Design speed is used to determine trail width, minimum curve radius, horizontal alignment and banking or superelevation to ensure that trail users have adequate space and time to safely approach and navigate sharper curves along the trail. The design speed for recreational cyclists is generally considered adequate for all self propelled trail users including pedestrians, in-line skaters, skateboarders, scooter users and those using mobility devices such as wheelchairs. The average recreational cyclist can maintain speeds of 18 to 25 km/hr on some trails and most roads, while utilitarian and fitness-oriented cyclists usually travel at higher speeds (25 to 30 km/hr on some trails and most roads. For granular surfaced off-road trails, a design speed in the area of 25 km/hr is usually adequate, whereas a minimum of 30 to 35 km/hr should be considered for hard surfaced trails. On descents with steeper grades, the design speed should be increased to 40 to 50 km/hr and consideration should be given to some



additional trail width to increase maneuvering space. Cautionary signing should be used to warn of upcoming steep grades and sharp curves.

Cycling is the critical user group when designing off-road trails for self-propelled users as they have the highest average travel speed. The minimum radius of a curve on an off-road cycling facility depends on the bicycle speed, super-elevation and coefficient of friction between the bicycle tires and the cycling facility surface. Refer to Table 5.4 for suggested outside radii for a range of design speeds and superelevation rates.

Table 5.4 Trail Curve Radii

| Design speed (km/hr) | Coefficient of Lateral Friction | Suggested radius (m) where superelevation = 0.02 m/m | Suggested radius (m) where superelevation = 0.05 m/m |
|----------------------|---------------------------------|--|--|
| 25 | 0.30 | 15 | 14 |
| 30 | 0.28 | 24 | 21 |
| 35 | 0.27 | 33 | 30 |
| 40 | 0.25 | 47 | 42 |
| 45 | 0.23 | 64 | 57 |
| 50 | 0.22 | 82 | 73 |

Source: TAC, 1999

The upcoming revision to the AASHTO Guide for the Development of Bicycle Facilities, expected to be published in late 2009 or early 2010 will be recommending that the general design speed should be 22 km/hr (14 mph) for multi-use trails where cycling is the highest speed user group. Based on research, 22 km/hr represents the 85th percentile for speed. The slightly lower design speed will allow for slightly smaller curve radii and potentially less construction impact as compared to trails requiring larger radii.

When horizontal curves are sharp (i.e. a very small radius), cycling facility widening should be considered to compensate for the tendency of cyclists to track toward the outside of the curve.

Table 5.5 provides additional widening requirements for curves on trails where the radii are less than the recommended minimum for the design speed selected.



Table 5.5 Additional Trail Widening on the Outside of Curve

| Radius (m) | Additional widening (m) |
|------------|-------------------------|
| 0-7.5 | 1.2 |
| 7.5-15 | 0.9 |
| 15-22.5 | 0.6 |
| 22.5-30 | 0.3 |

Roads are designed to accommodate vehicles that move at a significantly higher rate of speed than bicycles, therefore it is assumed that horizontal alignment of on-road routes will be ample to accommodate cyclists and other trail users.

Where propelled uses such as ATV's are being considered, a higher design speed should be used, and speed limits should be clearly posted and enforced. In the Chatham-Kent trail system, propelled uses such as ATV's may be considered on some trails in the rural area where sight lines are generally good, and where corridor width is sufficient to accommodate a separate trail bed for the ATV, or an ample shared trail bed can be provided.

Sight stopping distance is defined as the distance required to for the trail user to come to a full controlled stop upon spotting an obstacle. It is a function of the user's perception and reaction time. Once again stopping sight distances for off-road trails are typically governed by the distance required for cyclists since pedestrians and other trail users (with the exception of in-line skaters) can typically stop more immediately than cyclists, regardless of the trail configuration. In terms of in-line skaters however, no definitive data currently exists concerning stopping distance, the experiences and observations of in-line skaters, representatives and manufacturers corroborate that a proficient in-line skater travelling near the same speed as a bicycle can stop in a distance equal to or less than that of a cyclist. Therefore, basing stopping distance on the distance required for a cyclist should accommodate all other expected self propelled trail users including in-line skaters.

5.4 ACCESSIBILITY

Approximately one in eight Canadians suffer from some type of physical disability. Mobility, agility, and pain-related disabilities are by far the most common types, each accounting for approximately 10% of reported disabilities nationally.⁵ Disability increases with age: from 3.3% among children, to 9.9% among working-age adults (15 to 64), and 31.2% among seniors 65 to 74 years of age. Disability rates are highest among older seniors (75 and over), with fully 53.3% in this age group reporting a disability.

The Accessibility for Ontarians with Disabilities Act (ODA) states that "The people of Ontario support the right of persons of all ages with disabilities to enjoy equal opportunity and to participate fully in the life of the province."⁶ Within the ODA, Bills 118 and proposed Bill 125 recognize the need to provide for accessibility standards, improve

5 Social Development Canada, 2004, p. 2

6 Ontarians with Disabilities Act, Bill 118 and 125 2001



... there may be some locations... where lighting might extend the hours of use and enjoyment by the community and visitors.

opportunities and facilitate the removal of barriers in order to enable persons with disabilities to fully participate in the life of the province.⁷

Universal Trail Design is a concept that takes into consideration the abilities, needs, and interests of the widest range of possible users. In regards to trail design, it means planning and developing a range of facilities that can be experienced by a variety of users of all abilities.

Principles of universal trail design can be summarized as follows:

- Equitable use: provide opportunity for trail users to access, share and experience the same sections of trail rather than providing separate facilities;
- Flexibility in use: provide different options for trail users in order to accommodate a variety of experiences and allow choice;
- Simple, intuitive and perceptible information: whether conveying trail information through signage, maps or a web site, communicate using simple, straightforward forms and formats with easy to understand graphics and/or text;
- Tolerance for error: design trails and information systems so as to minimize exposure to hazards, and indicate to users any potential risks or challenges that may be encountered;
- Low physical effort: trails may provide for challenge but should not exceed the abilities of the intended users; where appropriate, rest areas should be provided; and
- Size and space for approach and use: trails and amenities should provide for easy access, comfort and ease in their usage.

Ontario's Best Trails – Draft (2006)⁸ provides an in depth discussion of the application of Universal Design principles and their application.

Where possible and practical, trails should be designed to be accessible to all levels of ability. It must be recognized however, that not all trails throughout the system can be fully accessible. Steep slopes are one of the most significant barriers for those with physical disabilities. Designing trails to be within the threshold (8.3%) for universal access will not only overcome this significant barrier but it will help to reduce the potential for erosion of the trail surface. The following are some additional considerations for making existing and new trails accessible:

- Designers should consult the most current standards available in Chatham-Kent through the local Advisory Committee/Department;
- Where the trail requires an accessibility solution that is above and beyond what is normally encountered, a representative of the local Advisory Committee/Department should be consulted early on in the process to determine if it is practical and desirable to design the specific trail to be fully accessibility;
- Where it has been determined that full accessibility is appropriate, the accessibility representative should be consulted during the detailed design process to ensure that the design is appropriate; and

⁷ Ontarians with Disabilities Act - Bill 118 and 125, 2001

⁸ Trails for All Ontarians Collaborative (TAOC), 2006



- Work collaboratively with the local Accessibility Advisory Committee/Department to consider developing signage/content to clearly indicate trail accessibility conditions, which allow users with mobility-assisted devices to make an informed decision about using a particular trail prior to travelling on it.

5.5 PERSONAL SECURITY

To the extent possible, trails should be designed to allow users to feel comfortable, safe, and secure. Although personal safety can be an issue for all, women, the elderly and children, are among the most vulnerable groups. Principles of Crime Prevention Through Environmental Design (CPTED) should be considered and applied to help address security issues concerning trail use, particularly in locations where trails are infrequently used, isolated or in areas where security problems have occurred in the past.

The four main underlying principles of CPTED are:

- Natural Access Control: deters access to a target and creates a perception of risk to the offender;
- Natural Surveillance: the placement of physical features and/or activities that provides for natural visibility or observation;
- Territorial Reinforcement: defines clear borders of controlled space from public to semi-private to private, so that users of an area develop a sense of proprietorship over it; and
- Maintenance: allows for the continued use of space for its intended purpose.⁹

By way of example, some specific design considerations that the City of Toronto Safe City Committee and Planning Department have identified include:

- Good visibility by others by having routes pass through well-used public spaces;
- Provide the ability to find and obtain help: Signage that tells users where they are along the trail system;
- Provide “escape” routes from isolated areas at regular intervals;
- Maintain sight lines and sight distances that are appropriately open to allow good visibility by users;
- Provide trailhead parking in highly visible areas;
- Minimize routing close to features that create hiding places such as breaks in building facades, stairwells, dense shrubs and fences;
- Design underpasses and bridges so that users can see the end of the feature as well as the area beyond; and
- Signs near entrances to isolated areas can be used to inform users that the area is isolated and suggest alternative routes.

9 CPTED Ontario, 2002



5.6 TRAIL LIGHTING

Lighting of Chatham-Kent trails must be carefully considered. Very few municipalities make the decision to light their entire trail system for a number of important reasons, including:

- The cost of initial installation can be prohibitive. Some recent general budget figures reported exceed \$40,000 per kilometer not including power supply;
- Staff time and material cost to properly monitor, maintain lamp fixtures and replace broken and burned out bulbs on an ongoing basis;
- A tendency for vandals to target light bulbs;
- Energy consumption;
- Excessive light pollution, especially in residential rear yards and adjacent to natural areas (though this can be controlled with proper shielding);
- Potential detrimental effects on flora and fauna, especially with light pollution in natural areas such as woodlots;
- The potentially false sense of personal security created by lighting in the nighttime environment; and
- Inability of the human eye to adapt to the high contrast resulting from brightly lit and dark shadowed areas adjacent to one another.

Lighting the entire trail system is not recommended, however there may be some locations where attractions and facilities such as urban and waterfront promenades, major parks or heavily used routes to major destinations where lighting might extend the hours of use and enjoyment by the community and visitors. The decision to light or not should be made on a site-specific basis, and where it has been determined that lighting appropriate, the quality and intensity of lighting should be consistent with prevailing standards for the setting being considered.

5.7 TRAIL TYPES



Major/Spine Multi-Use Trail in an Urban Area, Ottawa-Carleton Trailway (Trans Canada Trail) Stittsville, ON

5.7.1 Multi-use Trails

Spine or main trails are designed to accommodate the widest spectrum of users. They are wider, and may have an asphalt or granular surface. **Local or secondary trails** are generally narrow and follow the topography more closely than main trails. [Table 5.6](#) provides recommended guidelines for trail width and surface treatments for Major and Minor trails according to location type throughout Chatham-Kent. Intended trail uses should be considered when selecting trail surface as some surfaces tend to exclude certain uses.



Table 5.6 Suggested Trail Dimension and Surface Type According to Location

| Trail Location | Major /Main Trail | Minor /Secondary Trail |
|--|--|---|
| | Recommended/Preferred Guideline* | Recommended/Preferred Guideline* |
| Urban Core Area (i.e. riverfront promenade) | <p>3.0-3.5 m wide, hard surface (asphalt, concrete, pavers) compatible with urban design objectives.</p> <p>Note: some surface textures may be difficult for persons with wheelchairs and walkers to use.</p> <p>Consider application of a centerline marking on hard surface trails to articulate user positioning for bi-directional flow.</p> | Not applicable |
| Major city wide destination (i.e. Major city park, community centre , civic complex, urban rail trails, trails in utility corridors) | <p>3.0-3.5 m wide, hard surfaced (typically asphalt), especially for routes/loops to accommodate small wheeled users and urban rail trails where they pass through core areas and major city wide destinations.</p> <p>Use granular surface where warranted.</p> <p>Consider width and turning radii of service access vehicles when designing trails in utility corridors.</p> <p>Consider application of a centerline marking on hard surface trails to articulate user positioning for bi-directional flow.</p> | <p>2.4-3.0 m wide granular surface</p> <p>Hard surfaced only where requested by residents and warranted, or for maintenance concerns.</p> |
| Minor city parks, stormwater management areas with trails | <p>2.4-3.0 m wide granular surfaced.</p> <p>Hard surfaced when/where requested by residents and warranted, or for maintenance concerns.</p> | 2.4 m wide granular surface. |
| Natural area buffers, rural areas, including rail trails in rural areas | <p>2.4 m wide granular surface</p> <p>Consider trail hardening for maintenance concerns (only use asphalt or soil bonding agents).</p> <p>Avoid using asphalt around treed areas where excessive root damage may occur during installation and/or roots may cause premature heaving of asphalt.</p> | <p>1.5 m wide granular surface.</p> <p>Trail hardening for maintenance concerns only-use soil bonding agents.</p> |

Trails in utility corridors and abandoned rail corridors are prime opportunities to develop separated trails

Table 5.6 Suggested Trail Dimension and Surface Type According to Location

| Trail Location | Major /Main Trail | Minor /Secondary Trail |
|---|---|--|
| | Recommended/Preferred Guideline* | Recommended/Preferred Guideline* |
| Woodlots and conservation areas (urban and rural areas) | 2.4 m wide granular surface. | 1.5-2.0 m wide woodchip surface. May be granular or smooth earth surface where disabled access is desired. |
| Wetlands: includes treed swamps, marshes, shrub thickets/ meadow marshes, marshes (urban and rural areas) | 2.0-2.4 m wide granular surface, boardwalk or other surface considered to be compatible with site conditions. | 1.5 m boardwalk or other suitable elevated trail bed. |

* = Standards are to be achieved where possible. Some variation from standard width and surface type will be applied on a site by site basis when considering local environmental constraints and/or access needs for people using mobility devices.

In some areas, where trail use is high and adequate space exists, it may be appropriate to provide physically separated trails within the same corridor to create opportunities for faster traveling users as well as slower travelling users. Where this design treatment is appropriate, separation of the major trail from the minor trail can be created by distance, grade, or planted buffers. Signs to identify permitted uses for each trail should be used to communicate intent and ensure the integrity of the separated system. Trails in utility corridors and abandoned rail corridors are prime opportunities to develop separated trails.

There are a number of options for trail surface materials, each with advantages and disadvantages related to cost, availability, ease of installation, lifespan and compatibility with various trail users groups. Table 5.7 provides a summary of the most commonly used trail surfacing materials along with some advantages and disadvantages of each. There is no one trail surface material that is appropriate in all locations, and material selection during the design stage must be considered in the context of the anticipated users and location. Asphalt is the most commonly used hard surface and Stonedust/“Screenings” is likely the most widely accepted granular surface.



Table 5.7 Comparison of Trail Surfacing Materials

| Type | Advantages | Disadvantages |
|-------------|---|---|
| Concrete | <p>Smooth surface, can be designed with a variety of textures and colours, providing flexibility for different urban design treatments.</p> <p>Long lasting, easy to maintain.</p> | <p>High cost to install.</p> <p>Requires expansion joints which can create discomfort for users with mobility aids.</p> <p>Must be installed by skilled trades people.</p> <p>Is not flexible and cracking can lead to heaving and shifting, sometimes creating large step joints.</p> |
| Unit Pavers | <p>Relatively smooth surface, available in a variety of patterns and colours to meet urban design needs.</p> <p>Long lasting, can be easily repaired by lifting and relaying.</p> | <p>High cost to install.</p> <p>Users with mobility aids may find textured surface difficult to negotiate.</p> <p>Must be installed by skilled trades people.</p> |
| Asphalt | <p>Smooth surface, moulds well to surrounding grades, and is easily negotiated by a wide range of trail user groups.</p> <p>Relatively easy to install by skilled trades.</p> <p>Patterned and coloured surface treatments are available, however patterning in surface may be difficult for some user groups to negotiate.</p> | <p>Moderate-high cost to install.</p> <p>Must be installed by skilled trades people. Has a lifespan of 15-20 years depending on the quality of the initial installation. Poor base preparation can lead to significant reduction in lifespan.</p> <p>Cracking and “alligating” occurs near the edges, grass and weeds can invade cracks and speed up deterioration.</p> <p>Must be appropriately disposed of after removal.</p> |
| Granulars | <p>Pit Run: Mixed granular material “straight from the pit” containing a range of particle sizes from sand to cobbles. Excellent for creating a strong sub base, relatively inexpensive.</p> | <p>Not appropriate for trail surfacing.</p> |
| | <p>‘B’ Gravel: Similar characteristics to Pit Run with regulated particle size (more coarse than ‘A’ Gravel). Excellent for creating strong, stable and well drained sub bases and bases. Relatively inexpensive.</p> | <p>Not appropriate for trail surfacing.</p> |
| | <p>‘A’ Gravel: Similar characteristics to ‘B’ Gravel, with smaller maximum particle size. Excellent for trail bases, may be appropriate for trail surfacing of rail trails in rural areas and woodlots. Easy to spread and regrade where surface deformities develop.</p> | <p>Subject to erosion on slopes.</p> <p>Some users have difficulty negotiating surface due to range in particle size and uneven sorting of particles that can take place over time with surface drainage.</p> |



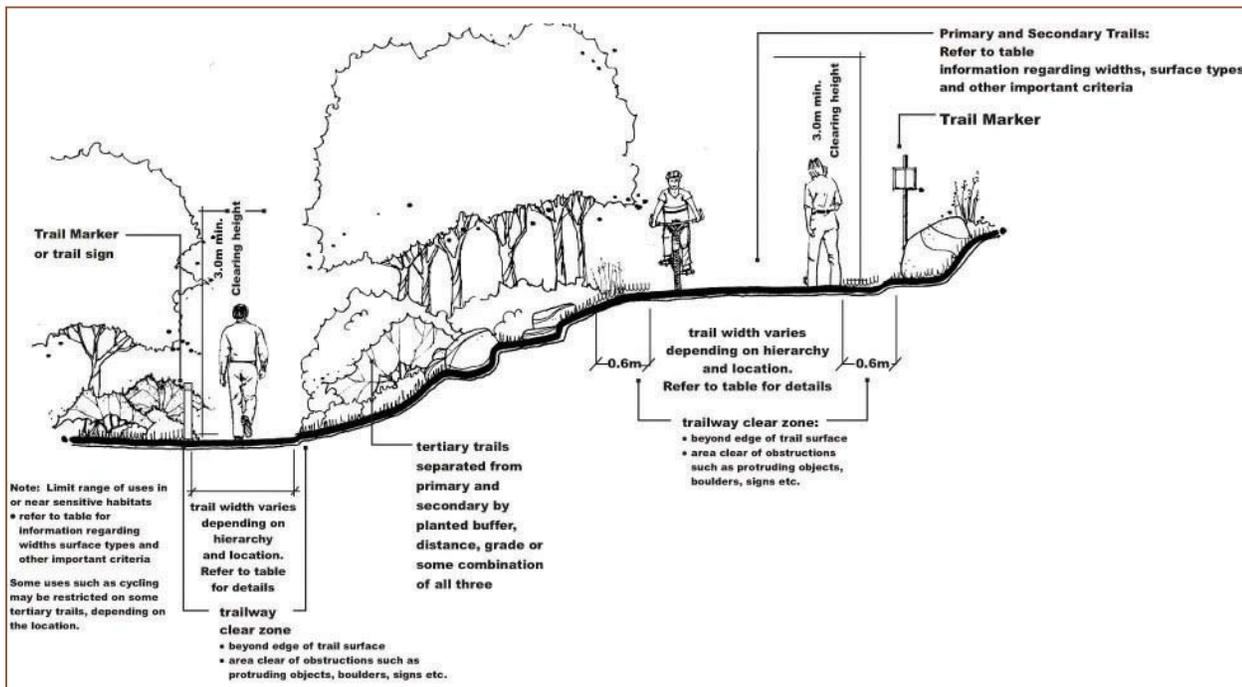
Table 5.7 Comparison of Trail Surfacing Materials

| Type | Advantages | Disadvantages |
|------------------------|---|---|
| Granulars cont'd | <p>Clear stone: Crushed and washed granular, particles of uniform size, no sand or fine particles included. Excellent bedding for trail drainage structures and retaining wall backfilling, if properly leveled and compacted, makes an excellent base for asphalt trails.</p> | <p>Not appropriate for trail surfacing.</p> |
| | <p>Stone fines (Screenings): Mixture of fine particles and small diameter crushed stone. Levels and compacts very well and creates a smooth surface that most trail users can negotiate easily. Easy to spread and regrade where surface deformities develop. Inexpensive and easy to work with. Widely used and accepted as the surface of choice for most granular surfaced trails.</p> | <p>Subject to erosion on slopes. Wheelchair users have reported that stone shards picked up by wheels can be hard on hands. May not be suitable as a base for hard surfaced trails in some locations.</p> |
| Mulches and Wood Chips | <p>Bark or wood chips, particle size ranges from fine to coarse depending on product selected, soft under foot, very natural appearance that is aesthetically appropriate for woodlot and natural area settings.</p> <p>Some user groups have difficulty negotiating the softer surface, therefore this surface can be used to discourage some uses such as cycling.</p> <p>May be available at a very low cost depending on source, and easy to work with.</p> | <p>Breaks down over time, therefore requires “topping up”.</p> <p>Source of material must be carefully researched to avoid unintentional importation of invasive species (plants and insects).</p> |
| Earth/Natural Surface | <p>Native soils existing in situ. Only cost is labour to clear and grub out vegetation and regrade to create appropriate surface. Appropriate for trails in natural areas provided that desired grades can be achieved and that soil is stable (do not use avoid organic soils).</p> | <p>Subject to erosion on slopes.</p> <p>Different characteristics in different locations along the trail can lead to soft spots.</p> <p>Some user groups will have difficulty negotiating surface.</p> |



Table 5.7 Comparison of Trail Surfacing Materials

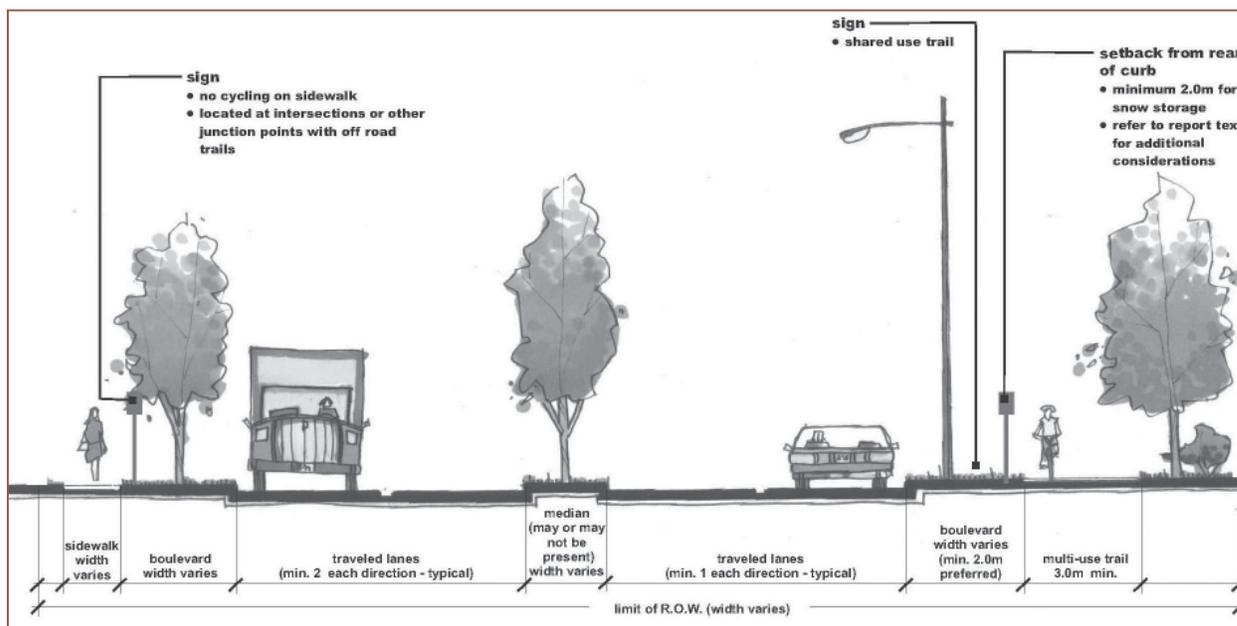
| Type | Advantages | Disadvantages |
|--------------------------------------|---|--|
| Soil Cement, and soil binding agents | <p>Soil Cement = mixture of Portland Cement and native/parent trail material. When mixed and sets it creates a stable surface that can be useful for “trail hardening” on slopes, particularly in natural settings.</p> <p>Soil Binding Agents = mix of granulars and polymers that create a solid, yet flexible surface that may be appropriate for “trail hardening” on slopes in natural areas.</p> <p>Limits volume and weight of materials to be hauled into remote locations.</p> | <p>Useful for specific locations only.</p> <p>Soil binding agents tend to be expensive and have been met with mixed success.</p> |
| Wood (i.e. bridges and boardwalks) | <p>Attractive, natural, renewable material that creates a solid and level travel surface.</p> <p>Choose rough sawn materials for deck surfacing for added traction.</p> | <p>Requires skill to install, particularly with the substructure.</p> <p>Gradually decomposes over time, this can be accelerated in damp and shady locations, and where wood is in contact with soil.</p> <p>Expensive to install.</p> |



Multi-Use Trail



5.7.2 Boulevard Multi-use Trails



Boulevard Multi-Use Trail

A boulevard multi-use trail can be used where the characteristics of the boulevard are suitable. Every intersection, including driveways/private entrances and intersecting roadways are a potential conflict point. Intersecting roadways are a particular concern as operators of motor vehicles making right hand turns may not be anticipating the speed at which some users of the boulevard multi-use trail may be traveling (i.e. cyclists and in-line skaters). Therefore, the boulevard multi-use trail has limited application. The following are some general roadway characteristics where the application of a boulevard trail may be considered:

- Urban arterial, collector or rural roads where there is ample right of way between the edge of the road (curb for urban cross section and shoulder for rural cross section) and the limit of the right of way to maintain a minimum separation between the road and the trail;
- Routes that provide connections between important destinations or links between off-road trails where no parallel route(s) exist nearby;
- Routes that are intended to provide short connections between long off-road trail segments (i.e. 4 –6 blocks or less where other alternatives are not available); and
- Along corridors where there are limited commercial or residential driveway crossings. The following guideline thresholds have been applied in several other municipalities and are suggested for Chatham-Kent.



Table 5.8 Driveway Crossing Thresholds for Boulevard Multi-use Trails

| Number of Driveway Crossings / Intersections Per km | Guideline Recommendation for Boulevard Multi-use Trail |
|---|---|
| 0-3 | An ideal application for boulevard multi-use trail. |
| 4-10 | Consider applying on-road paved shoulders or bike lanes, where other conditions noted above can't be met. |
| >10 | Boulevard trail not recommended. Pedestrian trail users should be directed to follow sidewalks, bicycle lanes should be installed on-road for cyclists. |

When implementing this facility type, the following design elements should be considered:

- A setback from the curb is required to provide space for snow storage, to provide an adequate clear zone from site furniture and utility poles and in some cases street tree plantings. Where street tree plantings are included, the preferred setback is 3.0-4.5 m from the curb. Where no trees are included and vehicle speed is 60 km/hr or less, the preferred setback can be reduced to 2.0 m;
- The setback should be achieved throughout the length of the route with the exception of intersections where the trail should cross with the formal pedestrian crossing;
- Signing in advance of, and at roadway intersections, to inform cyclists to stop, dismount and walk across intersections as required by the Highway Traffic Act, or a suitable crossing design to permit cyclists to legally ride through intersections after stopping but without dismounting;
- Stop or yield signs (decision on a site-by-site basis) at driveways, depending on the number of driveways and the distance between each;
- A treatment at road intersections (i.e. swing gate) to separate “lanes of traffic” in each direction. The treatment must be spaced adequately to allow for the passage of bicycles with trailers;
- Open sight lines at intersections with driveways and roadways;
- A centre yellow line on trail to separate directions of travel (for hard surfaced trails-optional) and to guide riders overtaking pedestrians and slower moving riders; and
- Curb ramps at driveways and roadway intersections.

When new roads are being built or existing roads are being reconstructed, the alignment of the centre line of the road within the right-of-way should be examined where the Trail Master Plan recommends an off-road connection. For example, when a road is being reconstructed from a two lane rural to a three or four lane urban cross section and the potential for a boulevard trail has been identified, an offset road centreline within the road right-of-way can provide additional boulevard space on one side. This will provide more space for the development of the boulevard trail and/or increased separation distance between the road and the trail. Where boulevard trails are implemented on one or both sides of a road, it is reasonable to assume that they can perform the same function as the sidewalk, therefore it is not necessary to install both a trail and sidewalk on the same side of the road. The boulevard trail should be clearly signed (i.e. trail and shared use signage) so that users are aware that the segment is multi-use and not pedestrian only.



