Corporation of the Municipality of Leamington

Active Transportation Plan (A.T.P.) & Implementation Strategy

FINAL REPORT | JULY 2016

LEAMINGTON ONTARIO CANADA

County of Essex

MMM GROUP

RC SPENCER ASSOCIATES INC. Consulting Engineers

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The Municipality of Leamington Active Transportation Plan (A.T.P.) study team would like to express their thanks and appreciation to the following individuals who contributed to the development of the plan.

We would also like to thank the members of Leamington Council, the public and stakeholders who offered their time and input to help develop the A.T.P. for the Municipality of Leamington.

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1.0 ACTIVE TRANSPORTATION (A.T.) IN LEAMINGTON

1.1 Background

Active Transportation (A.T.) in Leamington has been a collaborative effort between the local municipality, the County of Essex and numerous other stakeholders and interest groups over the past 5 – 10 years and has emerged as one of the most supportive regions for A.T. within Ontario.

The Municipality of Leamington is located in the south-eastern area of the County of Essex and consists of a significant number of cultural and natural destinations that are well known throughout the province and the country. The municipality has the second warmest climate in Canada and a geography that is flat and scenic – all desirable features of an active transportation system. Though the current municipal conditions (see additional details in **section 1.2**) are conducive to a high level of active transportation activities, the Municipality's urban form (urban, semi-urban and rural), vast landscapes and jurisdictional variations (e.g. Local municipal vs. County) result in missing links and gaps in the current on and off-road system of walking and cycling facilities.

Though the infrastructure has some key missing links, there is a significant amount of policy support. The County of Essex, through their County-wide Active Transportation Study (C.W.A.T.S., 2009), has moved forward with the implementation of pedestrian and cycling infrastructure which is complemented by an ongoing education, promotion and encouragement program to help encourage residents to lead more active and healthy lifestyles.

In 2014, Leamington identified the need for a municipality-focused active transportation plan which sets out a long-term strategy for infrastructure, programming and process improvements. The plan was completed between February 2015 and December 2015 and was a collaborative effort between Municipal staff, County staff, the consultant team of M.M.M. Group and R.C. Spencer & Associates and other key stakeholders and interest groups (e.g. surrounding municipalities, conservation authorities, school boards, etc.) which is reflected through the strategies and recommendations identified in the plan.

1.2 What is the A.T.P.?

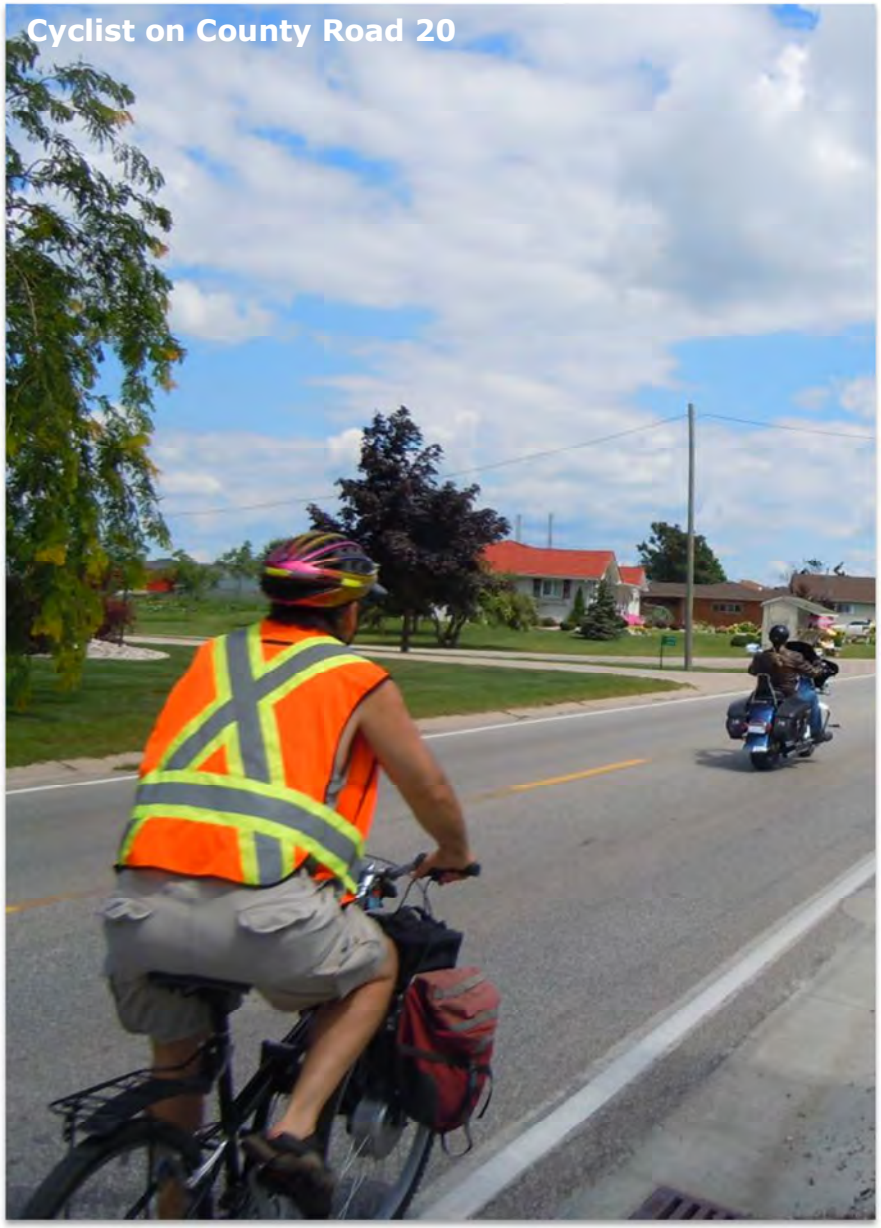
The A.T.P. is meant to be used as a blueprint and implementation guide for Leamington staff. The plan focuses on pedestrian and cycling improvements both on and off-road and provides a framework for increasing active forms of transportation and recreation throughout the municipality. It is important to define some of the key assumptions that were used to inform the development of the plan, as well as what the plan is intended to be and what it is not, in order to understand how it will be used to facilitate implementation. The following are the key plan assumptions that should be considered as the content and recommendations are reviewed.

What it is…

- A long-range blueprint;
- A tool to facilitate implementation;
- An action-plan for short-term priorities; and
- A recommended funding strategy.

What is isn't…

- A schedule of capital projects;
- A feasibility study;
- Prescriptive or set-in stone; and
- A commitment to capital costs and funding.



Cyclist on County Road 20

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The A.T.P. is part of a hierarchy of other policies and plans that together shape the future of Leamington.

Figure 1 illustrates the various policies that influence decision making in the Municipality of Leamington and how the A.T.P. will be integrated into this decision making "process".

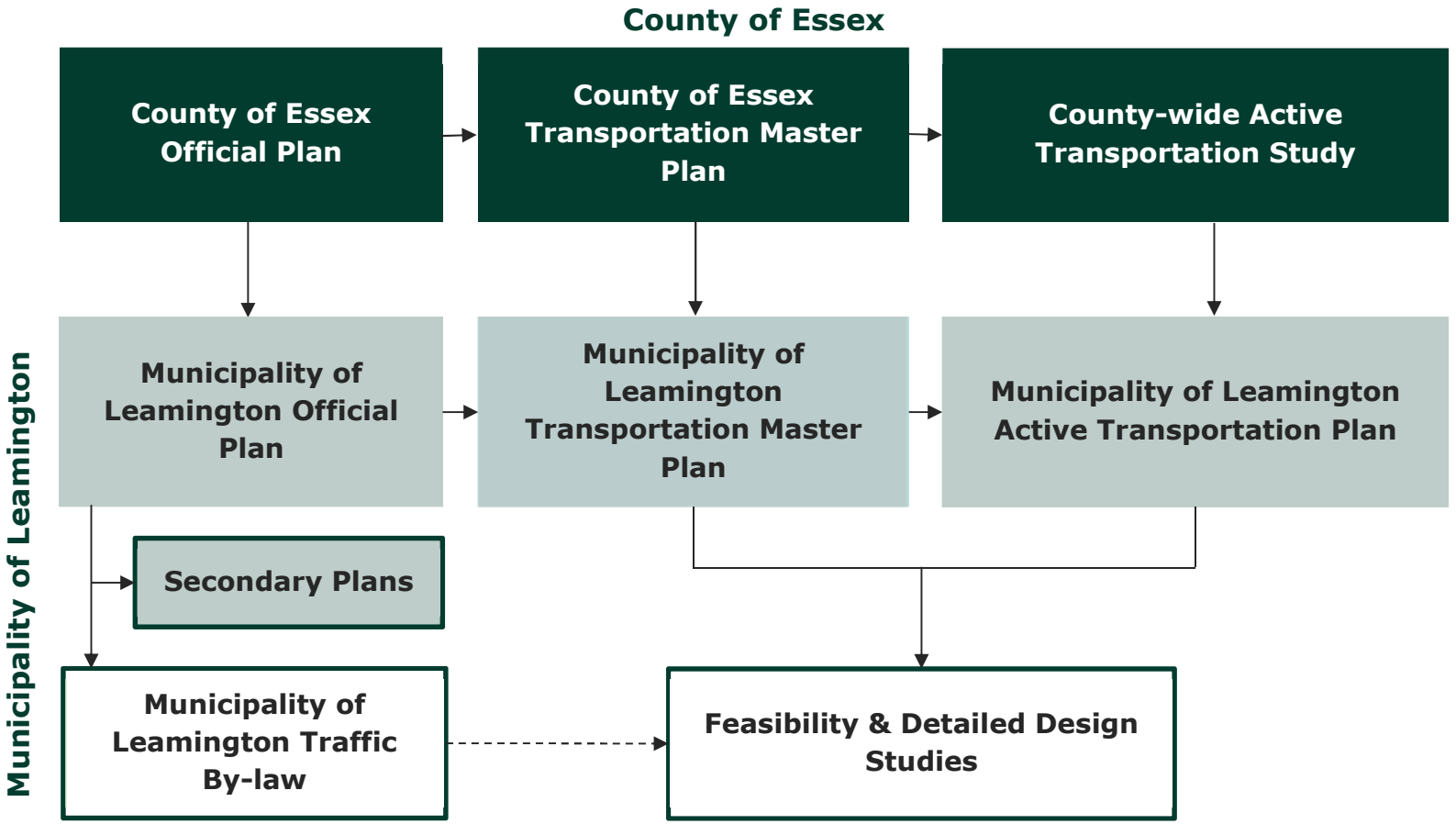

Figure 1 – Hierarchy of Influential Policies

1.3 Municipal Trends

Establishing a benchmark from which to grow is a key consideration when identifying infrastructure as well as programming and policy improvements.

In the initial stages of development, the project team undertook an environmental scan of the Municipality of Leamington to gain a better understanding of the different transportation and socio-demographic trends.

The assessment was also informed by data and information provided by the County from a 2013 survey conducted by the County of Essex in partnership with the Windsor-Essex County Health Unit. The survey was undertaken to develop an understanding of A.T. trends and behaviors of residents throughout the County of Essex. The survey provided County and municipal staff as well as health-unit officials with input to develop outreach initiatives that could support A.T. and further engage the public. 801 people completed the survey. The following are key highlights from the results.

80% of respondents own a bicycle or have access to a bicycle in working condition. **78%** of those who ride a bike indicated that they ride at least once a week. **Less than 30%** ride a bike four days a week or more.

88% of respondents indicated that they engage in a non-cycling active transportation activity.

94% of respondents walk at least once a week or more. Three quarters of these respondents **walk 3 days or more**.

Lack of Time and **Safety Concerns** were cited as the top two reasons **preventing** respondents from **participating** in active transportation.

Over **75%** of respondents indicated that **recreation** and **quality of life benefits** are primary motivators. Approximately 25% of respondents also indicated that they cycle for "purposeful trips"

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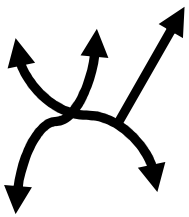
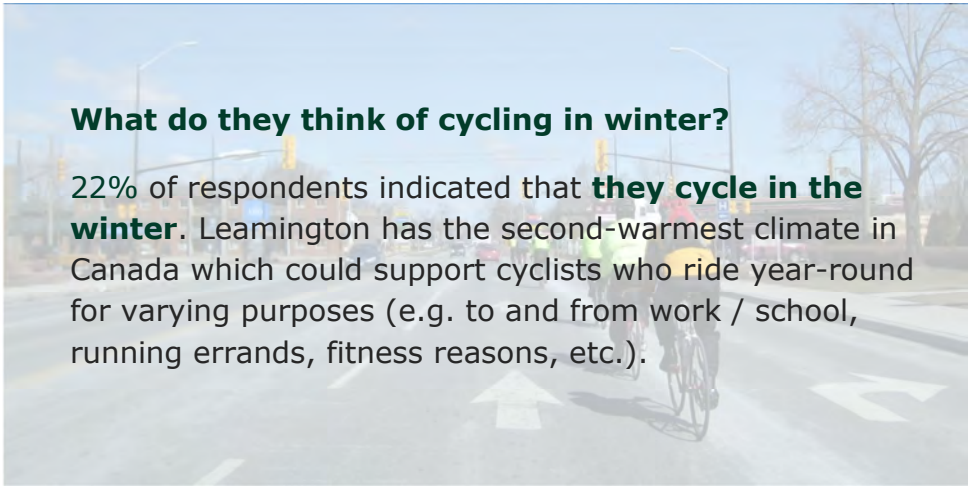


A majority of respondents indicated that would be **more active** if they had **greater access to more connected A.T facilities**. Respondents also supported municipal investment in AT facilities.

Leamington is made up of agricultural lands. As one of the most prominent industries, the transportation needs of migrant workers to and from the major urban areas were considered.

In addition, the study team also assessed existing walking and cycling demand. The assessment was completed using H.E.A.T. mapping from Strava – an online data source where cyclists and pedestrians can voluntarily log routes and the frequency in which they are taken is documented and translated into a density of use maps (see **Figure 2** and **Figure 3**).The H.E.A.T. mapping is a useful tool as it indicates the cycling route preferences of experienced road cyclists. The pedestrian information gathered is also subjective in the sense that individuals must download and track their own routes. As such information does not capture the majority of pedestrians and cyclists (e.g. users aged 8 to 80 years with varying skills).



What do they think of cycling in winter?

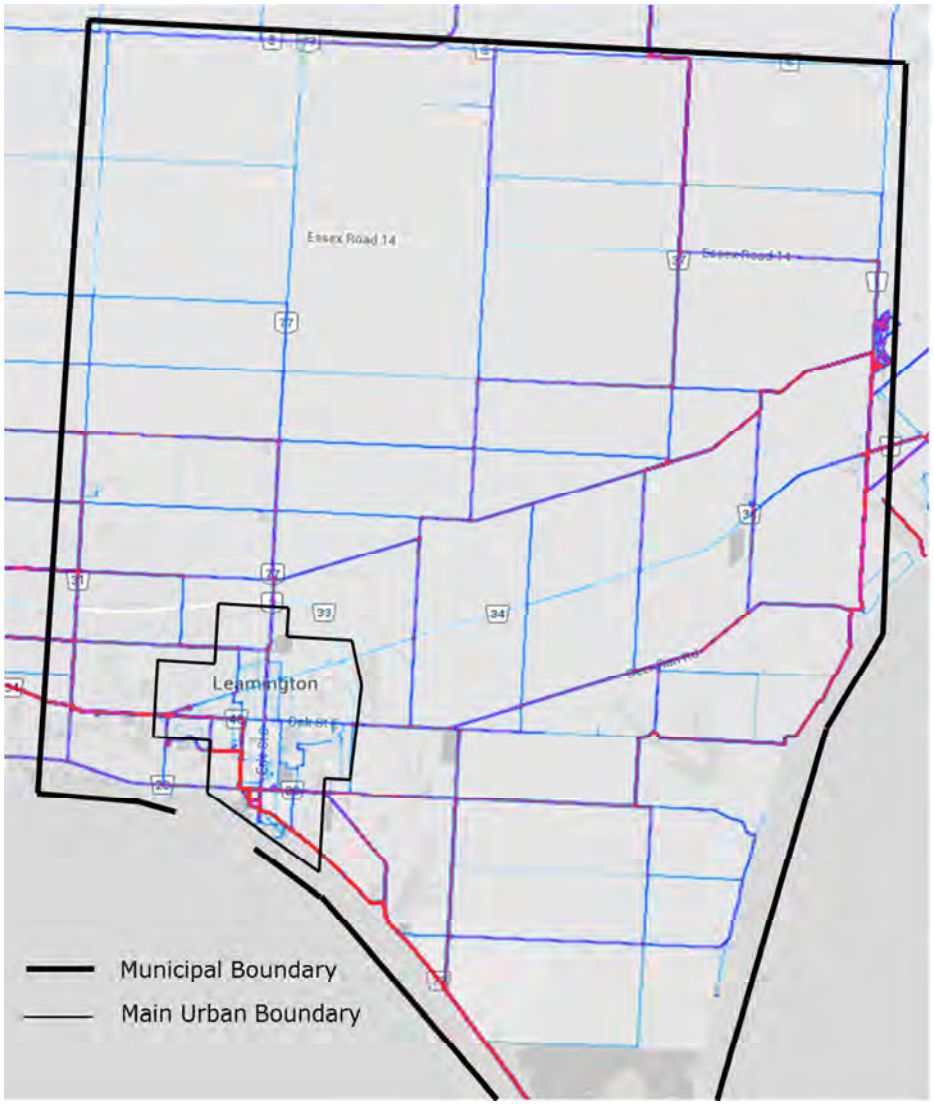
22% of respondents indicated that **they cycle in the winter**. Leamington has the second-warmest climate in Canada which could support cyclists who ride year-round for varying purposes (e.g. to and from work / school, running errands, fitness reasons, etc.).

What would encourage people to ride more?

Respondents cited that a **reduction in the amount of motorized traffic** and an **improvement to or smoother riding surfaces** would encourage them to engage in active transportation and recreation more often.

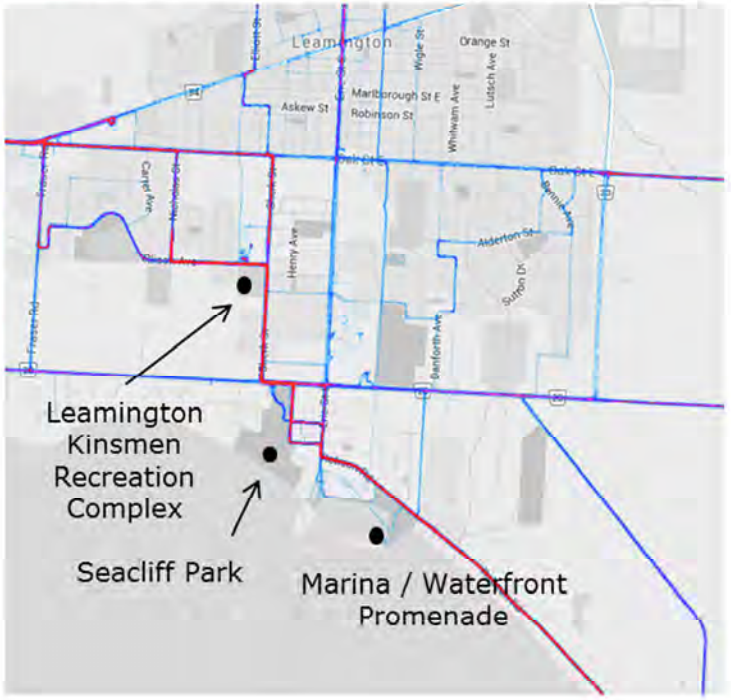
Results from this assessment provided a snap-shot of current trends which were used to help shape some of the recommendations outlined in the plan.