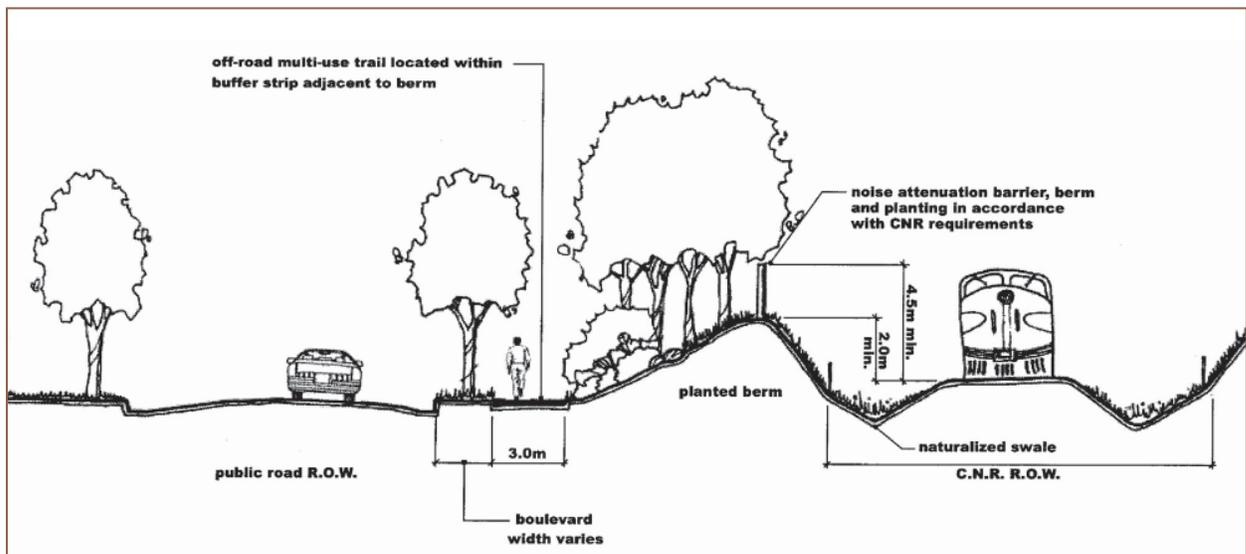
In Chatham-Kent a number of options exist for on-road cycling routes

Where boulevard trails are provided as multi-use primary or secondary trail connections, some cyclists may still prefer to, and have the legal right to, ride on the road. The addition of bicycle lanes should be evaluated during the design stage for new roads and upgrading of existing roads even where boulevard trails are provided. Where it is not appropriate or feasible to include bicycle lanes, consideration should be given to providing a wide curb lane to accommodate cyclists, along with other improvements to make the street more bicycle friendly (i.e. bicycle friendly catch basin covers).

5.7.3 Rails with Trails

There are several active rail corridors in Chatham-Kent, and some may be candidates for “rails with trails”. Rights-of-way for rail corridors are often wide enough to safely accommodate a multi-use trail in addition to existing rail operations. This can also work in reverse: should abandoned rail lines that currently host multi-use trails be needed in the future for rail or other future transportation options, it is possible to reinstall the rail infrastructure without losing the use of the multi-use trail. A number of municipalities are now considering “rails with trails”, particularly for low volume, low speed rail lines and light rail transit corridors.

Trails in active rail corridors should also be physically separated from the rail facility. This can be accomplished through the provision of planted berms where sufficient right-of-way exists. In locations with constrained rights-of-way, a barrier or fence is a more feasible way to safely separate trail users from active rail traffic. Crossings of the active line should be minimized and must be properly designed which will include an approval process with the rail agency.



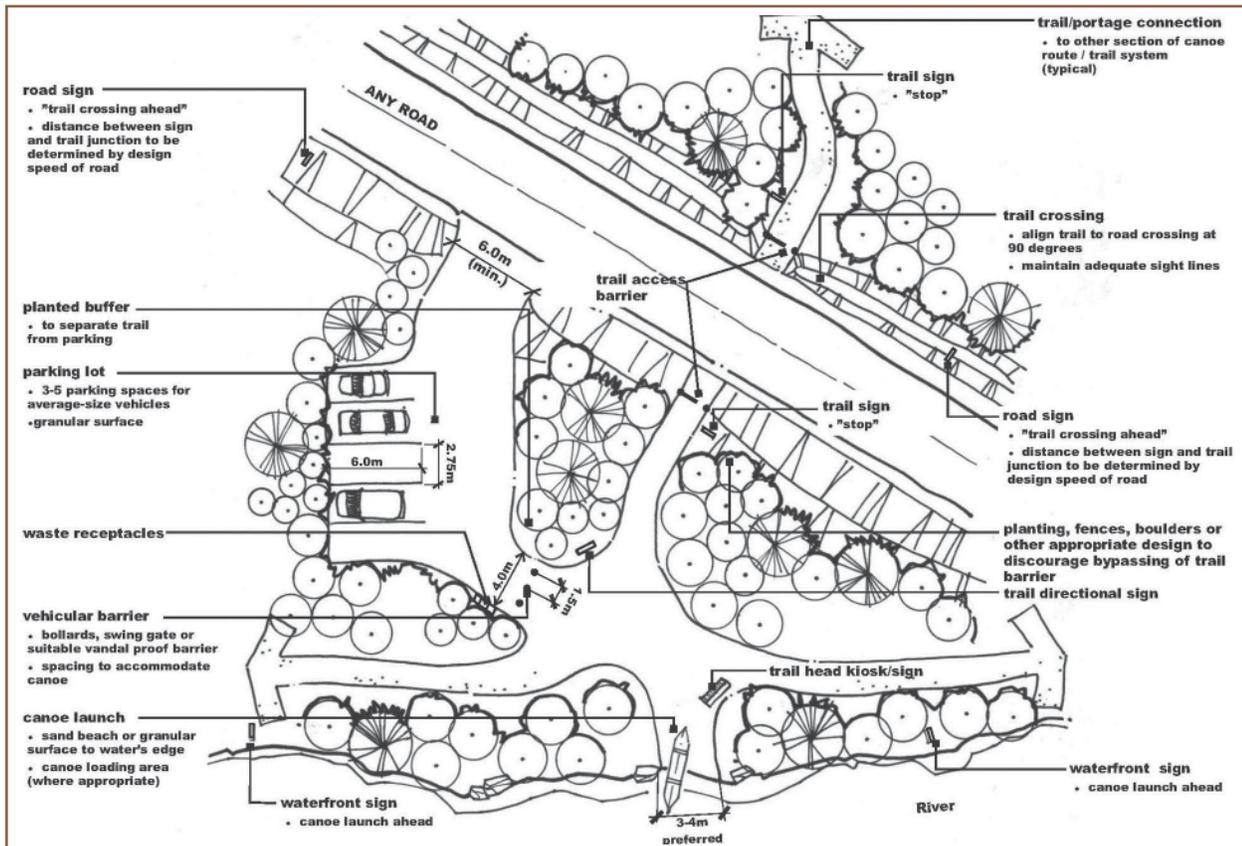
Typical Cross-Section of a Cycling Facility Adjacent to a Rail Corridor Separated by a Planted Berm



5.7.4 Water Routes

Chatham-Kent is blessed with many miles of shoreline, attractive bays and marshes along Lake Erie and Lake St. Clair as well as many interesting creeks and rivers. The Thames and Sydenham Rivers are two significant navigable waterways in Chatham-Kent. The Thames has national Heritage River status. Chatham-Kent's shorelines and rivers are a rich cultural and natural heritage resources deserving of an integral part of Chatham-Kent trail system. Many sections of these waterways are used today for pleasure boating, and some sections, such as the Sydenham River in Wallaceburg, are considered part of the existing local trail system.

There are many opportunities to develop water-based routes associated with Chatham-Kent's shorelines, rivers and creeks. Few, if any, improvements are required in the waterways themselves to make them suitable for use as water based trails, apart from the removal of overhead obstructions such as low hanging branches and underwater hazards such as snags. Any alterations to waterways or shorelines, and any work, in, near or crossing over waterways will require the approval of the Lower Thames Valley Conservation Authority as a representative of the Department of Fisheries and Oceans. Much of the land along shorelines is privately owned, and as such public access will be limited. Signage along the water's edge to inform users of appropriate locations for land access and public property should be placed in highly visible locations, and cautionary signs should be used to mark potential hazards such as bridge structures with low headroom.



Typical Canoe Launch

There are many opportunities to develop water-based routes associated with Chatham-Kent's shorelines, rivers and creeks



Currently there are public boat launches in a number of locations throughout the municipality that can be used as access points for water based trails. When planning and designing new access points a number of items should be considered. Ideally, parking should be located as close as possible to the launch point so the portage distance can be minimized. In addition, the portage route between the parking area and launch ramp should be relatively straight with no obstructions. Bollards or swing gates are preferred over offset gates at these locations. A 3 to 4 m wide launch area at the river's edge will provide adequate room for canoeists/kayakers to load and unload. Where necessary, this width can be reduced to 2 m. Signing along the shoreline upstream and downstream of the launch point will help to direct users to the dedicated launch point, minimizing unnecessary damage to the shoreline in other areas.

5.7.5 On-road Routes

One of the objectives of the Chatham-Kent Trails Master Plan is to develop a trail network that is off-road wherever possible, recognizing that in some cases an off-road alignment is not possible even in the long term. In the rural countryside and parts of the urban centres, such as the older residential neighbourhoods, public open space is confined to road rights-of-way and centralized parks. Where public land (other than the road right-of-way) is not available and access agreements for trails on private lands are not feasible, it is necessary to provide connecting links using the road network. Where this is the case, pedestrians and other small-wheeled users (strollers, in-line skaters, users with mobility-assisted devices etc.) are expected to use sidewalks in urban areas and road shoulder in rural areas, whereas cyclists are expected to use the road. Bicycles are designated as a vehicle under the Highway Traffic Act (HTA) and as such are required to obey all of the same rules and regulations as automobiles when being operated on a public roadway. The Ministry of Transportation (MTO) and the Transportation Association of Canada (TAC) have developed standards for the design of on-road facilities and signing for on-road-bike system. In Chatham-Kent a number of options exist for on-road cycling routes including bicycle lanes, paved shoulders, wide curb or shared lanes and signed routes. In addition to the commonly encountered situations to which relatively simple guidelines can be applied, there are often situations where the proper design requires a bicycle system design specialist who is familiar with not only the common guidelines, but also with innovative techniques that have been successfully applied elsewhere.

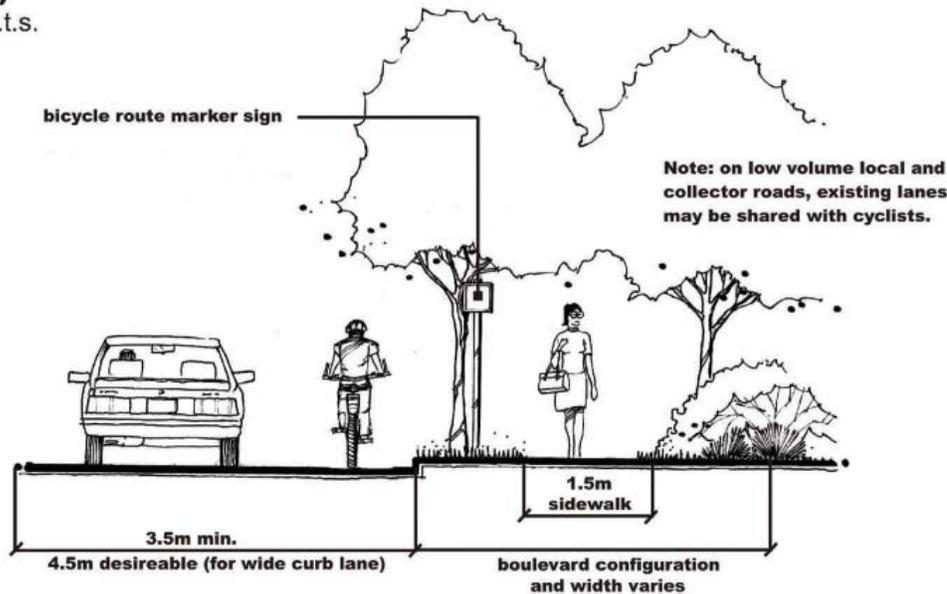
Signed Routes

Signed routes are typically found along roads where traffic volumes and vehicle speeds are low. Typical of quieter residential streets (low volume and low speed), core urban areas (higher volume and low speed) and lower order rural roads (low volume and moderate speed), cyclists can share the road with motor vehicles and there is no need to create a designated space for cyclists. Signs located at intersections and at regular intervals in rural areas help trail users find their way. Along signed routes where the street is very narrow, "share the road" signs can also be erected to encourage cooperative behaviour between cyclists and motorists. In some areas, particularly urban residential neighbourhoods, traffic calming techniques such as through travel restrictions for cars, traffic circles and reduction in the number of stops signs can be used to create "bicycle priority streets" which allow the cyclist to travel more efficiently by not having to stop at frequently placed four way stops.



Bikeway Typical Signed Route/Wide Curb Lane (urban)

section: n.t.s.



Shared use Lanes

Wide shared use lanes, sometimes also referred to as wide curb lanes are used on roads where vehicle speeds or traffic volumes are higher than those associated with signed routes (e.g. arterial and collector roads). Where necessary or desirable, the shared use arrow or “Sharrow” can be painted on the road at regular intervals to inform road users to expect cyclists, and to assist the cyclist in understanding the preferred location to travel.

Paved Shoulders

Paved shoulders provide a space for cyclists on rural cross-section roads (with shoulders, no curb and gutter). Pedestrians can use paved or granular shoulders where necessary (traveling in a direction facing traffic). Paved shoulders are typically recommended on rural cross section roads where traffic volume and speed are high. Poor sight lines and high truck volume are additional situations where paved shoulders should be considered. Research indicates that paved shoulders can reduce erosion and long-term maintenance costs of the road, extend pavement life, and reduce the potential for single vehicle run-off-the-road accidents. Some jurisdictions such as the Region of Niagara and City of Ottawa have recently approved policy to pave rural road shoulders when roads are resurfaced or reconstructed.



Bike Lanes



Example of a Bike Lane, Guelph, ON

Bike lanes are typically located on urban cross-section roads (with curb and gutter) to create a physical space reserved for cyclists. In many municipalities, persons who use mobility-assisted devices also use this space. The diamond symbol and bicycle symbol painted on the pavement, in addition to roadside signs are useful on higher volume and higher traffic roadways. In areas where on-street parking is permitted, continuing the bike lane is the ideal method where space permits. Where road right-of-way widths are limited, where narrowing or removing traffic lanes is not feasible, and/or where the relocation or removal of parking is not an option, the bike lane must be properly terminated, which includes proper signage. The Bikeway Traffic Control Guidelines for Canada (Transportation Association of Canada 1998), should be consulted for additional details and specifications.

Evaluating Existing Roadways

During the detail design stage, bikeway planners and designers and/or other concerned bodies should conduct an inventory of the existing conditions found along sections of a roadway right-of-way before they determine which routing and design options are most appropriate. The following factors (Table 5.9) for evaluating existing roadways can serve as a useful checklist to assist in that decision-making process and not all factors will apply in all locations. Although there is no formula or calculation that can be applied to come up with the definitive answer, the group of factors is arranged, generally, in descending order of importance. Sound “engineering judgment” should also be applied when deciding on the most appropriate facility type.



Table 5.9: Factors and Considerations Useful in Evaluating Roadways for Potential Multi-use Trails and Bicycle Routes

| Primary Factors | Considerations | Secondary Factors | Considerations |
|--|---|--|--|
| 1. Location | <ul style="list-style-type: none"> Rural roadway right-of-way Urban roadway right-of-way Not within a public roadway right-of-way | 1. Length of the section | <ul style="list-style-type: none"> Less than 50 m 50 m to 5.0 km Greater than 5.0 km |
| 2. Function | <ul style="list-style-type: none"> Provincial highway Arterial road Collector road Local road Residential street Park road Semi-public road Parking lot | 2. Pedestrian facilities and amenities | <ul style="list-style-type: none"> Curbs, sidewalks Boulevards, trees, benches (for each side of road), Transit stops and shelters |
| 3. Posted and observed motor vehicle operating speed | <ul style="list-style-type: none"> Less than or equal to 60 km/hr Greater than 60 km/hr | 3. Turning potential and crossing opportunities | <ul style="list-style-type: none"> Traffic lights, crosswalks, number of lanes, traffic sensors, medians, centre refuges, curbs, crossing interval, turning lanes |
| 4. Traffic volume (per lane) | <ul style="list-style-type: none"> Less than 1,000 AADT (Annual Average Daily Traffic) 1,000 to 3,000 AADT Greater than 3,000 AADT | 4. Driveways - number of commercial or residential | <ul style="list-style-type: none"> Number of crossings per km |
| 5. Traffic mix - trucks, buses, streetcars, RVs | <ul style="list-style-type: none"> Less than 6% of AADT 6% to 12% of AADT More than 12% of AADT | 5. Topography | <ul style="list-style-type: none"> Slopes less than or equal to 5% Slopes greater than 5% |
| 6. On-street parking | <ul style="list-style-type: none"> One side of the roadway Both sides of the roadway | 6. Scenic interest | <ul style="list-style-type: none"> Proximity or relationship to natural areas, scenic views and vistas, points of interest |
| 7. Intersections | <ul style="list-style-type: none"> Number and complexity | 7. Sidewalk or trail obstructions | <ul style="list-style-type: none"> Constrictions due to walls, utility poles, etc. |



Table 5.9: Factors and Considerations Useful in Evaluating Roadways for Potential Multi-use Trails and Bicycle Routes

| Primary Factors | Considerations | Secondary Factors | Considerations |
|--|--|--|--|
| 8. Sight lines / visual environment | <ul style="list-style-type: none"> Road bends, hills, pedestrian activity and crossings, tight urban scale, road signs, utility poles, shrubbery, walls, night lighting | 8. Opportunities for regeneration | <ul style="list-style-type: none"> Naturalized plantings, wildlife habitat |
| 9. Roadway width and surface conditions | <ul style="list-style-type: none"> Number of lanes, width of lanes, pavement type, edge condition, railway crossings, sewer grates | 9. Access to public transit | <ul style="list-style-type: none"> Interregional Transit Municipal transit |
| 10. Cost of recommended improvements | <ul style="list-style-type: none"> High Medium Low | 10. User security | <ul style="list-style-type: none"> Lighting, emergency telephones, “remoteness” |
| <p>Primary factors should be used to establish the basic form and “minimum recommended” or “preferred” width of the proposed route.</p> | | <p>Secondary factors are less important on their own but in combination with one another may increase or decrease the level of improvement required, and should be considered in detailed design.</p> | |

5.8 TRAIL CROSSINGS

A significant challenge when implementing a trail system is how to accommodate trail users when crossing roads. In the case of highways, arterial and busier collector roads, options generally include:

- Grade separated crossings (bridges and underpasses including both shared and pedestrian/trail only facilities);
- Directing users to cross at an existing signalized or stop-controlled intersection;
- Utilizing a mid-block pedestrian signal or Intersection Pedestrian Signal (IPS); and
- At a mid block location with a pedestrian island or refuge.

The IPS and pedestrian refuge are described in further detail below.

5.8.1 Intersection Pedestrian Signals (IPS)

The IPS provides a device to assist pedestrians crossing major streets and is a more positive and effective pedestrian crossing device than a pedestrian crossover (PXO). It is also significantly less expensive to install and maintain compared to a full traffic signal. Although widely used in Western Canada, the IPS is relatively new in Ontario. The Ministry of Transportation of Ontario has allowed the use of IPS’s across Ontario.



The IPS includes:

- Standard traffic signal indications to control traffic on the major street;
- Standard pedestrian “Walk” and “Don’t Walk” indications, activated by push buttons, for pedestrians wishing to cross the major street; and
- Stop signs for vehicles approaching the intersection from the minor street.

The IPS system is distinctly different from a standard traffic signal in two ways:

1. The traffic signal poles and pedestrian indicators are all located on one leg of the intersection and pedestrians are only permitted to cross at that location; and
2. The traffic approaching from the side streets is controlled by a STOP sign, as opposed to a traffic signal.

Vehicles approaching from the side street will be permitted to turn onto the main street only when it is clear and safe to do so, yielding the right-of-way to both pedestrians crossing the main street as well as vehicles traveling along the main street.

5.8.2 Pedestrian Refuge Islands

Pedestrian refuge islands are medians that are placed in the centre of the roadway separating opposing lanes of traffic. They allow trail users to cross one direction of traffic at a time, with a location in the centre of the roadway to wait for a gap in traffic for the other direction. They are particularly suited for roadways with four to five lanes since the cognitive requirements to select a gap in traffic traveling in two direction in four lanes is considerably higher than that required for cross two lanes of traffic. A number of jurisdictions have implemented Pedestrian Refuge Islands. The following are two specific examples to illustrate some principles being used to determine their location and design.

Guidelines for the typical design elements for a pedestrian refuge island are as follows¹⁰:



- Islands are typically a minimum of 6 m in length;
- Island width should be at least 1.8 m wide, but 2.4 m is preferred to accommodate wheelchairs in a level landing 1.2 m wide plus 0.6 m wide detectable warning devices on each side. The 2.4 m width will also accommodate bicycles in the refuge;

Example of a Pedestrian Refuge Island, Guelph, ON

¹⁰ Traffic Engineering Council Committee TENC-5A-5, *Design and Safety of Pedestrian Facilities: A Recommended Practice of the Institute of Transportation Engineers*, Institute of Transportation Engineers, Washington, D.C., March 1998

A significant challenge when implementing a trail system is how to accommodate trail users when crossing roads.

- Curb ramps are provided to allow access to the roadway and island for wheelchair users, and detectable warning devices (0.6 m in width) are required at the bottom of the curb ramps;
- The pathway on the island is constructed of concrete, not asphalt. The visually impaired can better detect the change in texture and contrast in colour supplemented by the detectable warning devices to locate the refuge island;
- Appropriate tapers are required to diverge traffic around the island based on the design speed of the roadway;
- The pathway on the island can be angled so that pedestrians are able to view on-coming traffic as they approach the crossing;
- Illumination should be provided on both sides of the crossing;
- Signage associated with the pedestrian refuge island includes “Keep Right” and “Object Marker” warning signs installed on the island facing traffic, and “Pedestrian Crossing Ahead” warning signs installed on the roadway approaching the crossing. “Wait for Gap” warning signs can be installed on the far side of the crossing and on the refuge island if pedestrians are failing to cross in a safe manner;
- Crosswalk markings are not provided unless the crossing is at an intersection controlled by signals, stop or yield signs, or controlled by a school crossing guard; and
- Railings on the island to control pedestrian access are not recommended because they are a hazard in potential collisions (spearing of driver or pedestrian). Some pedestrians will walk in front of or behind the island to avoid the railings, a less safe refuge location than on the island.

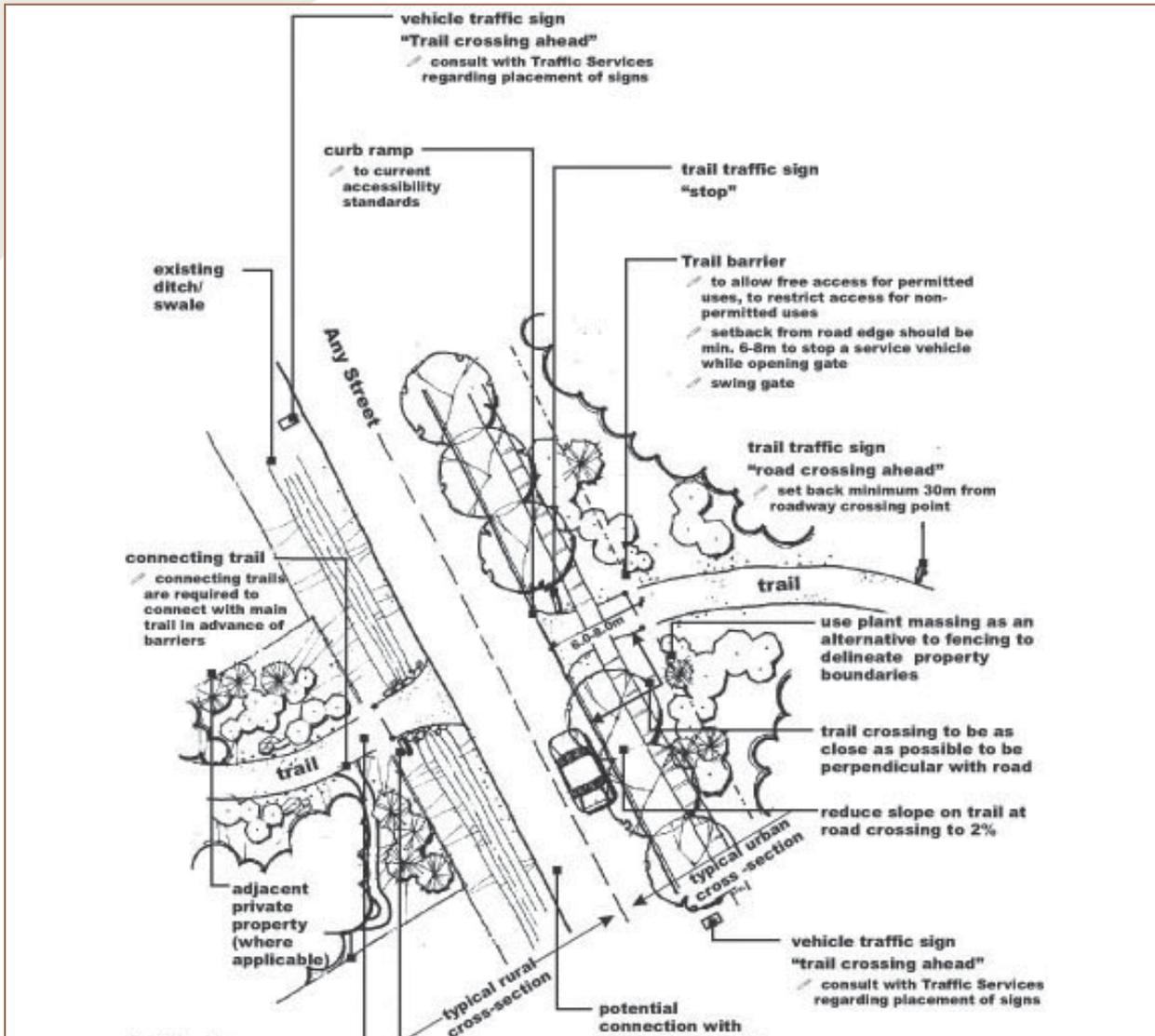
5.8.3 Minor Road

In the case of lower volume, lower speed roads the crossing can be accomplished with greater ease. The figure on the following page illustrates the key aspects of trail crossings of roadways.

Trail crossings of minor roads should include the following:

- Creation and maintenance of an open sight triangle at each crossing point;
- Trail access barriers;
- Signing along the roadway in advance of the crossing point to alert motorists to the trail crossing;
- Signing along the trail to alert trail users of the upcoming roadway crossing;
- Alignment of the crossing point to achieve as close to possible a perpendicular crossing of the roadway, to minimize the time that trail users are in the traveled portion of the roadway; and
- Curb ramps on both sides of the road.

In some locations signing on the trail may not be enough to get trail users to stop before crossing the road. Under these circumstances or in situations where the sightlines for motorists are reduced and/or where there is a tendency for motorists to travel faster than desirable, the addition of other elements into the trail crossing may be necessary. Changing the trail alignment may help to get trail users to slow and stop prior to crossing. Changes to the streetscape may also provide a cue and traffic calming effect for vehicles.



Elements of a Typical Trail Crossing



5.8.4 Active Railway

Currently, in order to establish a pathway crossing of an active rail line, proponents must submit their request directly to the railroad company. Submissions need to identify the crossing location and its basic design. Designs should be consistent with Draft RTD-10, Road/Railway Grade Crossings: Technical Standards and Inspection, Testing and Maintenance Requirements (2002) available from Transport Canada. In the event that an agreement cannot be reached on some aspect of the crossing, then an application may be submitted to the Canadian Transportation Agency, who will mediate a resolution between the parties.



Example of an At-Grade Trail Crossing of a Railway, Newmarket, ON

5.8.5 Farm Crossing of Abandoned Rail Lines

In rural areas where abandoned rail corridors are being considered for multi-use trails, owners of farming operations who have property on both sides of the corridor and/or are using a portion of the corridor to gain access to their fields are sometimes apprehensive when plans are made for trails as they see this important access being restricted or discontinued. Where site specific concerns are identified it is important for trail designers and managers to work with the adjacent landowner(s) to develop a mutually beneficial solution. Successful solutions have been developed elsewhere in Ontario and can be as simple as:

- Post and wire fencing along both sides of the corridor in the section of concern;
- Lockable wire or metal gates in locations that serve the landowner's needs, with a lock that remains in the possession of the landowner;
- Access ramp(s) to reach the trail bed, which may already be in place and require only minor improvements such as grading, culverts or drainage;
- Trail widening where the machinery must cross and/or along the length of the segment that the owner may be required to travel on the trailbed (in the case of a diagonal or offset crossing);



- Cautionary signs to warn trail users in advance of the crossing point or zone that the machinery needs to use the trailbed; and
- Signs at trailheads to forewarn trail users that they may expect to encounter farm machinery crossing or using the trail, and that this may be more frequent during planting and harvest seasons.