Figure 2 – Municipality of Leamington Cycling Trends (source: Strava H.E.A.T. Mapping)



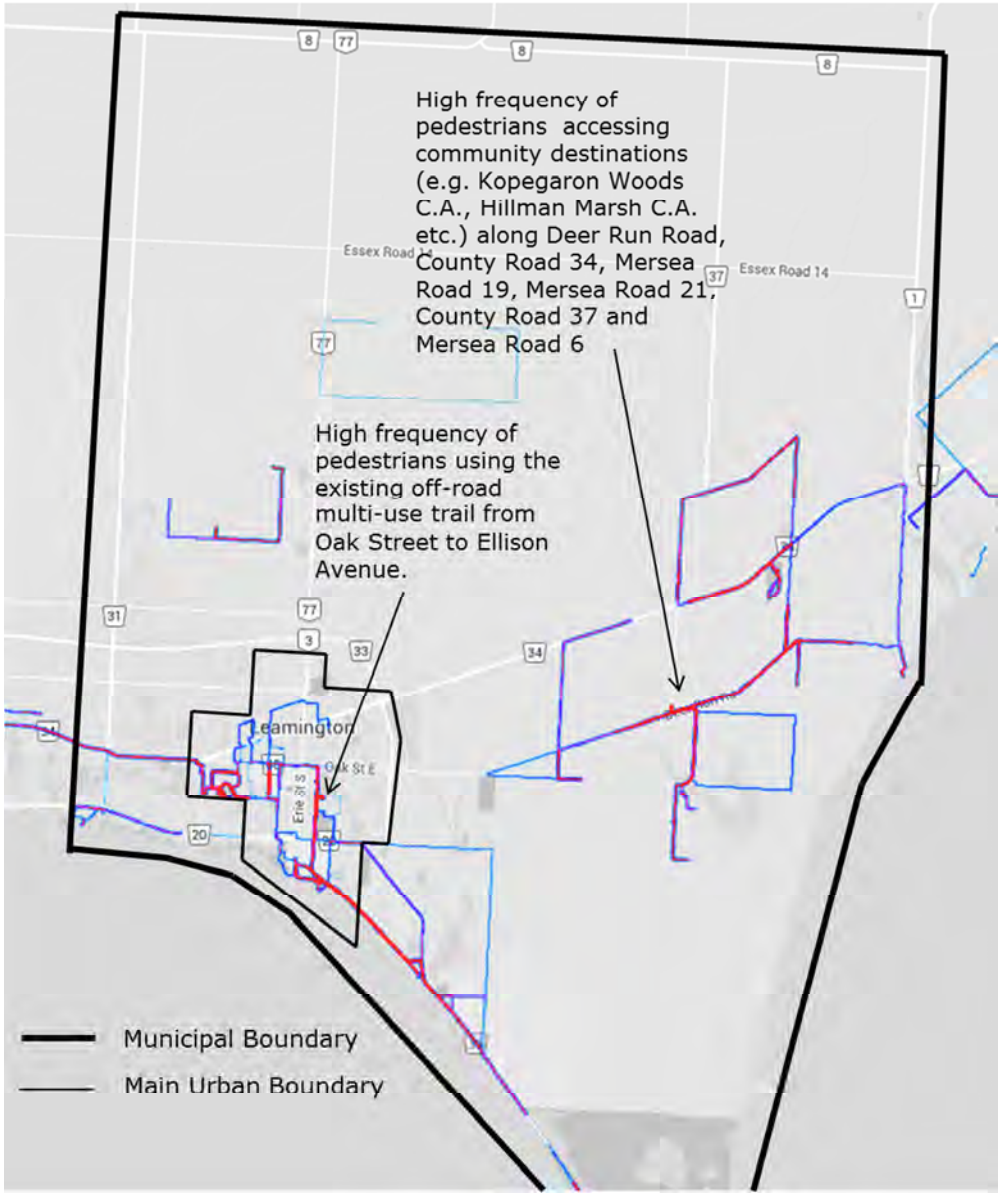
Results from the Strava HEAT mapping indicate the presence and frequency of cyclists along a number of major corridors in the Municipality including:

- Point Pelee National Park
- Leamington Kinsmen Recreation Complex
- Seacliff Park & Marina Park / Waterfront Promenade



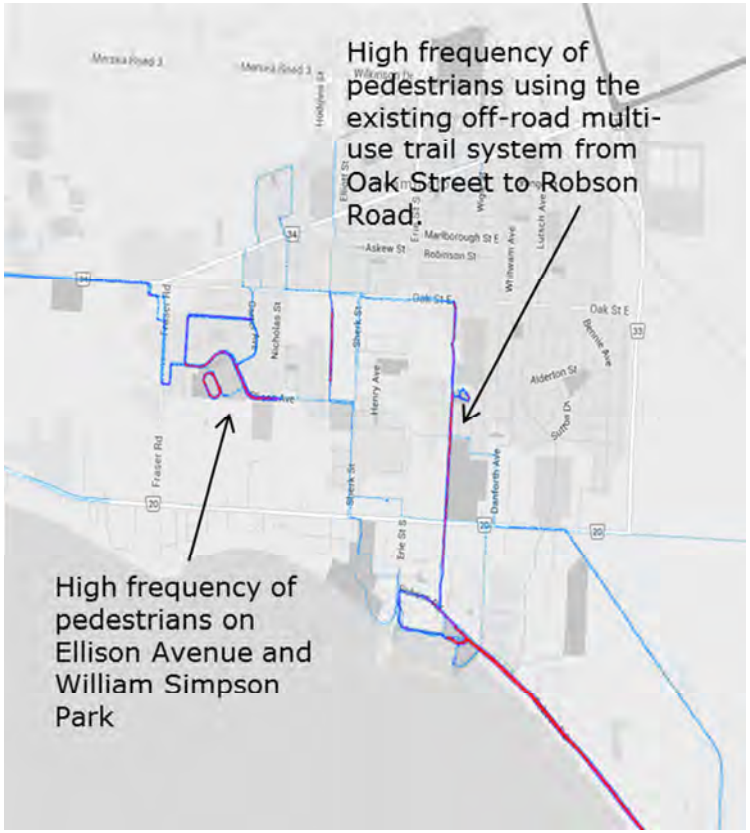
Heat mapping of cycling activity displays a high frequency of cyclists using CR.33, Robson Rd., Seacliff Dr. and Sherk St. to travel to key community destinations and to / from urban, semi-urban and rural

Figure 3 – Municipality of Leamington Pedestrian Trends (source: Strava H.E.A.T. Mapping)



Cycling and pedestrian movements are quite different; as such, the routes and environments that they prefer to use are also different. Strava HEAT mapping indicates higher pedestrian frequency in the following areas:

- Off-road multi-use trail from Oak St. to Robson Rd.
- Off-road multi-use trail from Oak St. to Ellison Ave.
- Ellison Ave. and William Simpson Park
- Robson Rd.



1.4 Policy Support

A successful A.T.P. builds upon existing policies, plans and strategies to support future improvements and to inform future decision making. Since the development of the C.W.A.T.S. and more recently Leamington's Transportation Master Plan (2011 and 2013), a number of policies have emerged that guide municipal planning, design and implementation of A.T. infrastructure, programs and initiatives.

A detailed summary of relevant policies and plans at the federal, provincial, county and local municipal level can be found in the separately bound **Technical Appendix A-1**. The study team also reviewed relevant policies from surrounding municipalities to understand the greater regional planning context.

Though there exists significant policy support, there are also areas for improvement. The study team has identified potential revisions which should be considered by the Municipality. It is recommended that Leamington should review and update some existing policies to ensure that these are consistent and provide strong policy support for A.T improvements.

Potential revisions / updates include:

- Strong Provincial support for cycling has emerged. The A.T.P. for the County and for Leamington should reflect / reinforce, where possible, the recommendations outlined in #CycleON;
- Municipality specific revisions (related to the network) may be needed for the C.W.A.T.S. plan to reflect updated priorities and improvements;
- The next update of the Municipality's Official Plan (O.P.) should reflect the A.T. recommendations and should also include the A.T. Network as a schedule;
- Consider revising the O.P. to include wording which supports all forms of A.T. and the design of supportive facilities in addition to trail development;
- Ensure alignment between policies and infrastructure improvements, the Trails Strategic Development Plan, when next updated, should reinforce recommendations found within the A.T.P.; and
- Work with the Essex Region Conservation Authority (E.R.C.A.) and surrounding municipalities to ensure that network improvements are coordinated in planning policy documents.

1.5 Why Invest? What are the Benefits of A.T.?

Improving active transportation and recreation in the Municipality of Leamington will support and help to achieve a number of strategic objectives. Many of Leamington's community values can be realized as changes are made to support alternative and sustainable modes of transportation.

The benefits that can be realized as a result of an increased investment in walking and cycling are significant. Research demonstrates the benefits – both individual and community – that can be realized.

Table 1 highlights some of these benefits in the context of Leamington.

Table 1 – Benefits of Active Transportation

Health & Quality of Life	Maintaining a physically active lifestyle is becoming increasingly more difficult with hectic schedules and busy lifestyles. Providing improved access to active transportation and active recreation by increasing the amount and overall connectivity of routes may help to encourage higher levels of activity. A more geographically dispersed network will also help to increase activity not only within the urban areas but in surrounding semi-urban and rural areas where the demand may currently be unmet. Having the facilities does not mean that people will automatically use them. Clearly marked and navigable options that give people a greater sense of comfort and safety can help to encourage people to use active forms of transportation for recreational activities as well as commuting which can help improve the overall quality of life for an individual as well as their community. More specifically, the benefits that can result from a higher level of activity include: ► Reduced risk of coronary heart disease, cancer and bone loss from osteoporosis; ► Reduced cost of medical care and workplace absenteeism; ► Improved quality of life of seniors and young adults including greater self-reliance and independence; and ► Enhanced mental well-being including decreased levels of depression, improved self-image and social relationships.

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Community & Individual Safety

Every individual has a different perception of comfort and safety when using active forms of transportation and recreation. Studies show that as the number of cyclists increases, other individuals may be more inclined to participate. For example, with more cyclists on the road, new cyclists may experience a sense of safety in numbers and motorists are likely to be more aware and considerate of how to share the roadway. An individual's level of comfort can also significantly vary depending on age. It is important to design for and provide facility and route alternatives for people of all ages (e.g. 8-80).

Research completed by the Thunderhead Alliance in the United States compared collision data with the number of pedestrian and cyclists, fatality data and A.T mode share. The results showed the correlation between increased pedestrians and cyclists and the lowest per capita fatality rates. Typically users feel a greater sense of comfort and safety with increased separation between pedestrians, cyclists and motorists[1]. This trend also tends to occur when routes and facilities are properly and consistently maintained[2]. Both results indicate that well-designed, separated and connected facilities yield more cyclists which can improve the sense of safety and comfort. Once implemented, properly maintain infrastructure will help to maintain ridership and can help to increase year-round cycling.

Economics & Tourism

Investment in active transportation and recreation can yield economic value at various scales. Business activity, employment opportunities and funding and grant support from different levels of government are all potential results of improved A.T. There are three opportunities for economic impact. The first is when facilities are being constructed by providing local businesses and retailers with an opportunity to invest in the design, supply and installation of materials.

Following the construction phase, communities with improved A.T. conditions tend to attract more tourists who either are part of a long-distance A.T focused tour or because of the transportation options it presents once in Leamington. In addition, the distribution of routes and facilities within the urban, semi-urban and rural areas will also help to provide more equitable transportation alternatives for those who are employed within the area or those who are coming from surrounding municipalities for employment opportunities.

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[1] Thunderhead Alliance. "Bicycling and Walking in the US: Benchmarking Report, 2007". Prescott, AZ: Thunderhead Alliance, 2007.
[2] Zeeger, C.V. "Designing for Pedestrians" Washington D.C. Institute for Transportation Engineers (1993).

Environmental Impacts & Sustainability

Self-propelled forms of transportation are energy-efficient and non-polluting. By reducing the number of single occupancy vehicles from the road and encouraging people to use more sustainable mores of transportation, the municipality can significantly reduce the amount of road congestion as well as maintenance costs. Pedestrian and cycling infrastructure is far less costly than developing roadways for motorists and can have positive impacts on road safety and decreased user costs.

Research shows that for distances up to 10km in more built-up areas, cycling can be a more efficient mode of transportation. Depending on the route alignment and its access to key community destinations, there is also significant potential to connect multiple sustainable modes of transportation e.g. cycling and transit, walking and cycling, etc. At the municipal, County, provincial and national level this supports goals to reduce impact on the environment and improve air quality. Transport Canada identified the single occupancy vehicle as the reason for half of the greenhouse gases in the transportation sector. Providing residents and visitors with alternatives to single occupancy vehicle and promoting the efficiency and ease of these modes will help to generate more sustainable communities and practices.

Food and Drink Cycling & Walking Tours (Source: visitwindsoressex.com)

Additional References

In addition to the research noted in Table 1, there are also a number of key resources that can be referenced when outlining the benefits of sustainable forms of transportation. As the Municipality proceeds with the implementation of the A.T.P. it may be necessary to provide residents, staff, visitors, business and Councillors with educational research and information in support of future investment, change and growth in active transportation and recreation.

Walking on Leamington Trails (Source: leamington.ca)

The Municipality should work with the County and its partners to develop these supportive / educational materials (see **section 4.2.4**).The following is a list of some useful references and resources for the Municipality to use when developing these materials or communicating with members of the public and stakeholders:

- *The Business Case for Active Transportation – The Economic Benefits of Walking & Cycling:* http://thirdwavecycling.com/pdfs/at_business_case.pdf
- *BEAT The Path to Health* – Benefits of Investing in Active Transportation: http://physicalactivitystrategy.ca/pdfs/BEAT/BEAT_Publication.pdf
- *Transportation Research Board: TR News – Active Transportation Implementing the Benefits:* http://onlinepubs.trb.org/onlinepubs/trnews/trnews280.pdf
- *Transportation Options Research – economic & tourism benefits:* http://www.transportationoptions.org/research.html
- *Cycling Opinion Poll – Overview of 2014 Results (Share the Road Coalition):* http://www.sharetheroad.ca/opinion-poll-data-s17022

1.6 What is in Leamington's A.T.P.?

The A.T.P. was developed to identify short and long-term infrastructure improvements, policies and processes, programming and outreach initiatives and tools to facilitate the growth and development of active transportation and recreation municipality-wide.

The overall goal of the plan is to establish a continuous system of A.T. routes and facilities that connects the municipality's communities and neighbourhoods, local and regional destinations, surrounding municipalities, areas of employment, and supports tourism.

The A.T.P. contains the following content:

The Support (Section 1.0)

- Current municipal trends;
- Supportive policies at the local, County and provincial level; and
- Benefits of investing in and promotion active transportation in Leamington.

The Process (Section 2.0)

- An overview of the steps taken to develop the AT plan;
- The proposed A.T. vision and supportive objectives; and
- An overview of the network development process.

The Network (Section 3.0)

- Documentation of the approach and outcomes for each step of the network development process; and
- The proposed A.T. network and associated facility types.

The Tools (Section 4.0)

- A set of short and long-term priorities to guide implementation;
- Proposed policies, processes and programs and recommended next steps;
- Maintenance recommendations and levels of services; and
- Network costing and funding opportunities.

2.0 PROCESS

2.1 How was the Plan Developed?

Developing the A.T.P. was a collaborative effort between the consultant team, the staff at the Municipality of Leamington, the County of Essex and surrounding municipalities as well as technical agencies, members of the public and stakeholders. The Plan was shaped by best practices, lessons learned and the expectations set-out in the original Request for Proposal (R.F.P.). As issues were raised, the project team worked together to develop an efficient and effective solution which was integrated into the Plan's recommendations and strategies. This section outlines the initial steps of the network and master plan development process and the outcomes of these steps.

2.1.1 Project Process

The A.T.P. was completed in three phases between the months of February 2015 and February 2016. **Figure 4** outlines the phases and their purpose as well as the level of effort (timeline) dedicated to each. The process was guided by the study design and consultation strategy.

Figure 4 – Active Transportation Plan Project Process & Timeline

Phase 1: Background Analysis & Consultation	**Phase 2:** Inventory Analysis & Development of AT Network	**Phase 3:** Council Presentations & Public Consultation
Purpose: ► Develop consultation materials ► Prepare draft table of contents ► Review relevant background information ► Map existing & previously proposed routes	**Purpose:** ► Establish an A.T. vision & route selection principles ► Identify & investigate potential routes ► Identify A.T. priorities ► Develop design guidelines & policies ► Prepare A.T.P. report	**Purpose:** ► Issue report to Council ► Consult Public ► Update the report ► Prepare final report ► Present to Council
Timeline: February – March 2015	**Timeline:** April – September 2015	**Timeline:** September – February 2016

2.1.2 Consistency with the Municipal Class Environmental Assessment Process

Municipal infrastructure projects typically follow the Municipal Class Environmental Assessment (M.C.E.A.) process set out in the Ontario Environmental Assessment Act. More complex projects would require the more extensive Individual Environmental Assessment. The process can be used for various projects to ensure that all potential environmental impacts are considered and any negative impacts or effects are appropriately addressed and mitigated. There are a total of five (5) phases that need to be undertaken and determined by scope, scale and cost prior to project commencement. Not all phases need to be completed for all projects.

In addition to municipal infrastructure projects, the M.C.E.A. process provides direction on the development of master plans – long range planning documents that identify infrastructure needs. As such, when preparing a master plan, the principles of the M.C.E.A. process are often applied. At a minimum, a master plan is required to complete Phases 1 and 2 of the M.C.E.A. Process.

Figure 5 illustrates the steps that are to be undertaken when completing a project consistent with Phases 1 and 2 of the M.C.E.A. process. Leamington's A.T.P. was completed using this process which means that a problem / opportunity statement was prepared, alternative A.T. routes were identified, and a preferred route network selected based on the study team's recommendations and staff, public and stakeholder input.

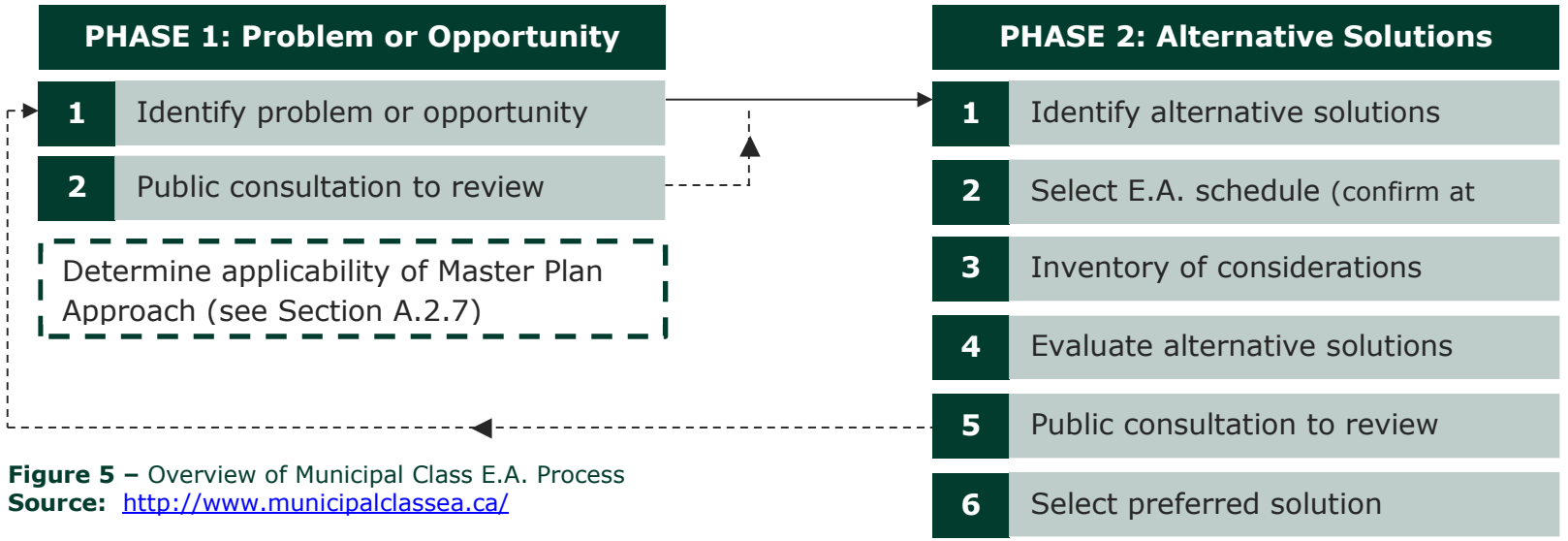


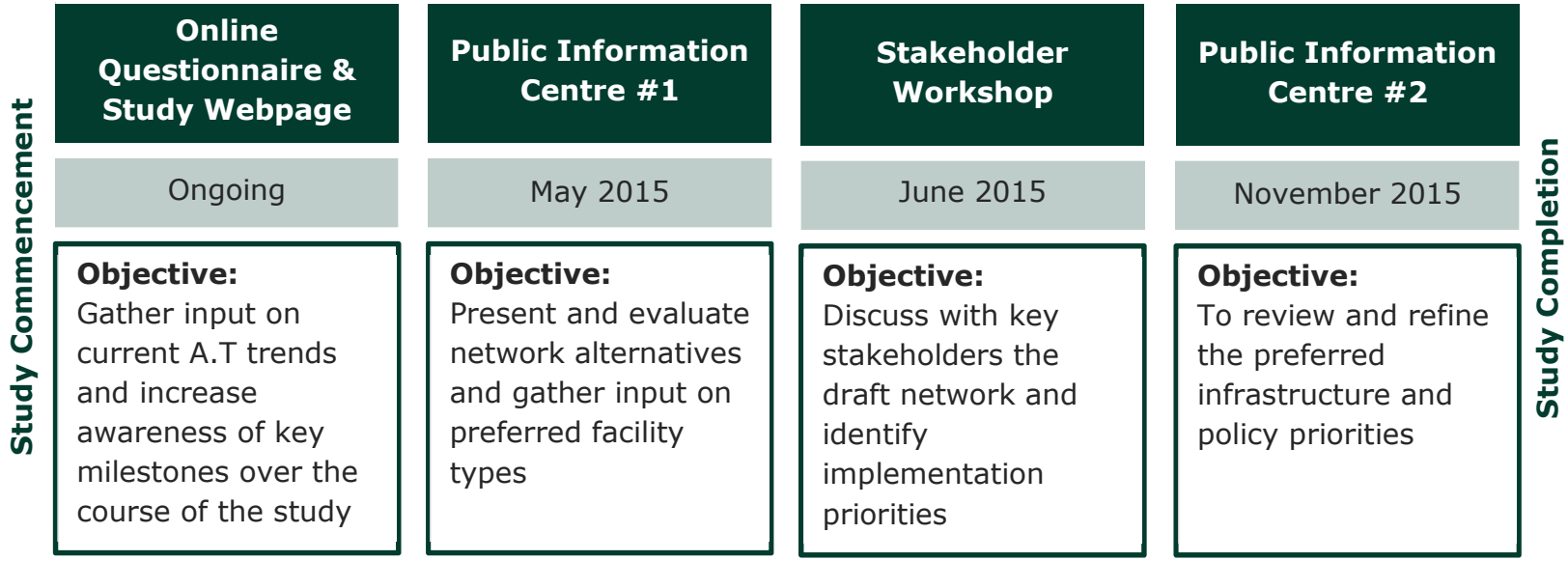
Figure 5 – Overview of Municipal Class E.A. Process
Source: http://www.municipalclassea.ca/

2.1.3 Consulting the Public & Stakeholders

Effectively consulting and engaging the public is a key component of the M.C.E.A. master planning process. It is important to understand the values, interests and needs of municipal and county staff, key stakeholders and interest groups as well as the residents of the Municipality. There were a total of two (2) points of consultation that occurred over the course of the project.