5.8.6 Gates and Barriers

Access barriers are intended to allow free flowing passage by permitted trail user groups, and prohibit access by others. Barriers typically require some mechanism to allow access by service vehicles and emergency access. Depending on site conditions, it may also be necessary to provide additional treatments between the ends of the access barrier and limit of the trail right of way to bypassing of the barrier altogether. Each access point should be evaluated to determine if additional treatments are necessary. Additional treatments can consist of plantings, boulders, fencing or extension of the barrier treatment depending on the location. There are many designs for trail access barriers in use by different trail organizations, some are more successful than others.

They can grouped into three categories:

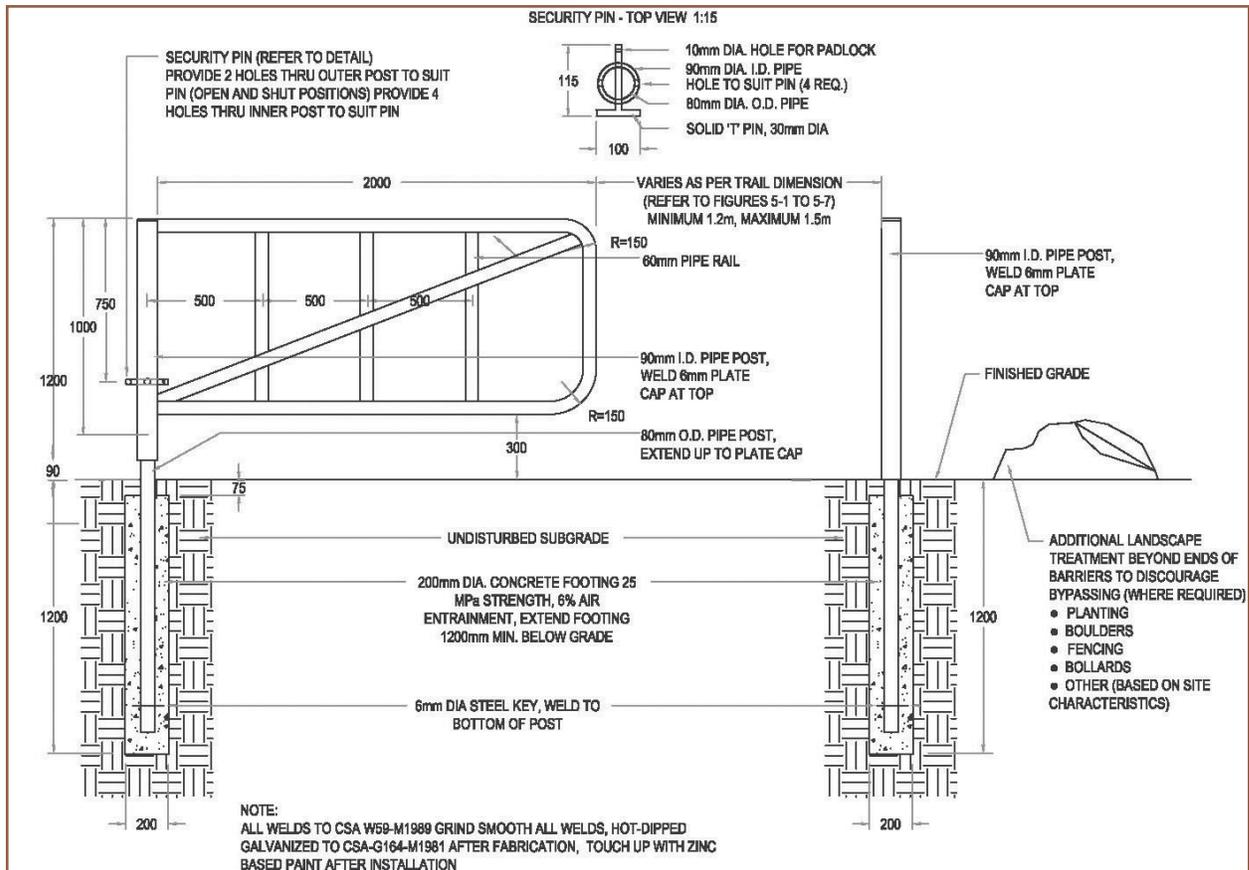
- Bollards;
- Offset Swing Gates; and
- Single Swing Gates.



Swing Gate Barrier, Grand Valley, ON



Swing Gate Barrier, Stittsville, ON



Light Duty Trail Barrier - City of Guelph

Bollards



Example Trail Crossing with Bollards, Windsor, ON

The bollard is the simplest and least costly barrier, and can range from permanent, direct buried wood or metal posts, to more intricately designed cast metal units that are removable by maintenance staff. An odd number of bollards (usually one or three) are placed in the trail bed in order to create an even number of "lanes" for trail users to follow as they pass through the barrier. Although the removable bollard system provides flexibility to allow service vehicle access, they can be difficult to maintain as the metal sleeves placed below grade can be damaged by equipment and can become jammed with gravel and debris from the trail bed.



Swing Gates



Urban Light Duty Swing Gate, Waterloo, ON

The single swing gate combines the ease of opening for service vehicle access, with the ease of passage of the bollard. Gates also provide a surface/support for mounting signage.

The offset gate is similar to the single swing gate, except that barriers are paired and offset from one another. Although they can be effective in limiting access by unauthorized users and can be easily opened by Operations staff, some groups including cyclists, especially cyclists pulling trailers and wheelchair users, can have difficulty negotiating the offset swing gate if the spacing between the gates is not adequate.

In urban areas the single swing gate is recommended for most applications. In some locations bollards may be sufficient. In rural locations a more robust single swing gate is should be used.

5.9 TRAIL STRUCTURES FOR OFF-ROAD TRAILS

5.9.1 Bridges



A Pedestrian Trail Bridge, Brampton ON

Where possible, the trail network should make use of existing bridges, including pedestrian bridges, vehicular bridges and abandoned railway bridges in appropriate locations. In cases where this is not possible a new structure will be needed and the type and design of a structure needs to be assessed on an individual basis. The following are some general considerations:

- In most situations the prefabricated steel truss bridge is a practical, cost effective solution;
- In locations where crossing distances are short, a wooden structure constructed on site may be suitable;
- Railings should be added if the height of the bridge deck exceeds 60 cm above the surrounding grade, and should be designed with a “rub rail” to prevent bicycle pedals and handlebars from becoming entangled in the pickets;
- When considering barrier free access to bridges, an appropriate hardened surface should be employed on the trail approaches and bridge decking should be spaced sufficiently close to allow easy passage by a person using a mobility-assisted device; and



- Decking running perpendicular to the path of travel is preferred over decking running parallel, as the latter is more difficult for use by wheelchairs, strollers, in-line skates and narrow tired bicycles.

5.9.2 Underpasses and Tunnels

Often an underpass or tunnel is the only way to cross significant barriers such as elevated railways and multi-lane highways. Designing trails through underpasses and tunnels can be challenging because of the confined space. Underpasses should be wide enough to accommodate all trail users whether they are traveling by foot, bicycle, in-line skates, wheelchair or other forms of transportation. Where feasible, it is suggested that trail widths through underpasses be equal to or greater than that of the approaching trail.

- The minimum recommended underpass or tunnel width for a multi-use trail is 3.6 m. Where the structure exceeds 18 m in length, in high traffic and/or urban areas the width should be increased to 4.2 m or greater;
- For shorter length underpasses, a vertical clearance of 2.5 m is usually sufficient recommended;
- For longer structures a vertical clearance of 3.0 m should be considered. If service and/or emergency vehicles are to be accommodated within the underpass, an increase in vertical clearance may also need to be provided;
- Underpasses and tunnels can be a security concern and also present maintenance challenges. To address these issues, tunnels should be well lit with special consideration made to security, maintenance and drainage. Approaches and exits should be clear and open to provide unrestricted views into and beyond the end of the structure wherever possible;
- Abutments should be appropriately painted with hazard markings;
- Offensive graffiti and debris should also be removed promptly and regularly; and
- Ideally, the transition between the trail and underpass crossing should be level and provide for accessibility. In the case where an underpass crosses beneath ground-level travel ways, ramps should ideally be provided to provide a transition down to the lower grade under the passage, with grade or alignment changes being taken up by the access ramps wherever possible.

5.9.3 Elevated Trailbeds and Boardwalks



Low Profile Boardwalk, Guelph, ON

Where trails pass through sensitive environments such as marshes, swamps, or woodlands with a large number of exposed roots, an elevated trailbed or boardwalk is usually required to minimize impacts on the natural feature. If these areas are left untreated, trail users tend to walk around obstacles such as wet spots, gradually creating a wider, often braided trail through the surrounding vegetation.

The figure to the left illustrates the turnpike and low profile boardwalk, a relatively simple yet effective method for secondary and special use (i.e. hiking only) trails. The low profile boardwalk is a low tech, low cost method that works very well in areas where organic soils are encountered.

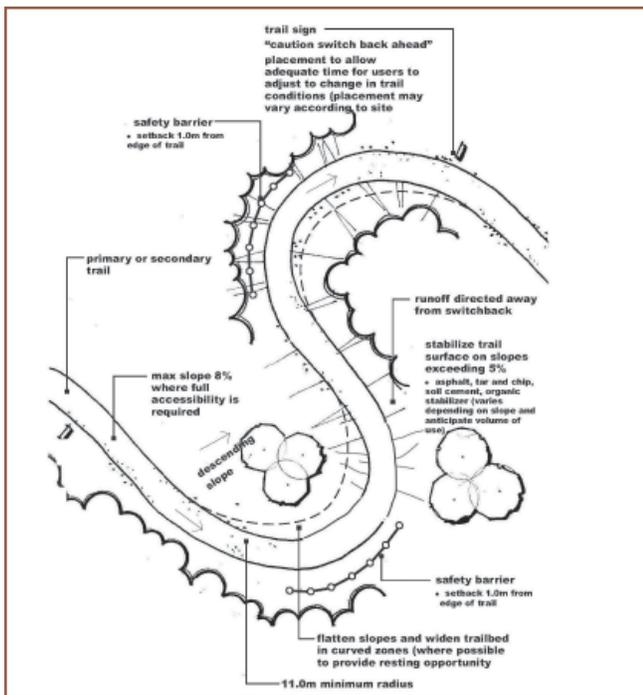


Various geosynthetic products have also been successfully used to overcome difficult soil conditions. The United States Department of Agriculture (Forest Service) has evaluated many products and design applications in the construction of trails in heavily used parks and on backcountry trails ¹¹.

Low profile boardwalks have been successfully employed by trail managers across Ontario. In some cases such as the Hanlon Creek Conservation Area in Guelph, the simple construction method provides a great opportunity for construction by supervised volunteers where precast “deck blocks” have been used for the foundation of the boardwalk. Where the trail is in a high profile location, where it is necessary to provide a fully accessible trail, or where the trail surface must be greater than 60 cm above the surrounding grade, a more sophisticated design and installation is necessary. This is likely to include engineered footings or abutments, structural elements and railings. A professional who is trained in structural design and approval requirements should be retained for these types of applications.

5.9.4 Switchbacks and Stairs

Pedestrian, motorized and some self-propelled users are capable of ascending grades of 30% or more whereas some users are limited to grades of less than 10%. For example, a slope of 8.3% is the threshold for a fully accessible facility. Once trail slopes exceed this threshold and slopes are long (i.e. more than 30 m) it is important to consider alternative methods of ascending slopes. Two alternatives to consider are switchbacks and stairs.



Switchback

Where construction is feasible, switchbacks are generally preferred because they allow wheeled users such as cyclists to maintain their momentum, and there is less temptation to create shortcuts, as might be the case where stairways are used. Switchbacks are constructed with turns of about 180 degrees and are used to decrease the grade of the trail. A properly constructed switchback also provides outlets for runoff at regular intervals, thus reducing the potential for erosion. Switchbacks typically require extensive grading and are more suited to open locations where construction activity will not cause major disruption to the surrounding environment. Switchbacks can be difficult to implement in wooded areas without significant impacts to surrounding trees.

11 (<http://www.fhwa.dot.gov/environment/fspubs/00232838/>)



When slopes exceed 15%, or where there is inadequate room to develop a switchback or another accessible solution, a stairway system should be considered. In these situations the site should be carefully studied so that the most suitable design can be developed. The following are some considerations for stairway design:

- Provide a gutter integrated into the stairway for cyclists to push their bicycles up and down (where appropriate to have bicycles);
- Develop a series of short stair sections with regularly spaced landings rather than one long run of stairs;
- For long slopes, provide landings at regular intervals (e.g. every 8-16 risers) and an enlarged landing at the mid-way point complete with benches to allow users the opportunity to rest;
- On treed slopes, lay the stairway out so that the minimum number of trees will be compromised or removed;
- Use slip resistant surfacing materials, especially in shady locations;
- Incorporate barriers on either side of the upper and lower landing to prevent trail users from bypassing the stairs; and
- Provide signs well in advance of the structure to inform users that may not be able to climb stairs.

5.10 SIGNAGE

Chatham-Kent is made up of several urban communities and a large rural area, all of which have their own identity. Local identity has evolved over time, in some cases the result of the architecture, landscape, land use, cultural history and residents. Trail themes can add a local flavour to individual trails or loops, creating an overall unique quality to the trail network. It also provides an additional opportunity and incentive for neighbourhood associations and interest groups to become unified as partners in developing and maintaining the trails throughout the entire municipality.

Other jurisdictions have taken this approach using a variety of methods including:

- Adding a distinct trail name or additional logo plate while maintaining other common design elements of the signs;
- Creating neighbourhood/district gateway nodes in key locations where the edges of neighbourhoods are considered to be; and
- Creating distinct interpretive themes for different neighbourhoods.

Signage is a critical element of the trail network and serves many important functions including:

- Providing instruction regarding traffic operations (for both motorists and trail users);
- Providing information regarding safety while traveling (i.e. maximum travel, upcoming hazards, junctions and crossings);
- Advertising the network to attract new users;



Ottawa-Carleton Rail Trail (Trans Canada Trail), Stittsville, ON



- Orienting and guiding trail users as they travel throughout the network, which can also be used as reference points for Emergency Services personnel;
- Providing information about the routes, nearby services and trail-related events;
- Informing users of their responsibilities while on the network; and
- Providing interpretation of local historical, cultural, natural and other resources.

Good signing systems have common characteristics, including:

- Clearly, concisely and consistently communicate information related to identification, direction, regulation and operation of the trail;
- Informing, but not distracting, trail users and detracting from the visual quality of overall trail experience;
- Graphics and internationally recognized symbols instead of excessive text to overcome language barriers;
- Visibility at night through the use of reflective materials should also be considered in locations where low light and night use is anticipated;
- A design that is timeless, in-scale and visually integrated with the landscape without creating unnecessary clutter; and
- High quality, durable (including resistance to ultraviolet radiation), vandal resistant quality materials and finishes.

5.10.1 Sign Types

The design and construction of the network should incorporate a hierarchy of signs each with a different purpose and message. This hierarchy is organized into a “family” of signs with unifying design and graphic elements, materials and construction techniques. The unified system becomes immediately recognizable by the trail user and can become a branding element. Consistent with this approach is the correct use of signage, which in-turn reinforces the trail's identity. Generally the family of signs includes:



Orientation and trailhead signs, which are typically located at key destination points and major network junctions. They provide orientation to the network through mapping, other appropriate network information as well as any rules and regulations. Where network nodes are visible from a distance, these can be a useful landmark. In some municipalities, orientation signing has also been used as an opportunity to sell advertising space. This not only provides information about local services that may be of interest to trail users, but it may also help to offset the cost of signs and/or trail.

“Rules of the Trail” signs, which should be posted at public access points to clearly articulate which trail uses are permitted, regulations and laws that apply, as well as trail etiquette, safety and emergency contact information. Reminder signs may be needed at some locations such as “Please stay on the

Signs located at intersections and at regular intervals in rural areas help trail users find their way



Trail". At trailheads, this information can be incorporated into trailhead signs. In other areas, this information can be integrated with access barriers.

Regulatory signs which are required throughout the system. Where traffic control signs are needed (stop, yield, curve ahead etc.), it is recommended that recognizable traffic control signs be used (refer to the Ministry of Transportation for Ontario's (MTO) *Manual of Uniform Traffic Control Devices*, 1996).

Interpretive signs which should be located at key trail features having a story to be told. These features may be cultural, historical, or natural. Interpretive signs should be highly graphic and easy to read. They should be located carefully in highly visible locations to minimize the potential for vandalism.

Route marker and trail directional signs, which should be located at regular intervals throughout the network and at intersections. The purpose of route marker signs is to provide a simple visual message to users that they are on an approved network route.

5.11 TRAILHEADS AND GATEWAYS

Major trailheads areas are generally proposed for important community destinations such as community centres. Because of their high visibility and proximity to other recreation facilities, they help to raise the profile of the trail system, and some of the necessary facilities and amenities may already be present or located nearby. In some locations it may be possible to share parking and washrooms with other community facilities or other partners (i.e. School Boards for parking, Conservation Authority for parking and washroom facilities). A well-designed trail staging area typically incorporates the following elements:

- Regular and accessible (handicapped) parking with an appropriate number of spaces in relation to the anticipated level of use of the nearby trail, with the flexibility to increase the number of spaces where warranted by future demand;
- Trail access barriers;
- Easy access to and from the trail;
- Ample room to load and unload equipment;
- Secure bicycle parking facilities;
- Waste receptacles;
- Lighting (may or may not be included, depending on location and site context);
- Signing;
- Washrooms;
- Seating and or picnic/informal activity space (more often associated with a major trailhead); and
- A food concession and/or other entrepreneurial facilities (i.e. canoe rentals, bicycle rentals) may also be available, depending on the size and setting.

A trail gateway is articulated with a sign indicating to the trail user that they have entered Chatham-Kent. This is the first opportunity to introduce the Chatham-Kent trail logo and character of the trail system as expressed through the



design of the sign and the trail gateway. In cases where the trail gateway is located in a rural setting it may be limited to simply a sign. Where the trail gateway is in an urban setting, or in a prominent location (such as the Trans Canada Trail) a more elaborate treatment may be desirable and include a plaza setting with hard surfacing, kiosks, landscape treatments and furnishings.

5.12 TRAIL AMENITIES

5.12.1 Seating and Rest Areas



Trail Rest Area, Stittsville, ON



Trail Lookout/Interpretive Node, Ottawa-Carleton Trailway near Stittsville, ON

Seating provides the opportunity to pause along the trail at points of interest or just to rest. Young children, older adults and those with disabilities will need to rest more frequently than others. Benches are the most common form of seating, but walls of appropriate height and width, large flat boulders, and sawn logs are some alternatives depending on the trail setting. Where seating/rest areas are planned, the design should consider a 1 m wide level area with a curb or other appropriate wheel stop for mobility-assisted devices. Staging areas, trail nodes and heavily used trails typically require a higher density of seating opportunities. For heavily used trails it is reasonable to provide some form of seating at approximately 500 m intervals.

5.12.2 Washrooms and Waste Receptacles

Washrooms must be provided along the trail. Typically, they are located at major trailheads and where possible make use of existing facilities (i.e. at community centres and in major parks). As trail use continues to increase, and as the network becomes denser, it may be necessary to provide additional facilities. Where this is necessary, they must be placed where they can be easily accessed for maintenance and surveillance. Many trail groups have used portable washrooms prior to installing permanent facilities, which

provides the opportunity to determine the most appropriate location for permanent washroom facilities before the investment is made in design and construction.

Waste receptacles are an absolute necessity throughout the trail network. Generally they should be located at regular intervals and in locations where they can be easily serviced. Mid block crossing points, staging areas, trail nodes and in association with other site amenities such as benches and interpretive signs are ideal locations. They must be monitored and emptied on a regular basis to prevent unsightly overflow. Several municipalities are reporting

good success with below ground trash receptacles in heavily used areas. These have a larger capacity, are “out of sight” and may result in fewer odours as trash is stored at cooler temperatures.

5.12.3 Bicycle Parking

Adequate bicycle parking facilities at key locations throughout the network will allow trail users to confidently secure their bicycles while pausing along the trail, enjoying nearby attractions, reaching their destination, or taking a trail



Post and Ring Bicycle Parking Facility, Toronto, ON

journey on foot. Key locations include trailheads, major trail nodes and lookouts. Proper bicycle parking facilities should be considered where multi-use trails intersect with pedestrian-only trails. The provision of bicycle parking facilities in these locations along with signing explaining the reasons for restricting bicycle use will help to discourage cycling on unsuitable trails, reinforce trail etiquette and encourage the proper use of the trail system.

Racks, whether as single units or grouped together, should be securely fastened to a mounting surface to prevent the theft of a bicycle attached to a rack. Another alternative is to create a bicycle rack that is large enough that it cannot be easily lifted or moved from its position with bicycles

attached. Bicycle racks should be placed as close as possible to the trail facility that it serves, but not in a location where they would inhibit trail user flow.

Generally bicycle parking devices/facilities should:

- Enable the bicycle to be securely locked to the device without damaging the bicycle, and be easy to use without the need for detailed instructions;
- Be placed along key trail routes, connections and other destinations where cyclists are expected;
- Be placed in public view where possible, where they can be viewed by passers-by, trail attendants, fellow workers, etc.;
- Present no hazard to pedestrians;
- Be easily accessible from the road or trail;
- Be arranged so that parking maneuvers will not damage adjacent bicycles;
- Be as close as possible to the cyclist’s destination;
- Be sheltered from inclement weather, where possible and practical; and
- Be located in areas that are optimal for deterring theft and vandalism.



5.13 TRAILS IN NATURAL AREAS AND ENVIRONMENTAL BUFFERS

Trail users often seek natural areas such as woodlots and wetlands where they can find some relief from the urban environment. Natural areas provide opportunities to enjoy and interpret nature, and to pursue some trail activities that are not possible in more traditional parks. In many cases, trails are compatible with natural areas, in some cases they are not. Creating the balance between providing public access and the need to conserve and/or protect the resource itself can be a difficult goal, especially in situations where there is a large population of residents nearby or surrounding the feature. This often serves to increase the pressure on the very resource that users seek and enjoy.

Where trails are to be located in natural areas it is important that they be sited and designed appropriately and that the area be monitored for the effects of inappropriate use and/or overuse. If trails are not carefully planned, designed, constructed and maintained in these areas, people will create their own trail routes sometimes in sensitive locations where it would be preferable not to have trails at all. Proper planning, design and construction of trails, coupled with public education can go a long way to achieving the balance between use and protection.

Change in natural systems is inevitable, especially where there are significant changes in the character of lands surrounding the natural area. Managing change is the key and this involves deciding what an acceptable limit of change should be, and having a plan in place should the change exceed the acceptable limit. Using background ecological data such as the Ecological Land Classification (ELC) system, a natural area can be divided into different zones based on sensitivity to disturbance. Using sensitivity mapping, decisions can be made regarding trail closures, rerouting, design strategies as well as a definition of indicators of disturbance over and above an acceptable threshold. Critical wildlife habitat may also be used in delineating management zones. Consultation with the Lower Thames Valley Conservation Authority and the local branch of the Ministry of Natural Resources is recommended for issues regarding vegetation communities and critical wildlife habitat.

In some cases trails (and people) should not be in natural areas. Vegetation communities that are highly sensitive to disturbance and narrow, constrained wildlife corridors are two examples where trails may not be appropriate. In these cases, it is advisable to provide alternative trail routes and information (i.e. signing, public information campaigns, etc.) explaining the management decision to exclude trails from the area. When designing trails through sensitive natural heritage features the following general considerations should include:

- Route or reroute to avoid the most sensitive and/or critical habitats;
- Interpret sensitive species away from their location;
- Consider and evaluate alternative routes and design treatments;
- Balance the effect of alternatives;
- Use previously disturbed areas where possible and appropriate;
- Maintain natural process;
- Limit accessibility;
- Incorporate habitat enhancements; and
- Complement and highlight natural features.

Where trail routes are being proposed within environmental buffers surrounding natural sensitive heritage features, the conditions in the buffer (width, slope etc) are sufficient to support the development of a trail such that the intended function of the buffer is not compromised.

5.14 UTILITY CORRIDORS AND TRAILS

Pipeline and hydro corridors, municipal water, storm and sanitary sewer lines are examples of linear corridors that provide excellent opportunities for trail development and should be considered for the development of trails in Chatham-Kent. Utility lines in urban areas often have a substantial easement, and in many cases are used informally for trail access as they tend to provide direct connections to a variety of destinations over a long distance. In rural areas the ability to provide trails in utility corridors is usually more limited as the easement may be much narrower and in the case of hydro corridors, may be limited to an area around the base of the towers. A number of municipalities have recently adopted practices and policies whereby emergency service access must be provided to manholes along sanitary sewer lines in the event of an emergency. For example the City of London now provides emergency service access to sanitary sewer lines running through their valley lands, and these routes are also used as main or trunk trails throughout the city. Bridges over waterways are designed to accommodate pedestrian traffic and in some cases lightweight service vehicles.

As previously discussed, abandoned railways are a valuable asset and present an opportunity for trail development. In addition, they may provide linear corridors for future transportation links (roads, future rail, light rail and transit). As well, easements can be leased to utility companies for underground transmission lines thus helping to offset the cost of owning, operating and maintaining a multi-use trail on the abandoned rail bed.

Chatham-Kent has a unique system of municipal/agricultural drains and dikes. Because of the flat topography, heavy soils, danger of flooding and significant agriculture production, a network of drains has been created and improved over the last 150 years. A number of the drains run parallel to road rights of way, but many, particularly in the rural areas cross private properties. The municipality retains an easement along all of these corridors strictly for maintenance of the drains, and the width of the easement varies depending on the location. Some of these easements may present an opportunity for the development of trails, though it is not generally recommended unless the route forms a critical link, the trail is invited, and a mutually acceptable agreement can be reached between the landowner and the municipality and/or trail managing organization.

5.15 TRAIL ACCESS AND ACTIVE CONSTRUCTION ZONES

Planning for the safety and movement of trail users through construction zones is as important as planning for vehicular movement, and should be considered an integral part of the construction staging and traffic management plan for any project. The Institute of Transportation Engineers' (ITE) manual for Design and Safety of Pedestrian Facilities¹² and the American Association of State Highway and Transportation Officials' (AASHTO) Guide for the

¹² Donaldson, G.A., in Design and Safety of Pedestrian Facilities: A Recommended Practice of the Institute of Transportation Engineers, March 1998



Planning Design and Operation of Pedestrian Facilities¹³ provide guidelines for the development, management and monitoring of pedestrian walkways through construction zones. The Ontario Traffic Manual Book 7: Temporary Conditions provides guidelines and requirements in the Ontario context used municipalities.

Planning for the safe passage of trail users through or beside active construction zones may vary depending on the proximity of the route to the active construction zone, the type and duration of construction and the volume of pedestrian traffic expected. Three important principles must be considered in the development of an appropriate plan:

- Separate trail users from conflicts with work site vehicles, equipment and operations;
- Separate trail users from conflicts with the main flow of vehicular traffic moving through, around or along side the work site; and
- Provide trail users with a safe, accessible and convenient route that duplicates as nearly as possible the most desirable characteristics of sidewalks or pathways.

The designated route must not be used for storage of construction equipment, materials, or vehicles. Furthermore, stopping or parking of work vehicles beside the temporary route should be discouraged as this may indirectly encourage the movement of workers, materials and equipment across the pedestrian path of travel.

Crossings of the temporary route should be minimized. Where construction access routes must cross the path of travel, signals, flag persons or police officers should be considered as a means to control movements. This is most important in high volume trail zones and near locations that children and seniors frequent.

Daily inspection of the temporary route is required. Modifications should be made to adapt to changes in the nature of the construction site, to further direct trail user movement where the route is not functioning as planned or where unanticipated conflict points are observed. Good engineering judgment should always be employed.

5.16 CREATING NEW TRAILS IN ESTABLISHED NEIGHBOURHOODS

There is no question that it can be challenging to implement trails in established neighbourhoods, even if the intent to do so has been clearly documented in strategic plans like the Chatham-Kent Trail Master Plan. It is sometimes difficult to obtain public opinion related to specific trail segments at the strategic planning stage and it is not until a project reaches the implementation stage that residents who perceive themselves as being directly affected become more involved and vocal. Real and perceived concerns over increased traffic/access to their rear yards, invasion of privacy, the increased potential for vandalism and theft are often cited as key concerns.

One aspect of a program to overcome this challenge is to engage residents in an open, iterative consultation process in the earliest possible stages of the project. In some cases, the most vocal opponent can become the greatest supporter if the process provides an effective avenue to address concerns. Some keys to success include:

- Notifying adjacent landowners early in the process and taking the time to understand and respond to their concerns. This should include an invitation to provide their input into the process (i.e. participation in a design charette to determine the trail layout, design materials and privacy features);

¹³ American Association of State Highway and Transportation Officials. Guide for the Planning, Design and Operation of Pedestrian Facilities, July 2004

Community trails are an integral part of the urban fabric and are a key component of a viable transportation system as well as a recreational asset

- Emphasizing the benefits of trails for their neighbourhood and community, including themselves and their children; and
- Emphasizing successful examples and effective solutions where similar problems were overcome.