The input received was documented and summarized to inform recommendations, policies, priorities and strategies. A summary of the consultation activities and the input received can be found in the separately bound **Technical Appendix A-2**. The different public and stakeholder consultation techniques that were used and the objectives of each are presented in **Figure 6**.

Figure 6 – Overview of Public / Stakeholder Consultation Process



In addition to the formal consultation activities, the project team developed a study brand and prepared a number of materials including study poster and business card which were used to encourage public involvement. Promotion and outreach was a collaborative effort between the consultant team, municipal and county staff as well as local stakeholders.

2.2 Problem / Opportunity Statement

The problem / opportunity statement is defined at the beginning of the master planning process and is considered the starting point from which the network, recommendations and strategies are identified. The statement is prepared to clearly identify the issues or opportunities that need to be addressed during and following the completion of the A.T.P. The following problem / opportunity statement has been prepared for active transportation in the Municipality of Leamington.

*This plan will propose a **comprehensive active transportation network** to accommodate **user groups of all ages and abilities** (walkers, hikers, cyclists, mobility assisted, etc.) and to **improve the health and quality of life** for Leamington residents and visitors. The plan will build upon the County's active transportation network (C.W.A.T.S.) to provide a set of **short and long-term network priorities** as well as **educational and encouragement strategies** for Leamington residents / visitors on the use of active transportation routes and facilities.*

2.3 An A.T. Vision for Leamington

Building upon the problem / opportunity statement and the County of Essex's A.T. vision, the project team developed a long-term vision for A.T. specific to the Municipality of Leamington. The vision was shaped by input from key stakeholders, interest groups and the public and is the intended outcome when the Municipality and its partners move forward with the planning, design and implementation of the recommended A.T. network and supportive policies and recommendations. The vision is founded on four key principles which are woven through the master planning and network development process.

Comfort & Safety	Connectivity & Continuity	Attractive & Interesting	Implementable & Sustainable

Table 2 presents both the Municipality's A.T. vision as well as the vision prepared for the C.W.A.T.S. Key words have been highlighted to demonstrate the consistency and alignment between the two planning documents.

Table 2 – A.T. Visions for the Municipality of Leamington & the County of Essex

LEAMINGTON A.T. VISION	C.W.A.T.S. VISION
Leamington **supports different self-propelled modes of transportation** including but not limited to walking, cycling, hiking, in-line skating, etc. through **safe and comfortable** on and off-road infrastructure. The use of these modes is supported by local policies and programs and is implemented through **partnerships with the County of Essex and other local groups**. Leamington is a cultural and tourist destination that offers **residents and visitors a high quality of life** due to the **recreational and commuter active transportation opportunities**.	The County of Essex and its 7 local area municipalities **support active transportation (walking and cycling)** and **in association with the Essex Region Conservation Authority, City of Windsor and Municipality of Chatham-Kent and other partners**, are working together to foster a **safe, comfortable,** bicycle and pedestrian friendly environment by encouraging people of all ages and abilities to engage in non-motorized activities for everyday **transportation and recreation**. **Residents and visitors are able to travel and experience** the urban and rural areas of the County by way of a connected network of on and off-road pedestrian and cycling facilities.

2.4 Identifying Municipal Objectives

The vision is supported by a set of objectives, used to help shape specific A.T. priorities and actions.

1	Establish a comprehensive on and off-road network	2	Design facilities for a sense of comfort & safety	3	Provide seasonal opportunities for active transportation
4	Establish an implementation strategy - short & long-term actions	5	Identify supportive policies & guidelines	6	Recommend supportive amenities & programs

2.5 A.T. Improvements in Leamington

Through this plan, Leamington aims to improve active transportation and recreation infrastructure, design, planning and operations and promotion and outreach to increase walking and cycling levels by residents and visitors within the urban, semi-urban and rural areas. The background provided in **section 1.0**, input from the public and stakeholders and the plan's vision and objectives were used to define a set of A.T. improvements (see **Figure 7**). The improvements were used to develop recommendations, strategies and tools which are intended support the plan's implementation (see **section 4.0**) for details.

Figure 7 – Overview of Proposed A.T. Improvements & Actions

Network Development & Operation	Design & Accessibility	Planning & Process	Promotion & Outreach
► Connect & Enhance the C.W.A.T.S. Network ► Connect the Urban, Semi-Urban and Rural Areas ► Implement Interim Facilities ► Implementing other Network Aspects	► Apply Consistent Design Guidelines ► Provide Guidance on User Groups & Facility types ► Design with Accessibility in Mind ► Clear Signage & Wayfinding ► Facility Transitions & Designing Conflict Point	► Define A.T. in the Development Process ► Streamline Implementation ► Define Roles & Responsibilities ► Revise & Update Supportive Policies ► Land-use & Facility Types ► Plan for Future Routes	► Active Transportation Education ► Establish Partnerships ► Cycling & Trail Tourism ► Encourage Increased Activity ► Establish a Cycling Friendly Community ► Safe Routes to School
Objectives achieved: #1, #2, #5 and #6	**Objectives achieved:** #1, #2, #5 and #6	**Objectives achieved:** #3, #4 and #5	**Objectives achieved:** #3, #5 and #6

2.6 Developing the Network & Implementation Plan

The study team applied a step-by-step process to develop the A.T. network and implementation plan. The approach included a six step iterative process which builds upon existing policies, programs and infrastructure – refer to **Figure 8** for an overview of these steps.

Figure 8 – Six Step Network and Implementation Plan Development Process

STEP 1: Refining	**STEP 2:** Selecting	**STEP 3:** Identifying
► Build on existing and previously proposed A.T. routes ► Identify route principles and selection criteria	► Identify potential A.T. routes i.e. Candidate Routes ► Apply criteria to select draft preferred routes	► Evaluate & select preferred routes ► Apply facility selection process to confirm preferred facility types
STEP 4: Prioritizing	**STEP 5:** Implementing	**STEP 6:** Maintaining
► Identify proposed implementation timelines i.e. phases for each route & identify short-term priorities	► Establish a long-term strategy for implementation ► Identify a process for implementation	► Highlight operations & maintenance practices ► Develop performance measures

EX1

The outcomes from each step are documented in **sections 3.0** and **4.0** of the A.T.P. report. As a result, a number of recommendations have been identified to achieve Leamington's vision and objectives. The recommendations are highlighted using a blue circle and a number (shown to the right). A summary of recommendations is presented in separately bound **Technical Appendix A-3**.

3.0 NETWORK


COUNTY WIDE ACTIVE TRANSPORTATION SYSTEM
CWATS
WALK RIDE COUNTY WIDE
CWATS • ROUTE

3.1 Refining: Building Upon What You Have

The intent of the A.T.P. was not to "reinvent the wheel" but to build on the successes that have been realized in the past 10 years at the County and municipal level. Since the development of the C.W.A.T.S., the County and Leamington and its partners have successfully implemented a number of A.T. facilities, programs and initiatives within the Municipality of Leamington and in surrounding municipalities.

This section of the report provides a summary of:

- Existing infrastructure conditions;
- Previously planned or proposed A.T. routes (on and off-road);
- Opportunities and constraints identified by the study team through field investigations and discussions with the Municipality's project team, members of the public and stakeholders; and
- Route selection criteria which were developed based on criteria and considerations identified in Ontario Traffic Manual (O.T.M.) Book 18: Bicycle Facilities and refined based on Leamington specific priorities and objectives.

3.1.1 Existing Conditions

There are both existing on and off-road routes found within the Leamington. Information was provided by the County and the Municipality (in Geographic Information System (G.I.S.) format) to inform the development of an existing conditions database which was used as the basis for the development of the A.T. plan database / implementation tool (described in **section 4.0**).

The existing and previously proposed routes and facility types are illustrated on **Maps 1a** and **1b**. The information presented is consistent with information found within the C.W.A.T.S. and A.T. related schedules presented in the Municipality's Official Plan (O.P.) and Transportation Master Plan (T.M.P.).

LEAMINGTON A.T. PLAN (2016)

A summary of existing facilities by type and length (in km) is presented in **Figure 9**.

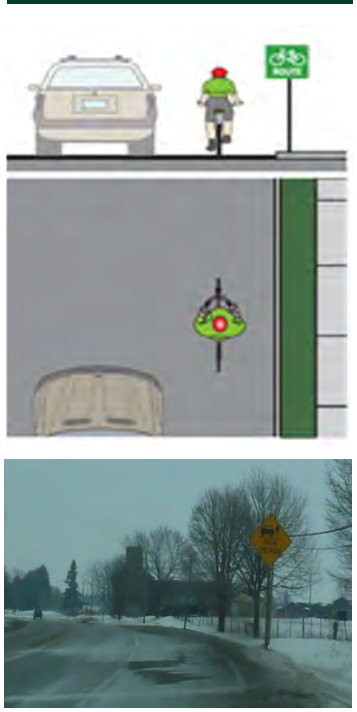
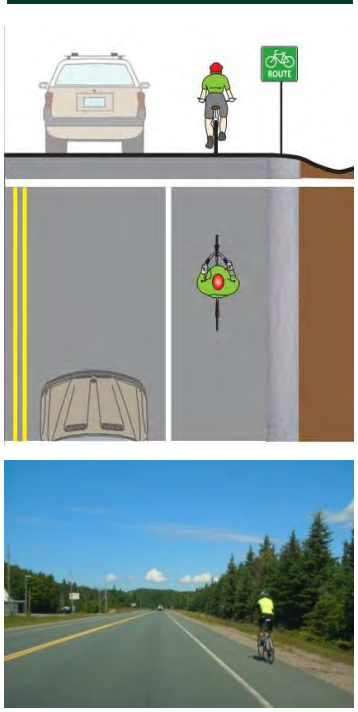
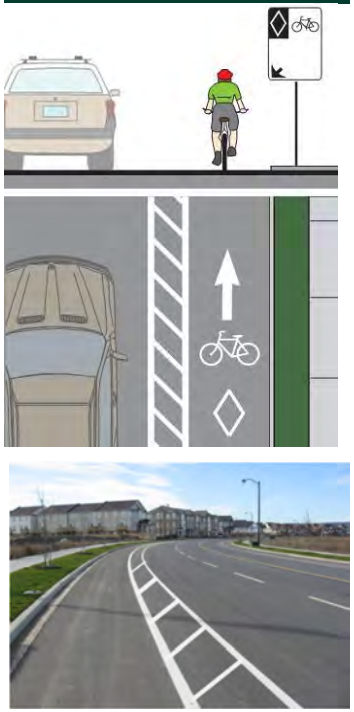
SIGNED BIKE ROUTE	PAVED SHOULDER	BUFFERED BIKE LANE	BIKE LANE	MULTI-USE TRAIL
				
Total kilometres Existing: 5.7km Proposed: 68.2km	**Total kilometres** Existing: 16.6km Proposed: 30.5km	**Total kilometres** Existing: 0km Proposed: 0.9km	**Total kilometres** Existing: 2.8km Proposed: 10.2km	**Total kilometres** Existing: 15.1km Proposed: 22.9km

Figure 9 – Summary of Existing and Previously Proposed A.T. Conditions in Leamington

Municipality of Leamington

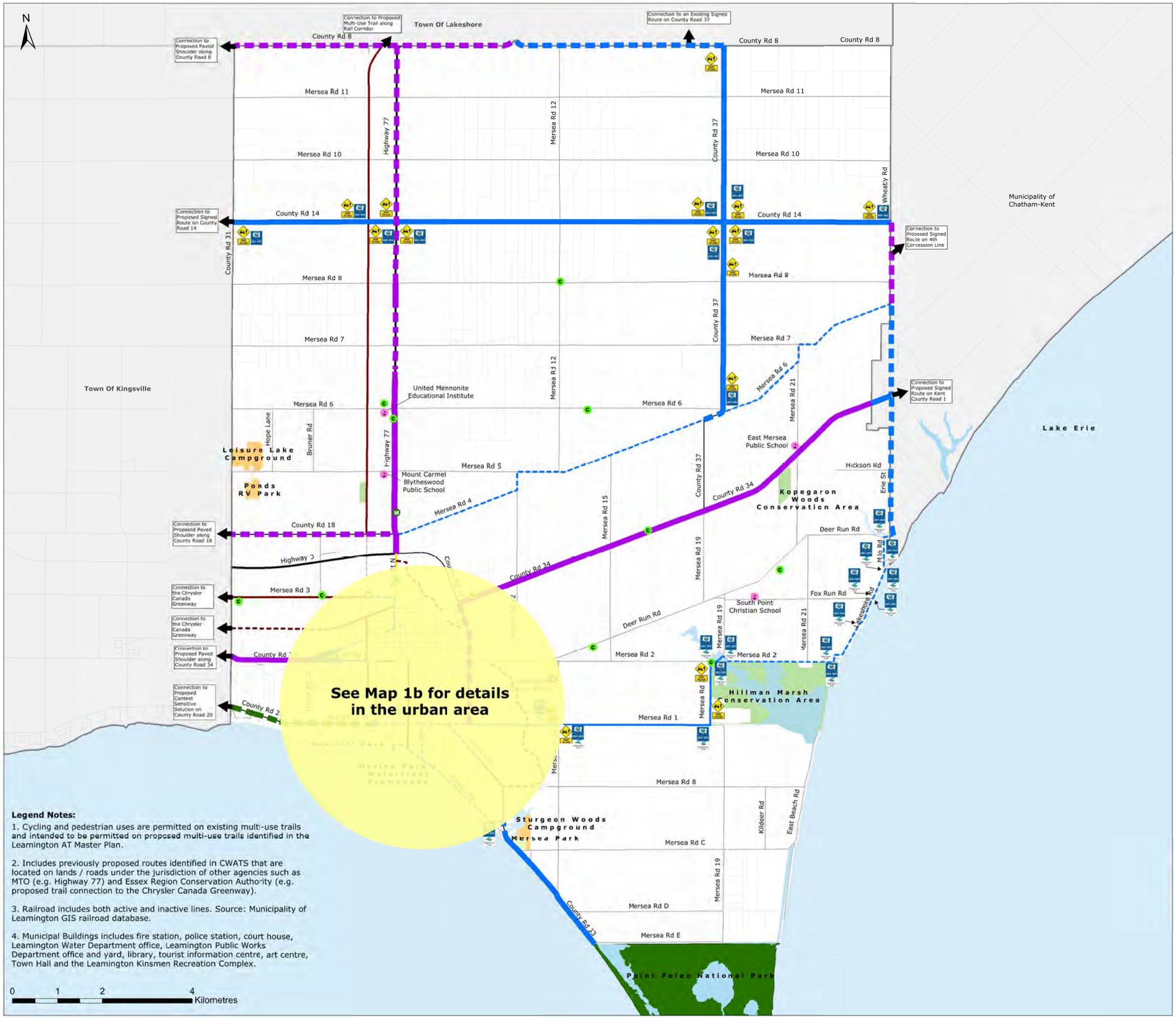
Active Transportation Plan

Final July 2016

Map 1a

Existing and Previously Proposed Active Transportation Conditions

Municipal-wide Rural Area Map



Legend Notes:

1. Cycling and pedestrian uses are permitted on existing multi-use trails and intended to be permitted on proposed multi-use trails identified in the Leamington AT Master Plan.

2. Includes previously proposed routes identified in CWATS that are located on lands / roads under the jurisdiction of other agencies such as MTO (e.g. Highway 77) and Essex Region Conservation Authority (e.g. proposed trail connection to the Chrysler Canada Greenway).

3. Railroad includes both active and inactive lines. Source: Municipality of Leamington GIS railroad database.

4. Municipal Buildings includes fire station, police station, court house, Leamington Water Department office, Leamington Public Works Department office and yard, library, tourist information centre, art centre, Town Hall and the Leamington Kinsmen Recreation Complex.

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail[1]

Previously Proposed Cycling Facility Types [2]

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail[1]
	N/A	Context Sensitive Solution
		Connection to Surrounding Municipality

Existing Route Signage

- Share the Road Signage
- CWATS Signage
- Waterfront Trail Signage

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad[3]

Community Features

- Church
- Municipal Building[4]
- Community Centre / Sport Facility
- School

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

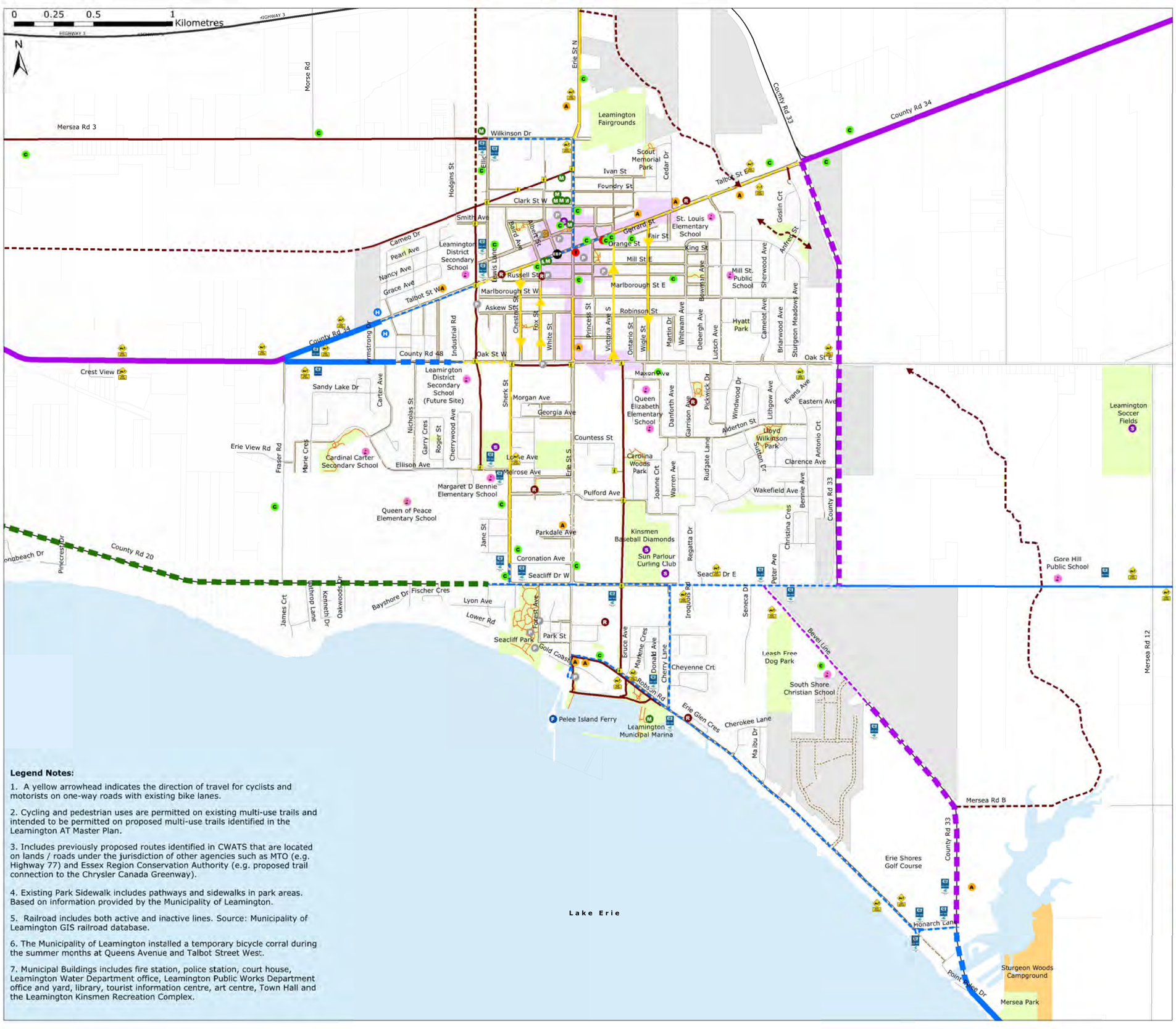
Active Transportation Plan

Final July 2016

Map 1b

Existing and Previously Proposed Active Transportation Conditions

Urban Area Map



Legend Notes:

1. A yellow arrowhead indicates the direction of travel for cyclists and motorists on one-way roads with existing bike lanes.

2. Cycling and pedestrian uses are permitted on existing multi-use trails and intended to be permitted on proposed multi-use trails identified in the Leamington AT Master Plan.

3. Includes previously proposed routes identified in CWATS that are located on lands / roads under the jurisdiction of other agencies such as MTO (e.g. Highway 77) and Essex Region Conservation Authority (e.g. proposed trail connection to the Chrysler Canada Greenway).

4. Existing Park Sidewalk includes pathways and sidewalks in park areas. Based on information provided by the Municipality of Leamington.

5. Railroad includes both active and inactive lines. Source: Municipality of Leamington GIS railroad database.

6. The Municipality of Leamington installed a temporary bicycle corral during the summer months at Queens Avenue and Talbot Street West.

7. Municipal Buildings includes fire station, police station, court house, Leamington Water Department office, Leamington Public Works Department office and yard, library, tourist information centre, art centre, Town Hall and the Leamington Kinsmen Recreation Complex.

Legend

Existing Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane[1]
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail[2]

Previously Proposed Facility Types[3]

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
N/A		Multi-Use Trail[2]
	N/A	Context Sensitive Solution

Existing & Previously Proposed Pedestrian Facilities

- Existing Sidewalk / Path
- Proposed Sidewalk / Path
- Existing Park Sidewalk[4]

Existing Route Signage

- Share the Road Signage
- CWATS Signage
- Waterfront Trail Signage

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad[5]

Community Features

- Existing Bicycle Parking[6]
- Church
- Community Centre / Sport Facility
- Ferry
- Hospital / Hospice
- Hotel / Motel / Bed & Breakfast
- Municipal Building[7]
- Parking Lot
- Post Office
- Retirement Home
- School
- Theatre
- Trail Access Point

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

LEAMINGTON A.T. PLAN (2016)

In addition to the existing A.T. infrastructure, **Maps 1a** and **1b** also illustrate a number of other existing conditions. These A.T. supportive conditions were documented and reviewed when assessing the potential network improvements / enhancements and are described in further detail below.

Community Destinations

One of the key considerations and network development principles is to provide connections within and between urban and semi-urban areas. The G.I.S. database provided by the County and municipality provided the study team with information about key community destinations e.g. community centres, parks, libraries, schools, etc. By understanding some of the trip generators - origins and destinations - the study team was able to identify missing links and future routes to improve connectivity.

Reinforcing Regional Routes

Regional connections provide excellent opportunities for those individuals who select to engage in longer distance touring cycling or hiking trips. Many of these routes can also be considered as tourist draws for short-term visitors of the municipality and surrounding areas. Though not under the Municipality's jurisdiction, these routes are considered part of Leamington's A.T. network and a critical component of a connected system of routes. Reinforcement of existing regionally significant routes was a key consideration when developing the A.T. network but also requires additional design consideration related to clarity of route signing. Regional connections were considered as part of the system of existing and previously proposed conditions, however for clarity, they have been illustrated on a separate map of Regional Routes which is presented in the separately bound **Technical Appendix A-4**.

Connections to Surrounding Municipalities

A key consideration when developing the A.T. network is how it will connect to surrounding municipalities. Making connections to the surrounding municipalities in the County of Essex as well as the bordering Municipality of Chatham-Kent will help to facilitate long-distance, inter-regional connectivity and route continuity.

LEAMINGTON A.T. PLAN (2016)

The Municipality of Leamington is bordered by the Towns of Kingsville and Lakeshore and the Municipality of Chatham-Kent. As part of the documentation of existing conditions, the study team reviewed policies and plans from the County of Essex and the Municipality of Leamington as well as from the surrounding municipalities (see separately bound **Technical Appendix A-1**) including but not limited to:

- The Town of Kingsville Active Transportation Master Plan;
- Town of Lakeshore Trails Master Plan, Transportation Master Plan & Impact Study Guidelines; and
- Municipality of Chatham-Kent Cycling Master Plan & Trails Master Plan.

The existing infrastructure and proposed improvements identified within these plans provide direct connections to Municipal and County roadways. On **Maps 1a** and **1b** these connections are illustrated using a black arrow. Also included is a description of the facility type that is present or will be implemented in the bordering municipality. An example of this would be the previously proposed connection along Mersea Road 3 in Leamington which connects to the Chrysler Canada Greenway in Kingsville. Both the routing and the facility types were considered at key stages in the network development process.

Route Signing

Different types of signs have been implemented throughout the municipality. Existing signage can be organized into three categories. They are each used for different purposes to provide users with various types of information. The categories include **regulatory**, **warning** and **wayfinding / information**.

- **Regulatory signage** - provides a direction message that must be obeyed, e.g. stop sign;
- **Warning signage** - provides warning for dangerous or unusual condition ahead such as a curve, turn, drip or side road; and
- **Wayfinding / informational signage** - provides users with visual cues and messages which assist them with route orientation and directions to destinations and points of interest.

Branded wayfinding / informational signage has been implemented to provide directional cues for the Trans Canada Trail, the Waterfront Trail and the C.W.A.T.S. Routes. Branded signage has also been developed and implemented throughout the Municipality at local trailheads – entry or exit points of the major trail system. The Municipality has implemented A.T specific warning signage in the form of "Share the Road" signs where conditions are more constrained for cyclists and they are expected to share the road with motorists.

Warning signs have been implemented at pedestrian crossings or where trail users are asked to cross a major roadway to access the next linkage in the system. A sample of some of the branded / wayfinding and warning signage existing in Leamington is presented in **Figure 10.**

Though not illustrated on the map, the municipality and County have implemented regulatory signage along roadways where appropriate. Details regarding the design and application of signage related to walking and cycling facilities can be found in Ontario Traffic Manual Book 15 as well as Ontario Traffic Manual Book 18.

Bicycle Parking

Bicycle parking is another means of promoting cycling, as it provides people with a sense of security at the end of their trip. As part of the development of the A.T.P., the project team undertook a review of potential locations within the Municipality where bicycle corral parking could be implemented. Bicycle corral parking is typically implemented by converting one or more on-street motor vehicle parking space to permit bicycle parking (see **Figure 11**). A feasibility overview was completed to assess the application of corral style bicycle parking in downtown Leamington.

The results and rationale were documented in memo format in May 2015 (see separately bound **Technical Appendix A-5**). As a result, five locations were identified for potential bicycle corral style parking. One of these locations was selected as a pilot project and implemented in the summer of 2015. The location of the pilot project is illustrated on **Map 1b.** The result of this application was extremely positive with high documented use of the parking facilities according to Municipal staff.

Figure 10 – Existing Branded Signage in the Municipality of Leamington

Figure 11 – Sample of Bicycle Corral Parking
Source: www.foxcitiescycling.org

Context Sensitive Solutions

In addition to the "traditional" A.T. facility types (see Figure 9) the County has designed and implemented a "context sensitive solution" within Leamington.

A context sensitive solution is one that may vary from a typical design and has been selected for a particular location based on the roadway and surrounding conditions following the application of sound planning and engineering judgement. For example, a feasibility study was undertaken by MMM Group for the Municipality of Leamington to assess the feasibility of an A.T. route along County Road 20 from Sherk Street to the Municipal Boundary. The feasibility study was developed to confirm the preferred design concept and next steps to move forward with implementation. The preferred facility type selected is a one-way A.T. facility with new mountable curbs in the existing location.

The design concept is illustrated in **Figure 12**. Additional details about this particular design alternative and the results of the feasibility study can be found on the C.W.A.T.S. webpage (www.cwats.ca).

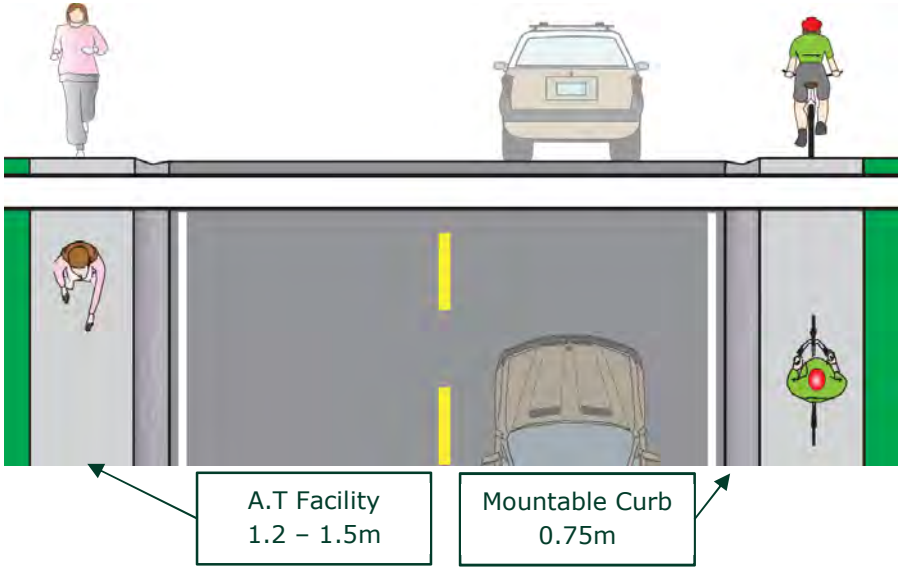


Figure 12 – Concept for Context Sensitive Solution on County Road 20

3.1.2 Opportunities & Constraints

There are physical, operational and political opportunities and challenges within every community. A set of A.T. opportunities and constraints were identified for Leamington and considered as the network, policies and recommendations were identified. The opportunities and challenges are summarized in **Table 3**.

Table 3 – Summary of A.T Opportunities & Constraints in Leamington, ON

Opportunities	Constraints
► **Partnerships:** Strong partnerships with the County of Essex and other key stakeholder e.g. Conservation Authorities, Windsor Essex County Health Unit, etc. ► **Existing Infrastructure:** Over 40km of on-road cycling facilities and 75km of multi-use or walking facilities (including sidewalks). ► **Tourism:** Significant support for tourism at the commercial and recreational level including key regional and provincial destinations. ► **Existing Support:** County and municipal politicians and staff are supportive of future improvements in addition to the public. ► **Policy Support:** Existing local and County policies that support future improvements. There is also significant support from the Province. ► **Natural Areas:** Numerous destinations of natural and cultural significance which can be highlighted by active forms of recreation and transportation. ► **Supportive Industries:** Local support from industries that encourage and support A.T. including agro-tourism businesses and wineries.	► **Gaps & Barriers:** Missing links in the system that prevent connectivity between on and off-road routes. ► **Funding & Budget:** Limited dollars available and many priorities to implement, maintain and operate. ► **Vast Landscapes:** Vast rural areas in Leamington that need to be crossed in a way that is considered safe and comfortable. ► **Vehicular Focus:** Reliance on the motorized vehicle as the primary form of transportation by residents of the Municipality. ► **Aging Population:** An aging population with mobility issues and decreased driving ability. A strong demand for accessible infrastructure. ► **Staff Resources:** Limited staff resources to implement the master plan. ► **Public Education:** The public is still learning about the commuting and recreational opportunities available and the safe and comfortable ways to be active.

3.1.3 Route Selection Criteria

Route selection criteria are the cornerstones of network development. Criteria for the Leamington A.T.P. were developed based on plan objectives, municipal principles and the needs of local users.

The criteria were also shaped by the route and facility selection considerations set-out in O.T.M. Book 18: Cycling Facilities as well as best practices and lessons learned. In addition to informing the selection of A.T. routes, the criteria are also used to inform the selection of preferred A.T. facility types.

The route selection criteria for the Leamington A.T.P. are organized into four categories informed by the plan objectives – comfort & safety, connectivity & continuity, attractive & interesting and implementable & sustainable. The criteria and a description of each are presented in **Figure 13**.

Source: County of Essex, CWATS webpage

Source: County of Essex, CWATS webpage

LEAMINGTON A.T. PLAN (2016)

Figure 13 – Leamington A.T. Route Selection Criteria

COMFORT & SAFETY		CONNECTIVITY & CONTINUITY	
Safety	**Visible & Accessible**	**Integrated**	**Connected**
Reduces risk & provides a sense of safety	Accessible by people of all ages and abilities	Connects with other transportation modes	Links urban, semi-urban and rural areas
Comfortable	**Visible & Accessible**	**Continuous**	**Direct**
Supportive amenities & in desirable locations	Route & facility suits the appropriate location	Gaps in the system are eliminated	Overcomes physical and social barriers
ATTRACTIVE & INTERESTING		**IMPLEMENTABLE & SUSTAINABLE**	
Destination Oriented	**Appealing**	**Cost Effective**	**Partnership Based**
Provides access to major destinations	Takes advantage of scenic areas	Fiscally responsible & appropriate scale	Opportunities for funding & partnerships
User Specific	**Diverse Experience**	**Sustainable**	**Maintainable**
Accommodates a range of different user groups	Provides users with varying experiences	Designed & located with long-term in mind	Consider cost & maintenance longevity

3.2 Selecting: Identifying new Routes

Candidate routes need to be identified - based on network objectives and goals, reviewed - based on the confirmed selection criteria and investigated - using range of tools to appropriately assess and document the results. In some cases, routes that were previously thought to be ideal components of the A.T. network were ultimately removed; while others that were not previously considered viable were selected based on field reviews and further discussion with Leamington, public and stakeholders. The steps used to investigate and refine the new A.T. routes are documented below.

3.2.1 Candidate Routes

When developing a network, consistent with the M.C.E.A. process, potential alternatives must be identified and evaluated. Using the map of existing and previously proposed conditions, the study team undertook an exercise to identify candidate A.T. routes (also known as route alternatives). The candidate routes are reflective of key network principles and objectives including:

- Connecting missing links or gaps in the existing / previously proposed network both County and municipal;
- Connecting to surrounding municipal A.T. linkages;
- Taking advantage of active and abandoned railway corridors and hydro corridors;
- Providing future routes on publically owned lands that are slated for future development;
- Facilitating connectivity between the semi-urban, urban and rural areas;
- Providing access to major destinations including schools and major commercial areas;
- Providing direct north-south and east-west connections throughout the municipality;
- Providing touring loops and recreational routes for pedestrians and cyclists;
- Building upon the existing regional connections e.g. Trans Canada Trail and Waterfront Trail; and
- Providing users with both on and off-road linkages.

The various route alternatives are illustrated on **Maps 2a** and **2b**. Once identified, the routes were reviewed and assessed using the route selection criteria (see **section 3.1.3**) and information gathered through field investigations and desk-top analysis.

Municipality of Leamington

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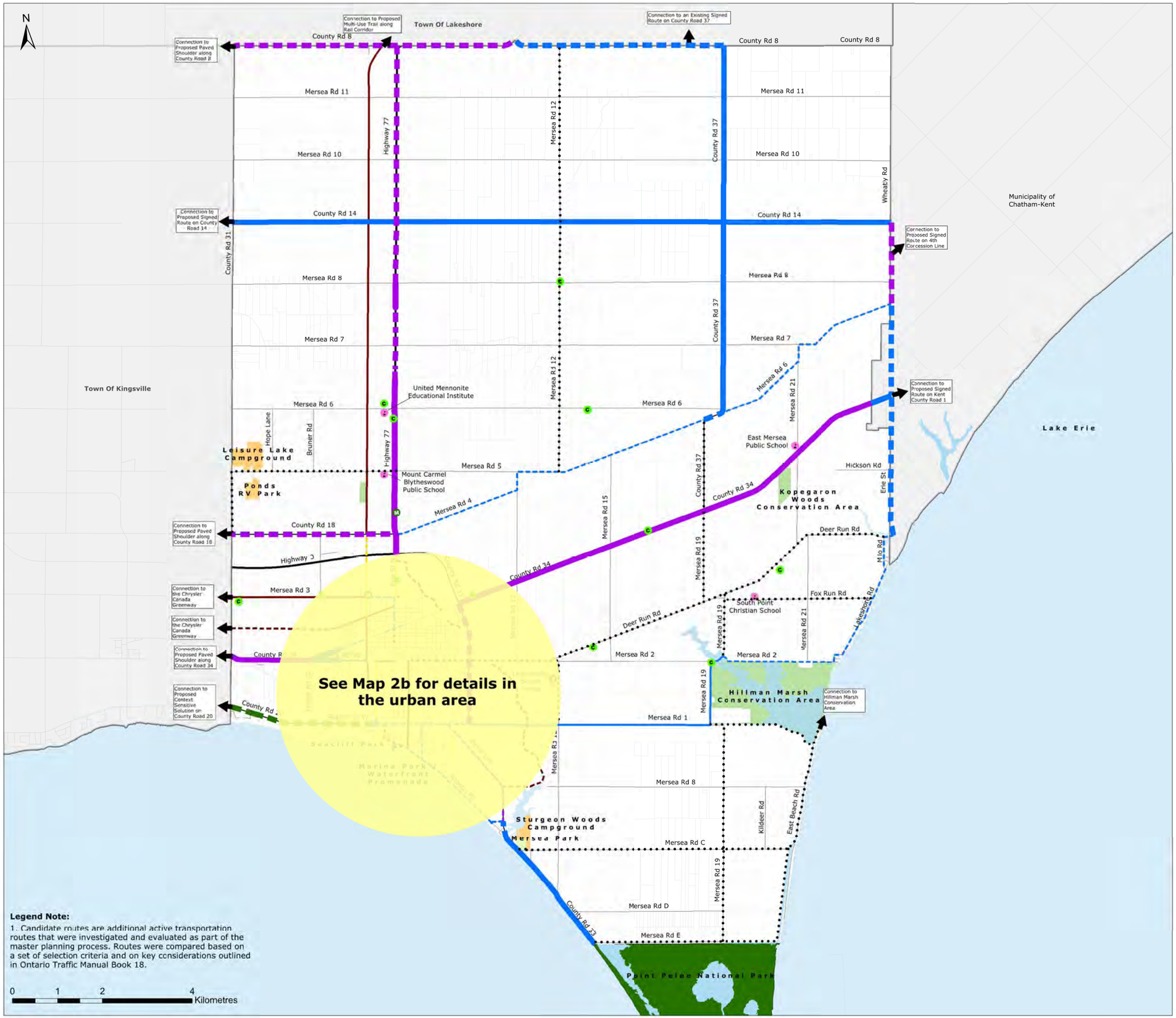
Map 2a

Candidate Active Transportation Routes

Municipal-wide Rural Area Map



Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON
N/A	Bike Lane
	Signed Route
	Paved Shoulder
N/A	Multi-Use Trail

Previously Proposed Cycling Facility Types

COUNTY	LEAMINGTON
N/A	Bike Lane
	Signed Route
	Paved Shoulder
N/A	Multi-Use Trail
	Context Sensitive Solution
	Connection to Surrounding Municipality

Candidate AT Routes[1]

- AT Candidate Route

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Municipal Building
- Community Centre / Sport Facility
- School

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

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Map 2b

Candidate Active Transportation Routes

Urban Area Map

0 0.25 0.5 1 Kilometres

N

Legend Note:

1. Includes previously proposed routes identified in CWATS that are located on lands / roads under the jurisdiction of other agencies such as MTO (e.g. Highway 77) and Essex Region Conservation Authority (e.g. proposed trail connection to the Chrysler Canada Greenway).