5.17 TRAILS AND NEW DEVELOPMENT

Chatham-Kent is a growing community. This growth includes both the development of new land areas around the periphery of the urban areas as well as the redevelopment of under-utilized lands within existing urban areas. In both cases, the planning of the trail system is seen as a critical component of the land development process. Community trails are an integral part of the urban fabric and are a key component of a viable transportation system as well as a recreational asset. New developments must be planned for the efficient movement of people for utilitarian and recreation purposes. This includes not only roads and sidewalks, but also trails that must make connections among neighbourhood destinations and the city-wide trail network.

Developers are expected to work through an iterative process with City staff, beginning early in the planning stages to create a trail network within their development area that reflects the intent of the Chatham-Kent Trails Master Plan. A number of the Developers that currently operate in and around Chatham-Kent recognize the value of integrating trails into their projects, and they have and have been working cooperatively with staff for some time, as is evidenced by many of the newer trails throughout the urban areas in the Municipality. Providing developers with information about the network, desired connections and design expectations will only serve to strengthen this relationship.

It is expected that proposals for new development areas (both greenfield and infill) will contain a network of on-road bikeways and off-road trails that reflect the density, variety, hierarchy and character that is consistent with the Trails Master Plan.

Specifically this implies the planning and development of:

- A network of trails that overcome physical barriers, make appropriate connections to important destinations and enhance connectivity with the existing or planned system of trails surrounding the development area;
- An on-road network of bicycle lanes and routes that make critical links where off-road links cannot be achieved; and
- A network of trails that is both sensitive to, and takes advantage of, inherent qualities of the natural and cultural landscape features within the development area.

A careful examination of a variety of factors including topography and drainage, slopes, soil conditions, plant and animal communities, microclimate and human comfort, historic/cultural resources, public education opportunities, significant views and vistas should be part of the process to integrate trails in new developments.

Ideally, in new development areas trails should be constructed prior to or concurrently with the construction of other infrastructure and homes. Where trail construction will not take place until a later date, there is often conflict as residents claim that they were not aware of plans for trail construction even if this intention has been clearly indicated in municipal planning documents. Developers should be encouraged to be very proactive about notifying prospective buyers where trails are to be located at the time they are selling lots. Providing information at sales offices, including

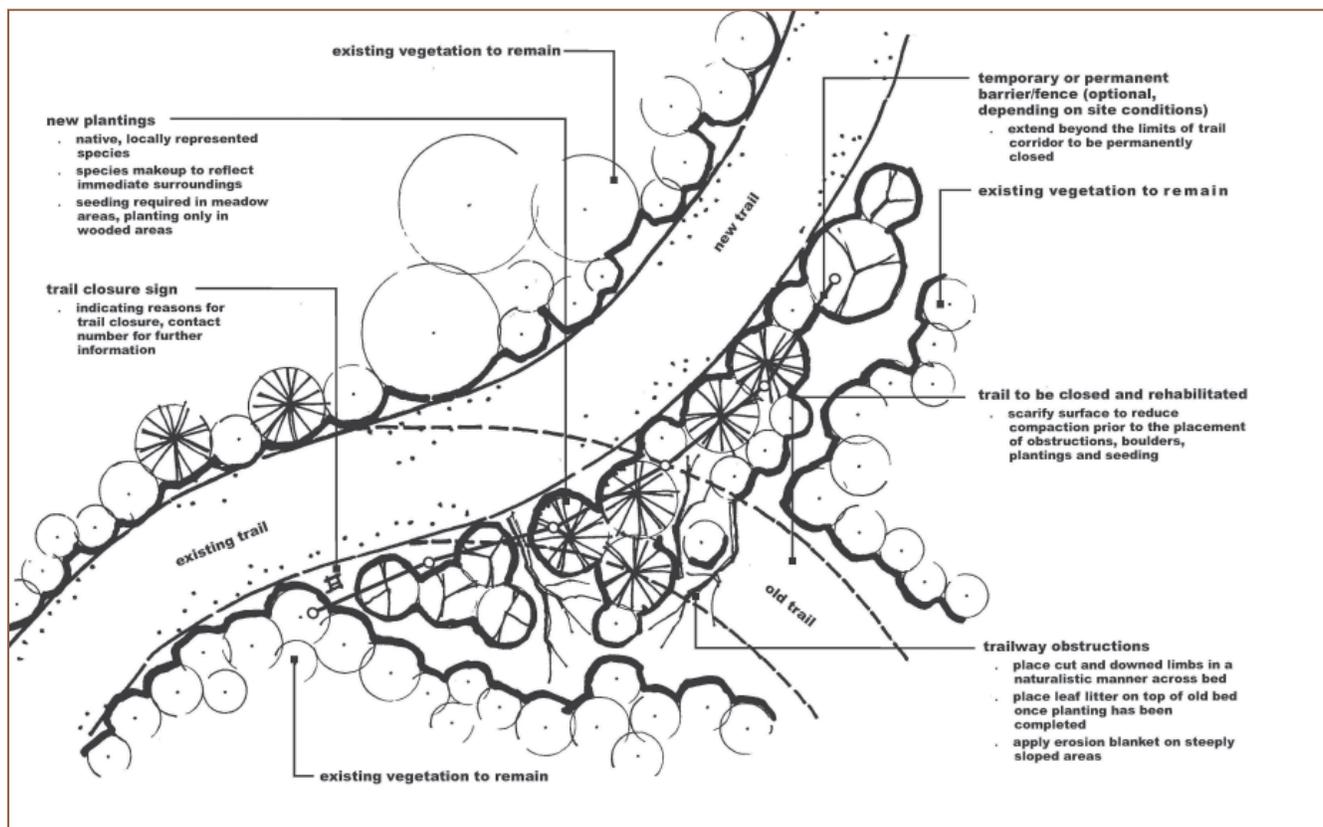


information in sales packages and erecting signs in locations where trails are to be constructed may help to alleviate difficulties at a later date.

5.18 TRAIL CLOSURES AND REHABILITATION

From time to time it will be necessary to temporarily close sections of trails or entire routes to public access. Situations such as inundation by water, culvert washout or general trail construction are typical reasons for temporary trail closures. As these situations arise, users must be informed well in advance of the closure. If the closure is planned, advance notices should be placed at all access points for the affected section(s). In the event of an emergency closure, notices must be placed at these locations immediately following the discovery of the problem. Signing and temporary barricades, notification in community newspapers, on local radio stations and the Chatham-Kent website are possible methods of informing users of about temporary trail closures.

Permanent trail closures may be required at some point in the life cycle of the trail, especially in the case of trails in woodlots and other natural settings. It is important when closing a trail to rehabilitate the landscape to match the surrounding conditions, inform trail users that it has been closed, and to provide reasons for the closure. The figure below illustrates a typical permanent trail closure and rehabilitation in a naturalized setting.



Typical Trail Closure and Rehabilitation in a Naturalized Setting

From time to time it will be necessary to temporarily close sections of trails or entire routes to public access

Depending on the location, appropriate rehabilitation measures in natural/naturalized settings may include:

- Slope stabilization, using engineered material and methods for severely eroded slopes;
- Terracing, using locally collected low-tech materials for eroded slopes of moderate and low severity;
- Live staking using locally collected cuttings from appropriate species;
- Plantings with appropriate native species (may include plants salvaged from nearby sites that will be cleared for development, roadway widening etc.);
- The application of erosion blankets and mulches;
- Seeding with mixes that are appropriate for the site in which they are to be applied;
- Scarification of the surface of the trail to be closed and covering it with forest litter (leaves, branches, and limbs) in a naturalistic manner which can help to reinforce the message that the trail is closed, reduce erosion, and supply nutrients to plants during establishment;
- Placement of a detector object at the beginning of the closure area so that the closure can be detected by visually impaired users; and
- Erecting signage describing the closure to inform users of the conditions and “Water Me” signs for newly planted trees.



6.0 THE IMPLEMENTATION STRATEGY

6.1 INTRODUCTION

The Chatham-Kent Trails Master Plan should be adopted by Council as the long-term strategy to guide decision making related to trail development for the Municipality. This Plan has been designed to be flexible so that the Municipality and its partners can adapt to changes, constraints, available budget resources and opportunities as they arise. This chapter outlines a strategy for implementing the recommendations of the Plan in three phases, a short term phase representing the first 5 years (2010 to 2015) a medium term phase (2016 to 2026) and a long term strategy for the years beyond 2026.

The Chatham-Kent Trails Master Plan is not intended to be a static document. Though its purpose is to plan into the future, it must be recognized priorities change over time and opportunities may also arise that were not known at the time this plan was prepared. The timing and details related to implementation, particularly the location of recommended routes and trail types can and should evolve through community consultation and detailed technical studies where appropriate. While making adjustments to meet changing priorities and opportunities, it is also important that the intent and direction established through the development of the Plan is respected when changes to the network are being contemplated. Therefore, it is important that:

- The validity of each route is confirmed when it is being considered for implementation. Where it is determined that a particular route is no longer valid, or is impossible to achieve, a parallel route performing the same network function should be selected;
- Trail routes, trail crossings and in particular on-road cycling routes are considered during the Environmental Assessment process for municipal infrastructure projects;
- Input is solicited from various municipal departments through a coordinated communication process to ensure that all needs are being considered and balanced among one another;
- The performance of the facilities are being regularly monitored throughout their lifecycle so that improvements in routing, design and maintenance can evolve as new information is generated; and
- The Chatham-Kent Trails Master Plan is updated on a regular basis, at least every five years.

The Implementation Plan has four main components:

- **Management** – the strategy by which various groups involved in trails will work together to plan, develop and operate Chatham-Kent's trail system
- **The Network** - which includes the construction and maintenance of the physical infrastructure
- **Policies** – which become the basis for initiatives and practices at the municipal level to ensure that trails are given proper consideration as part of day-to-day business practice in the municipality
- **Partnerships, Promotion and Supportive Programs**- which identifies the importance, benefits, and strategies related to working collaboratively within the municipal structure, and also with the variety of organizations interested in trails.

Each of the four components is discussed in the sections that follow.



Recommendation: 6-1 **The Chatham-Kent Trail Master Plan should be formally updated through a public process at least every five years. (Ongoing)**

6.2 MANAGEMENT OF THE CHATHAM-KENT TRAIL SYSTEM

6.2.1 The Need for an Effective Organizational and Management Structure

For the Chatham-Kent Trails Master Plan to be most successful, a management structure must be created that is capable of effectively developing a comprehensive trail system plan, reflective of the interests of trail users, residents, and government, and responsive to the needs of all residents of the community.

A wide range of challenges must be overcome in order to develop a broadly-based, inter-connected, multi-use trail network, and the organizational structure selected for the trail authority will have considerable influence on how effectively these can be met. From an operational perspective, the ability to access both construction and maintenance funding, obtain insurance coverage, employ staff, and manage the completed asset all will be affected by the management structure chosen. How issues such as education and promotion, policing and enforcement, and development standards are resolved will all depend on the trail management organization.

In a regional community such as Chatham-Kent, there is a wide array of competing, and often conflicting, interests. Various trail-using communities, such as walkers, bikers, and motorized recreationalists all will want to see their uses included in a trail system plan, and once accepted will all be advocating for their use to have priority in construction. Similarly, the residents of the different communities will each wish to have trail development in their area proceed as soon as possible, and will be prepared to lobby their elected representatives in order to achieve their goal. The proper forum must be established to enable these competing interests to both have fair voice, and find negotiated resolution.

There will also be significant interests in Chatham-Kent that are not supportive of trail development, undoubtedly in the earliest stages of route selection, but almost certainly throughout every phase of the life of the network. The management system selected must be open to working with its antagonists fairly and compassionately, flexible enough to incorporate alternative solutions when indicated, and strongly-enough connected to the community to be able to withstand pressures when they would unreasonably hinder the creation of this beneficial public resource.

6.2.2 Working with Other Groups and Agencies

One of the principle challenges of a trail management body is the ability to work effectively with a broad range of government departments and non-governmental agencies. Some of these bodies will be potential partners in one or more components of the development of the trail system; others, such as the Provincial and Federal Government agencies, will be potential funders or have jurisdiction over some component of the construction or operation on the trails.

Following is a list of many of the potential stakeholder groups. It is by no means exhaustive:

Provincial and National Associations

- Ontario Trails Council: This provincial not-for-profit is the voice of trails in the province of Ontario;
- Trans Canada Trail – Ontario: This not-for-profit group is tasked with the completion of the Trans Canada Trail in the province of Ontario. Chatham-Kent is included in its route;
- Ontario Federation of Snowmobiler Clubs (OFSC): The provincial body that oversees the development and operation of snowmobiles in the province;
- Hike Ontario: Provincial walking association; no clubs currently in Chatham-Kent;
- Canadian Volkssport Federation: National association of walking clubs;
- The Ontario Cycling Association (OCA) provincial non-profit organization that is dedicated to the development and promotion of programs and services for the sport of cycling in Ontario;
- Ontario Trail Riders Association: Promotes the development and use of trails suitable for horse and rider;
- Ontario Federation of Trail Riders: Dedicated to the safe use of trails for moto-sport enthusiasts. This group consists of off-road bike and on-trail recreational motorcycle users;
- Ontario Federation of All Terrain Vehicle Clubs: Represents the interests of ATV clubs;
- Association of Municipalities of Ontario (AMO);
- Parks and Recreation Ontario; and
- Ontario Parks Association (OPA).

Local Trails Organizations

- Chatham-Kent Trails Council;
- South Kent Trails; and
- Wallaceburg Trails Association.

Other Interested Non-Governmental Organizations

- Lower Thames Valley Conservation Authority;
- St. Clair Conservation Authority;
- Ontario Federation of Agriculture;
- Southwest Agriculture Development Committee;
- Kent Federation of Agriculture;
- Buy Local Eat Fresh;
- Ontario Federation of Anglers & Hunters;
- Ontario Heritage Trust;
- Communities in Bloom;
- Local Service Clubs (Rotary, Lions, Kinsmen etc.-all communities in Chatham-Kent);



- Community Associations (all communities in Chatham-Kent);
- Neighbourhood/Landowner Associations;
- Local walking/cycling/other use clubs;
- YMCA; and
- Scouts/Guides.

Government Agencies (Municipal)

- Community and Development Services;
- Public Health and Family Services;
- Infrastructure and Engineering; and
- Corporate Services.

Government Agencies (Provincial)

- Ministry of Health Promotion;
- Ministry of Transportation;
- Ministry of Natural Resources;
- Ministry of Environment;
- Ministry of Community Safety and Correctional Services;
- Ministry of Tourism; and
- Ministry of Aboriginal Affairs.

Government Agencies (Federal)

- Environment Canada;
- Transport Canada; and
- Public Health Agency of Canada.

Politicians

- Municipal Councilors; and
- Members of the Legislative Assembly.

6.2.3 Management Models: An Environmental Scan

Since the advent of the Trans Canada Trail, in 1992, there has been an explosion of trail development in Canada, and consequently, a variety of trail management models have emerged. Regional municipalities have generally adopted a variation of one of four basic models:

Model 1: City Staff Project

In this model, the entire trail initiative, from planning and design through construction, maintenance, and policing, are undertaken by municipal staff. The community's participation is through its response to open houses, reports to Council, and as a neighbour to a trail. Typically, trails managed in this manner are operated by the Recreation or Parks Department, often depending both upon the size municipality and of the trail network. In some municipal settings, such as the Halifax Regional Municipality, a "Trails Coordinator" position has been created.

Model 2: Citizens Advisory Committee

This (usually) volunteer body is typically assembled by and liaises with the municipal staff person tasked with responsibility for the operation of the trail network. The individuals who make up this advisory committee have some specialized knowledge, such as representatives from one of the trail user groups, or represent a particularly important perspective, such as a land-owner's association. They provide a line-of-communication with the public without providing them decision-making ability over the resource. Advisory committees tend to be primarily consultative bodies.

The City of Calgary, as an example, has a "Bicycle Advisory Committee" that meets regularly with the Transportation Planner responsible for bicycle trails and on-road use. It provides feedback to staff on city initiatives, and provides suggestions for future direction.

Model 3: Committee of Council

Although similar to a Citizens Advisory Committee in that it is partly composed of individuals from the community with special skills or interests, the Committee of Council is a body with some decision-making authority. Such a committee often has the ability to make policy recommendations that go directly to Council through one or more Councilors who are members of the committee. Staff from several municipal departments may attend, although responsibility for the body rests with only one staff person. Members of the committee undertake tasks related to the operation of the project.

The City of Ottawa operates its Pathway Patrol through such a committee. Three Council representatives attend, as does city staff from fire, police, paramedics, recreation (chair), community services, and transit. In addition, there are several volunteer pathway patrollers, representatives from the National Capital Commission, the YMCA, Envirocentre, Citizens for Safe Cycling, and others. This Steering Committee operates with funding from the municipal government and from donations.

Model 4: Autonomous Not-for-Profit Trails Association

Incorporated, and with an elected Board of Directors, the Autonomous Not-for-Profit Trails Association has complete/shared authority over the planning, design, construction, and operation of trails within its operating area. It has the authority to fundraise, hire staff, enter into contracts, and otherwise operate as any not-for-profit enterprise. Typically, it does not own the resource, but enters into an agreement with the land owner to develop and operate a trail. This association is comprised entirely of volunteers, and typically municipal and/or other government staff attends as ex-officio members or guests.

This is a model that has become increasingly widespread in Canada since the advent of the Trans Canada Trail (TCT). The Cape Breton Municipality Trails Association was formed to develop the TCT through the regional



municipality. Since its formation, it has developed several sections of new trail, erected a TCT pavilion, and undertaken a number of trail promotion projects.

The Ontario Trails Council, the provincial coordinating body for trail development, in this province, is an example of this model on a larger scale.

Table 6.1 compares the advantages and disadvantages of the 4 different generic models.

Table 6-1 Comparison of Trail Management Models

| Model | Advantages | Disadvantages |
|-----------------------------|---|---|
| City Staff Project | <ul style="list-style-type: none"> • Direct line of communication and access to Ministry of Transportation when discussing trail routes within/crossign Provincial highways • Municipality already in control of road rights of way • Complete Control by municipality • Municipal Insurance Policy Coverage • Highest construction standards • Integration with other municipal policies • Communication with other government agencies | <ul style="list-style-type: none"> • Higher costs of construction • Extremely limited community participation • Fully supported by tax revenues • Directly dependent on political priorities • Inflexible |
| Citizens Advisory Committee | <ul style="list-style-type: none"> • Access to community perspectives • Complete control by municipality • Fairly flexible composition • Responsive to municipal needs | <ul style="list-style-type: none"> • No authority • Limited community participation in operation • Limited engagement with other municipal departments • Depends upon staff appointment for quality • No independent fund-raising abilities • Consultative only |
| Committee of Council | <ul style="list-style-type: none"> • Direct municipal council participation • Community perspectives • Municipal staff from other departments participate | <ul style="list-style-type: none"> • Volunteer interests often conflicts with municipal plans • Limited community participation • Limited fund-raising abilities |

| Model | Advantages | Disadvantages |
|--|---|--|
| Autonomous Not-for-Profit Trails Association | <ul style="list-style-type: none"> • Access to alternative funding sources • Representative of Trail-Using Community • Extremely flexible • Volunteer labour • Least expensive construction and operation costs • Independent • Existing provincial association (OTC) • Constantly changing | <ul style="list-style-type: none"> • Operating revenues always challenging to find • Takes time to “learn the job” and become effective • Obtaining and paying for insurance • No direct line of communication with government agencies • Minimal control by government • Potentially inconsistent operation • Continuity issues • No nationally accepted policies/guidelines • Rarely contains adequate land-owner participation • Association’s priorities may not be the same as the municipality’s |

In most municipalities, a combination of these models is used. For example, in the Halifax Regional Municipality (HRM), there is a staff “Trails Coordinator”. However, the Coordinator is assisted by a “Halifax Regional Trails Advisory Team” made up of representatives from more than 20 community autonomous not-for-profit trail associations. The majority of these associations are developing unconnected paths in their local area, while the remainder is attempting to complete the Trans Canada Trail through the HRM on abandoned rail-lines owned by the provincial government. In Prince Edward Island, Island Trails is the community not-for-profit that is the lead for the 300+km Confederation Trail, the Trans Canada Trail in that province, yet regular maintenance is performed by the Ministry of Transportation, and the Department of Tourism chairs an advisory committee made up of Island Trails, community representatives, and other provincial government departments. The current management structure evolved in the final stages of construction, and has continued since the main trail’s completion in 2000.

6.2.4 Chatham-Kent Active Communities Steering Committee (ACSC)

Council has recently approved the formation of the Chatham-Kent Active Communities Steering Committee (ACSC). The ACSC mandate covers a wide range of different issues and areas of day-to-day business practice in Chatham-Kent (refer to Table 6-2) from active living and health, health promotion, to transportation and recreation. The ACSC mandate covers three broad areas of responsibility:

- Active Transportation;
- Trails (Active Recreation); and
- Active Communities.



Table 6.2 Mission of the Active Communities Steering Committee

The Mission of the ACSC is to:

- Encourage, facilitate and educate the citizens on active living and support community health, vitality and safety.
- Advise and guide the Municipality of Chatham-Kent on ways to increase walking and cycling, thereby decreasing car dependence, leading to cleaner air and a decline in chronic illness.
- Improve the quality of life for all community members and contribute to a vibrant, livable community.
- Enhance the economic well-being of this community through increased tourism, employment and housing.

It is foreseeable that some of these areas of responsibility would overlap with some of the issues and responsibilities that a trails organization or committee would be required to address, therefore it is appropriate that the ACSC and various trails groups combine their resources and efforts in the areas where they have common mandates. Recognizing these common interests, the approved ACSC organizational structure provides the opportunity for representation from trail organizations.

The ACSC is currently in the midst of developing a recommended Active Transportation network. The Active Transportation network focuses on routes that provide commuter connections, trips to schools, trips to key commercial and institutional destinations. The recommended trail network in the Chatham-Kent Master Plan focuses more on recreational routes. In comparing the two networks, there are routes that are unique to each, however, there is also considerable overlap. Consideration should be given to integrating routes that evolve from the work of the ACSC with trail network routes recommended in the Chatham-Kent Trails Master Plan. This process should also assist in identifying common priorities to inform capital works planning, budgeting and future infrastructure funding opportunities available through provincial and federal programs.

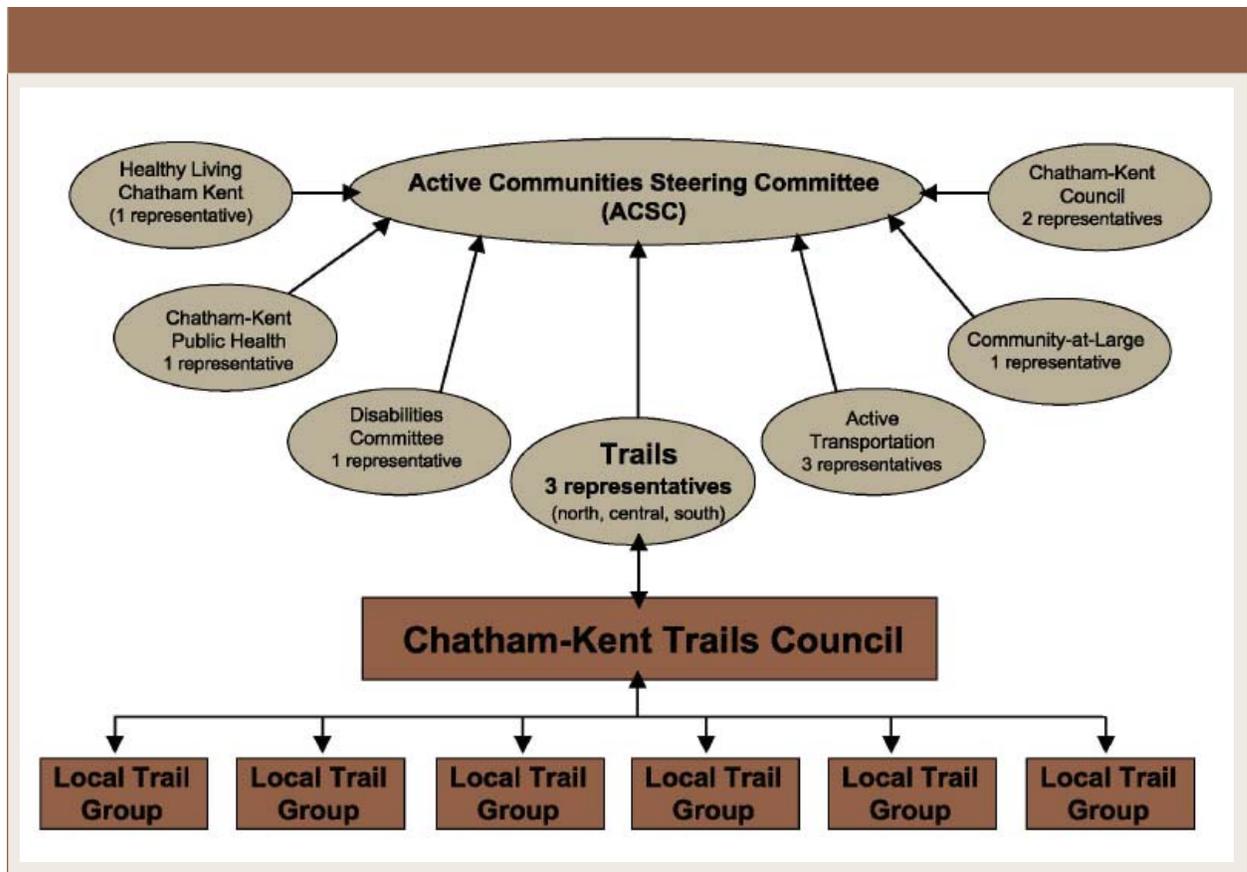
Figure 6-1 illustrates the structure of the ACSC. It is led by a staff coordinator and includes the following representatives:

- 3 representatives from Active Transportation (primarily cycling);
- 3 representatives from the trails community;
- 1 representative from Public Health;
- 1 representative from Healthy Living Chatham-Kent;
- 1 representative from the Disabilities Committee;
- 1 community member-at-large; and
- 2 representatives from Chatham-Kent Council.

Representatives from the trails community are expected to liaise with the Chatham-Kent Trails Council. Ideally, trail representatives should come from each of three general geographic areas in the municipality, the north, central and south. Representation from the three districts will help to ensure that trail interests across the entire municipality

are being fairly considered. All decisions related to the recreational trail network and trail initiatives such as annual setting of priorities for trail development should be made at the Chatham-Kent Trails Council level, then brought forward to the ACSC through the appointed representatives from the trails community.

Figure 6.1 The Active Communities Steering Committee Structure



A Trails Coordinator

The role of a trail coordinator should not be overlooked. Based on the scan of various management models currently in use, and through consultation with different trail organizations, it is quite apparent that municipalities/jurisdictions which have created a coordinator position enjoy the highest levels of success with the implementation of their Master Plans. The position can be a direct staff appointment or some form of shared arrangement with another organization having a vested interest in trails. Considerable effort is required alone to seek out grant opportunities, prepare grant applications, and ensure that grant monies are being utilized according to the conditions and schedule outlined in the agreements. Interdepartmental coordination regarding capital and lifecycle projects, coordination of education and promotional programs, annual reporting to Council, media relations, and working with Steering Committees are just some of the responsibilities that a coordinator would be expected to manage.



Recommendation 6-2 Integrate Active Transportation routes that evolve from the work of the Active Communities Steering Committee with Active Recreation routes recommended in the Chatham-Kent Trails Master Plan. (Ongoing)

Recommendation 6-3 To oversee the implementation and management of trails in the municipality, examine different options for the creation of a trails coordinator position and determine a suitable course of action. (Short term)

6.3 THE NETWORK

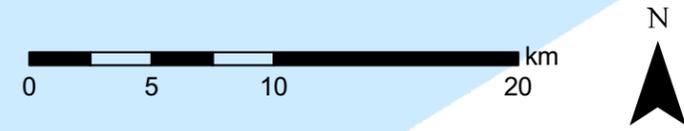
6.3.1 Rationale for Network Priorities

Figures 6-3 to 6-10 illustrate the proposed facility types and phasing plan for the network. The approach used to establish priorities for the implementation of the various routes in the proposed network considered the following strategies:

1. Where possible take advantage of and work in tandem with planned capital road and linear utility reconstruction projects;
2. Construct routes in new development areas as construction progresses (shown generally in the short term for known development areas);
3. Provide spine connections between main urban centres;
4. Build where user demand is anticipated to be highest (includes key corridors and/or key destinations);
5. Close gaps in the existing network;
6. Consideration of Project Team, Steering Committee and public opinions regarding priorities; and
7. Provide an equitable distribution of routes/facilities among each of Chatham-Kent's urban centres, and create loops within each of the centres that improve access to key destinations such as recreation complexes centres and schools.

Strategy No. 1 is fundamental to the implementation strategy and is based on known and/or documented forecasts, which change from time to time and require annual Council approval. Therefore, it is important that those responsible for monitoring and scheduling the network implementation reconfirm capital forecasts on a regular basis. Typically the most cost efficient way to implement new on-road trail infrastructure which requires physical road modifications or pavement marking adjustments is to implement these changes at the time a road is being resurfaced or reconstructed. Although this will allow the Municipality through economies of scale to make the most efficient use of its budget for new trail infrastructure, it will also mean that not all routes implemented will initially have the desired facility type along the entire length of the proposed route.

Figures 6-3 to 6-10 illustrate the recommended network and priorities for implementation. They should be read in conjunction with the following sections which provide an overview of the key network features and priorities.



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Figure 6 - 3:
Municipal Wide

- ★ Attraction
- ⦿ Beach
- 🐦 Bird Watching
- ⛺ Camping
- 🌳 Conservation Area
- 🏥 Hospital
- 🚏 Transit
- ⚓ Marina
- ℹ Visitor Information
- 🎓 School
- Existing
- Short Term
- Medium Term
- Long Term
- Municipal Wide Spine Route*

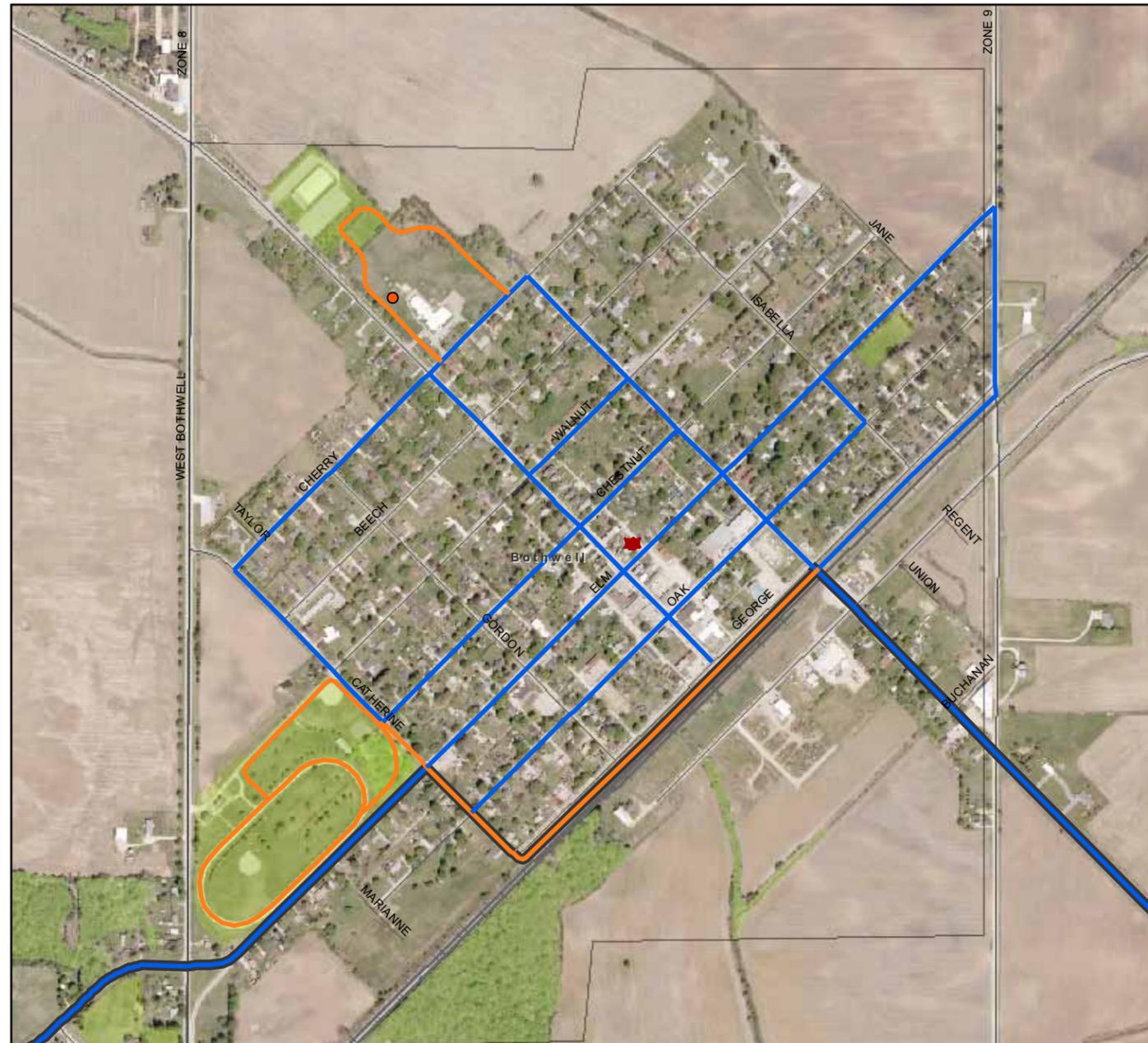
← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.

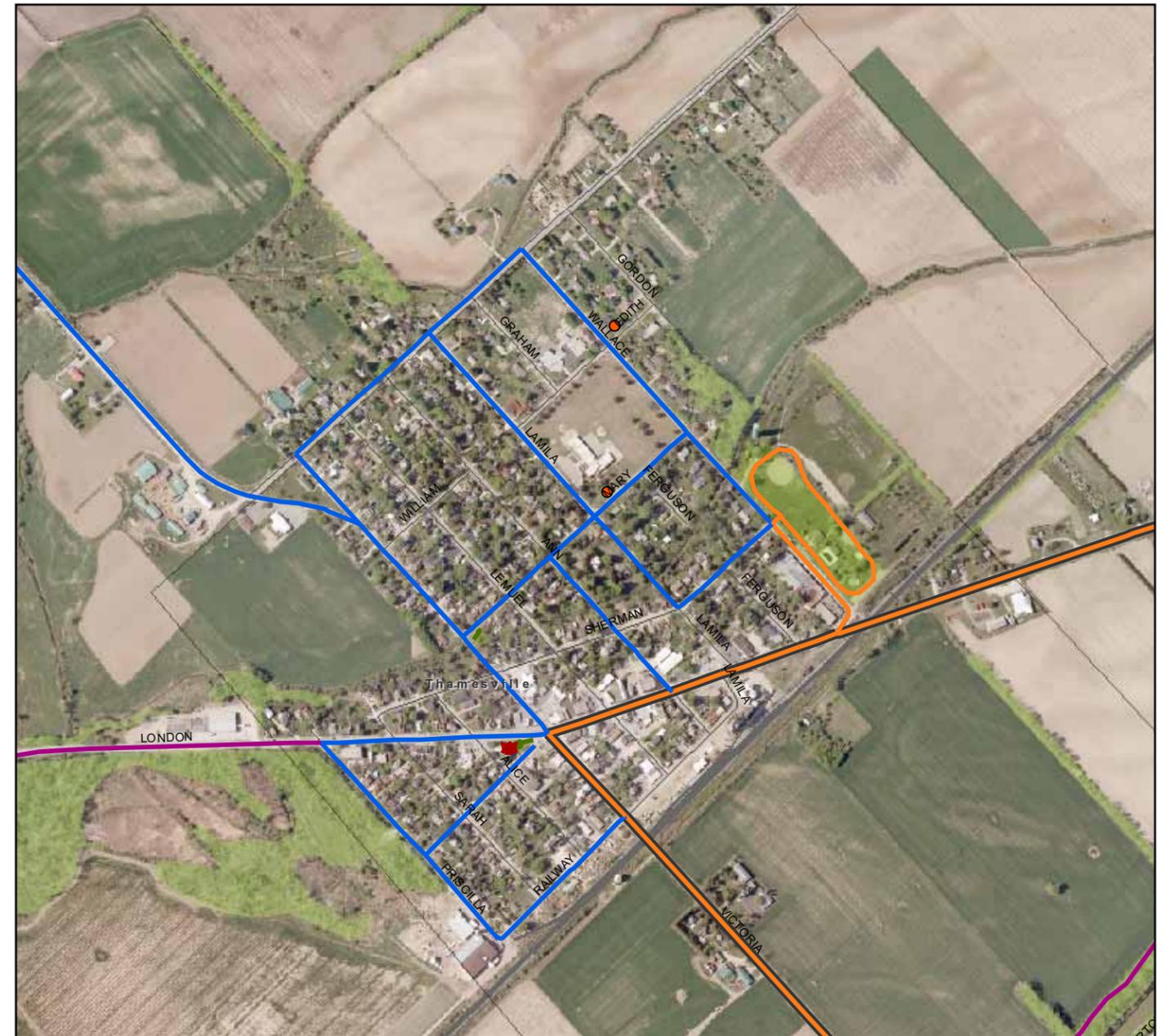
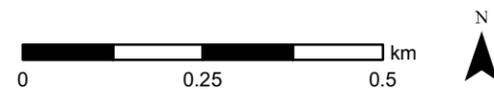


Chatham-Kent
ONTARIO, CANADA





Bothwell



Thamesville



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Figure 6 - 4:
Bothwell & Thamesville

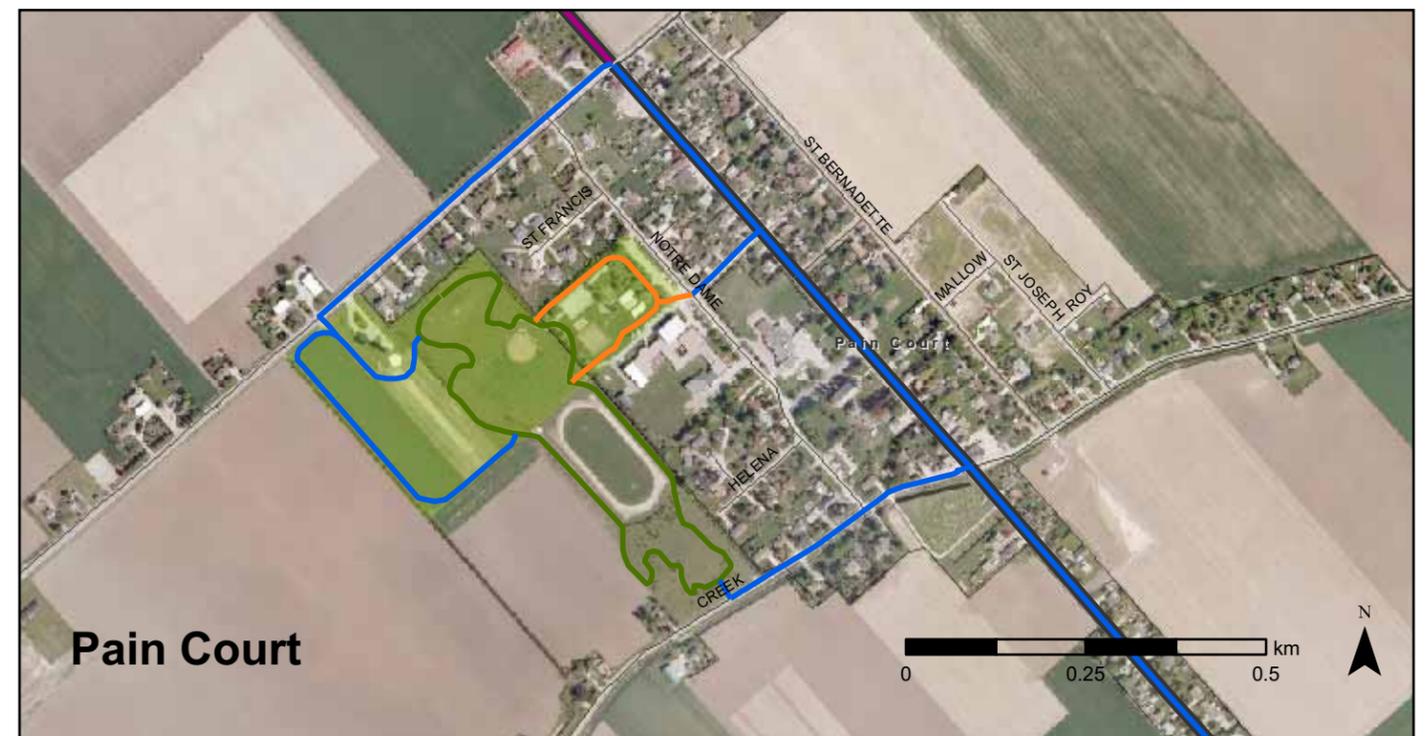
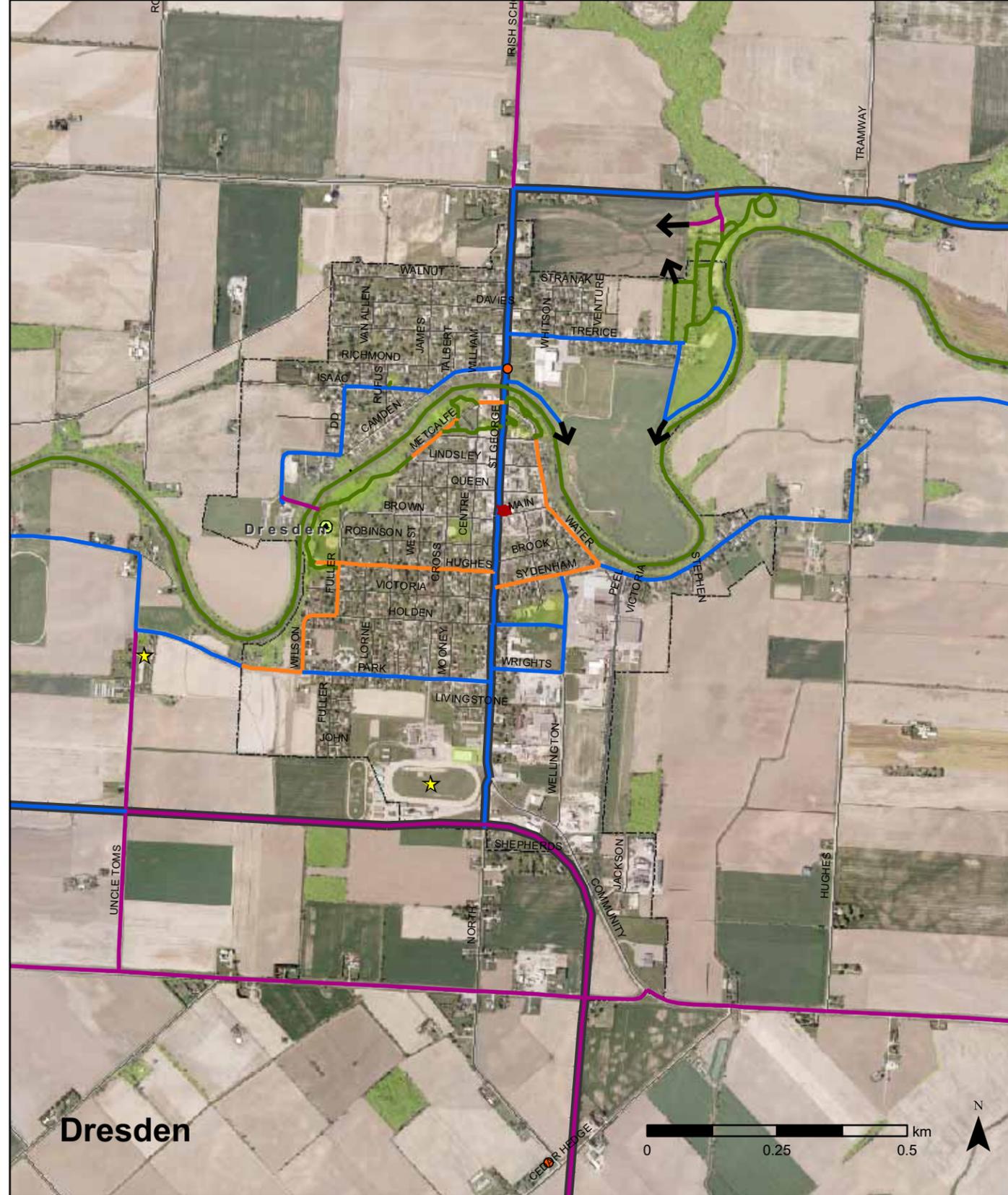
- ★ Attraction
- ⦿ Beach
- Bird Watching
- ⦿ Camping
- Conservation Area
- ⦿ Hospital
- ⦿ Transit
- ⦿ Marina
- ⦿ Visitor Information
- School

- Existing
- Short Term
- Medium Term
- Long Term
- Municipal Wide Spine Route*

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.





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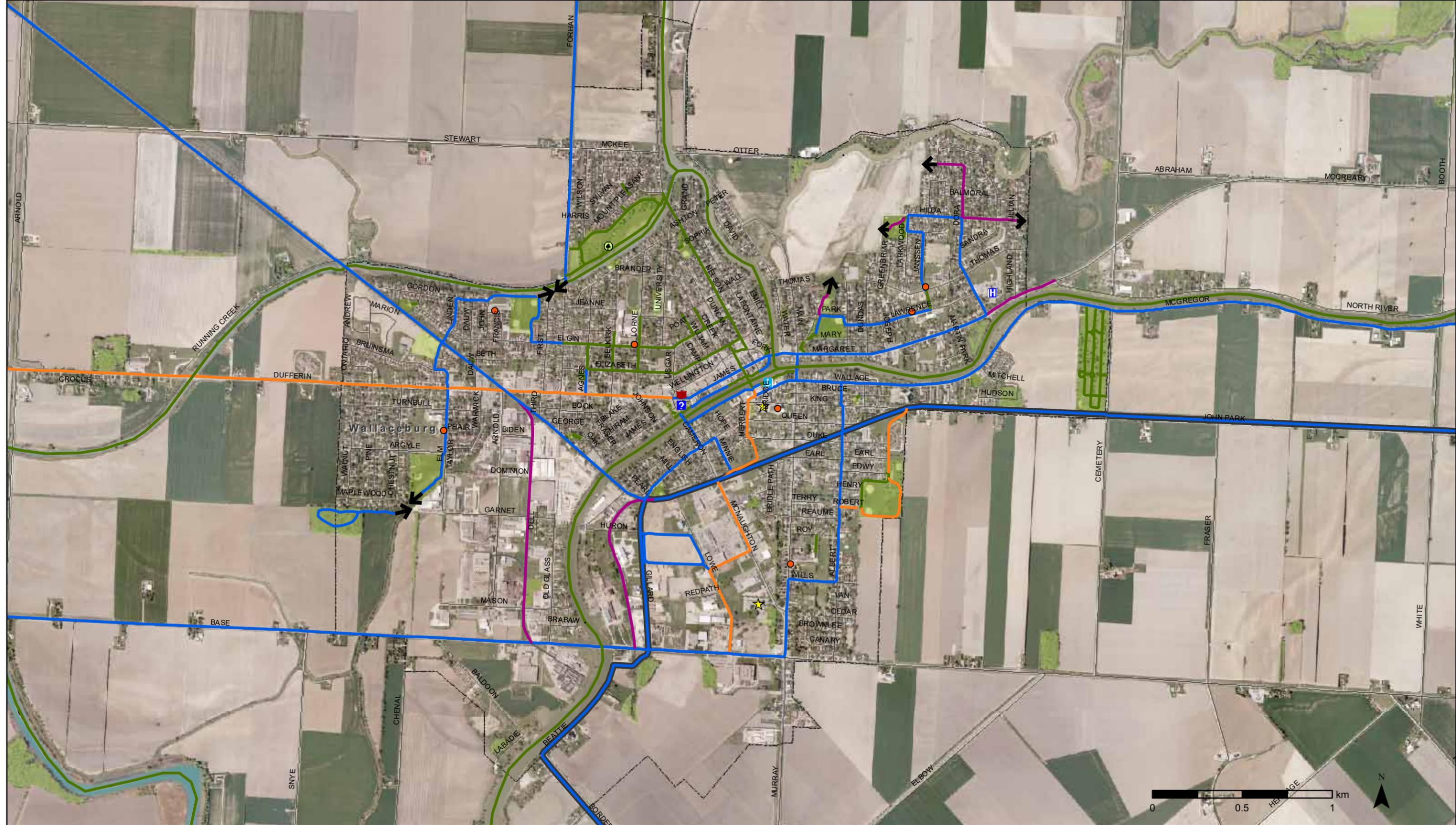
Figure 6 - 5:
Dresden, Mitchell's Bay & Pain Court

- | | | |
|---------------------|-----------------------|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing |
| 🏖 Beach | 🚏 Transit | — Short Term |
| 🐦 Bird Watching | 🚤 Marina | — Medium Term |
| 🏕 Camping | ℹ Visitor Information | — Long Term |
| 🌳 Conservation Area | 🎓 School | — Municipal Wide Spine Route* |

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.





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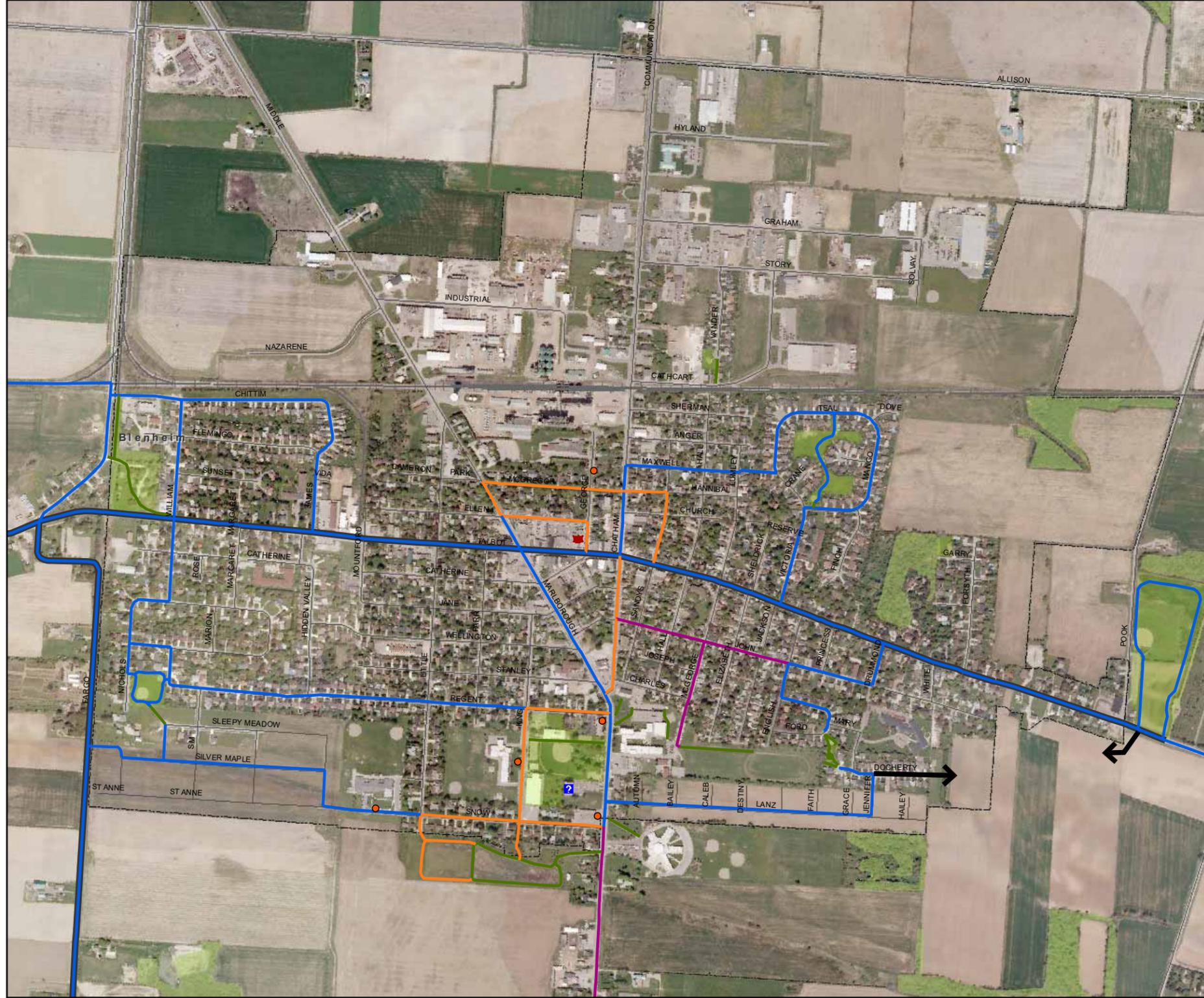
Figure 6 - 6:
Wallaceburg

- | | | |
|---------------------|-----------------------|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing |
| 🏖 Beach | 🚏 Transit | — Short Term |
| 🐦 Bird Watching | 🚤 Marina | — Medium Term |
| 🏕 Camping | ℹ Visitor Information | — Long Term |
| 🌳 Conservation Area | 🎓 School | — Municipal Wide Spine Route* |

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.





Blenheim



Erieau



Shrewsbury



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August 2009**

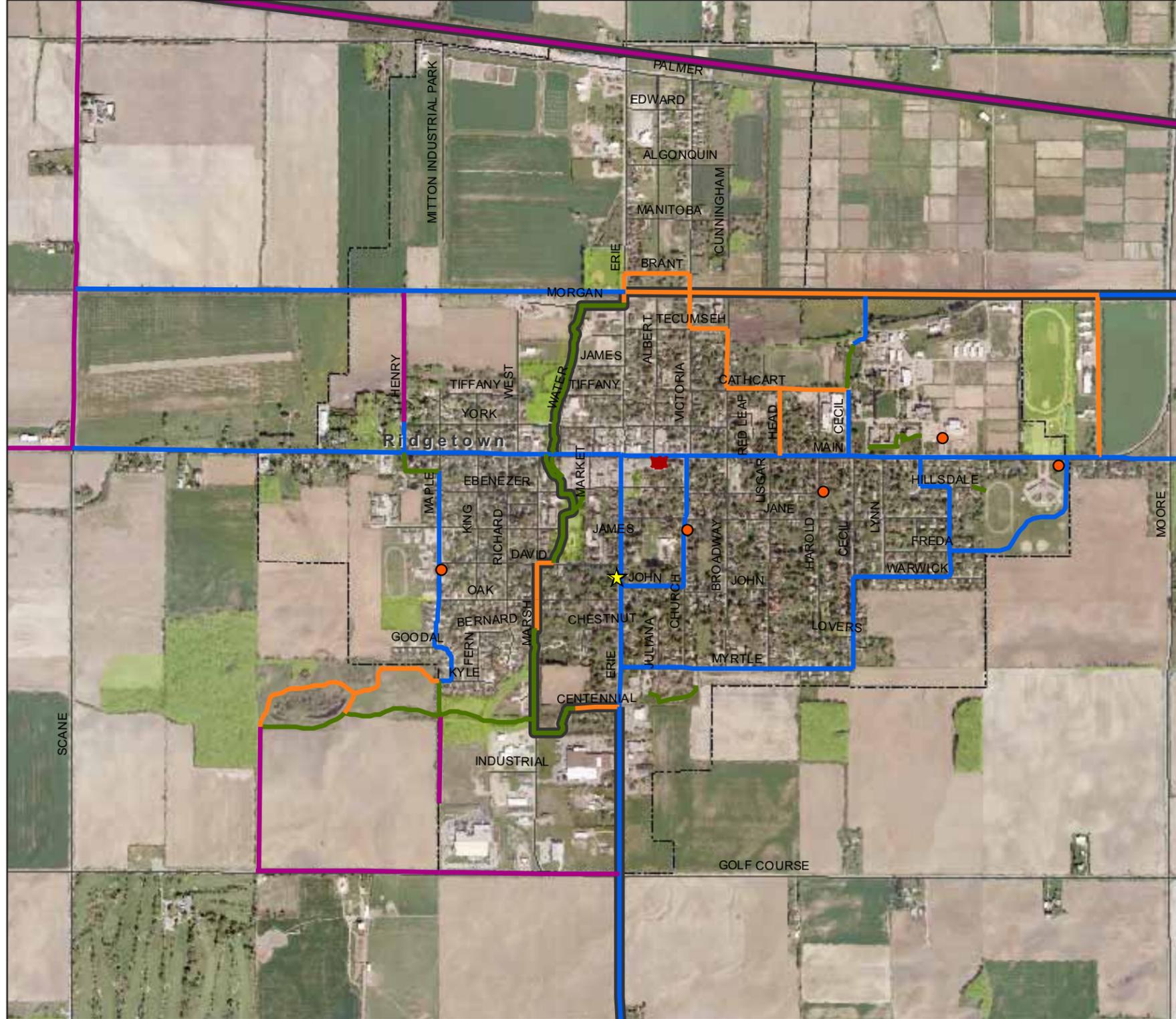
**Figure 6 - 7:
Blenheim, Erieau & Shrewsbury**

- ★ Attraction
- ☉ Beach
- 🐦 Bird Watching
- 🏕️ Camping
- 🌳 Conservation Area
- 🏥 Hospital
- 🚏 Transit
- ⚓ Marina
- ℹ️ Visitor Information
- 🎓 School
- 🟢 Existing
- 🟠 Short Term
- 🟡 Medium Term
- 🟣 Long Term
- ➡️ Municipal Wide Spine Route*

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.