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Previously Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
N/A		Multi-Use Trail
	N/A	Context Sensitive Solution

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Candidate AT Routes[1]

- AT Candidate Route

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Community Centre / Sport Facility
- Ferry
- Hospital / Hospice
- Hotel / Motel / Bed & Breakfast
- Municipal Building
- Parking Lot
- Post Office
- Retirement Home
- School
- Theatre
- Trail Access Point

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

3.2.2 Field Investigation

Field investigation is an important part of the network development process. Field investigations can be completed using a variety of approaches; however, the results generated help network developers appreciate the roadway and surrounding conditions that impact the planning, design and implementation of A.T. routes. For the Leamington A.T. Network, the consultant team used a three stage field investigation approach. The stages are documented in **Figure 14**.

STAGE 1	STAGE 2	STAGE 3
Desk-top Review	**In the Field Investigation**	**Select Point Investigation**
The study team used tools (e.g. aerial photography) to develop a high-level understanding of the conditions of key roadways and other locations in the municipality. The assessment was completed between April and May 2015.	In-the-field investigation of candidate routes was completed in May 2015 by the consultant team. Each route was reviewed and key information including existing roadway conditions (e.g. presence of on-street parking, road width, etc.) were documented using photos and G.P.S.	The third stage included a review of select locations for a more focused investigation of route conditions (e.g. along Mersea Road East). The review was completed as a desk-top exercise as well as some in the field investigation. This assessment occurred in June 2015.

Figure 14 – Three (3) Step Field Investigation Approach

Using G.P.S. waypoints and photos gathered, the study team developed a "database of conditions" which was used to develop a file that can be overlaid into GoogleEarth. The file can also be used as a tool to illustrate route conditions when a project moves from the planning to detailed design and implementation stage. Candidate routes were also reviewed by members of the public at the first public information centre (P.I.C.) and meetings / workshops attended by Municipal and County staff and key stakeholders. The results of the field investigation and input received were used to refine the candidate route network to identify the preferred network concept presented in **section 3.2.3**.

3.2.3 Network Concept & Hierarchy of Routes

The result of the refinements and revisions made to the initial candidate route network - is the network concept - a high-level system of preferred A.T. routes. It is made up of both on and off-road routes which builds on the existing infrastructure and aims to achieve the network objectives as noted in **section 2.0**. Leamington's network concept is presented on **Maps 3a** and **3b**. Comparing the candidate route system and network concept, some routes were added and others deleted. These additions and deletions are important to highlight and to understand the progression of the network development process and the rationale behind the preferred routes identified. The routes and rationale are highlighted in **Table 4**.

Table 4 – Summary of Network Additions and Candidate Route Deletions

Linkage	Rationale
County Road 31 (Mersea Road 5 to County Road 18)	► Removed as this is a proposed County connection that was not previously identified in the C.W.A.T.S. and an alternative connection was available. A parallel north-south connection is provided on the existing off-road pathway, approximately 3 kilometres east of County Road 31.
Fader Avenue / Johnson Avenue / Pearl Avenue / Aiuto Drive / Proposed Off-Road Connection (Clark Avenue to County Road 48 / Oak Street West)	► Several parallel connections currently exist and/or have been previously proposed through County planning initiatives (e.g. C.W.A.T.S. Master Plan). An off-road pathway exists between Clark Street and Oak Street West and a proposed off-road pathway has been identified in C.W.A.T.S., extending from the existing off-road pathway west to the Municipal boundary.
Proposed off-road connection through Leash-Free Dog Park and proposed on-road connection through future planned development	► A parallel north-south connection has been identified through future planned development. This connection is proposed as signed road through future planned roads from Bevel Line (County Road 33 to Robson Road).
Deer Run Road (Kent County Road 1 to Mersea Road 2)	► Several parallel connections currently existing and / or have been previously proposed through County planning initiatives (e.g. C.W.A.T.S. Master Plan). An existing paved shoulder on County Road 34 (previously recommended for implementation in C.W.A.T.S.) and a proposed signed route on Mersea Road 1 / Mersea Road 19 / Mersea Road 2 has been recommended in C.W.A.T.S.

Municipality of Leamington

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Map 3a

Proposed
Route Network
Hierarchy

Municipal-wide
Rural Area Map

N

Connection to Proposed Multi-Use Trail along Rail Corridor

Town Of Lakeshore

Connection to an Existing Signed Route on County Road 37

Connection to Proposed Paved Shoulder along County Road 8

Connection to Proposed Signed Route on County Road 14

Connection to Proposed Signed Route on 4th Concession Line

Connection to Proposed Signed Route on Kent County Road 1

Municipality of Chatham-Kent

Town Of Kingsville

Lake Erie

Connection to Proposed Paved Shoulder along County Road 18

Connection to the Chrysler Canada Greenway

Connection to the Chrysler Canada Greenway

Connection to Proposed Paved Shoulder along County Road 34

Connection to Proposed Context Sensitive Solution on County Road 20

Connection to Hillman Marsh Conservation Area

See Map 3b for details in the urban area

County Rd 8 · Mersea Rd 11 · Mersea Rd 10 · County Rd 14 · Mersea Rd 8 · Mersea Rd 7 · Mersea Rd 6 · Mersea Rd 5 · Mersea Rd 4 · County Rd 18 · Mersea Rd 2 · Mersea Rd 1 · Mersea Rd C · Mersea Rd D · Mersea Rd E · County Rd 34

Highway 77 · Mersea Rd 12 · County Rd 37 · Whelan Rd · County Rd 11 · Hope Lane · Brunner Rd · Mersea Rd 15 · County Rd 39 · Mersea Rd 19 · Mersea Rd 21 · Hickson Rd · Erie St · Deer Run Rd · Miss Rd · Fox Run Rd · Lakeshore Rd · Kildeer Rd · East Beach Rd · Highway 3

Leisure Lake Campground

Pohas RV Park

Mount Carmel Blytheswood Public School

United Mennonite Educational Institute

East Mersea Public School

South Point Christian School

Kopegaron Woods Conservation Area

Hillman Marsh Conservation Area

Sturgeon Woods Campground

Mersea Park

Point Pelee National Park

Marina Park / Waterfront Promenade

Seacliff Park

Legend Note:

1. The proposed route hierarchy is a high-level system of preferred AT routes. Refer to section 3.2.3. in the Leamington A.T.P for additional information.

0 1 2 4 Kilometres

Legend

Proposed Route Hierarchy[1]

- Primary Route
- Secondary Route
- Connection to Surrounding Municipality

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Community Centre / Sport Facility
- Municipal Building
- School

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

Active Transportation Plan

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Map 3b

Proposed
Route Network
Hierarchy

Urban Area Map

0 0.25 0.5 1 Kilometres

N

Legend Note:

1. The proposed route hierarchy is a high-level system of preferred AT routes. Refer to section 3.2.3. in the Leamington A.T.P for additional information.

Legend

Proposed Route Hierarchy[1]
- Primary Route
- Secondary Route[2]
- Desired Connection

Existing and Previously Proposed Pedestrian Routes
- Existing Sidewalk / Path
- Proposed Sidewalk / Path
- Existing Park Sidewalk

Transportation Features
- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features
- Church
- Community Centre / Sport Facility
- Ferry
- Hospital / Hospice
- Hotel / Motel / Bed & Breakfast
- Municipal Building
- Parking Lot
- Post Office
- Retirement Home
- School
- Theatre
- Trail Access Point

Land Use
- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Railroad
- Parcel Property
- Watercourse

Linkage	Rationale
Mersea Road 19 (Mersea Road 1 to Mersea Road C)	► During field investigation, the study team noted deep ditches on either side of Mersea Road 19 between Mersea Road 1 and Mersea Road C. Implementing an appropriate facility types for cyclists could provide significant challenges. A parallel connection was proposed on Erie Beach Road from Mersea Road 1 to Mersea Road C.

Maps 3a and **3b** also illustrate the route hierarchy for the network concept. The route hierarchy is an initial step in the identification of potential facility types and is made up of two systems, the primary network and the secondary network. When defining the A.T. route network hierarchy, the municipality's existing road classification was considered to gain a better understanding of how the implementation of cycling facilities relates to the different types of roadways. Road classification within the Municipality is defined in the Official Plan and is illustrated in **Schedule "E"**. There are four types of roads found within the Municipality:

- **Provincial Roads:** roads under the jurisdiction of the Ministry of Transportation Ontario (M.T.O.) and are subject to permit control and approval under the Public Transportation and Highway Improvement Act[3];
- **Arterial Roads:** are major routes in the transportation system. They connect industrial and commercial centres and concentrations of residential development. Arterial roads are controlled access highways meaning that any direct access to abutting properties must be in accordance with specific regulations. Parking is totally restricted along these arterial roads;
- **Collector Roads:** are major routes in the transportation system. They connect industrial and commercial centres and concentrations of residential development; and
- **Local Roads:** are expected to function as local roads during the planning period, providing direct access to abutting lands. Trips on local roads have their origin or destination within the length of the road.

The hierarchy including the route objectives, road classification application and initial facility types for consideration are presented in **Table 5**. The defined routes are not meant to be prescriptive but a point of reference for future decision makers.

[3] Municipality of Leamington Official Plan | Adopted on September 10, 2007 Council By-law #794-07 | Municipality of Leamington Development Services

Table 5 – A.T. Network Hierarchy Overview

Route Hierarchy	Objectives	Road Classification	Facility Considerations
Primary System	Routes are part of a "spine" system that establishes north-south and east-west connections between the urban, semi-urban and rural areas, to surrounding municipalities and key community destinations. The system is the "backbone" of the A.T. network and is typically provides the most direct routes throughout the Municipality.	Provincial & Arterial Roads	Potential high-speed and high volume roadways which require more separation e.g. either designated or separated facilities
Secondary System	Routes provide access to local neighbourhood destinations e.g. schools, community centres and churches. The routes complement and "feed into" the primary system and provide users with a less direct but typically more scenic route to their destination.	Collector & Local Roads	Lower volume and lower speed roadways which could accommodate a shared facility or some separation if space is available

Though these definitions are intended to be used as a general guideline there are some routes within the A.T. network that are considered exceptions. For these routes, the hierarchy was determined based on the application of route selection criteria and network development objectives. A summary of the exceptions is provided in **Table 6**.

A continuous and connected A.T. system is made up of on and off-road linkages. The hierarchy of routes was established based on the Municipality's road classification system and do not apply to the proposed off-road A.T. routes. However, the off-road routes are considered a key component of the municipality's network and part of the spine system of A.T. routes. As such, existing and proposed off-road linkages are considered part of the primary system.

Table 6 – Route Hierarchy Exceptions

Primary System Exceptions	Secondary System Exceptions
Robson Road / Monarch Lane from Erie Street South to County Road 33 (Collector Road) Robson Road and Monarch Lane form part of the "spine" system to provide users with a key connection between the urban, semi-urban and rural areas and to key destinations such as Seacliff Park, Marina Park and the Waterfront Promenade. This route provides the most direct route through the urban area south to County Road 33 and Point Pelee National Park.	**Bevel Line / County Road 33 from Seacliff Drive to Monarch Lane (Arterial Road)** Bevel Line / County Road 33 between Seacliff Drive and Monarch Lane is identified as secondary route in the A.T. network since alternate parallel routes (e.g. Robson Road/ Monarch Lane) provide a more direct route to the urban, semi-urban and rural areas within the Municipality. Bevel Line / County Road 33 connects to a fewer number of residences and destinations compared to parallel primary routes such as Robson Road / Monarch Lane.
County Road 33 from Monarch Lane to Mersea Road E (Collector Road) Connecting to Robson Road and Monarch Lane, County Road 33 provides the most direct connection for users destined to Point Pelee National Park. This route forms part of the "spine" network to connect users in the urban, semi-urban and rural areas of the Municipality.	**County Road 18 from Morse Road to Highway 77 (Arterial Road)** County Road 18 between Morse Road and Highway 77 is identified as a secondary route in the A.T network since parallel routes provide a more direct link to existing regional routes and community destinations. For example, Mersea Road 3 is included in the primary A.T. system, since it is part of the Trans Canada Trail and Lake Erie Waterfront Trail and provides a direct link to surrounding municipal infrastructure such as the Chrysler Canada Greenway in the Township of Kingsville.

Primary System Exceptions	Secondary System Exceptions
Forest Avenue / Park Street (Local Road) This route provides the most direct connection for urban users destined south to rural areas and key destinations (e.g. Mersea Park, Sturgeon Wood Campground, Point Pelee National Park). Forest Avenue / Park Street is also a "spine" route with access to Seacliff Park and the existing park trail, Marina Park and the Waterfront Promenade.	**Mersea Road 4 from Highway 77 to Mersea Road 12 (Arterial Road)** Mersea Road 4 from Highway 77 to Mersea Road 12 is identified as a secondary route in the A.T network since parallel routes connect to a greater number of key community destinations and provide a more direct route throughout the municipality. For example, County Road 34 currently has paved shoulders with C.W.A.T.S. signage and provides a key east-west linkage throughout the entire municipality. This route is included in the primary A.T. system; parallel to Mersea Road 4.
Erie Street South from Seacliff Drive West to road terminus (Collector Road) Erie Street N/S between County Road 33 and Seacliff Drive West is designated as an Arterial Road and part of the primary system for the A.T. network. The extension of Erie Street South from Seacliff Drive West to the road bulb as a primary system forms part of a spine system to provide a direct north-south route through the downtown area and to key destinations (e.g. commercial areas, municipal buildings, parks, trails, marina, etc.).	
Mersea Road 2 from Mersea Road 12 to Mersea Road 12 (Collector Road) Mersea Road 2 between County Road 33 and Mersea Road 12 is designated as an Arterial Road and part of the primary system for the A.T. network. The extension of Mersea Road 2 east to Mersea Road 12 provides a loop route to the Leamington Soccer Fields for users in the urban and rural areas of the Municipality.	

Primary System Exceptions
Mersea Road 12 from Mersea Road 2 to Mersea Road 1 (Collector Road) Building upon the primary routes along Mersea Road 2 and Mersea Road 1, Mersea Road 12 provides users with a loop route to urban, semi-urban and rural areas, and to key destinations such as Leamington Soccer Fields.

R1 **The Municipality of Leamington's A.T. Network should be made up of primary "spine" routes and secondary local neighbourhood connections for both on and off-road linkages with the goal of achieving network objectives and route principles.**

3.3 Identifying: Designing the Network

Though the ultimate decision regarding facility designs for individual network segments is based on sound engineering judgement, the facility selection process has been streamlined by recent guidelines and tools that have broad acceptance across the province. Practitioners now have a standardized approach to decision making which can be applied in various contexts. The process used for facility selection in the Leamington A.T.P. follow this process, which is further described in the following section.

3.3.1 Facility Selection

The facility selection tool identified in O.T.M. Book 18: Cycling Facilities was used to identify the preliminary and preferred A.T. facility types for the Municipality of Leamington. The tool is meant to be flexible - by taking into consideration different physical and operational characteristics for the design of facilities in both urban and rural areas. The facility selection tool includes a three step process. The steps and a brief description of each are provided in **Figure 15**.

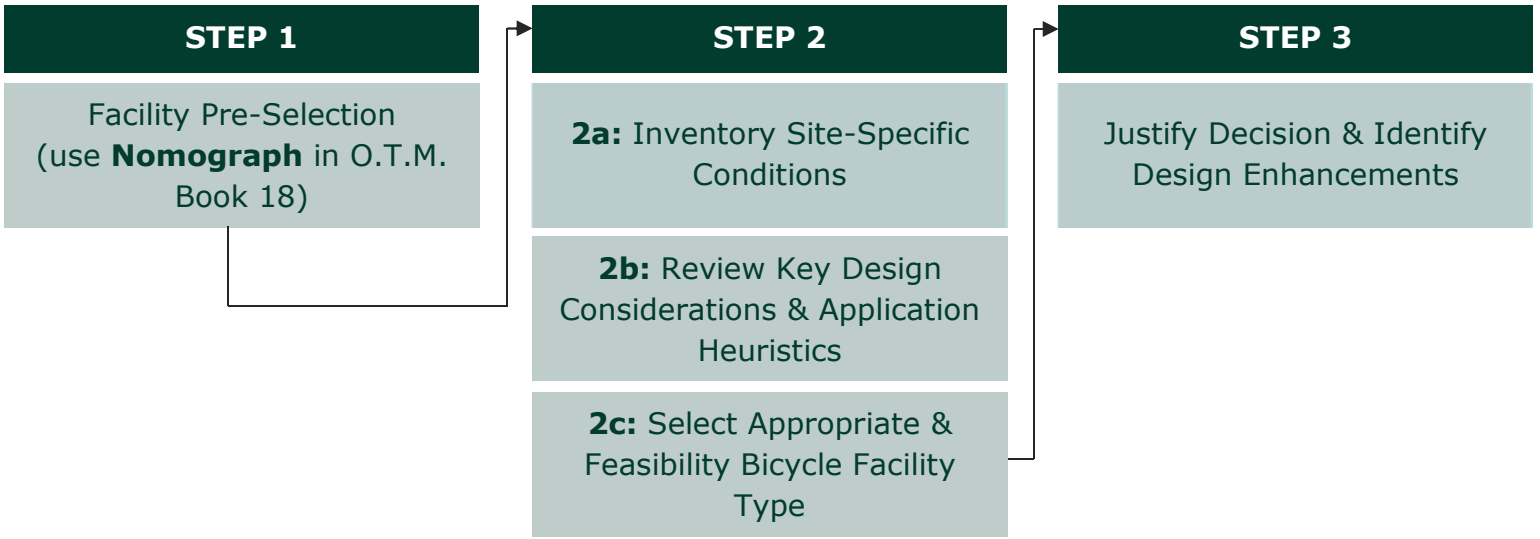

Figure 15 – O.T.M. Book 18: Cycling Facilities Facility Selection Process

Steps one through three were completed as part of the network development process for the Leamington A.T.P. The results of each step were documented in different manners in the A.T.P. report. The following provides an overview of the steps and a summary of the results.

R2 **The Municipality of Leamington is encouraged to use the facility selection process identified in O.T.M Book 18 should additional route opportunities arise as the A.T.P. is being implemented.**

Step 1: Facility Pre-Selection

For Step 1, routes are evaluated based on the 85th percentile motor vehicle operating speed and average daily traffic volumes. Annual Average Daily Traffic (A.A.D.T.) and posted speeds for roadways under the Municipality's jurisdiction was provided by the Municipality and used by the consultant team for their analysis. Using this information route segments were plotted on the nomograph (see **Figure 16**) to identify an initial operating environment category. The results of this exercise are documented in the separately bound **Technical Appendix A-6**.