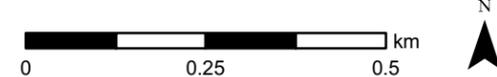




Ridgetown



Highgate



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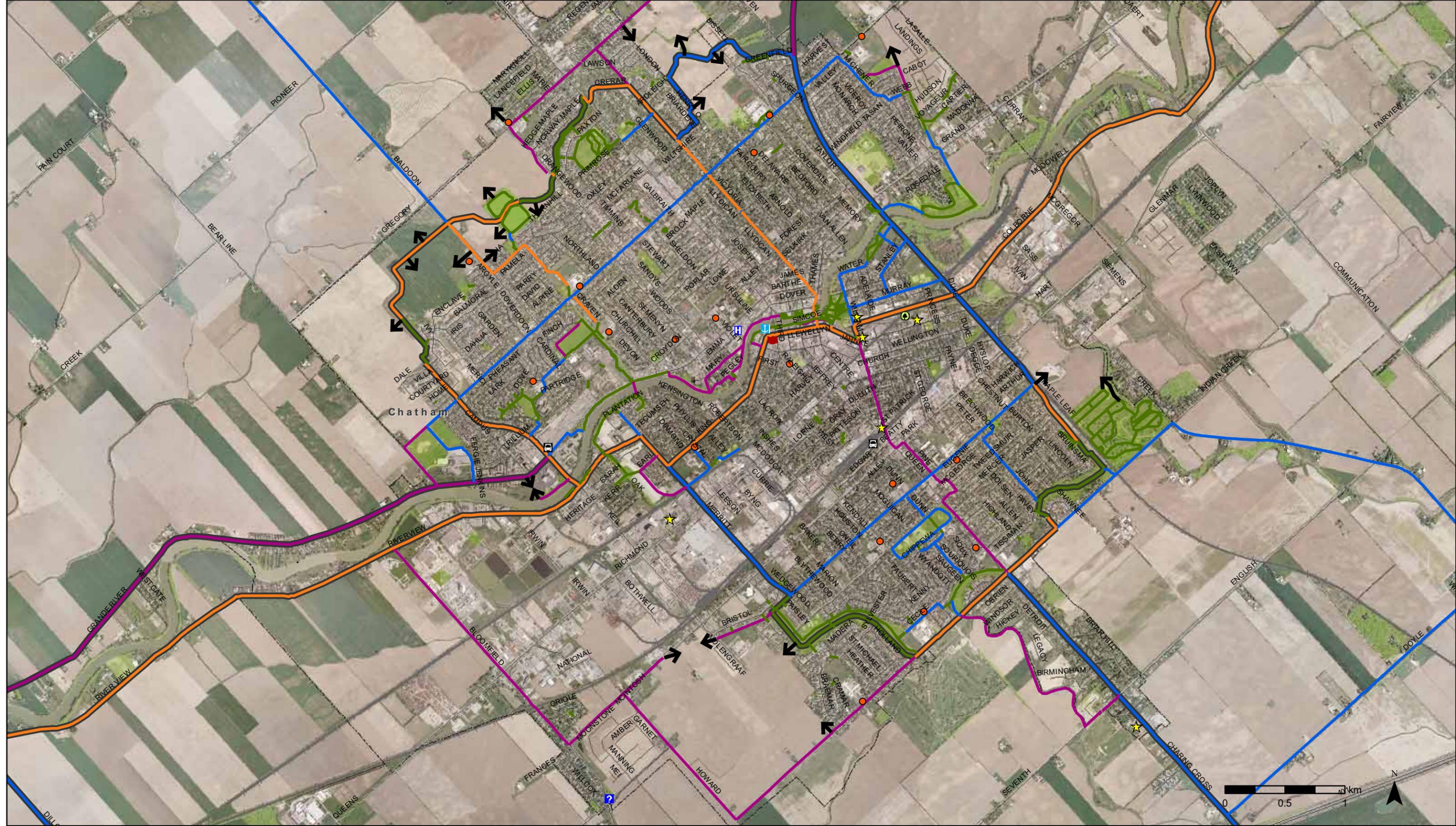
Figure 6 - 8:
Highgate & Ridgetown

- | | | |
|---------------------|-----------------------|-------------------------------|
| ★ Attraction | 🏥 Hospital | — Existing |
| 🏖 Beach | 🚏 Transit | — Short Term |
| 🐦 Bird Watching | 🚤 Marina | — Medium Term |
| 🏕 Camping | ℹ Visitor Information | — Long Term |
| 🌳 Conservation Area | 🎓 School | — Municipal Wide Spine Route* |

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.

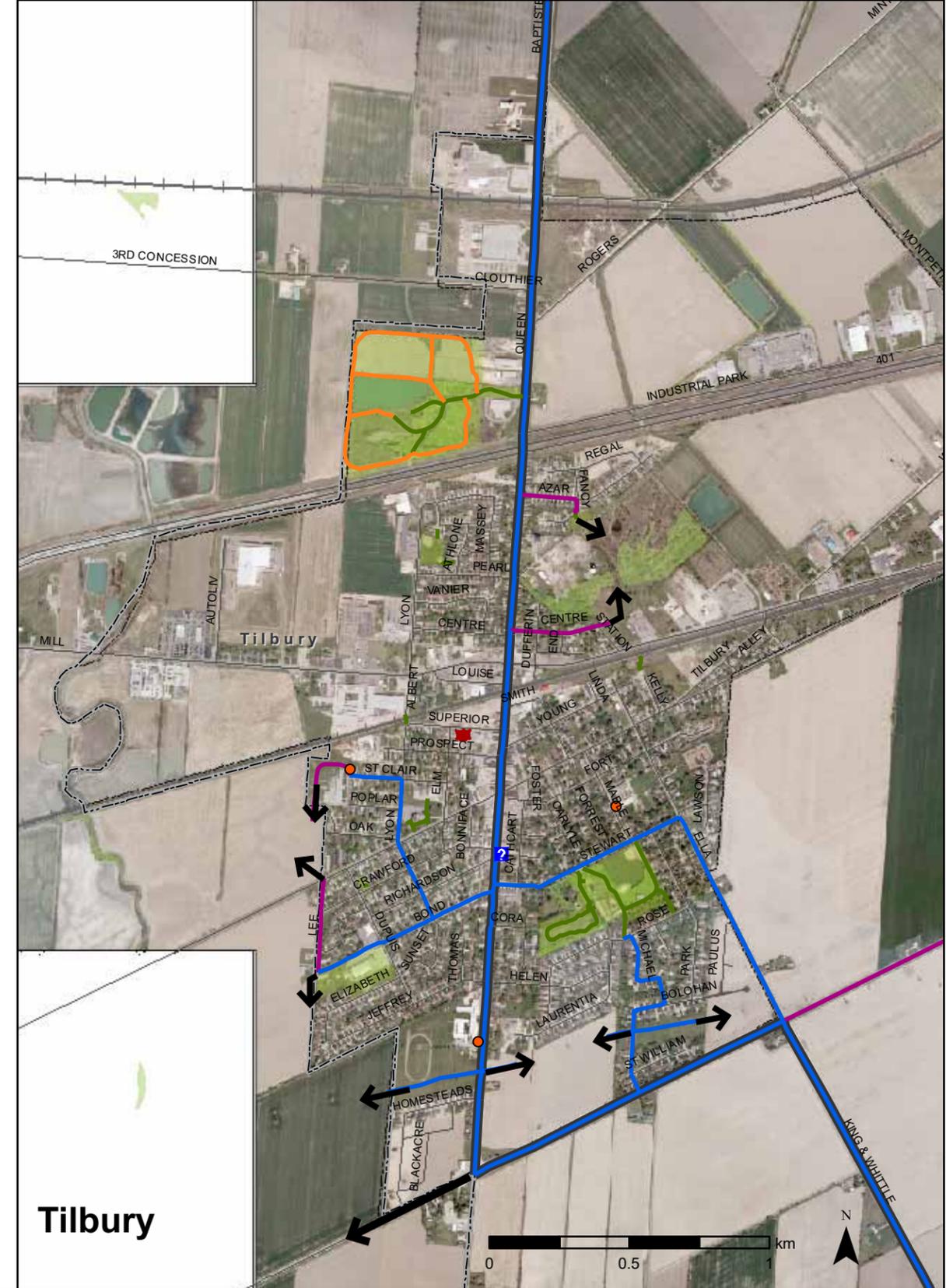
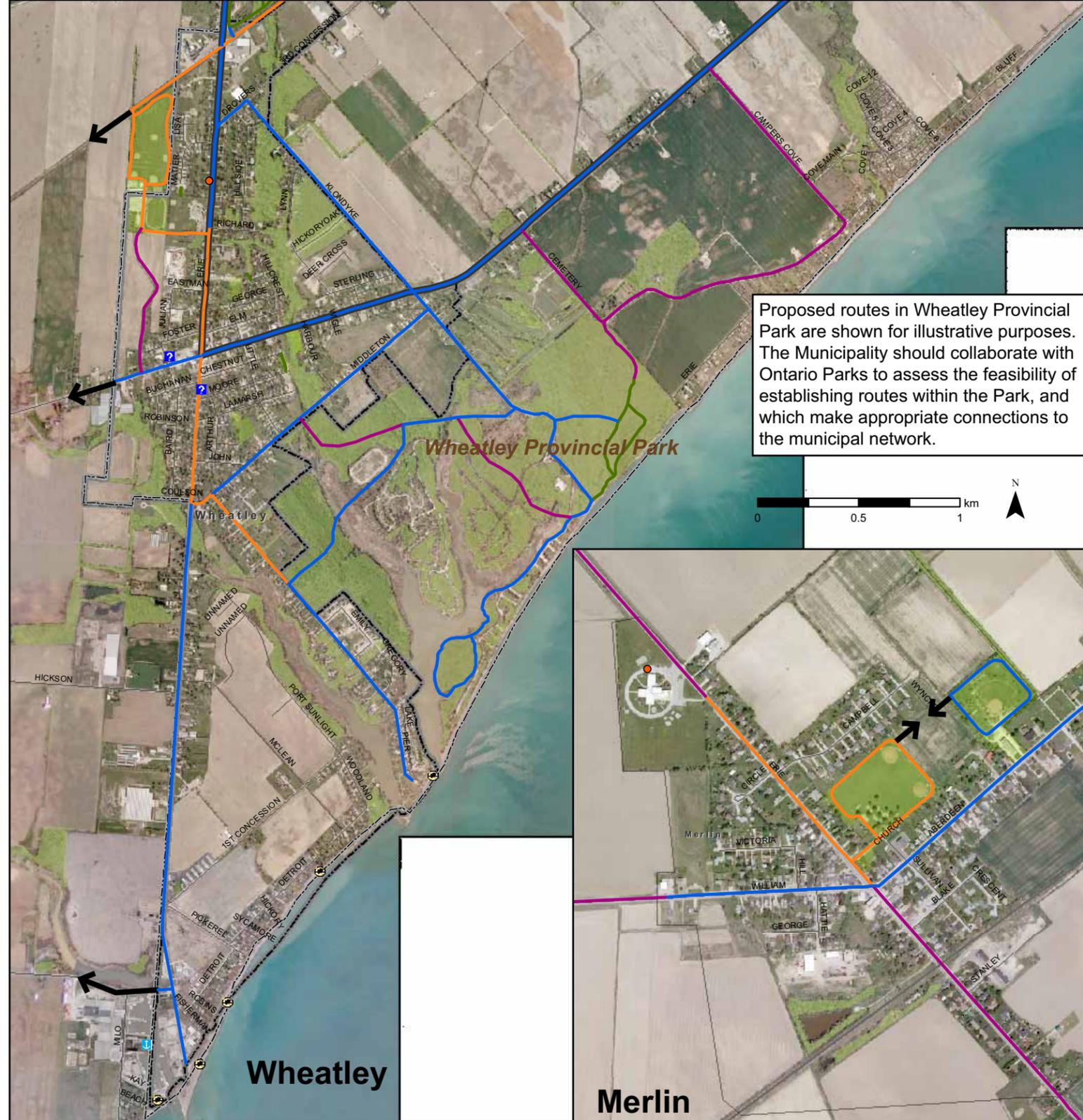




Implementation Plan
August 2009

Figure 6 - 9:
Chatham

- | | | | |
|---------------------|-----------------------|-------------------------------|----------------------------------|
| ★ Attraction | 🏥 Hospital | — Existing | ← Desired Connection (Long Term) |
| 🏖 Beach | 🚏 Transit | — Short Term | |
| 🐦 Bird Watching | 🚢 Marina | — Medium Term | |
| 🏕 Camping | ℹ Visitor Information | — Long Term | |
| 🌳 Conservation Area | 🎓 School | — Municipal Wide Spine Route* | |
- * All other routes are designated Secondary Routes in the Network Hierarchy.



Implementation Plan
August 2009

Figure 6 - 10:
Merlin, Tilbury & Wheatley

- | | | |
|---------------------|-----------------------|-------------------------------|
| ★ Attraction | 🏠 Hospital | — Existing |
| 🏖 Beach | 🚉 Transit | — Short Term |
| 🐦 Bird Watching | 🚤 Marina | — Medium Term |
| 🏕 Camping | 📄 Visitor Information | — Long Term |
| 🌳 Conservation Area | 🎓 School | — Municipal Wide Spine Route* |

← Desired Connection (Long Term)

* All other routes are designated Secondary Routes in the Network Hierarchy.

6.3.1.1 General (Municipal-Wide)

1) Rural Areas (Figure 6-3)

- Establish scenic cycling routes along rural roads identified in the trail network. This includes the addition of bicycle route signs, share the road/and or watch for cyclist signs on all roads, and the addition of paved shoulders to roads with higher traffic volumes, very high travelled speed and/or roads with constrained sight lines.
- Develop connections between urban centres, and to important natural heritage, cultural heritage and recreation destinations.
- Upgrade rural gravel roads on the designated network to a hard surface (i.e. tar and chip as a minimum). These are generally shown for implementation over the medium term, in some cases long term where other parallel routes exist nearby.
- Identify and continue to track scheduled improvements to roadways and bridges (including both municipally and provincially-owned structures) so that facilities can be added as part of road upgrade or construction projects.
- Work with other agencies such as the Lower Thames Valley Conservation Authority (LTVCA) and Ontario Parks to plan and develop routes in Conservation Areas and Provincial Parks that connect to the proposed municipal network. This may involve creating connections to trail networks that currently exist in Conservation Authorities and Provincial Parks, and/or working collaboratively to develop new routes and connections within Conservation Areas and Provincial Parks where it is feasible (i.e. Rondeau Provincial Park, Clear Creek Provincial Park, St Clair Shores National Wildlife Area, C.M. Wilson Conservation Area, Two Creeks Conservation Area etc.).
- Assess the feasibility to develop partnerships with private landowners over the short, medium and long term to develop trails along the Thames River dikes and Lake St. Clair dikes.
- Work with surrounding municipalities to coordinate trail connections between jurisdictions.

2. Rural Villages and Hamlets

- Assess the potential to develop multi-use loops in main public parks, consider the use of asphalt hard surface to accommodate a wide range of uses (i.e. including small wheeled users such as in-line skaters). If loops are measured (i.e. 1000m) and distance markers are installed these loops could be promoted also for fitness walking/exercise.
- Examine existing trails on the designated network and determine the need for upgrades to meet the recommended guideline in Chapter 5 (refer to Table 5-6).

6.3.1.2 North District

Bothwell (Figure 6-4)

- Add to and promote existing walking loops using existing roadway network as part of these loops.
- Assess the feasibility to develop an off-road route along the south side of George Street beside the railway right-of-way, adjacent to commemorative street tree plantings.



- Assess potential to work with school board and create a loop/link to the arena/community centre.
- Develop a multi-use loop in Victoria Park and/or assess potential to share the track with the Bothwell Driving Club.

Thamesville (Figure 6-4)

- Assess potential to develop a multi-use trail loop in Ferguson Park/around Brunner Community Centre.
- Add to and promote existing walking loops using the existing roadway network as part of these loops.
- Develop and highlight the Tecumseh Parkway route on Longwoods Road (former Highway 2), through the core of town.

Dresden (Figure 6-5)

- Complete a central loop consisting of a connected trail in Trillium Park, through Tony Stranak Conservation Area, along Hughes, Sydenham, Water and Metcalfe Streets, and rehabilitate and upgrade existing trails along this route.
- Develop a route from central town area to Uncle Tom's Cabin.
- Assess the potential to develop a trail along the former CSX rail line (rail trail or rails with trail), connecting to the city of Chatham to the south and Wallaceburg to the west.
- Create a trail link to the Dresden cemetery, and through the cemetery to Croton Line.
- Investigate the potential to develop a trail connection through lands along the Sydenham River between the south end of the cemetery and Lambton-Kent Composite School.
- Add to and promote existing walking routes using local sidewalks for pedestrians and roadways for cyclists. Place a higher priority on routes that connect to schools, retail areas and key community destinations such as community centres and libraries.
- Assess the potential for a water based trail connecting Dresden and Wallaceburg.

Mitchell's Bay (Figure 6-5)

- Assess the potential to develop a multi-use trail loop in Centennial Park.
- Through partnerships with landowners create an off-road route connecting the south end of the urban area to Angler Line and the north end of the village to Winter Line at Bass Haven.
- Examine the feasibility to create partnerships with landowners and develop an off-road trail route between Mitchell's Bay and Bass Haven utilizing the dike system along Lake St. Clair.

Pain Court (Figure 6-5)

- Assess the potential to expand the existing trail loop in Centennial Park and parkland around the water tower to provide alternative/multiple trail loop opportunities.
- Connect the south end of the existing loop around the track to connect with Creek Road so that it can become part of larger walking/cycling loop in town using Creek Road, Winter Line and Pain Court Road.

Wallaceburg (Figure 6-6)

- Make improvements to the Rose Trail including:
 - Upgrades on Dufferin Street to accommodate pedestrians and cyclists (provide wide shared lanes or bike lanes in the urban area and paved shoulders in the rural area).
 - Extend connections to meet with trail facilities on Walpole Island and to the St. Clair River Trail
 - Improve/enhance signing of the Rose Trail.
- Assess the potential to develop a trail route from King Street/ the CSX rail line through to Glen Nickle Athletic Field, and develop a multi-use trail loop in Glen Nickle Athletic Field.
- Continue to develop a waterfront promenade loop between Murray Street and McNaughton Avenue by acquiring easements as properties are redeveloped/as opportunities become available.
- Assess the potential to develop a trail along former the CSX rail line (rail trail or rails with trail), to connect to Dresden to the east and the St. Clair River Parkway and St. Clair River Trail to the northwest.
- Protect for future trail connections into future development lands, in particular in the north east part of the community.
- Add to, and promote existing walking routes using local sidewalks for pedestrians and roadways for cyclists. Place higher priority on routes that connect to schools, retail areas and key community destinations such as community centres and libraries.

6.3.1.3 Central District

Blenheim (Figure 6-7)

- Improve the connection to Centennial Park/soccer fields on the east end of town (i.e. sidewalks and paved shoulders, or a multi-use trail).
- Enhance the existing trail around the stormwater management ponds south of Snow Avenue.
- Using the abandoned railway corridor as access develop a trail connection to, and loop around the water treatment lagoons between Fargo and Lagoon Roads.
- Add to, and promote existing walking routes using local sidewalks for pedestrians and roadways for cyclists.
- Place a higher priority on routes that connect to schools, retail areas and key community destinations such as community centres and libraries.

Erieau (Figure 6-7)

- Assess the potential to connect Erieau to Fargo Road, through the extension of the Erieau Marsh Trail.
- Assess the potential to develop a paved trail loop on the park land on north side of Mariners Road.

Shrewsbury (Figure 6-7)

- Assess the feasibility to develop a boardwalk/interpretive trail starting at Rondeau Bay Marshes Conservation Area and utilizing unopened road allowances.



Highgate (Figure 6-8)

- Add to the designated walking loop along Queen and Oak Streets.
- Assess the potential to develop a multi-use trail loop in the park on the east side of Queen Street.
- Assess the feasibility to incorporate the abandoned railway line into the network and as a key connection to West Elgin.

Ridgetown (Figure 6-8)

- Complete a connection between off-road trails on the west side of Marsh Street in south end of town and abandoned rail line on north side of town.
- Upgrade the existing trail through Mickle Park to the guideline recommended in Chapter 5. Develop an off-road route from the north end of this existing trail to Ridgetown College using the abandoned railway line.
- Add to and promote existing walking routes using local sidewalks for pedestrians and roadways for cyclists. Place higher priority on routes that connect to schools, retail areas and key community destinations such as community centres and libraries.
- Upgrade and enhance trail loops west of Marsh Street, around existing ponds and southward to Golf Course Line.
- Work with the University of Guelph to develop a route through the campus to connect Main Street with a trail on the abandoned rail line.

6.3.1.4 South District

Chatham (city) (Figure 6-9)

- Develop the Tecumseh Parkway route as an east-west spine connection through the centre of the city.
- Complete the north loop using Keil Drive/Keil Trail north, new development lands in the northwest part of the city including a route through Paxton's Bush, connecting the existing Brown Drain Pathway system, Kingston Park paths, and Victoria Avenue.
- Complete the connection between the Mud Creek trail system and the trails along Indian Creek both east and west of Queen Street by establishing routes along Indian Creek Road. Connect existing trails at the north end of the Henry Smyth Pathway, north to the major east-west hydro corridor north of Tweedsmuir Avenue.
- Assess the potential to develop a trail along former CSX rail line (rail trail or rails with trail), as the key north-south spine on the east side of the City.
- Continue to develop the east-west trail spine using the hydro corridor parallel to Tweedsmuir Avenue and connect the western end of this corridor to the Tecumseh Parkway and north city loop via Merritt Avenue and a formalized crossing of the CN rail line immediately north of Park Avenue. (note that this informal connection is being heavily used currently).
- Develop a north-south spine in the central north part of the city by establishing a route past the skateboard park off Grand Avenue, open space surrounding courthouse complex, with connections to John N. Given School, and Tecumseh School using Craven Drive and Parry Drive, through to the north loop at Paxton's Bush.

- Develop the link along McNaughton Avenue, making connections to the former CSX line and hydro corridor on the east side of the City, and connect the route using the hydro corridor to trails in Thames Grove Conservation Area.
- Create a connection between the Indian Creek Pathway system and the hydro corridor trail north of Tweedsmuir Avenue using Souriquois Street, Kinsmen Park and Dunn Avenue up to Victor Lauriston school.
- Protect for/develop policy for linked linear greenspace as part of approvals for new land development applications (i.e. in northwest, southwest and northeast parts of the city), particularly along waterways, hedgerows and within hydro rights-of-way.

Merlin (Figure 6-10)

- Assess the feasibility to develop trail loops in parks on the east side of Merlin Road.
- Seek opportunities to join separate loops together through a partnership arrangement with landowner(s) between the Village's two parks.

Tilbury (Figure 6-10)

- Develop and promote trail loops in Tilbury Northside Park, and improve the Queen Street underpass of Highway 401 for pedestrians and cyclists.
- Assess the condition of existing trails in Memorial and Odette Park and rehabilitate/upgrade as required.
- Work with neighbouring municipalities to develop connections to the municipalities of Lakeshore and Essex.
- Protect for/develop policy for linked linear greenspace as part of approvals for new land development applications (i.e. at south end and northeast parts of town, and west side of urban limit-west of Lee Street).
- Develop a linear multi-use trail within the hydro corridor south of Bolohan Drive and north of Homestead Drive, expand on this trail and connections to it as lands surrounding the corridor transition to urban uses from agriculture.
- Add to and promote existing walking routes using local sidewalks for pedestrians and roadways for cyclists. Place a higher priority on routes that connect to schools, retail areas and key community destinations such as community centres and libraries.

Wheatley (Figure 6-10)

- Collaborate with the Lower Thames Valley Conservation Authority (LTVCA) to improve/enhance trails in Two Creeks Conservation Area.
- Create a park to park link between Two Creeks Conservation Area and Wheatley Provincial Park by:
 - working collaboratively with Ontario Parks to improve connections into Wheatley Provincial Park, through potential trail access points created on Pier Road and Middleton Line (in partnership with Ontario Parks);
 - creating a trail loop within Wheatley Area Community Centre/Park with connections to Erie Street and to Two Creeks Conservation Area; and
 - improving the connection between the main town area and Two Creeks Conservation Area by gaining control of the section of the abandoned rail line within Town limits and develop it for a trail.



- Protect for/develop policy for linked linear greenspace as part of approvals for new land development applications (i.e. on west side of Town along creek corridor).
- Work with neighbouring municipalities to develop connections to the municipalities of Leamington and Essex.

6.3.2 Further Considerations for Determining Priorities

In addition to the general strategies employed in developing the network priorities for the Master Plan, there are a number of other criteria that staff can use on annual or on-going basis to compare and prioritize potential routes for implementation. These include:

6.3.2.1 Off-road and On-road Routes

- Group(s) or organization(s) have demonstrated an interest in forming a partnership with the Municipality to develop the trail route and are willing to contribute to its development and/or ongoing maintenance.
- Funding and/or in-kind donations of labour and materials are available for the project.
- The proposed route makes an important connection between existing facilities in locations where the completion of a small missing link results in the creation of a large section of trail.
- The proposed route creates a direct connection to important community destinations such as schools, community centres and recreation complexes, major sports fields, key points of interest.
- The proposed route provides a connection to a significant destination that has a network of trails (i.e. conservation area).
- The proposed route is part of a safe walking and/or cycling route to area schools (Active and Safe Routes to School).
- The proposed route creates or completes a loop within a neighbourhood or the Municipality that with its completion might help to encourage more residents to walk or cycle more often for exercise.
- Developing the proposed route or facility is part of a strategy to demonstrate a commitment to a particular trail and manage an existing problem (i.e. unauthorized parking, dumping etc).
- The proposed route links a new development area with the existing trail network.
- Giving a higher priority to those links that provide links to generators that have the high potential to increase trail user participation, particularly in the urban areas. Some possibilities include:
 - within 500m of an area with a high population of seniors;
 - within 500m of a commercial shopping node;
 - near a formalized (i.e. legal/registered) daycare facility;
 - a trail in a geographic area/neighbourhood with a higher percentage of the population dependant on traveling as a pedestrian or cyclist rather than by personal automobile; and
 - within 500m of a structure/crossing of a significant physical barrier to trail continuity.

- The proposed route provides an opportunity to link directly with surrounding municipalities, regional, provincial or national trails.
- The proposed route provides an outstanding opportunity to educate users about the natural, and cultural attributes of the Municipality.
- The proposed route is linked to, or is directly associated with a specific tourism or economic development initiative, and the development of a trail will increase the potential for significant economic benefit.
- The proposed route provides opportunities to improve or enhance terrestrial or aquatic communities that might not otherwise be possible or as effective if trails were not to be included.

6.3.2.2 Specific to On-road Cycling routes

- If the roadway platform width is sufficient but existing pavement width is inadequate, implementation should be scheduled with road resurfacing or widening.
- Where platform width is not sufficient to accommodate the recommended facility type, and implementing an interim solution (i.e. signed route) is not feasible because of roadway characteristics such as traffic volume, speed, percent trucks etc., the route should be identified as a longer term priority tied to roadway reconstruction.
- If pavement width is adequate and implementation is related to adding pavement markings, co-ordinate implementation with the Municipality's pavement marking program and consider fast tracking those roads that are identified in the network.
- Acquiring additional lands to expand the right-of-way for the sole purpose of implementing a recommended route is not necessarily the best and most efficient use of public funds, however, this may be the only long-term option, if no alternative emerges.

Recommendation: 6-4 Municipal staff responsible for building the on and off-road trail network should use the criteria identified in the Chatham-Kent Trails Master Plan to inform decision-making related to setting priorities for implementation. (Ongoing)

6.3.3 Construction Costs

Table 6-4 provides a summary of estimated unit costs for the construction of the trail network. These are based on averages obtained from recent construction projects across Ontario and were used to develop an opinion of probable cost to construct the trail network illustrated in the Master Plan. It also includes a guideline unit cost for individual items that may be required on a site specific basis. Unit costs (in 2009 dollars) are based on the following assumptions:

- The unit costs assume typical or normal/average conditions for construction. For example, unit prices for off-road trails assume good soil conditions, an average requirement for grading;
- Cost estimates for on-road bikeways assume bi-directional facilities (i.e. one way on both sides of the road);



- Estimates do not include the cost of property acquisitions, utility relocations, driveway/entrance restorations, permits or approvals for construction;
- Costs associated with major site-specific projects such as bridges, railway crossings, retaining walls and stairways are not included in the estimate for a specific segment of the network;
- Annual inflation, which includes increased cost of labour, materials, fuel etc., is not included in these costs; and
- Professional services and/or staff time for detailed design and applicable taxes are also additional.

As each trail segment becomes a priority for construction, a more detailed assessment as part of the design process will be required to determine site-specific conditions and design details. Detailed cost estimates can then be developed from this work.

The construction of trails in Chatham-Kent requires a significant investment. As discussed earlier in this report, investing in trails has significant individual, societal, environmental, economic and health benefits that will begin to be realized well in advance of the completion of the network.

The estimated costs to construct the recommended network are based on field evaluation of existing conditions from a master plan viewpoint, and the estimates cover the basic cost of installing the facility and not costs associated with site-specific major improvements and/or site amenities. [Table 6-5](#) provides an estimated construction cost by phase for the off and on-road components of the network.