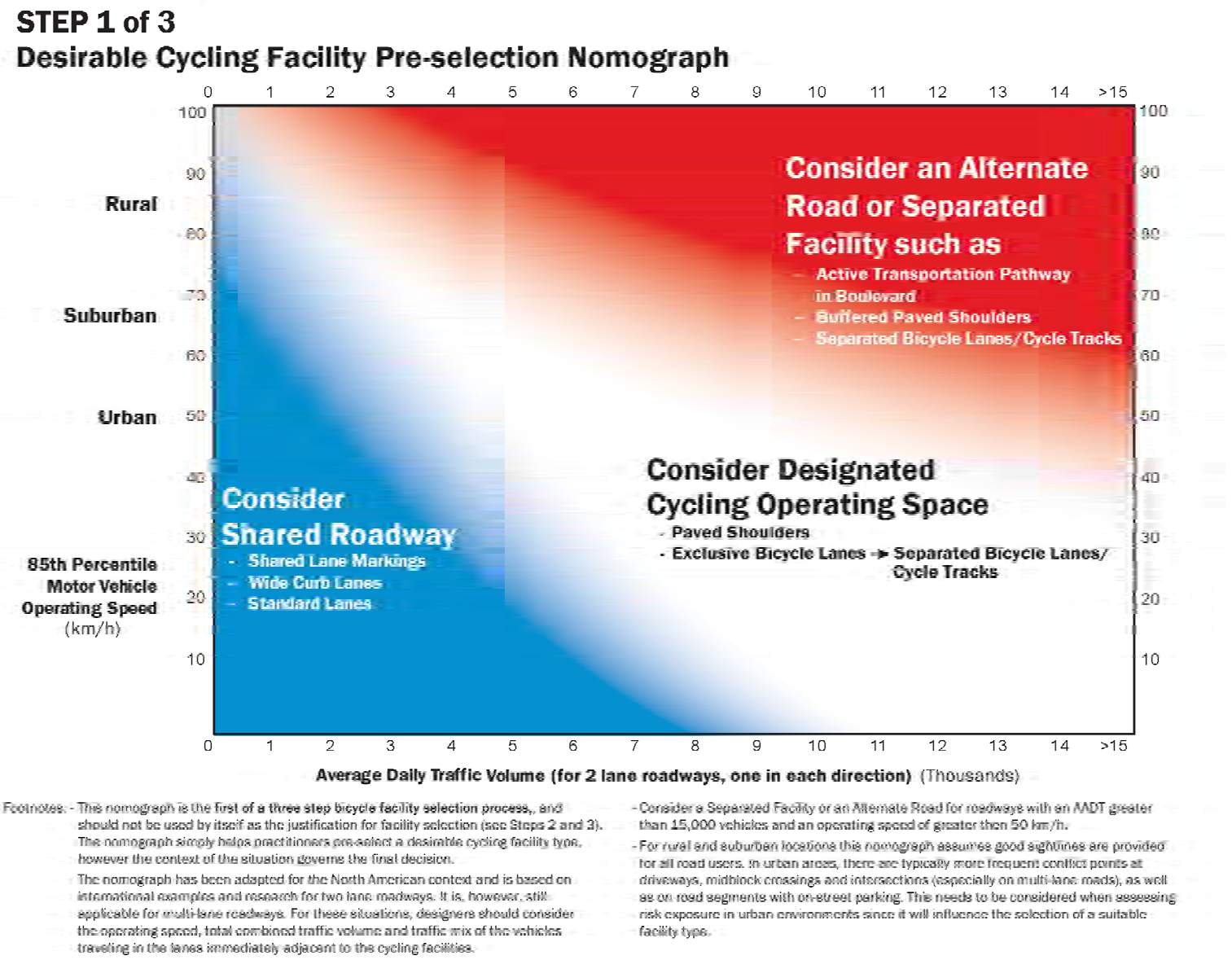

Figure 16 – O.T.M. Book 18 Facility Pre-Selection Nomograph

The segment identification number (I.D.) will be referenced throughout the remaining sections of the A.T.P. report. The I.D. number is a unique number used to identify rows in the G.I.S. database which enables Municipal staff to understand the routes proposed without having to use G.I.S. It is important to note that some segment I.D.s span multiple roadways with varying conditions and characteristics. This is also documented in the table below.

The mapping prepared as a result of the facility selection process documented in the following sections as well as the phasing / priorities recommended in **section 4.0**) are meant to be read in conjunction with the tables summarizing the results of the investigation. White circles containing the segment I.D.s are included on the mapping for ease of readability.

Step 2: A More Detailed Look

Step 2 further refines the findings of the pre-selection (Step 1) to determine the desirable bicycle facility type based on other design factors and considerations. A set of heuristics (knowledge-based rules) based onsite specific conditions / characteristics which are identified in O.T.M. Book 18. A review of these conditions / characteristics helped refine and confirm the preferred facility type based on a standard set of "criteria". It is important to note that the route selection criteria identified in **section 2.0** are also based on the heuristics noted in O.T.M. Book 18. Primary and secondary criteria were considered by the study team to identify preferred facility types. Information made available by the municipality (part of the Municipality's Roadway database) and County was reviewed including:

- Width of the roadway;
- Number of lanes;
- Current roadway condition;
- A.A.D.T. information (2000);
- Vehicles / lane kms;
- Collision information; and
- Capital works information for both the municipality as well as the County – including future roadway improvement projects.

The data provided was supplemented by information gathered in the field and through addition route investigation including:

- "H.E.A.T." mapping of current cycling and running routes documented throughout the municipality of Leamington (see **Figure 2** and **Figure 3** in **section 1.3**)
- Field investigation findings including the database of G.P.S waypoints and photographs to highlight vehicle mix, operating speed and frequency of intersections or other key conflicts
- The proposed hierarchy of routes (as identified in **section 3.2.3**)

Step 3: Justify your Rationale

The third and final step is the documentation and confirmation of the results of steps 1 and 2 to identify the preferred A.T. facility type for the location in which it is being proposed. The preferred facility type was ultimately determined based on sound engineering judgement with context sensitive conditions considered. The steps used to identify the preferred facility type for each linkage as part of the A.T. network are illustrated on **Maps 4a** to **4d**.

Proposed Changes to C.W.A.T.S. Approved Facility Types in Leamington

Maps 4a and **4b** illustrate the A.T. network for Leamington that includes the currently approved C.W.A.T.S. facility types on C.W.A.T.S. routes in the Municipality of Leamington. The C.W.A.T.S routes and facility types have been reviewed and approved by the County of Essex and the C.W.A.T.S. Committee and include existing and proposed segments. As such, **Maps 4a** and **4b** are intended to be the blueprint for the development of active transportation facilities in Leamington.

The Leamington A.T.P. also includes C.W.A.T.S segments where there are proposed revisions to the current approved C.W.A.T.S. facility types. The proposed revisions to C.W.A.T.S. facility types are illustrated on **Maps 4c** and **4d**. It is recognized that any modifications to the approved C.W.A.T.S. facility types would need to be reviewed and approved by the C.W.A.T.S. Committee and County of Essex before implementation.

Table 7 provides a summary of the C.W.A.T.S. route segments in Leamington where changes in facility types are proposed in the Leamington A.T.P. The table provides information regarding segment / street name, to and from, jurisdiction, length, C.W.A.T.S I.D., C.W.A.T.S. approved facility type, C.W.A.T.S. estimated cost O.T.M. Book 18 Step 1 results, A.T.P. route I.D., A.T.P. proposed facility type and A.T.P. estimated cost.

The A.T.P. I.D. identified in **Table 7** can be found on **Maps 4c** and **4d**. **Table 7** also summarizes the A.T.P. proposed facility types that may differ from the results of O.T.M. Book 18 Step 1 facility selection process.

It is important to note that no changes to C.W.A.T.S. routes are proposed in Leamington (e.g. only revisions to the approved C.W.A.T.S. facility types are proposed in the Leamington A.T.P.)

Table 7 – C.W.A.T.S. Route Segments in Leamington where changes in Facility Types are Proposed

Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
County Road 33	Mersea Road E	Monarch Lane	County	3.42	Leam-17	Signed Route	$620	Shared or Designated	1	Paved Shoulder	$446,340
									75	Sharrow	
									97	Multi-Use Trail	

Rationale:

- A.A.D.T. is 1,866 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared or designated facility.
- County Road 33 was previously proposed as a signed route in C.W.A.T.S.
- Based on the outcomes of O.T.M. Book 18 Step 1, the A.T.P. is proposing that a paved shoulder be implemented along County Road 33 from Sturgeon Creek bridge to Mersea Road 12. A paved shoulder is considered an appropriate facility type due the high volume of cyclists destined to key destinations such as Point Pelee National Park. The linkage is considered a primary connection in the A.T. network.
- The A.T.P. recommends signed route with sharrows along County Road 33 between Sturgeon Creek Bridge and Monarch Lane due to the current roadway constraints (e.g. narrow road right-of-way). Sharrows are to be implemented to assist cyclists when transitioning from the proposed paved shoulder (south) to the proposed in-boulevard multi-use trail (north) on County Road 33.
- The A.T.P. is recommending an off-road multi use trail at the bottom of County Road 33 dyke from Mersea Road 12 to Mersea Road E. The off-road multi-use trail is intended to accommodate a range of users (cyclists and pedestrians) with varying skill levels that are travelling to key destinations such Point Pelee National Park, Mersea Park, etc.

Municipality of Leamington

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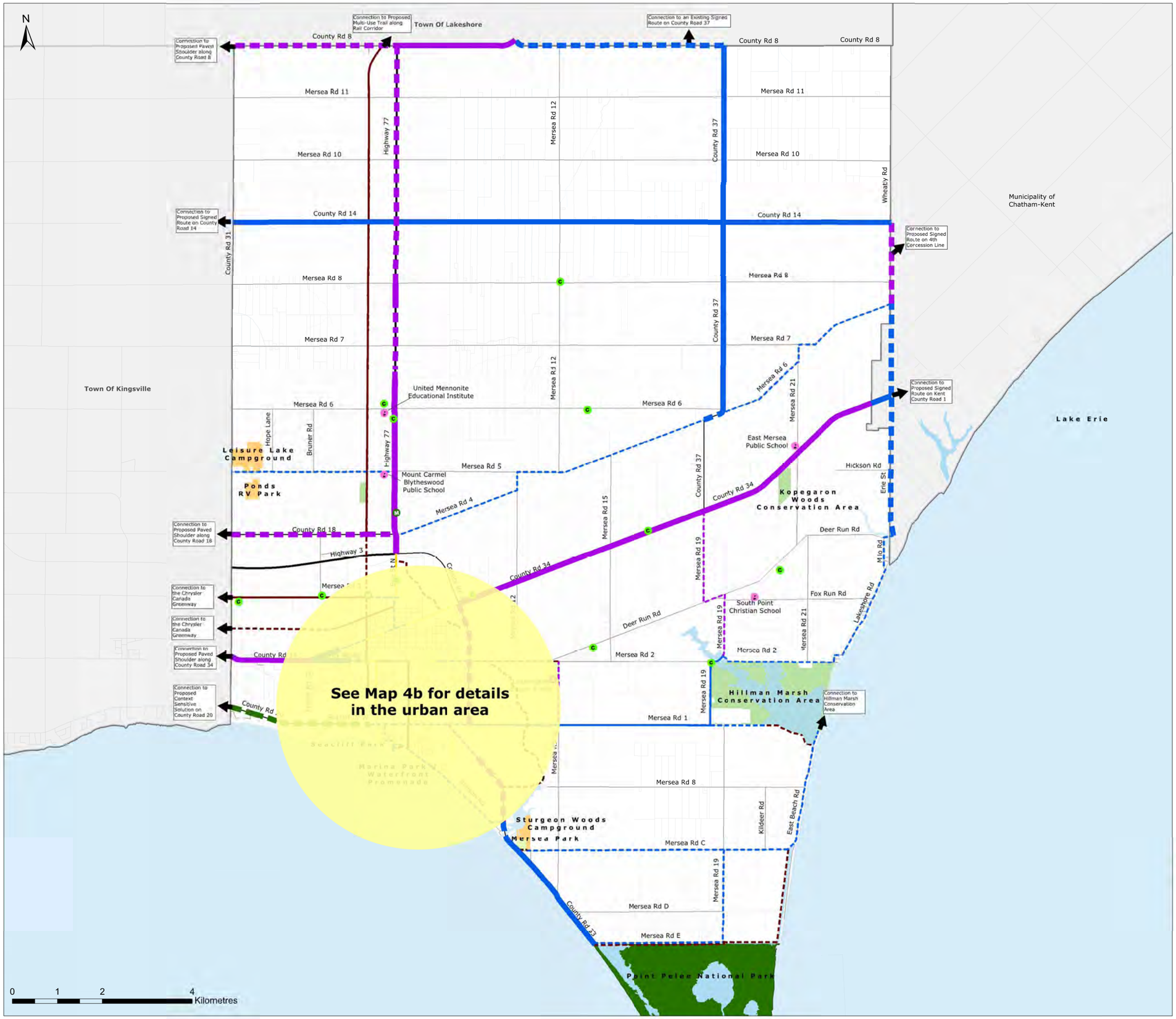
Map 4a

Proposed
Facility Types
Including Approved
CWATS Facility Types

Municipal-wide
Rural Area Map



See Map 4b for details in the urban area

Legend

Existing Facility Types

COUNTY	LEAMINGTON
N/A	Bike Lane
	Signed Route
	N/A Paved Shoulder
N/A	Multi-Use Trail

Proposed Facility Types

COUNTY	LEAMINGTON
N/A	Bike Lane
	Signed Route
	Paved Shoulder
N/A	Multi-Use Trail
	N/A Context Sensitive Solution
	Connection to Surrounding Municipality

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Municipal Building
- Community Centre / Sport Facility
- School

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

Active Transportation Plan

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Map 4b

Proposed
Facility Types
Including Approved
CWATS Facility Types

Urban Area Map

0 0.25 0.5 1 Kilometres

N

Proposed Buffered Bike Lane along Erie St. between Countess St. and Seacliff Dr. W. pending future development and traffic study.

Lake Erie

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
N/A		Multi-Use Trail

Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
N/A		Multi-Use Trail
	N/A	Context Sensitive Solution
N/A		Signed Route with Sharrow
N/A		Buffered Bike Lane
N/A		Desired Connection

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Community Centre / Sport Facility
- Ferry
- Hospital / Hospice
- Hotel / Motel / Bed & Breakfast
- Municipal Building
- Parking Lot
- Post Office
- Retirement Home
- School
- Theatre
- Trail Access Point

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

Municipality of Leamington

Active Transportation Plan

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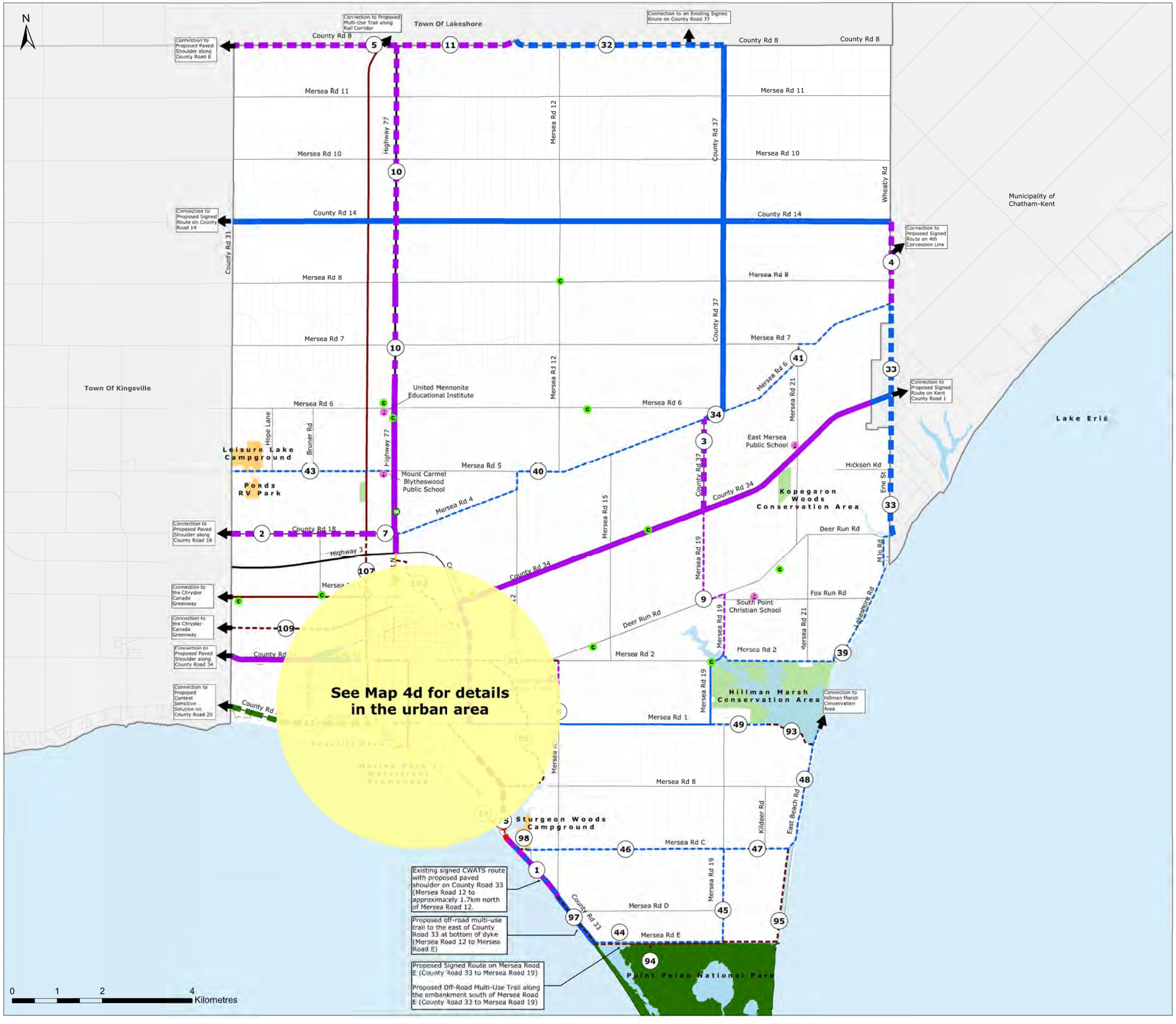
Map 4c

Proposed Facility Types Including Proposed Revisions to CWATS Approved Facility Types

Municipal-wide Rural Area Map



Legend

Existing Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
		Connection to Surrounding Municipality

Route Segment I.D

40 Additional information for each route segment is provided in Technical Appendix B

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Municipal Building
- Community Centre / Sport Facility
- School

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

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Map 4d

Proposed
Facility Types
Including Proposed Revisions
to CWATS Approved
Facility Types

0 0.25 0.5 1 Kilometres

N

Proposed Buffered Bike Lane along Erie St. between Countess St. and Seacliff Dr. W. pending future development and traffic study.

Lake Erie

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
	N/A	Signed Route
		Paved Shoulder
N/A		Multi-Use Trail

Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
N/A		Desired Connection

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Route Segment ID

(40) Additional information for each route segment is provided in Technical Appendix B

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Community Features

- Church
- Community Centre / Sport Facility
- Ferry
- Hospital / Hospice
- Hotel / Motel / Bed & Breakfast
- Municipal Building
- Parking Lot
- Post Office
- Retirement Home
- School
- Theatre
- Trail Access Point

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

LEAMINGTON A.T. PLAN (2016)

Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
County Road 20 / Seacliff Drive	140m west of Sherk Street	County Road 33	Local (County Link)	2.21	Leam-22	Signed Route	$4,800	Shared or Designated	17	Bike Lane	$520,580
									26		
									37		
									89	Multi-Use Trail	

Rationale:

- Segment 17 – A.A.D.T. is 6,685 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a designated facility. Based on this outcome, the A.T.P. is recommending that a bike lane be implemented on Seacliff Drive between Sherk Street and Erie Street South. A bike lane is considered an appropriate facility type due to high traffic volumes as well as the high volume of cyclists travelling to community destinations such as Seacliff Park, the Leamington Roma Club, etc.
- Segment 26 – A.A.D.T. is 5,400 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a designated facility. This section of Seacliff Drive East (Cherry Lane to County Road 33) was previously proposed as a signed route in C.W.A.T.S. Based on results from Step 1, the A.T.P. is recommending a bike lane be implemented on this section of Seacliff Drive East. A bike lane is considered an appropriate facility type due to high traffic volumes and high volume of cyclists travelling to community destinations such as the Leamington Roma Club, retail / commercial stores, Kinsmen Baseball Diamonds, etc.
- Segment 89 – A.A.D.T. of 7,000 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared or designated facility. Municipal staff and stakeholders expressed interest in an in-boulevard multi-use trail to connect to the existing north-south trail and community destinations such as the Kinsmen Baseball Diamonds and the Leamington Roma Club. The study team confirmed that the boulevard is approximately 5 metres (back of roadway curb to property line) and has sufficient space to accommodate a 3.0m minimum in-boulevard trail. Based on input received from Municipal staff and the results from Step 1 of the O.T.M. facility selection process, the A.T.P. is recommending that a multi-use trail (located in the road right-of-way) be implemented on the north side of Seacliff Drive East.