6.3.4 Other Sources of Funding for Implementation

In addition to general tax revenues, there is an array of options for cost-sharing in the development of the on and off-road trail network:

- On-road facilities on new roads in new subdivisions should be funded and built by Developers as part of subdivision agreements;
- Developers of new residential and commercial subdivisions should be encouraged through the planning process to construct new off-road pathways and connections to the proposed network; and
- On-road facilities on existing arterial and collector roads in growth areas that are to be widened to accommodate growth, may be funded through Development Charges.

The Municipality should also pursue outside funding opportunities. Outside funding sources made available over the last few years for cycling, pedestrian and trail related projects is at or near an all time high, and it is expected that this trend will continue. Outside funding opportunities include:

- The Federal / Provincial Gas Tax;
- Transport Canada's MOST (Moving on Sustainable Transportation) and EcoMobility (TDM) grant programs;
- The Federation of Canadian Municipalities Green Municipal Fund; which supports the implementation of innovative environmental projects. Trail projects may be eligible if partnered with other transportation planning and management related initiatives in Chatham-Kent; and
- Federal / Provincial infrastructure stimulus funding.

Table 6-4 Unit Price Schedule

PART A. ON-ROAD BIKEWAY NETWORK

| ITEM | UNIT | UNIT PRICE | COMMENTS/ASSUMPTIONS |
|---|--------------|---------------------------|---|
| | | 2008 DOLLARS ¹ | Note: Unit prices for linear meter are for both sides of a road unless otherwise noted (applies to on-road routes only). |
| 1. Retro-fit existing road with bike lanes (line painting) | linear metre | <u>\$13</u> | Repaint only (includes removal of existing lines, repainting of lane markings, addition of bike lane symbol every 200m, addition of bike lane road signage) |
| 2. Add 1.5m Bike Lane as part of the construction of a new road | linear metre | <u>\$205</u> | Cost of additional asphalt and markings - road project pays for curbs, CB leads, road pavement structure |
| 3. Add 1.5m Bike Lane as part of an existing road scheduled for widening/reconstruction | linear metre | \$535 | Cost of additional asphalt and markings - road project pays for existing pavement removal, curbs, CB leads, road pavement structure |
| 4. Add 1.5m Bike Lane on existing road as part of a separate/stand-alone project | linear metre | \$605 | Cost of additional asphalt and markings, curbs, CB leads, road pavement structure all borne by cycling project |
| 5. Add 1.5m Paved Shoulder when existing road is scheduled of resurfacing | linear metre | <u>\$55</u> | Cost of additional asphalt over existing granular base and granular shoulder, includes 80mm depth of asphalt |
| 6. Pave existing gravel road | linear metre | <u>\$140</u> | Upgrade existing rural gravel road to a bituminous surface, 6.0m hard surface width |
| 7. Add 1.5m Paved Shoulder as part of a separate/stand alone project | linear metre | \$80 | Cost of additional asphalt over existing granular base and granular shoulder, includes 80mm depth of asphalt |
| 8. Retro-fit existing road with wide-shared use lane (on typical road with 1 lane each direction) | linear metre | <u>\$7</u> | Repaint only (includes removal of existing lines, repainting of lane markings, addition of sharrow symbol every 75m, addition of share the road signage) |
| 9. Retro-fit existing road with wide-shared use lane (on typical road with 2 lanes in each direction) | linear metre | <u>\$13</u> | Repaint only (includes removal of existing lines, repainting of lane markings, addition of sharrow symbol every 75m (durable paint), addition of share the road signage) |
| 10. Widen Curb Lane as part of the construction of a new road | linear metre | \$70 | Cost of additional asphalt 0.5m and markings - road project pays for curbs, CB leads, road pavement structure |
| 11. Widen Curb Lane as part of a road scheduled for widening/reconstruction | linear metre | \$220 | Cost of additional asphalt and markings - road project pays for existing pavement removal, curbs, CB leads, road pavement structure |
| 12. Widen Curb Lane as part of separate/stand-alone project | linear metre | \$435 | Full reconstruction cost for road widening by 0.5m for both sides |
| 13. On-road signed route in rural area | linear metre | <u>\$0.4</u> | Assumes one "bike route" sign each side per kilometre in rural areas (2 signs total), assumes cost to supply and install each sign = \$200.00. Does not include allowance for other route signing systems (i.e. street blade signing, route map/orientation signing) |
| 14. On-road signed route in urban area | linear metre | <u>\$2</u> | Assumes five "bike route" signs each side per kilometre in urban areas (10 signs total), assumes cost to supply and install each sign = \$200.00. Does not include allowance for other route signing systems (i.e. street blade signing, route map/orientation signing) |
| 15. Replace catch basin covers with bicycle friendly model | each | \$350 | Price varies by municipality and supplier |
| 16. Construct Median Refuge | each | \$20,000 | Average price for basic refuge with curbs, no pedestrian signals |
| 17. Construct neighbourhood traffic circle | each | 5,000-60,000 | Prices vary depending on conditions and complexity. \$10,000 used as benchmark for typical for master plan costing |
| 18. Construct Pedestrian activated traffic signal (IPS) | each | \$80,000 | Varies depending on number of signal heads required |
| 19. Repaint/Restripe urban roadway | linear metre | \$12 | Line removal and repainting average 4 lane road |
| 20. Traffic Signs - On-road | each | \$200 | Per Ontario Ministry of Transportation specifications |

Table 6-4 Unit Price Schedule continued

| PART B. OFF-ROAD PATHWAY NETWORK | | | |
|---|--------------|---|---|
| ITEM | UNIT | UNIT PRICE 2009 DOLLARS ¹ | COMMENTS/ASSUMPTIONS |
| 1. Major rough grading (for multi-use pathway) | cubic metre | \$25 | |
| 2. Clearing and Grubbing | square metre | \$2 | |
| 3. Grading and compacting path bed | square metre | \$1 | On an abandoned railway line, rails and ties already removed and off-site. Includes leveling and packing after leveling (3.0m wide) |
| 4. Culvert Railings | linear metre | \$100 | Basic wood post and rail style railing |
| 5. Install new culverts | linear metre | \$75-160 | Price range applies to 400mm diameter CSP up to 600mm diameter CSP |
| 6. Fencing | linear metre | \$55 | |
| 7. Construct new granular surface trail on abandoned railway corridor | linear metre | <u>\$40</u> | Includes basic allowance for items 1-6 noted above. Assumes 1 basic roadway crossing every 5km on average. 3.0m wide granular surfaced pathway. This unit price is applied to all conversions of abandoned rail lines to trails <u>other than</u> the CSX line from Chatham to Dresden and Wallaceburg. |
| 8. Construct new granular surface pathway | linear metre | <u>\$112</u> | Normal site conditions (3.0m wide trail), this unit price is also used for estimating the cost of "rail with trail" as may be the case for the abandoned CSX line |
| 9. Construct new asphalt trail | linear metre | \$114 | Normal site conditions (3.0m wide) |
| 10. Upgrading granular trail to tar and chip | linear metre | \$12,000 | Includes 1 coat primer and 2 coats surface (areas requiring "trail hardening"-3.0m wide) |
| 11. Upgrading existing granular trail | linear metre | <u>\$70</u> | Price includes some upgrades to base (3.0m wide), and adding asphalt |
| 12. Construct Concrete sidewalk | linear metre | \$75 | 1.5m wide concrete sidewalk, one side of street only. Price for sidewalk only under normal site conditions, does not include utility pole relocations, retaining walls, excessive grading beside sidewalk etc.). Recent local tender prices equate to \$60-90/linear metre. |
| 13. Construct pedestrian overpass of major arterial/highway | each | 750,000-2.0M | Requirements and design vary widely, use price as general guideline only |
| 14. Trail/Road transition (at grade mid-block crossing, at grade crossing at signalized or unsignalized intersection) | each | 5,000-7,000 | Typically includes 2 gates, warning signs, curb cuts and minimal restoration (3.0m trail) |
| 15. At grade railway crossing | each | \$65,000 | Flashing lights, motion sensing switch (C.N. estimate) |
| 16. Below grade railway crossing | each | \$500,000 | 3.0m wide, unlit culvert style approx 10 m long for single elevated railway track |
| 17. Multi use subway under 4 lane road | each | \$1,200,000 | Guideline price for basic 3.3 m wide, lit |

NOTES:

- Unit Prices reflect 2009 Dollars, based on projects in southern Ontario. They do not include the cost of property acquisition, utility relocations, or major roadside drainage works unless noted
- Installing on-road cycling facilities as a separate stand-alone project is generally not recommended. Unit prices are provided for comparison purposes only.
- Bolded and underlined** unit prices are typically used to estimate network costs for the Implementation Plan . Other unit prices are provided for reference.

- The Ontario Ministry of Environment Community Go Green Fund (CGGF);
- The Ontario Ministry of Transportation Demand Management Municipal Grant program;
- Partnership funding with other agencies such as the Chatham-Kent Public Health Unit for initiatives related to health promotion and promoting active lifestyles;
- The Communities in Action Fund available through the Ontario Ministry of Health Promotion for programming and promotional initiatives related to health/active living/active transportation;
- The Canada-Ontario Infrastructure Program;
- The Ontario Trillium Foundation;
- Human Resources Development Canada program that enables personnel positions to be made available to various groups and organizations;
- Corporate environmental funds such as Shell and Mountain Equipment Co-op, which tend to be for small, labour-intensive projects where materials or logistical support is required;
- Corporate donations that may consist of money or services in-kind, by large and small businesses;
- Potential future funding that might emerge from the Province in rolling out the Ontario Trails Strategy;
- The Trans Canada Trail Foundation which as recently broadened the range of projects that qualify for funding and has increased their level of contribution to projects that qualify;
- The National Trails Coalition;
- Local service clubs;
- Projects built in conjunction with other agencies such as the LVTCA, school boards, post-secondary institutions;
- Built through servicing agreements. For example, trails built along sanitary sewer and water mains can also serve as access routes for regular service and emergency repairs;
- Built by volunteers;
- Private citizen donations/bequests; and
- Fundraising programs and/or sponsorship of individual trail items (“Buy-a-bench, Buy a metre” etc.).

Recommendation 6-5 The Municipality should commit to the allocation of annual life cycle budgets for the construction of trail infrastructure. (Ongoing)

Recommendation 6-6 In addition to investing life cycle budgets for the construction of trail infrastructure, the Municipality should pursue outside sources for the development and maintenance of the trails. (Ongoing)

Table 6.5 Summary of Network Implementation Costs by Type and Phase.

| | | Off-Road | | | On-Road ² | | | | | | Total Costs | | |
|--|---------------------|-------------------------------|--------------------------|-----------|----------------------|-------------|----------------|--------------|------------------|-----------|--------------|-----------|--------------------------|
| | | Land Based Trail ¹ | Water Route ⁵ | | Bike Lane | | Paved Shoulder | | Wide Shared Lane | | Signed Route | | |
| | | | | | | | | | | | | | |
| Existing | 111 km ³ | \$1,943,245 | 136 km | \$272,000 | 0 km | \$0 | 0 km | \$0 | 0 km | \$0 | 0 km | \$0 | \$2,215,245 ⁴ |
| Short Term (2010-2015) | 18 km | \$1,939,341 | 0 km | \$0 | 2 km | \$375,126 | 47 km | \$2,574,411 | 8 km | \$109,524 | 43 km | \$46,017 | \$5,044,419 |
| Medium Term (2016-2026) | 68 km | \$7,194,922 | 0 km | \$0 | 6 km | \$1,232,871 | 153 km | \$8,429,064 | 22 km | \$286,248 | 304 km | \$229,989 | \$17,366,094 |
| Long-Term (Beyond 2026) | 83 km | \$6,647,406 | 0 km | \$0 | 4 km | \$884,920 | 138 km | \$7,613,636 | 3 km | \$34,848 | 142 km | \$79,677 | \$15,260,487 |
| Totals | 280 km | \$17,724,914 | 136 km | \$272,000 | 12 km | \$2,492,917 | 338 km | \$18,617,111 | 33 km | \$430,620 | 493 km | \$348,683 | \$39,886,245 |
| <p>Notes</p> <ol style="list-style-type: none"> Off-road trails are multi-use and all user groups can be accommodated with a single facility. On-road routes include (i) bicycle facilities on the road as cyclists are not permitted to ride on sidewalks except in limited circumstances, and (ii) existing sidewalks for pedestrians and other similar users. 55km of the total 111km of existing trails are municipally owned, the remaining 56km of are located in Provincial Parks and Conservation Areas. Total Cost for existing trails refers to upgrades required on approximately 20% of the existing total trails (approximately 28km). Total Cost for existing water routes includes an allowance of \$2,000 per km for upgrades (signage, launches etc.) | | | | | | | | | | | | | |

6.3.5 A Five-Step Network Implementation Process

The Chatham-Kent Trails Master Plan is not intended to be a static document. The timing and details related to implementation, particularly the location of recommended routes and facility types should and will evolve through community consultation and technical review during the implementation. At the same time, however, the extensive effort that established the overall direction for the network should be respected when network modifications are being contemplated.

The following 5 step process is a step-by-step mechanism to confirm the feasibility of each route recommended in this report at the time implementation is proposed. It will assist municipal staff from affected departments to work together, to share information and to facilitate the implementation of the Plan. Each part of the network implementation process is described in the following sections.

Part I: Preliminary Review

The first step in implementing segments of the network is to identify and communicate opportunities. As such, municipal infrastructure projects including the capital roads forecast should be monitored. When a project involving a corridor or road proposed for a route identified in the Master Plan is advanced to the planning stage, or an opportunity to establish a new route not identified in the Master Plan comes forward, staff responsible for the implementation of the Master Plan network should undertake a preliminary review. This review should:

- Compare the timing of the project to the short and long term implementation priorities identified in the Chatham-Kent Trails Master Plan;
- Assess whether the nature of the project may permit implementation of the recommended facility type in a cost effective manner; and
- Inform the project lead and affected departments whether or not a feasibility assessment should be undertaken to confirm the feasibility and costs for implementing the proposed route as part of the subject project.

The key aspect of this initial step is communication. Staff from various departments should report all upcoming projects that may involve or impact a trail route identified in the Master Plan.

Part II: Feasibility Assessment

If a network route is confirmed through the preliminary review process (Part I), a brief feasibility assessment should be undertaken, which includes the following:

- Confirm the feasibility of the route based on a review of the Master Plan and supporting route selection and planning and design criteria, as well as other relevant information;
- For on-road segments, collect or confirm current roadway characteristic information including Average Annual Daily Traffic volumes, collision data and the commercial vehicle percentage;
- Conduct a field check for both on and off-road route segments to identify any other issues that should be considered and to measure sight line distances (if applicable);
- Determine if further public consultation should be conducted;



- Undertake a functional design for the segment and estimate implementation costs, including construction and signing; and
- Prepare a cost/benefit analysis statement. This “statement” should comment on the following;
 - The timing for implementing the proposed pedestrian or cycling facility;
 - Costs and efficiencies achieved;
 - Identify any less costly alternatives and how they may fit within the intent of the overall network plan, and this may include alternative parallel routes that meet the intent of the Master Plan; and
 - A recommended course of action.

Part III: Detailed Design, Tender and Implementation

Once a determination has been made to proceed the necessary detailed design should be completed. In the case of on-road routes, this step is typically completed as part of the detailed design for capital roads project, such as a road widening and does not usually require additional resources. The final step involves tendering the project (if not undertaken in-house) and then construction / implementation. It is also possible that following detailed design the decision is made not to proceed with the facility or preferred facility type because of the cost, other constraints that arise through the detailed design process or based on direction from Council. If this occurs, the network should be updated and an alternative route should be proposed.

Part IV: Monitoring Phase

Once facilities have been constructed, their design and use should be monitored to ensure they function in the manner intended. When necessary, the facilities should also be upgraded and maintained to ensure continued safe use.

Part V: Municipal Official Plan

The fifth part of the implementation process includes updating the Municipality’s Official Plan to account for changes in policy and network routes.

Recommendation: 6-7 Municipal staff should review and adapt as necessary the proposed five-part process tool for guiding the implementation of the trail network identified in the Chatham-Kent Trails Master Plan. (Short Term)

6.3.6 The Network Management Tool

The proposed network for the Chatham-Kent Trails Master Plan was developed using the Municipality’s Geographic Information System (GIS) base. This digital GIS based network map provided to the Municipality as part of this study can also be used as a facility management tool. A database is associated with the map information and includes a number of different attributes. For example, the network has been divided into segments, each specifying a length of the segment and the facility type proposed, as well as the phase in which the route and facility is proposed to be implemented.

During the implementation process, staff can use this tool to assist in confirming the feasibility of routes, facilities and the proposed schedule for implementation. The GIS Tool can also be used to track and document new segments as they are implemented. Updating the facilities component of the network on a regular basis will significantly reduce the effort and cost to update the entire Master Plan in the future. If the Municipality chooses, this GIS information with some additional computer programming, could also be posted on the Chatham-Kent website and become the basis for an interactive trail map as well as other promotional materials.

Recommendation: 6-8 Municipal staff should maintain and annually update the GIS based Network Management Tool developed as part of the Chatham-Kent Trails Master Plan and use this tool to assist in asset planning and management. (Ongoing)

6.3.7 Network Maintenance and Risk Management

Even though multi-use trails are separated from the roadway, they still may legally fall under the definition of a “highway”, since bicycles, one of the key user-groups on the trail system are legally defined as vehicles. This is important as it implies that cycling facilities are covered under many of the same basic immunities as other highways. It also illustrates the importance of adhering to design and construction guidelines, as this will provide the greatest legal protection. Aside from proper design and operation of on and off-road trail facilities, the Municipality should take steps to address potential hazards associated with these facilities including accidents, theft, vandalism, and other problems. The following general strategies for reducing risk are suggested to help minimize the liability associated with providing designated trail facilities:

- Avoid describing or promoting specific routes or trails as “safe” or “safer” than alternatives. It is generally preferred for facility users to assess their capabilities themselves and make their own choices about selecting one route over another;
- Improve the physical environment, increase public awareness of the rights and obligations of trail users and improve access to educational programs in order to demonstrate that efforts are being taken to reduce the likelihood of accidents;
- Select, design and designate facilities in compliance with the most current prevailing standards, where they exist. For example regulatory signs, as identified by the MTO Manual of Uniform Traffic Control Devices, should be used for regulatory signing of an on-road cycling network;
- Ensure that designs comply with applicable laws and regulations (i.e. Ontario Highway Traffic Act and current Municipality by-laws);
- Take steps to ensure that maintenance operations meet acceptable standards. For instance, if a hazard cannot be removed very shortly after it has been discovered , it must be isolated with barriers or notified by clear warning signage;
- Monitor the physical conditions and operations of roadways and trail facilities on a regular basis. All reports of hazardous conditions received should be promptly and thoroughly investigated and written records of monitoring and maintenance activities should be kept up to date;
- Maintain proper insurance coverage.



6.3.7.1 Approaching Trail Maintenance

Many jurisdictions have formalized programs to plan and construct trail systems, however the number that have formal programs for trail maintenance is lower. In 2004, as part of the development of another municipal trail master plan in southern Ontario, members of the Chatham-Kent Trails Master Plan team conducted telephone interviews with approximately a dozen southern Ontario municipalities to determine the overall scope of their trail maintenance, to learn about significant issues and priorities and to gain an understanding of basic costs for trail maintenance. The following are some highlights:

- Very few maintain their trails in winter. Of those that do, none reported maintaining all of their trails in winter. Generally winter maintained trails included only asphalt trails and those that are heavily used, or are main connections serving utilitarian purposes such as connections to schools and main bicycle/pedestrian commuter routes;
- Several reported having defined maintenance standards for trails, based on trail type. Many of those that did not currently have standards reported that they were working towards them;
- Most have a call in/hot line for areas requiring emergency repairs, or areas where garbage containers are heavily used. None of the hot lines were trail specific, most often they were included with a parks or even municipal-wide hotline for parks, roads, infrastructure etc.;
- In most cases, respondents felt that they could do a better job at trail maintenance, but were limited by resources (staff resources/budget and time);
- Most reported conducting an annual safety audit, in most cases this was included as part of their annual safety and security audit for parks, playgrounds and recreation facilities;
- Many noted that proactive or preventative maintenance, especially with regard to trail surface condition, signing, trash and vandalism was a key success factor;
- Most use trail patrols or supervisors conducted a regular (i.e. as often as weekly) review to assess conditions, prioritize maintenance tasks and monitor known problem areas;
- Some use maintenance logbooks to set out a schedule of tasks, priorities, standards to be achieved and method of tracking that the work has been completed. This method of tracking was also noted as useful for being able to predict which locations would require the highest level of maintenance;
- In most cases, parks crews performed trail maintenance as part of their regular park maintenance role. Where extensive maintenance programs were reported, additional seasonal labour was added to the workforce (often summer students). Volunteer “adopt-a-trail” programs were also identified as useful for basic trail cleanup and monitoring;
- Trail maintenance is generally handled under Parks Operations budgets, sometimes tracked as a separate trail maintenance budget, but most often grouped in with other parks maintenance budgets;
- Trail maintenance costs range depending on the type of trail and location. Costs to maintain highly urbanized trails ranged from \$2000-\$4000/km per year, whereas costs to maintain rural trails (including rail trails) were significantly lower, ranging from less than \$100/km year to \$350/km per year. Tasks covered as part of these estimates included maintenance of trail drainage, storm channel and culvert maintenance, grading and minor

topping up of trail surfaces, minor pothole repair, sweeping and clearing of debris, trash removal, mowing of clear zones, minor surface repairs and repairs to trail fixtures/furnishings;

- Many respondents reported that asphalt surfaces on trails have a life span of approximately 15-20 years, and trails that were installed in 1980's and earlier now require reconstruction, and in the process are generally being widened to meet higher levels of use/demand experienced today. Wider trails are also better for preventing damage to trail edges by municipal service vehicles, as vehicle wheels are less likely to roll over and break trail edges and less likely to create ruts in the soil beside the trail;
- Trails that were properly constructed at initial installation had the fewest maintenance issues. Proper subgrade excavation, adequate base and proper drainage were noted as keys to trail longevity;
- Many reported that erosion is a big challenge and that "trail hardening" with asphalt on sloped trails is the best way to prevent further erosion. Some reported trying other soil binding compounds for trails on slopes and reported only moderate success with these alternative materials;
- Mowing grass along edges of trails is performed on a regular basis. Depending on trail location this may be weekly, biweekly, monthly or infrequently throughout the growing season. The width of the mown swath generally varies from 0.5m to 2.0m depending on the municipality and location. Mowing helps to keep clear zone open and can also help with the invasion of weeds into granular trail surfaces;
- Several have trained their mower operators to be more observant while mowing and to take note of problem areas along the trails;
- Garbage pickup is performed on a regular basis (i.e. 10 day cycle), with receptacles located at the ends of trail segments where they can be easily accessed for service vehicles;
- Tasks performed on a seasonal basis include culvert cleanout and pruning to maintain trail clear zones;
- Grading/grooming the surface of granular trails is generally performed once per year or as required after heavy storm events in areas prone to erosion;
- Tasks performed every 3 to 5 years cycle include refurbishment of signs, cleaning and refurbishment site furnishings;
- Tasks performed on an as-required basis include moving or marking obvious hazards within 24 hours of their identification, inspection/monitoring of trail areas prone to damage following heavy storms, repairs to vandalized items, minor repairs to structural elements such as bridges, trail surfaces, railings, benches, gates and signs;
- Major renovation or replacement of large items such as bridges, kiosks, gates, parking lots, and asphalt trail surfaces was generally described as a 10-20 year replacement item.

6.3.7.2 Winter Maintenance of Off-road Trails

As previously noted very few municipalities maintain their off-road trails during winter months. For those municipalities that do offer winter maintenance services on trails, generally only certain routes are maintained, and these tend to be primary routes that serve a commuter function to key destinations such as schools and community centres. The following are some general considerations that are being used in other jurisdictions to identify candidates for winter trail maintenance and to develop priorities among those candidate routes.



1) Trail Function and Location

- The trail's role in the overall transportation network and community connectivity (primary vs. secondary function);
- The trail does not provide an alternate route to a nearby sidewalk or trail that is already being maintained in winter;
- Determine if the trail is integral to the overall network such that it provides a primary route to schools, public facilities such as recreational centres and to other pedestrian generators such as senior's homes, shopping and commercial establishments;
- The trail is not merely a convenient short cut. Consideration needs to be given to the length of the detour required if the trail is not available for winter use. Although each case should be considered on an individual basis, 500m can be considered as a threshold guideline;
- The trail connects dead end streets or cul-de-sacs where alternative routes do not exist;
- Consideration is given to neighbouring land use(s) and how this relates to pedestrian origins, destinations and pedestrian generators;
- Consideration is given to sidewalks/trails that have historically received winter maintenance, but winter maintenance has not been formally adopted.

2) Trail Design and Condition

- The trail should be constructed to a minimum standard including:
 - Adequate surface drainage to prevent ponding of water on the trail surface;
 - Minimum width (e.g. no less than 3.0m for multi-use trails) and there is adequate access for maintenance equipment;
 - The trail has an asphalt surface (this factor may not apply if a snowblower is used instead of a plow);
 - There should be no danger adjacent to the trail, such as a steep drop off that could be a hazard for equipment operators.

6.3.7.3 A Trail Maintenance Plan for Chatham-Kent

Based on the information in the previous sections, this section describes a potential trail maintenance program for Chatham-Kent. The general objectives of a trail monitoring and maintenance plan are to:

- Provide safe, dependable and affordable levels of service;
- Preserve infrastructure assets;
- Protect the natural environment;
- Enhance the appearance and health of the community;
- Provide a reference framework against which to measure performance;
- Provide the basis of a peer review that is comparable with other municipalities; and

- Provide citizens and Council with a reference for expectations.

The first step in implementing a maintenance and management program is to determine its scope. Trail plans, maps, inventories, trail logs, traffic count information and condition surveys are all valuable sources of information for developing maintenance management systems. Utilizing GIS technology to track operations and maintenance costs can inform future decisions related to maintenance and help in establishing tasks, programs and costs/benefits based on locally collected data.

Table 6-6 outlines typical trail maintenance activities that Chatham-Kent should consider as part of the development of a trail maintenance program that is tailored to suit the Municipality’s needs. Tasks have been grouped according to the frequency with which they would typically be performed:

- Immediately (within 24 to 48 hours);
- Regularly (weekly/biweekly/monthly);
- Seasonally;
- Annually;
- Every 3 to 5 years; and
- Every 10 to 20 years.

Table 6.6 Maintenance Considerations for Off-Road Trails

| Frequency | Response |
|--|--|
| <p>Immediate (within 24 hours of becoming aware of the situation through a “hotline”, email, other notification or observation)</p> | <ul style="list-style-type: none"> • As a minimum, mark, barricade and sign the subject area to warn trail users, or close the trail completely until the problem can be corrected. • Remove vegetation and/or windfalls, downed branches etc., where traffic flow on the trail is being impaired or the obstruction is resulting in a sight line issue. Remove hazard trees that have been identified. • Repair or replace items that have been vandalized or stolen/removed. This is especially important for regulatory signs that provide important information about trail hazards such as road crossings, steep grades, sharp curves. • Removal of trash in overflowing containers or material that has been illegally dumped. • Repair of obstructed drainage systems causing flooding that poses a hazard to trail users or that is resulting in deterioration that poses an immediate safety hazard. • Monitor trail areas and structures that are prone to erosion after severe summer storms and repair as required. • Repairs to structural elements on bridges such as beams, railings, access barriers and signs. |



Table 6.6 Maintenance Considerations for Off-Road Trails

| Frequency | Response |
|---|---|
| Regularly (weekly / biweekly / monthly) | <ul style="list-style-type: none"> Trail patrols/inspections should review the trail conditions (as often as weekly in high-use areas), to assess conditions and prioritize maintenance tasks and monitor known problem areas. Mow grass along edges of trails (in open settings only). Depending on trail location this may be done weekly, biweekly or monthly and the width can vary according to the location (typically 0.5 to 1.0m). This helps to keep the clear zone open and can slow the invasion of weeds into granular trail surfaces. Not all trails will have mown edges. In woodland and wetland areas, pruning and brushing is typically the only vegetation maintenance to be undertaken. Regular garbage pickup (10 day cycle or more frequent for heavily used areas). Restock trailhead information kiosks with brochures as needed. Repair within 30 days or less, partially obstructed drainage systems causing intermittent water backups that do not pose an immediate safety hazard, but that if left unchecked over time will adversely affect the integrity of the trail and/or any other trail infrastructure or the surrounding area. |
| Seasonally | <ul style="list-style-type: none"> Patching/minor regrading of trail surfaces and removal of loose rocks from the trailbed. Culvert cleanout where required. Top up approaches to bridges. Planting, landscape rehabilitation, pruning/beautification. Installation/removal of seasonal signage. |
| Annually | <ul style="list-style-type: none"> Conduct an annual safety audit. This task is not necessarily specific to trails and may be included with general annual safety audits for parks, playgrounds and recreation facilities. Evaluate support facilities/trailside amenities to determine repair and/or replacement needs. Examine trail surface to determine the need for patching and grading. Grading/grooming the surface of granular trails, and topping up of wood chip trails. Pruning/vegetation management for straight sections of trail and areas where branches may be encroaching into the clear zone. This task is more of a preventative maintenance procedure. Cuttings may be chipped on site and placed appropriately or used as mulch for new plantings. Remove branches from the site unless they can be used for habitat (i.e. brush piles in a woodlot setting), or used as part of the rehabilitation of closed trails. Where invasive species are being pruned and/or removed, branches and cuttings should be disposed of in an appropriate manner. Inspect and secure all loose side rails, bridge supports, decking (ensure any structural repairs meet the original structural design criteria). Aerate soils in severely compacted areas. |

Table 6.6 Maintenance Considerations for Off-Road Trails

| Frequency | Response |
|---|---|
| Every 3 to 5 Years | <ul style="list-style-type: none"> • Cleaning and refurbishment of signs, benches and other trailside amenities. |
| Every 10 to 20 Years | <ul style="list-style-type: none"> • Resurface asphalt trails (assume approximately every 15 years). • Replace or reconstruct granular trails (assume approximately every 15 years, but this may not be necessary if adjustments/repairs are made on an annual basis). • Major renovation or replacement of large items such as bridges, kiosks, gates, parking lots, benches etc. |
| <p>Note A trail maintenance log should be used to document maintenance activities. The log should be updated when features are repaired, modified, replaced, removed, or when new features are added. Accurate trail logs also become a useful resource for determining maintenance budgets for individual items and tasks, and in determining total maintenance costs for the entire trail. In addition, they are a useful source of information during the preparation of tender documents for trail contracts, and to show the location of structures and other features that require maintenance.</p> | |

Although it may represent some additional time or cost, it has often been demonstrated that simply reorganizing existing maintenance priorities can contribute significantly to an effective maintenance program for an on-road cycling network. Table 6-7 outlines key maintenance considerations for on-road routes.