LEAMINGTON A.T. PLAN (2016)

Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
Erie Street North	Wil-kinson Drive	Clark Street	Local	0.43	Leam-26	Signed Route	$2,000	Designated	18	Bike Lane	$5,148

Rationale:

- A.A.D.T. is 10,389 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a designated facility.
- A signed route was previously proposed on this section of Erie Street North in C.W.A.T.S. Based on O.T.M. Book 18 Step 1 results, the A.T.P. is recommending that a bike lane (e.g. repaint road for bike lanes) be implemented on this section of Erie Street North. This linkage is considered a primary connection in the A.T. network.

LEAMINGTON A.T. PLAN (2016)

Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
Robson Road / Monarch Lane	Erie Street South	Bevel Line / County Road 33	Local	3.51	Leam-28	Signed Route	$7,200	Shared or Designated	23, 24, 27, 28	Bike Lane	$170,440
									77	Sharrow	

Rationale:

- Segments 23 and 24 - A.A.D.T. is 1,012 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared facility. A signed route was previously proposed on Robson Road in C.W.A.T.S. As part of the A.T.P., Municipal staff provided input that Robson Road from Erie Street South to Cherry Lane and Erie Glen Crescent to Monarch Lane is scheduled to be implemented as a bike lane (e.g. repaint road for bike lanes). Although the traffic volumes do not warrant a designated facility, the A.T.P. is recommending a bike lane (repainting road) be implemented along these sections of Robson Road based on Municipal staff input. As an interim solution, a signed bike route should be implemented on this section of Robson Road until the road is resurfaced and bike lanes are installed.
- Segment 28 – A.A.D.T. is 1,012 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared facility. A signed route was previously proposed on Robson Road in C.W.A.T.S. As part of the A.T.P., Municipal staff provided input that Robson Road is scheduled to be implemented as a two-stage project. In the interim, the roadway should be implemented as a signed bike route. The ultimate solution for Robson Road would require a road widening and removal of a bulb out to accommodate 1.5m bike lanes. Although the traffic volumes do not warrant a designated facility, the A.T.P. is recommending a bike lane be implemented on Robson Road based on Municipal staff input. This linkage is considered a primary connection in the A.T. network.
- Segment 27 – A.A.D.T. is 1,500 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared facility. A signed bike route was previously proposed on Monarch Lane in C.W.A.T.S. Municipal staff provided input that Monarch Lane is scheduled to be implemented as a two-stage project. In the interim, the roadway should be implemented as a signed bike route. When lands to the south of Monarch Lane are developed, the ultimate solution requires a road widening to accommodate 1.5 metre bike lanes. Based on this input the A.T.P. is recommending that bike lanes be implemented on this section of Monarch Lane. This linkage is considered a primary connection in the A.T. network.
- Segment 77 – A.A.D.T. is 1,500 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared facility. A signed route was previously proposed in C.W.A.T.S. The A.T.P. is recommending a signed bike route with sharrows be implemented on the Monarch Lane roundabout. Sharrows are to be implemented to assist cyclists through the roundabout to the bike lanes proposed on Robson Road and Monarch Lane. This linkage is considered a primary connection in the A.T. network.

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Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
Wilkinson Drive	Elliot Street	Erie Street North	Local	0.54	Leam-25	Signed Route	$1,000	Shared or Designated	22	Bike Lane	$5,292
									76	Sharrow	

Rationale:

- Segment 22 – A.A.D.T. is 2,180 to 4,990 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared or designated facility. A signed route was previously proposed in C.W.A.T.S. Based on the Step 1 results, the A.T.P. is recommending that bike lanes be implemented on this section of Wilkinson Drive. The cross-section width of the roadway is 10.6m and can accommodate 1.5m bike lanes (e.g. repaint road for bike lanes). This linkage is considered a primary connection in the A.T. network.
- Segment 76 – A.A.D.T. is 2,180 to 4,990 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared or designated facility. A signed route was previously proposed on Wilkinson Drive in C.W.A.T.S. Due to the road cross-section (e.g. constrained right-of-way) on Wilkinson Drive on the approach to Erie Street North, the A.T.P. is recommending that a signed bike route with sharrows be implemented. Sharrows are intended to transition cyclists from the proposed bike lanes to and from Erie Street North. This linkage is considered a primary connection in the A.T. network.

LEAMINGTON A.T. PLAN (2016)

Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
Erie Street	Clark Road	Talbot Street	Local	1.14	Leam-26	Signed Route	$1,400	Designated	78	Sharrow (40 km/h)	$3,990

Rationale:

- Erie Street has high traffic volumes (A.A.D.T. of 10,389 to 13,620) and a posted speed of 50 km/h. There is also a high volume of marked on-street parking and commercial frontage along the road. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a designated facility. Due to the roadway cross-section (12.4 metres) and constraints (e.g. high utilization of on-street parking) there is not sufficient space to implement a designated facility such as bike lanes. As a result the A.T.P. is recommending the implementation of signed route with sharrows (in a green painted box). Sharrows are intended to guide cyclists transition from the existing bike lanes south of Marlborough Street and the bike lanes proposed north of Clarke Street.

Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
County Road 34 (Talbot Street)	Albert Street	Victoria Avenue	Local (County Link)	0.5	Leam-21	Signed Route	$1,000	Designated	79	Sharrow (40 km/h)	$1,733

Rationale:

- County Road 34 has high traffic volumes (A.A.D.T. of 9,892 to 11,278) and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a designated facility. A signed route was previously proposed in C.W.A.T.S.
- Due to the current roadway cross-section (13.0 metres) and constraints (marked on-street parking) there is not sufficient space to implement a designated facility such as bike lanes. The A.T.P. is recommending that a signed route with sharrows (in a green painted box) be implemented on County Road 34 between Victoria Street and Albert Street to guide cyclists through the downtown core.

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Current Approved C.W.A.T.S Route and Facility Type								Proposed Facility Type Change			
Segment Name	**From**	**To**	**Juris-diction**	**Length (km)**	**C.W.A.T.S I.D.**	**C.W.A.T.S Facility Type**	**C.W.A.T.S Cost**	**OTM Book 18 Step 1 Results**	**A.T.P I.D.**	**A.T.P. Facility Type**	**A.T.P. Cost**
County Road 33 (Bevel Line)	Seacliff Drive	Mon-arch Lane	County & Local (County Link)	2.61	Leam-5 Leam-10	Paved Shoulder	$319,000	Shared or Designated	87 88	Multi-use Trail	$652,500

Rationale:

- A.A.D.T. is 3,140 and posted speed is 50 km/h. Step 1 of the O.T.M. Book 18 facility selection process results in an initial recommendation of a shared or designated facility.
- This section of County Road 33 was previously proposed as a paved shoulder in C.W.A.T.S. As part of the Leamington A.T.P. Municipal staff provided input and recommended an in-boulevard multi-use trail along County Road 33. The boulevard width of County Road 33 is approximately 12m (back of shoulder to property line). As such there is sufficient space to implement a 3.0m multi-use trail on the north side of County Road 33 from Seacliff Drive East to Monarch Lane. The proposed in-boulevard multi-use trail is intended to accommodate a high volume of cyclists and pedestrians travelling to key destinations such as Point Pelee National Park.

3.3.2 Facility Design

The design of on and off-road A.T. facilities is intended to be guided by current industry design guidelines and standards e.g. O.T.M. Book 18: Cycling Facilities, O.T.M. Book 15: Pedestrian Crossings, T.A.C. Bikeway Traffic Control Guidelines, Ministry of Transportation Bikeways Design Guidelines and the Accessibility for Ontarians with Disabilities Act (A.O.D.A.), among others. The guidelines and standards outlined in the primary design guideline manual – O.T.M. Book 18: Cycling Facilities - have been provided in the separately bound **Technical Appendix A-7** for application and use by Municipal staff.

Separately bound **Technical Appendix A-7** focuses on the design of cycling facilities, however, design consideration and guidance is also provided for a number of other aspects of network design to address challenges identified by the Municipality over the course of the assignment. The guidelines include information related to the design of key conflict points such as intersections and mid-block crossings, bridges, underpasses and tunnels, structures, amenities along trail linkages, trail surface types and risk management and liability in the form of maintenance considerations.

The design guidelines outlined in the separately bound **Technical Appendix A-7** are intended to be used in conjunction with those provided in O.T.M. Book 18 and other design standards and manuals as noted above.

R3 **The Municipality should adopt the A.T. facility design guidelines presented in the separately bound Technical Appendix A-7 in addition to other industry standards and guidelines as the basis for the design of on and off-road A.T. facilities Municipality-wide. Designers and builders should be provided with relevant resources to inform future decision making.**

3.4 The Recommended A.T. Network

The routes and facility types recommended as part of the Leamington A.T.P. have been identified based on the iterative network development process and the facility selection process outlined in **section 3.3**. A summary of the total facility types proposed to form part of Leamington's A.T. network is presented in **Tables 8a** and **8b**.

Table 8a summarizes the A.T. network for Leamington that includes the currently approved C.W.A.T.S. facility types on C.W.A.T.S. routes in the Municipality of Leamington (facility types illustrated on **Maps 4a** and **4b**).

Table 8b summarizes the A.T. network that includes C.W.A.T.S segments where there are proposed revisions to the current approved C.W.A.T.S. facility types (facility types illustrated on **Maps 4c** and **4d**).

Table 8a – A.T. Network for Leamington including Currently Approved C.W.A.T.S Facility Types

Facility Type	Existing (km)	Proposed (km)	Total (km)
Bike Lane	2.8	4.8	7.6
Buffered Bike Lane	0	0.9	0.9
Signed Bike Route	5.7	79.5	85.2
Paved Shoulder	16.6	31.4	48.0
Multi-use Trail (outside of the road right-of-way)	8.9	17.5	26.4
Multi-use Trail (In-boulevard)	6.2	4.9	11.1
Context Sensitive Solution	0	3.2	3.2
Signed Bike Route with Sharrow	0	0.8	0.8
Sidewalk[1]	72.3	0	72.3
Total	112.5	143	255.5

Note:
1. The length of sidewalks does not include proposed sidewalks located within future subdivisions. These sidewalks are anticipated to be implemented when planned development areas are constructed in the future. The Municipality of Leamington has a separate sidewalk implementation plan outside of the A.T.P.

Table 8b – A.T. Network for Leamington including Proposed Revisions to the Current Approved C.W.A.T.S. Facility Types

Facility Type	Existing (km)	Proposed (km)	Total (km)
Bike Lane	2.8	10.2	13.0
Buffered Bike Lane	0	0.9	0.9
Signed Bike Route	5.7	68.2	73.9
Paved Shoulder	16.6	30.5	47.1
Multi-use Trail (outside of the road right-of-way)	8.9	21.4	30.3
Multi-use Trail (In-boulevard)	6.2	5.8	12.0
Context Sensitive Solution	0	3.2	3.2
Signed Bike Route with Sharrow	0	3.1	3.1
Sidewalk[1]	72.3	1.2	73.5
Total	112.5	144.5	257.0

Note:
1. The proposed length of sidewalks (1.2 km) does not include proposed sidewalks located within future subdivisions. These sidewalks are anticipated to be implemented when planned development areas are constructed in the future.

R4 **The A.T. network illustrated on Maps 4a and 4b should be adopted by the Municipality as the blueprint for the development of on and off-road A.T. facilities municipality-wide. With this in mind the Municipality should:**

i. **Work collaboratively with the County of Essex and C.W.A.T.S. Committee to implement routes that are identified in C.W.A.T.S., and**
ii. **Ensure that local routes not identified in C.W.A.T.S. are designed and implemented to connect seamlessly to the C.W.A.T.S. network.**

R5 **Notwithstanding Maps 4a and 4b, Maps 4c and 4d illustrate proposed changes to some approved C.W.A.T.S. facility types within Leamington. Prior to proceeding with design or construction of these routes the Municipality shall work with the County of Essex and C.W.A.T.S. Committee to formally request the change of facility type.**

R6

The network will change with time as new opportunities arise and the network database and mapping should be updated to reflect these changes. To respond to new opportunities or route modifications, staff should have the authority to approve new routes on local roads and should work with the County to move forward with additional revisions.

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4.0 IMPLEMENTATION

4.1 Prioritizing: A Short and Long-Term Guide

An effective A.T.P. requires a strategy and supportive recommendations to ensure that implementation is continued beyond the short-term timeline through to full development. An implementation strategy is needed which identifies priorities and "quick wins" that will help to promote the use of active forms of transportation for recreational as well as commuting purposes within the short term. The strategy should also include long-term strategies, policies and initiatives that are intended to achieve the network and A.T.P. objectives set-out in **section 1.0**. Together, the short-term priorities and long-term strategies become an "implementation guide" for the Municipality.

When developing the "implementation guide" the consultant team aimed to build upon the A.T. network identified as part of the C.W.A.T.S. as well as municipal successes in the form of on and off-road A.T. infrastructure. The information contained in the following sections is intended to be used as a tool by the Municipality as they proceed with implementation.

4.1.1 Network Phasing

The A.T network for Leamington has a 10+ year timeline. The timeline has been broken into three phases:

- Phase 1 - Short Term (0 – 5 years)
- Phase 2 - Medium Term (6 – 10 years)
- Phase 3 - Long Term (10+ years)

The phasing is not meant to be prescriptive. The anticipated completion date and the proposed phasing for routes are dependent on available budgets and strategic priorities for both the municipality and County.

In addition, the phasing plan does not reflect a recommended point of commencement for the planning and design work that is required in advance of implementation. Project commencement is something that is intended to be determined by the Municipality based on strategic planning initiatives.

Maps 5a and **5b** illustrate the proposed phasing for each route segment that makes up the A.T. network. **Maps 5a** and **5b** also illustrate the proposed A.T. network including proposed revisions to the approved C.W.A.T.S. facility types in Leamington (e.g. facility types illustrated in Maps 4c and 4d).

The proposed network phasing was identified based on a number of key considerations including:

- C.W.A.T.S. network phasing schedule;
- Municipal capital works schedules;
- Previously planned and approved residential development areas;
- The network and master plan objectives;
- Route selection criteria; and
- Input from key stakeholders and members of the public.

The Municipality should adopt the proposed implementation schedule to guide the development and prioritization of A.T. projects over the next 10+ years.

The proposed implementation schedule and network phasing is intended to be flexible and adaptable to available budgets and priorities that are identified by staff or emerge through future decision making.

As annual budgets and priorities are identified, the Municipality should make reference to the phasing schedule. Within the first five years of implementation, the Municipality should make reference to the priority projects and action plan outlined in **section 4.1.2**.

An overview of each phase and the number of proposed kms, by jurisdiction, is presented in **Table 9**.

The network includes routes identified on County Roads (consistent with C.W.A.T.S.). For these routes, the consultant team worked with the County and the phasing plans / schedules identified in the C.W.A.T.S. to determine the appropriate route phasing. No changes are recommended to these routes. As the Municipality moves forward with the implementation of the A.T.P. they are encouraged to work with the County to identify opportunities for consistent implementation. In addition, if there are any deviations from the original facility type or phasing recommendations the Municipality will work with the C.W.A.T.S. Committee, through their confirmed process to ensure that the decisions are appropriately highlighted, documented and approved.

R7 **The network phasing identified in Maps 5a and 5b should be used by the Municipality as a guide for the development of the A.T. network and should be used as a reference by the County, E.R.C.A. and surrounding municipalities when future connections are being explored.**

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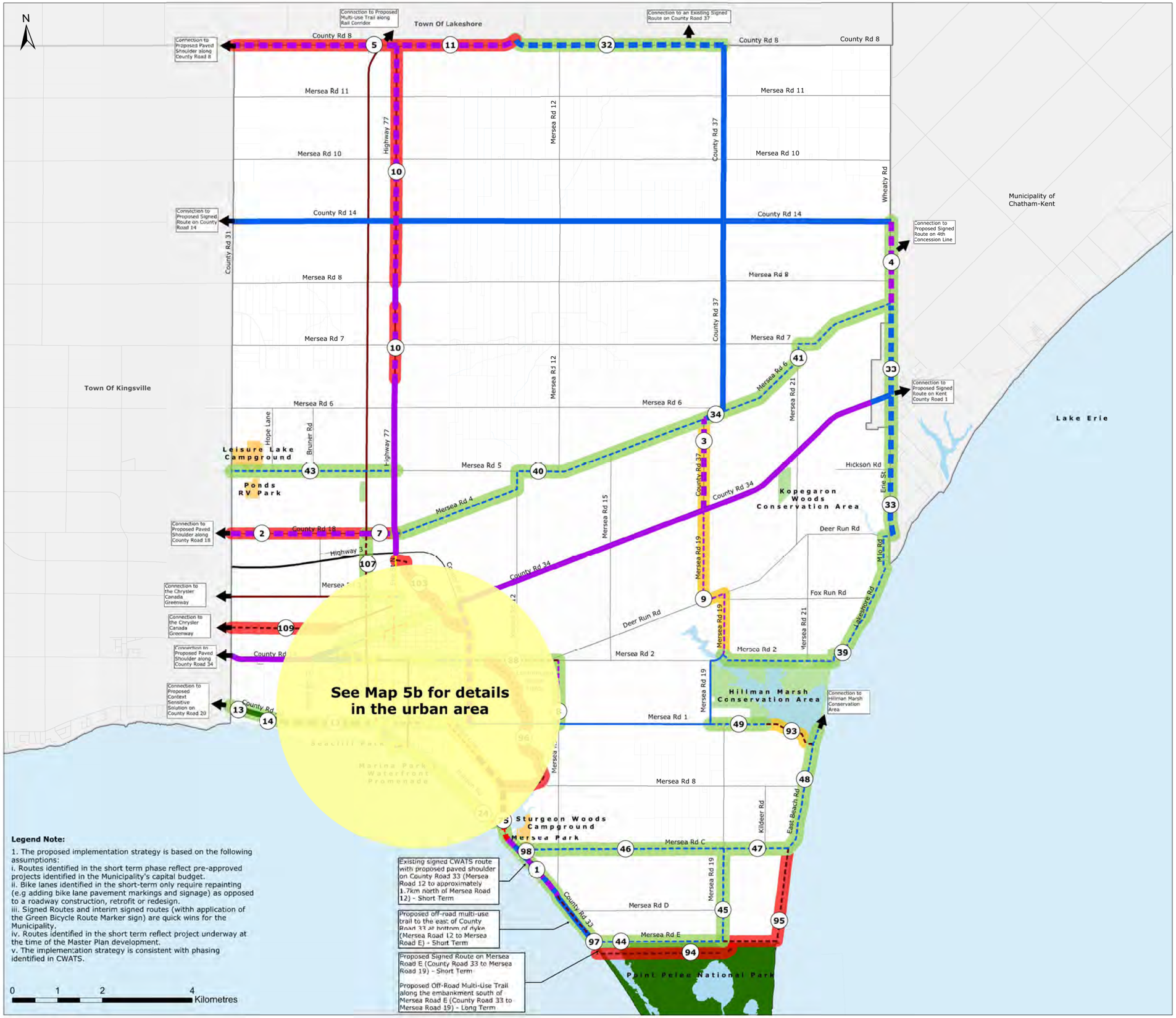
Map 5a

Proposed Phasing

Municipal-wide
Rural Area Map



Legend Note:

1. The proposed implementation strategy is based on the following assumptions:
   i. Routes identified in the short term phase reflect pre-approved projects identified in the Municipality's capital budget.
   ii. Bike lanes identified in the short-term only require repainting (e.g adding bike lane pavement markings and signage) as opposed to a roadway construction, retrofit or redesign.
   iii. Signed Routes and interim signed routes (withh application of the Green Bicycle Route Marker sign) are quick wins for the Municipality.
   iv. Routes identified in the short term reflect project underway at the time of the Master Plan development.
   v. The implementation strategy is consistent with phasing identified in CWATS.