Table 6.7 Maintenance Considerations for On-Road Routes

| Feature | Details |
|---|---|
| Distortions in the road surface that may pose a potential hazard for cyclists | <p>Bumps or depressions causing ponding of water on at least one third of the width of the trail surface, or cycling surface where on-road links form the network connection.</p> <p>Drop-offs at the edges of pavement greater than 5cm in height over a horizontal distance of 20m. Vertical discontinuities greater than 2.5cm.</p> <p>Cracks (especially those running parallel to the path of travel) greater than 5cm wide by 2.5cm deep by 2.5cm long.</p> <p>Potholes greater than 10cm in diameter and 2.5cm in depth.</p> |
| Street Sweeping and Debris Removal | <p>Sand left over from winter road maintenance and leaves allowed to accumulate in bike lanes can be hazardous to cyclists. Sweeping crews should be instructed to pay particular attention to the right edge of the road along designated bikeways.</p> <p>Another useful strategy is to organize the spring sweep so that roads with bike lanes and routes are swept first, recognizing the potential hazard to cyclists of not doing so.</p> |



Table 6.7 Maintenance Considerations for On-Road Routes

| Feature | Details |
|------------------------------|--|
| Snow Plowing | On-road routes should be cleared as part of the regular removal and de-icing of roadways. A priority-shift to include roads with bike lanes and routes that serve major origins/designations should be considered. |
| Catch basin covers | Service covers and roadway edges are often the first place where cracking, heaving and breakup of asphalt occurs. A 2cm vertical ridge and a 1cm groove paralleling the direction of travel can be hazardous to cyclists. The condition of road surfaces particularly near the curb and at corners/intersections is one of the most common complaints about on-road cycling facilities. Patching and pavement overlay procedures may have to be increased to meet these tolerances within the traveled portion of the bikeway. |
| Signing and Pavement Marking | Maintain on-road route and regulatory signs in the same manner that other roadway signs are maintained. Renew lane markings and symbols at the same time that other roadway lane markings are renewed. |

Recommendation: 6-9 Using the strategies outlined in the Trails Master Plan as a starting point, Chatham-Kent staff should develop a trail maintenance plan that is tailored to meet the Municipality’s needs, and is supported by an appropriate budget. (Short term)

6.4 DEVELOPING TRAIL POLICY

Another important component of supporting trails within Chatham-Kent is through the creation of policy to address how developing and operating a trail system is interwoven with day-to-day business at the municipal level. In addition to the network and other elements of the master plan, policies help define and communicate the municipality’s intent regarding trails. During the development of the Trail Master Plan, a number of potential policy ideas were generated. The following is a list of potential ideas that should be considered in the development of new policies for trail development and operation in Chatham-Kent. They are organized under the following four themes:

- Management and Administration of the Plan;
- Planning and Design;
- Communications; and
- Maintenance and Operations.

Theme 1. Management and Administration of the Plan

1. Adopt the Trail Master Plan as the basis for the systematic implementation of an integrated community trail network in Chatham-Kent.

2. Where required, use additional detailed studies to further develop designs for trail alignments and related amenities.
3. Detailed route design will involve a consultation process with adjacent landowners and local neighbourhoods where consultation is deemed appropriate by Municipal staff.
4. Implement the trail network in a phased fashion, over time.
5. Wherever possible create trail links in association with land development, and municipal infrastructure improvement projects as this can result in significant cost savings. Projects may also be implemented based on changing construction opportunities or specific trail related demand.
6. Review and update the Master Plan on a regular basis (i.e. every 5 years) to re-establish or re-allocate priorities, generally update the findings of the current project, take advantage of opportunities that may arise, and to ensure that the plan remains current with prevailing industry approaches and standards.
7. Provide a leadership role at the municipal level for the implementation and management of the trail system.
8. Seek opportunities to establish partnerships with other agencies and organizations for the development, management and promotion of the trail system. Partnerships should be considered for both trail infrastructure and supporting initiatives and programs.
9. Provide appropriate staff resources to oversee the implementation and management of trails.

Theme 2. Planning and Design

1. Examine and update the municipality's land-use policies and regulations to require developers to provide trails as part of their projects, and so that these trails link appropriately with the trail network illustrated in the Chatham-Kent Trails Master Plan.
2. Ensure that all retired road and railway rights-of-way and other linear corridors are given adequate consideration for their usefulness as part of the trail network, future transportation corridors and utility corridors before being sold or "no interest" is declared. If these corridors are sold or released, attempt to maintain a public easement wherever possible.
3. Include appropriate references to the Trail Master Plan in future updates of the Official Plan and other long range planning documents including those that deal with land use, environmental and transportation planning issues.
4. Have staff review the Planning Act as it relates to parkland dedication, with a view towards determining if, and under what circumstances the provision of trails can be included as part of parkland dedication.
5. Provide sidewalks where none currently exist along streets in urban areas that are part of the recommended trail network.
6. Examine and update the municipal policy related to acquisition and/or easement along waterfronts to ensure that linear, publicly accessible corridors can gradually be assembled over time along key waterfronts.



Theme 3. Communications

Internal Communication

1. Establish an interdepartmental team and communication process so that opportunities to realize the implementation of trails as part of other infrastructure projects are not overlooked.
2. Report to Council annually on the successes and challenges in implementing the trail system and supporting initiatives and programs.
3. As part of day-to-day business practice, recognize that trails are for more than just recreation, and that they have environmental, transportation, health and economic benefits.

External Communication

1. Establish and maintain lines of communication with other agencies and surrounding municipalities to keep abreast of trail initiatives at a regional level.
2. Recognize trail partners and donors in an appropriate manner.
3. Develop a trail map and signage strategy.
4. Establish a public trail advisory committee.
5. Develop an information link on the municipal website for information about trails in Chatham-Kent.
6. Support community events and activities that encourage more participation/use of trails.
7. Develop a distinctive logo/brand for trails in Chatham-Kent that can be used at every appropriate opportunity for trail-related design, signing, promotion and events.

Theme 4. Maintenance and Operations

1. Monitor and care for trails by developing appropriate maintenance strategies and programs, and by allocating sufficient resources. Examine the role of partnerships in developing trail management and maintenance strategies.
2. Establish a trail hazard reporting program.
3. Routinely consider and accommodate the needs of trail users in all transportation projects including the design of new roadways, bridges and underpasses, and crossings of barriers (waterways, railways, existing and future highways etc.).
4. Routinely consider and accommodate the needs of trail users in transportation services and practices such as active construction zones and traffic management plans for public rights-of-way.

6.4.1 Trails and the Official Plan

Chatham-Kent's Official Plan received Ministry approval in January 2009. The Chatham-Kent Official Plan, along with several other municipal Official Plans were reviewed during the development of the Chatham-Kent Trails Master Plan,

with the intent of identifying areas where policies could be strengthened and/or additional policies could be provided that further support the development and promotion of trails in the municipality.

The Official Plan contains a number of policies that speak directly to the integration of trails and a number of others that relate indirectly to trails. Specifically these include:

- Section 2.2.4 Transportation
- Section 2.4.5 Recreational Trails/Pedestrian Linkages
- Section 3.4 Developing a Diversified Economy
- Section 3.5 Industrial Development
- Section 3.6 Business Parks
- Section 3.11 Recreational Area Policies

The following (in italics) are policy excerpts from the sections noted above. Additions to existing policies and suggested new/additional policies are italicized and underlined.

Section 2.2.4 Transportation

2.4.2.2.9 The Municipality may accept a level of service which is less than the optimum in return for a more pedestrian-oriented environment in the downtowns and main streets of its Primary and Secondary Urban Centres. To achieve this environment, the Municipality may apply a variety of traffic calming techniques such as the following:

- a) reduced lane width;*
- b) provision of a centre median which may be landscaped;*
- c) provision for on-street parking; and*
- d) provision for widened sidewalks, and road cutouts.*
- e) provision of facilities for bicycles*

Section 2.4.5 Recreational Trails/Pedestrian Linkages

It shall be the objective of Chatham-Kent to:

2.4.5.1 Promote and facilitate a system of walking and cycling paths and trails.

It shall be the policy of Chatham-Kent that:



2.4.5.2.1 The Municipality shall develop a linked system of recreational trails and pedestrian linkages comprising a combination of sidewalks, dedicated off road paths and road rights-of-way. The system should include linking downtowns, residential neighbourhoods, parks and open spaces, riverfronts and lakefronts.

2.4.5.2.2 Recreational trails and pedestrian linkages shall be permitted in all land use designations. The location of the Trans Canada Trail through Chatham-Kent is shown on Schedule B to this Official Plan. Changes to this location shall be permitted to accommodate the actual on-ground route, without the need for an amendment to this Plan.

2.4.5.2.3 Utility corridors, abandoned rail lines unused/unopened road allowances and other rights-of-ways should be utilized for recreational trails. The Municipality shall support and assist in the protection of abandoned rail lines, unopened road allowances and other linear corridors for off-road trails. The Municipality shall carefully consider the value that these corridors can have in the development of a connected trail network. On a case-by-case basis, the Municipality shall research, document and publicize the opportunities and constraints related to each unused road allowance, abandoned rail line and other linear corridor prior to making the decision to dispose of these lands or declaration of "no interest" in retaining them for trail or other future transportation use. The Municipality shall consider the various means to protect and/or acquire such corridors.

2.4.5.2.4 Sidewalks and recreational trails shall be developed in new residential subdivisions . The Municipality shall require all proposed developments to include trail facilities wherever appropriate. The Municipality shall encourage the implementation of such facilities as part of the "up-front" stages of construction wherever possible.

2.4.5.2.5 For safety reasons, the provision of separate cycling lanes within arterial road rights-of-way in the larger Primary Urban Centres shall be encouraged.

2.4.5.2.6 Private development shall be encouraged to provide facilities such as bicycle parking that is appropriately designed and properly located. Appropriately designed and properly located bicycle parking shall be required at all new municipal facilities. The Municipality shall undertake a program to provide appropriately designed and properly located bicycle parking at existing facilities.

2.4.5.2.7 The Chatham-Kent Trails Master Plan is a guiding document that provides the framework for the development and operation of a trail system in the Municipality. Figures 6-3 through 6-10 of the Chatham-Kent Trails Master Plan provide the location of existing and future trail routes throughout the Municipality. Changes to these locations shall be permitted to accommodate the actual on-ground route, and to respond to new opportunities that arise from time-to-time without the need for an amendment to this Plan.

2.4.5.2.8 Prior to the design and construction of a trail or related facility, design issues including land use compatibility, safety and operational matters will be considered as well as the cultural, scenic and other environmental attributes through which the designated routes pass.

2.4.5.2.9 As part of day-to-day business practice, the Municipality shall recognize that trails are for more than just recreation, and that they have environmental, transportation, health and economic benefits.

2.4.5.2.10 The Municipality shall work collaboratively with other agencies and surrounding municipalities to plan for, and develop trails and related facilities.

2.4.5.2.11 All "secondary plans" shall incorporate trail infrastructure that is consistent with the intent of the trail network as described in the Chatham-Kent Trails Master Plan.

2.4.5.2.12 Linear park and open space systems create a significant opportunity for the development of a linked trail system. Wherever possible, the creation of a continuous linked open space system utilizing linear parks in addition to more traditional block shaped parks will be achieved by:

i) encouraging continuous, linked park and open space systems in new subdivisions;

ii) striving towards a continuous park system along river valleys and tributary lands;

iii) pursuing the potential use of hydro corridors, flood plain, wetlands, drainage courses, minor railway rights-of-way and similar features or facilities as linear parks.

2.4.5.2.13 The Municipality shall routinely consider and wherever possible accommodate the needs of trail users in the design and construction of all infrastructure undertakings such as roadways, linear utilities such as hydro and pipeline corridors, bridges and underpasses, and crossings of physical barriers such as waterways, railways, existing and future highways.

2.4.5.2.14 All development applications, including, but not limited to, plans of subdivision, severances, plans of condominium, Official Plan Amendments, zoning by-law amendments, site plans shall be reviewed by staff to ensure that they are consistent with the Chatham-Kent Trails Master Plan.

2.4.5.2.15 It is recognized that trail routes located on private property will only be established and/or remain open with the approval of the property owner. Where critical missing links are needed to complete sections of the network and no public land exists, the Municipality shall consider other means of securing access such as land purchases, leases, easements, rights-of-way, dedications and any other applicable means.

Section 3.4 Developing a Diversified Economic Base

Chatham-Kent has strong potential within the tourism industry; however, tourism products and supporting infrastructure need updating. Chatham-Kent should further investigate opportunities for:

- *heritage tourism;*
- *water based tourism;*
- *camping and nature tourism;*
- *recreational vehicle camping;*
- *event tourism;*
- *golf tourism;*
- *agri-tourism;*
- *tournaments and sports tourism*
- *family based tourism; and*



- *trails and bicycle tourism*

Section 3.5 Industrial Development

Section 3.5.2.8

In planning for industrial development, the Municipality shall:

d) Ensure that where possible, new industrial development will be accessible by trails and/or bicycle routes to enable employees the opportunity to travel to and from places of work by foot and/or bicycle.

Section 3.6 Business Parks

3.6.2.21 The Municipality shall ensure that where possible, new business parks will be accessible by trails and/or bicycle routes to enable employees the opportunity to travel to and from places of work by foot and/or bicycle.

Section 3.11 Recreational Area Policies

3.11.2.4 The Recreational Area designation means that the main permitted uses shall include: tourist establishments; resorts and other accommodations uses; marinas, residential uses accessory to waterfront resort/marina/recreation uses; campgrounds; fishing camps; active and passive recreational uses such as golf courses and amusement parks, trails, indoor and outdoor recreational facilities; cultural heritage; and, other similar tourism recreational uses, and compatible institutional uses.

Recommendation: 6-10 Municipal staff should use the policy themes and Official Plan policy suggestions identified in the Chatham-Kent Trails Master Plan as the basis for developing official policies related to trails in the Municipality. (Short Term)

6.5 SUPPORTING PARTNERSHIPS AND TRAIL PROGRAMS

Before the network build-out is complete, and once it is complete, trails will require ongoing support so that they can become and remain vital component of the recreation system, are well used and enjoyed by residents and visitors.

Two key elements to supporting trails include:

- Promoting trails to raise awareness and encourage more user participation, seek participation in trail building, annual programs and events, awareness and encouragement, and to recognize those who have contributed directly or indirectly to the development of trails; and
- Educating users about the proper use of trails through public service campaigns, trail signing, information on trail etiquette, cooperative programs with agencies to deliver messages about trail use, teaching skills related to specific trail user groups.

6.5.1 Partnering with Private Businesses and Outside Agencies

It is very important to recognize the efforts of private business when they partner with the municipality on initiatives related to the development and use of the trail system. Recognition through the media for efforts that encourage more trail use is a very positive way of showing partners that their contribution is appreciated. Furthermore, media recognition is a simple and cost-effective way to raise awareness and encourage use. Where contributions are made that improve conditions of the trail, such as the provision of trail amenities, creation of links across private properties, the municipality should consider recognition of the effort. This can be done with donor signs and plaques that are tastefully designed and carefully located. There are already a number of potential partners that have expressed a sincere interest in improving the trail system in Chatham-Kent. Many trails across the country have been built this way.

In addition to recognizing those individuals and businesses that make a contribution to the development of actual trail routes, some municipalities have developed incentive programs to recognize businesses that, through their actions indirectly encourage more user participation on trails. For example, the City of Toronto hosts an annual "Bicycle Friendly Business Awards" event, which recognizes businesses that have made considerable effort to improve their facilities for cyclists through things that may be as simple as providing high quality and conveniently located bicycle parking. Winners are presented with a plaque and are recognized in the local media for their participation.

Recommendation: 6-11 Individuals, businesses and organizations who contribute to the development of trails should receive recognition for their efforts. Chatham-Kent should explore potential avenues for recognizing contributors. (Short Term)

Opportunities exist for Chatham-Kent to develop partnerships with businesses and other agencies that provide services to a large sector of the population. The Chatham-Kent Public Health Unit is already delivering important messages on healthy living choices and active living. As demonstrated through their participation in the development of the Master Plan there is a strong interest in partnering with the other departments in promoting trails and trail use as a healthy lifestyle choice. These kind of partnerships can result in jointly produced promotional or educational literature in magazines, materials distributed through offices, materials on or linked to corporate/agency websites.

Partnerships with outside agencies can also include co-participation in annual events related to trail use. Events such as the Terry Fox Run and other fundraisers, and events such as Ride to Work Week, the Clean Air Campaign and Earth Day are natural matches. Allowing time for key staff to contribute to the organization of these events that use the trails is a simple, cost effective way to spread the word about using the trail system. The Manulife Ride for Heart in Waterloo and the Tour de Grande in Cambridge for example, attract thousands of cyclists to one-day fundraisers



that use trails extensively, providing visibility through extensive media coverage at essentially no cost to the owners of the trail.

Recommendation: 6-12 The Municipality should explore opportunities to develop partnerships with agencies as a method of spreading the word about trails and to encourage trail use across Chatham-Kent. (Short Term)

6.5.2 Education, Outreach and Awareness

Interpretive programs and signs, brochures, either self guided or as part of a wider natural and cultural heritage education program, offer endless opportunities to raise awareness about the privilege of using trails. More importantly, the need to educate users about their obligations as responsible trail users is an integral part managing the network. Posting signs is a useful way to get messages out to trail users and can be a good tool for building positive relations where neighbours have raised concerns about trail use. Public Service campaigns, information signs and interpretive signs are also useful ways to send messages to trail users and neighbours that the municipality is aware of particular concerns, that situations are being monitored and actions are being taken.

Trail maps are one of the most overlooked opportunities to spread the word about trails. Maps inform users where the routes are, plus they provide an opportunity to educate trail users through messages such as “rules of the trail” and trail user etiquette. Though expensive to produce initially, maps can be updated with the release of new additions as the system grows, making the initial investment pay for itself over time. The GIS Network Management Tool prepared as part of this project could be an excellent starting point for the development of a trail user map and can be easily updated as the status of various trails change over time. Many other municipalities have produced local trail maps and have used a variety of techniques such as selling advertising space to offset the cost of production and distribution, and partnering with graphic design companies to develop and produce maps.

Recommendation: 6-13 The Municipality should investigate the development and production of a trail user education and outreach campaign that could include trail signs, brochures, public service messages and trail maps. (Short Term)

Many municipalities have successfully implemented trail ambassador programs. These often involve teaming a staff leader with summer students who attend events and functions organized by private businesses and agencies, camps and related recreation programs, where they promote the use of the trails and in some cases teach certain skills such as cycling. In addition, ambassadors ride the routes and trails, hand out trail brochures, provide assistance to users, and monitor the condition of facilities.

Trail patrols travel the entire trail system on a regular basis and can be trained to take note of, and report observations related to trail surface conditions, vandalism, user-conflicts, environmental degradation and overgrown vegetation to Parks Operations staff. In addition, the ambassadors are available to the public and can gather important data on user satisfaction, and can educate trail users about proper trail etiquette.

A trail ambassador program is more typical of a mature, urban trail system. As the trail system in Chatham-Kent continues to grow and mature, the Municipality should explore the merits of a trail ambassador program. In the

interim, training park maintenance staff (including seasonal staff) to carefully observe and take note of trail conditions as part of their day-to-day maintenance role is an effective way to assist Parks Operations in keeping track of trail conditions.

Recommendation: 6-14 As the trail system in Chatham-Kent continues to grow and mature, the Municipality should explore the merits of a trail ambassador program.
(Long Term)





7.0 SUMMARY OF RECOMMENDATIONS

Chapter 4

- Recommendation 4-1:** Implement the Chatham-Kent Trails Network as illustrated and described in the Chatham-Kent Trails Master Plan. (On-going)
- Recommendation 4-2:** Include the Recommended Trail Network as a schedule(s) in the Chatham-Kent Official Plan. (with the next Official Plan update)
- Recommendation 4-3:** Given the Tecumseh Parkway initiative as a major tourist corridor, and that the potential for new funding for this project may become available, the Municipality and the Chatham-Kent Trails Council should review the alignment of the Trans Canada Trail in Chatham-Kent. (Short Term)

Chapter 5

- Recommendation 5-1:** Adopt the trail design guidelines presented in Chapter 5 of the Chatham-Kent Trails Master Plan as the basis for the design of trails in the Municipality. (Ongoing)
- Recommendation 5-2:** Municipal staff responsible for trail design (on and off-road) should be encouraged to remain current with best industry design practices. (Ongoing)

Chapter 6

- Recommendation: 6-1:** The Chatham-Kent Trail Master Plan should be formally updated through a public process at least every five years. (Ongoing)
- Recommendation 6-2:** Integrate Active Transportation routes that evolve from the work of the Active Communities Steering Committee with Active Recreation routes recommended in the Chatham-Kent Trails Master Plan. (Ongoing)
- Recommendation 6-3:** To oversee the implementation and management of trails in the municipality, examine different options for the creation of a trails



coordinator position and determine a suitable course of action. (Short term)

Recommendation 6-4: Municipal staff responsible for building the on and off-road trail network should use the criteria identified in the Chatham-Kent Trails Master Plan to inform decision-making related to setting priorities for implementation. (Ongoing)

Recommendation 6-5: The Municipality should commit to the allocation of annual life cycle budgets for the construction of trail infrastructure. (Ongoing)

Recommendation 6-6: In addition to investing life cycle budgets for the construction of trail infrastructure, the Municipality should pursue outside sources for the development and maintenance of the trails. (Ongoing)

Recommendation 6-7 Municipal staff should review and adapt as necessary the proposed five-part process tool for guiding the implementation of the trail network identified in the Chatham-Kent Trails Master Plan. (Short Term)

Recommendation 6-8 Municipal staff should maintain and annually update the GIS based Network Management Tool developed as part of the Chatham-Kent Trails Master Plan and use this tool to assist in asset planning and management. (Ongoing)

Recommendation 6-9: Using the strategies outlined in the Trails Master Plan as a starting point, Chatham-Kent staff should develop a trail maintenance plan that is tailored to meet the Municipality's needs, and is supported by an appropriate budget. (Short term)

Recommendation 6-10: Municipal staff should use the policy themes and potential Official Plan policies identified in the Chatham-Kent Trails Master Plan as the basis for developing official policies related to trails in the Municipality. (Short Term)

Recommendation 6-11: Individuals, businesses and organizations who contribute to the development of trails should receive recognition for their efforts.

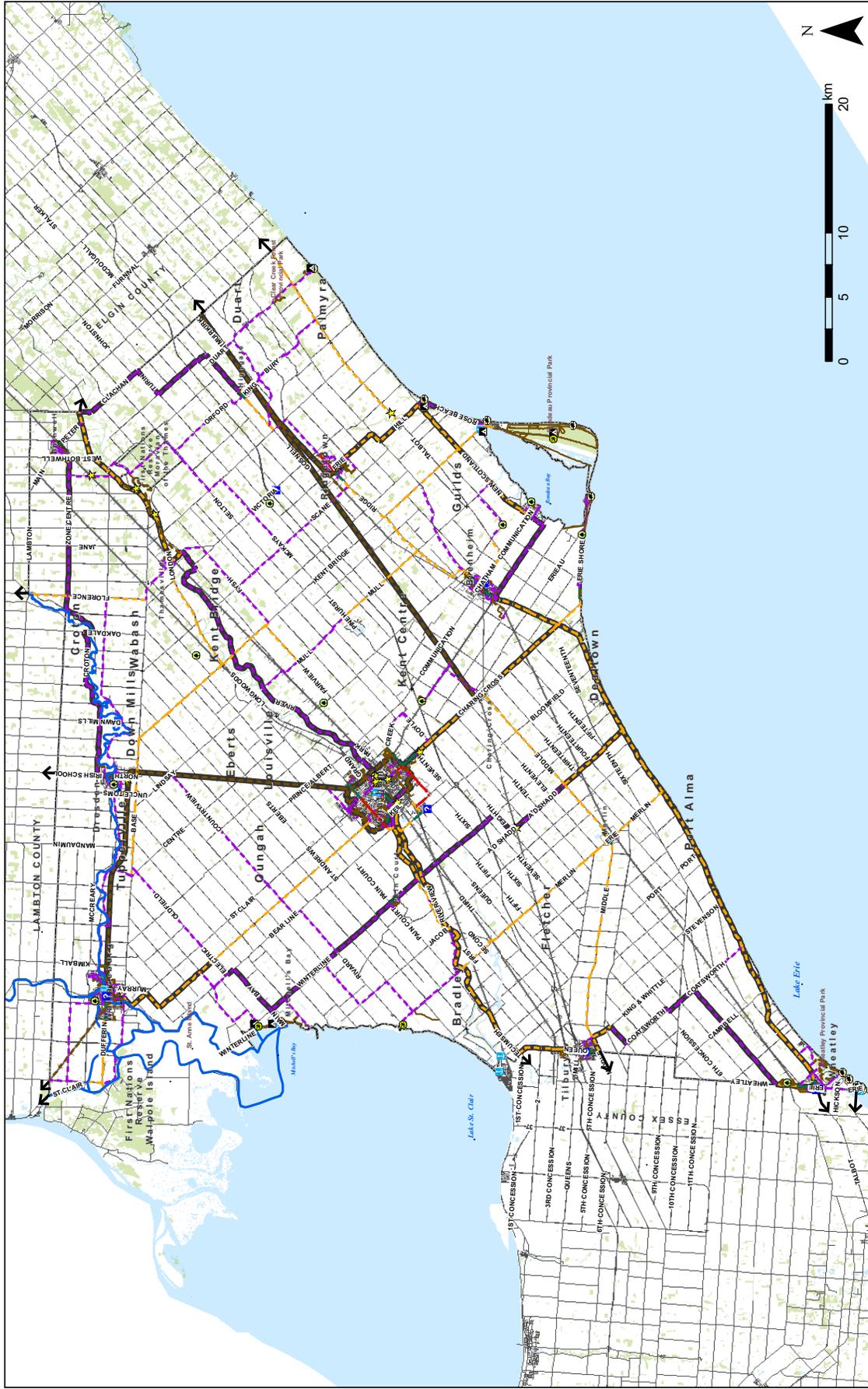


Chatham-Kent should explore potential avenues for recognizing contributors. (Short Term)

Recommendation 6-12: The Municipality should explore opportunities to develop partnerships with agencies as a method of spreading the word about trails and to encourage trail use across Chatham-Kent. (Short Term)

Recommendation 6-13: The Municipality should investigate the development and production of a trail user education and outreach campaign that could include trail signs, brochures, public service messages and trail maps. (Short Term)

Recommendation 6-14: As the trail system in Chatham-Kent continues to grow and mature, the Municipality should explore the merits of a trail ambassador program. (Long Term)



Trail Network
August 2009

Figure 4 - 3:
Municipal Wide

- ★ Attraction
- ☀ Beach
- 🐦 Bird Watching
- 🏕 Camping
- 🌳 Conservation Area
- Hospital
- 🚊 Transit
- 🚤 Marina
- 📄 Visitor Information
- 🎓 School
- Existing Trail
- Existing Signed Route
- Existing Water Route
- Municipal Wide Spine Route*
- Recommended Crossing Enhancement
- * All other routes are designated Secondary Routes in the Network Hierarchy.
- Proposed Trail
- Proposed Bike Lane
- Proposed Wide Shared Lane
- Proposed Paved Shoulder
- Proposed Signed Route
- Desired Connection



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