Legend

Existing Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
		Connection to Surrounding Municipality

Proposed Phasing[1]

- Short Term (0-5 Years)
- Medium Term (6-10 Years)
- Long Term (10+ Years)

Route Segment ID

(40) Additional information for each route segment is provided in Technical Appendix 9

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

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Map 5b

Proposed Phasing

Urban Area Map

0 0.25 0.5 1 Kilometres

N

Robson Road (Erie Street South to Cherry Lane)

Interim Design Solution: Signed Route

Robson Road (Cherry Lane to Erie Glen Crescent)

Interim Design Solution: Signed Route

Robson Road (Erie Glen Crescent to Monarch Lane roundabout)

Interim Design Solution: Signed Route

Monarch Lane & Roundabout (Robson Road to Bevel Line / County Road 33)

Interim Design Solution: Signed Route

Legend Note:

1. The proposed implementation strategy is based on the following assumptions:
i. Routes identified in the short term phase reflect pre-approved projects identified in the Municipality's capital budget.
ii. Bike lanes identified in the short-term only require repainting (e.g adding bike lane pavement markings and signage) as opposed to a roadway construction, retrofit or redesign.
iii. Signed Routes and interim signed routes (withh application of the Green Bicycle Route Marker sign) are quick wins for the Municipality.
iv. Routes identified in the short term reflect project underway at the time of the Master Plan development.
v. The implementation strategy is consistent with phasing i identified in CWATS.

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
N/A		Desired Connection

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Proposed Phasing[1]

- Short Term (0-5 Years)
- Medium Term (6-10 Years)
- Long Term (10+ Years)

Route Segment ID

(8) Additional information for each route segment is provided in Technical Appendix 9

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

Table 9 – Overview of A.T. Network Phasing by Jurisdiction

	Phase 1 (0 – 5 years)		Phase 2 (6 – 10 years)		Phase 3 (10+ years)				Total
	M.L.	C.O.E.	M.L.	C.O.E.	M.L.	C.O.E.	M.T.O.	E.R.C.A.	
Total Distance (km)	80.4	17.5	6.3	6.8	14.3	7.3	9.6	2.3	144.5
% of Total Network Length	55.6%	12.1%	4.4%	4.7%	9.9%	5.1%	6.6%	1.6%	100%

M.L. – Municipality of Leamington
C.O.E. – County of Essex
M.T.O. – Ministry of Transportation Ontario
E.R.C.A. – Essex Region Conservation Authority

4.1.2 Short-term Priorities

Master plans are intended to be long-term strategic documents, however, short-term priorities and quick-wins are needed to establish momentum early in the implementation process. With full build-out as one of the primary goals, the Municipality and County are encouraged to move forward with short-term infrastructure projects as a priority and revisit the project identified in the short and medium-term phases to first five years of implementation has been completed.

The consultant team, with input from staff and stakeholders, identified priorities for the A.T.P. Priorities were selected from the short-term phase and include a range of on and off-road facility types that accommodate both pedestrians and cyclists. The short term priorities can be organized into three categories **quick wins**, **Municipal actions** and **County actions**.

- **Quick wins** - projects that provide the greatest "impact" based on the overall investment. For the Leamington A.T.P. quick wins were identified in the form of signed bicycle routes. All signed-routes found within the urban area were identified to be implemented within the first year of following the adoption of the plan. On all routes identified as a signed bike route, the municipality should implement the standard green bike route signs. The recommended spacing for placement of bike route signs is identified in O.T.M. Book 18. The municipality should be consistent with these guidelines. In addition Share the Road signs (cautionary signage) should be implemented at points along routes where there are poor sightlines, narrowing of the roadway, etc.

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- **Municipal actions** are routes found on lands under the municipality's jurisdiction which have been identified through discussions with municipal staff as more immediate projects / initiatives, through input from stakeholders and public as connections to key destinations / areas of interest / tourism draws (e.g. the downtown core, waterfront and soccer fields) as well as routes that provide access to the primary off-road linkages e.g. the Chrysler Greenway.
- **County actions** are routes found on lands under the County's jurisdiction that make-up part of the County-wide A.T. Network. The routes have been approved by the C.W.A.T.S. Committee and County of Essex Council as priority projects or more immediate short term initiatives. They were identified based on information provided by the County as well as consultation with County staff.

The priorities found within these three categories are illustrated on **Maps 6a** and **6b** and are recommended to be considered for implementation in the first 2 years following the adoption of the A.T.P. For ease of readability the projects are presented using three different shapes with a black fill. In each icon the segment I.D. is noted along with a notation for the type of priority proposed. The following are the icons used:

- **Quick Win** – 

- **Municipal Actions** – 

- **County Actions** - 

R8 **The short-term priorities, found under the Municipality's jurisdiction, identified in Table 11 and illustrated in Maps 6a and 6b should be used as the primary reference for the Municipality within the first two years following the adoption of the A.T.P.**

R9 **Should additional opportunities arise at the County or local municipal level, the Municipality should work with the County to identify the infrastructure improvements and should identify them as short-term priorities.**

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Map 6a

Proposed
Short-Term Priorities

Municipal-wide
Rural Area Map

N

Connection to Proposed Multi-Use Trail along Rail Corridor

Town Of Lakeshore

Connection to an Existing Signed Route on County Road 37

Connection to Proposed Paved Shoulder along County Road 8

County Rd 8

Mersea Rd 11

Mersea Rd 10

Mersea Rd 8

Mersea Rd 7

Mersea Rd 6

Mersea Rd 5

Mersea Rd 4

Mersea Rd 2

Mersea Rd 1

Mersea Rd C

Mersea Rd D

Mersea Rd E

Highway 77

Mersea Rd 12

Mersea Rd 15

Mersea Rd 19

Mersea Rd 21

County Rd 37

Wheatly Rd

Connection to Proposed Signed Route on County Road 14

County Rd 14

County Rd 31

Connection to Proposed Signed Route on 4th Concession Line

Municipality of Chatham-Kent

Connection to Proposed Signed Route on Kent County Road 1

Town Of Kingsville

Hope Lane

Bruner Rd

Leisure Lake Campground

Ponds RV Park

Lake Erie

Hickson Rd

Erie St

County Rd 34

Kopegaron Woods Conservation Area

Deer Run Rd

Mile Rd

Fox Run Rd

Lakeshore Rd

Connection to Proposed Paved Shoulder along County Road 18

County Rd 18

Highway 3

Connection to the Chrysler Canada Greenway

Connection to Proposed Paved Shoulder along County Road 34

Connection to Proposed Context Sensitive Solution on County Road 20

Hillman Marsh Conservation Area

Connection to Hillman Marsh Conservation Area

Seacliff Park

Marina Park / Waterfront Promenade

Sturgeon Woods Campground

Mersea Park

Kildeer Rd

East Beach Rd

County Rd 33

Point Pelee National Park

32 33 34 39 40 41 43 44 45 46 47 48 49 97 107 1 13

See Map 6b for details in the urban area

Existing signed CWATS route with proposed paved shoulder on County Road 33 (Mersea Road 12 to approximately 1.7km north of Mersea Road 12) - Short Term

Proposed off-road multi-use trail to the east of County Road 33 at bottom of dyke (Mersea Road 12 to Mersea Road E) - Short Term

Proposed Signed Route on Mersea Road E (County Road 33 to Mersea Road 19) - Short Term

Legend Note:

1. The short-term priorities include a range of on and off-road facility types that can be organized into three categories: Quick Wins, Municipal Actions and County Actions. Refer to section 4.1.2 in the Leamington A.T.P for additional information.

0 1 2 4 Kilometres

Legend

Existing Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
		Connection to Surrounding Municipality

Proposed Phasing

Priority Project identified in the Short Term (0-5 Years)

Short-Term Priorities[1]

- 44 Quick Wins
- 95 Municipal Actions
- 1 County Actions

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

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Active Transportation Plan

Final July 2016

Map 6b

Proposed Short-Term Priorities

Urban Area Map

0 0.25 0.5 1 Kilometres

N

Legend Note:

1. The short-term priorities include a range of on and off-road facility types that can be organized into three categories: Quick Wins, Municipal Actions and County Actions. Refer to section 4.1.2 in the Leamington A.T.P for additional information.

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
N/A		Desired Connection

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Proposed Phasing

- Priority Project identified in the Short Term (0-5 Years)

Short-Term Priorities[1]

- 44 Quick Wins
- 95 Municipal Actions
- 1 County Actions

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Proposed Road

Land Use Features

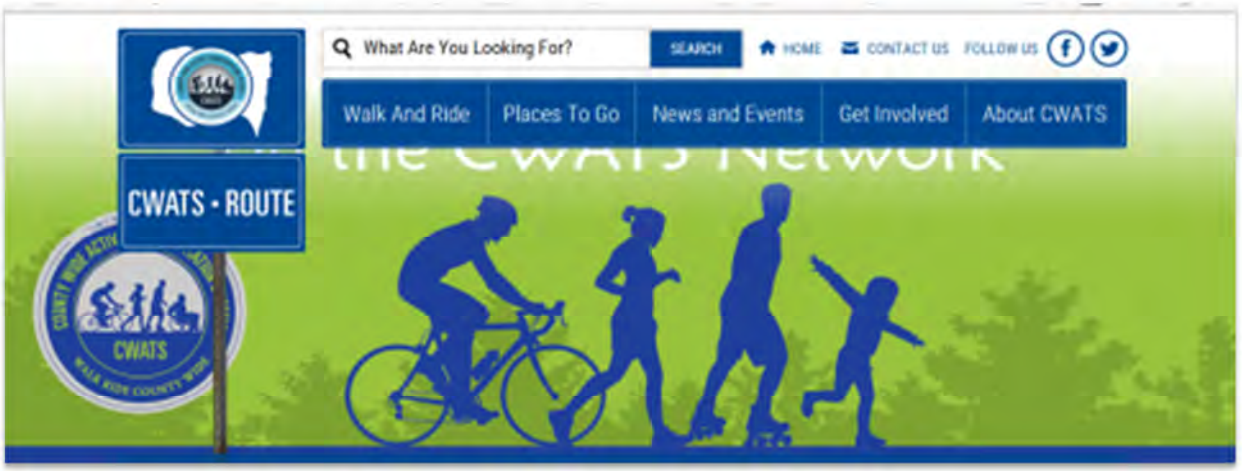
- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

4.1.3 Coordination with the County

County reports, plans and documents directly influenced the proposed phasing for the Leamington A.T, network. Specifically, the information presented in C.W.A.T.S, related to phasing and implementation (including updated phasing information provided by County Staff) was closely reviewed to ensure that there was consistency between the plans. As the Municipality moves forward with the implementation of the A.T, network, they should work with the County of Essex on an ongoing basis to ensure that implementation in coordinated, connected and consistent.

As noted above, should there be any deviations from the C.W.A.T.S., network or phasing plan these should be appropriately presented, reviewed and confirmed based on discussions with the County's A.T. Committee and consistent with the current process set-out by the committee to approve changes or revisions. As needed, the municipality should work with the County of Essex to provide them with the latest network information including proposed facility types and phasing as well as network costing (see additional detailed in **section 4.4**). The transfer of information should be mutual with updates provided annually to ensure that all information is up to date and consistent.

The Municipality of Leamington is a contributing and voting member of the C.W.A.T.S., committee and should use this platform as a means of working with the County and its bordering municipalities to leverage implementation priorities and future programming and outreach initiatives.



4.2 Implementing: Suggested Actions

In order to achieve the primary objectives of the A.T.P., the municipality, and its partners, need to work on addressing and implementing priority improvements and actions. **Section 2.5** identified the proposed "improvements and actions" that have been identified to specifically respond to issues and opportunities raised by staff from the Municipality, County and surrounding municipalities as well as other stakeholders and technical agencies.

The actions and improvements relate to network development, policies, processes, programming and outreach – soft and hard infrastructure – to achieve the big picture A.T. objectives and long-term vision for the Municipality of Leamington. The following sections outline the proposed actions, recommendations and strategies in these four areas for consideration and adoption by Leamington.

4.2.1 Network Development & Operation

The development of the A.T. network will be the primary focus for Municipal and County staff. Providing residents and visitors with the infrastructure and facilities needed to accommodate walking and cycling throughout the municipality will focus on five key aspects:

- Connecting to and enhancing the existing and previously proposed C.W.A.T.S. network;
- Providing linkages between the urban, semi-urban and rural areas that make up the municipality;
- Identify routes and facilities that provide youth with safe routes to school;
- Identifying and implementing interim facilities prior to full project build-out where appropriate; and
- Implementing amenities and other features to enhance the use and continuity of the network.

Connect & Enhance the C.W.A.T.S Network

Leamington's A.T. network was designed to build upon the C.W.A.T.S. network. The Municipality should continue to work with the County of Essex to continue the implementation of both networks (as illustrated on **Maps 4a** and **4b**) to establish a continuous and connected system of on and off-road facilities in the Municipality of Leamington. The C.W.A.T.S. routes should be a focus for implementation by the County to provide connections to surrounding municipalities including the Town of Lakeshore, the Town of Kingsville and the Municipality of Chatham-Kent. One of the primary goals of the A.T.P was to identify missing links in the local and Regional system to achieve inter-connectivity.

Figure 17 illustrates the A.T. routes that were identified in C.W.A.T.S. that are located in Leamington. Over the course of the project the team worked with the County to ensure that the municipal network reinforced, complemented and enhanced (where needed) those routes identified in the C.W.A.T.S. plan. Several of the C.W.A.T.S. routes have been identified as priority projects (see separately bound **Technical Appendix B-1** and **Maps 6a** and **6b**) to reflect the importance that has been placed on working with the County to facilitate the implementation of both A.T. networks.

These priority routes have been strategically selected due to their ability to achieve County-wide connectivity as well as access to primary municipal destinations.

It is recommended the Municipality review the A.T. network and route segments at the time of implementation to confirm facility type, and review the potential to upgrade the facility types. For example it may be appropriate to upgrade a signed bike route to a bike lane on roadways that are planned for future construction and / or widening. In cases where potential changes or upgrades to C.W.A.T.S approved routes are involved the Municipality shall work with the County of Essex and C.W.A.T.S. Committee to formally request the change.

Connect the Urban, Semi-Urban and Rural Areas

The geography of Leamington contains three distinct geographic areas (as defined by the O.P.) including- urban, semi-urban and rural areas. **Figure 18** illustrates these defined areas in the Municipality. The population is 28,403 (Statistics Canada, 2011 Census of Population), of which 20,000 – over 70% - reside in the main urban area. Routes that make up the A.T. network have been proposed in all three geographic areas of the municipality. However, the density and design of the facilities are unique to the particular area in which it is being proposed for implementation. In the urban and semi-urban areas, there is a higher opportunity for residents to make short / local trips by foot (~1km or less) or bike (~5km or less), therefore a greater density of routes is proposed.

Research undertaken for the C.W.A.T.S. identified a 10.1% walking and cycling mode share. This can be attributed to the extensive greenhouse industry (1500+ acres) that employs thousands of migrant workers, many of whom use active modes of transportation from the greenhouse sites (located in the rural areas) to the urban and semi-urban areas.

Approximately 15% of Leamington's labour force is employed in the agriculture industry and 22% are employed in the manufacturing industry (Statistics Canada. 2013. Leamington, MU, Ontario). However, many of these pedestrians and cyclists do not have the infrastructure available leading to an increased potential for conflict between pedestrians, cyclists and motorists. In addition to these types of employment based trips, there is also significant potential for an increase in the number of short-distance trips within the urban areas e.g. shopping, recreation, entertainment, etc. to be taken by bicycle or on foot.

The municipality has a total area of 261.92km^2, of which 25.64 km^2 is urban area. 5km is the typical threshold for a cycling trip. As such, there is significant potential, to make walking and cycling a viable transportation alternative should infrastructure be improved. By providing infrastructure not only within the semi-urban and urban areas but spine systems which provide access to and through the rural areas could help to increase the cycling and walking mode share while also providing existing pedestrians and cyclists with a connected and continuous system of facilities that are designed for the roadway conditions that they are identified along.

LEAMINGTON A.T. PLAN (2016)

Figure 17 - Proposed C.W.A.T.S Network in Leamington
Source: www.cwats.ca

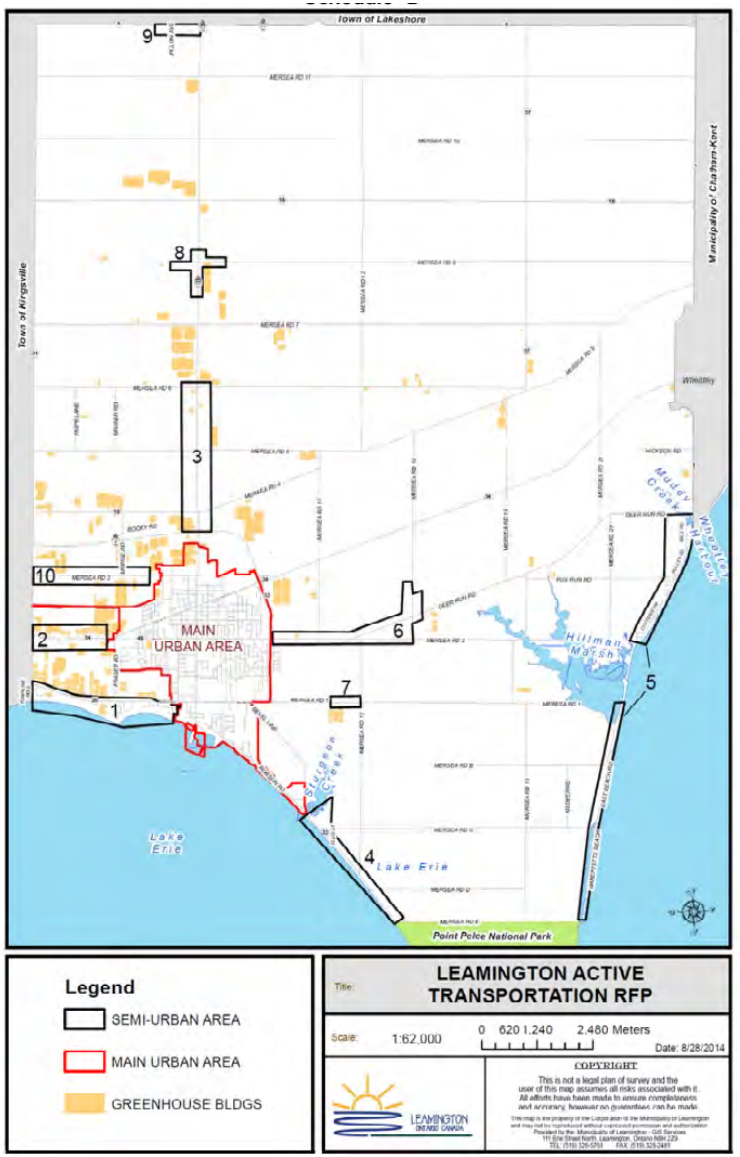


Figure 18 – Map of Urban, Semi-urban and Rural Areas
Source: Municipality of Leamington Active Transportation 2014 R.F.P

Implementing Interim Facilities

The A.T. network reflects full build-out, therefore the facilities illustrated are the final design solutions identified for each specific area. Though full build-out is the preferred outcome, in some locations an interim facility may be feasible.

An interim facility type is typically identified to achieve connectivity between existing facilities in the short or medium-term for a project where the ultimate solution is identified for implementation in the long-term. Within the Municipality there are four locations where an interim facility type has been identified. **Table 10** summarizes the route segments where interim facilities have been identified.

Table 10 – Summary of Proposed Interim Facilities

I.D.	Route Segment Name	From	To	Interim Solution	Ultimate Solution	Length (km)
23	Robson Road	Erie Street South	Cherry Lane	Signed Route	Bike Lanes	0.72
24	Robson Road	Erie Glen Crescent	Monarch Lane roundabout	Signed Route	Bike Lanes	1.80
26	Monarch Lane	Roundabout	Bevel Line (County Road 33)	Signed Route	Bike Lanes	0.19
27	Robson Road	Cherry Lane	Erie Glen Crescent	Signed Route	Bike Lanes	0.28

In these locations, the study team has completed the facility selection process and identified preferred enhancements that reflect the current roadway conditions. At this stage, enhancements were identified to accommodate pedestrian and cyclist movements; however the preferred facility type may not be implemented or accommodated until a later date. Some reasons why interim facilities have been identified for these locations include:

- Insufficient space to accommodate the preferred facility type;
- Environmental constraints or Environmental Assessments are needed to confirm future impacts;
- Land is not available to the municipality to accommodate the facility type; or
- The budget is not thought to be available within the preferred timeline to implement ultimate design.

The Municipality should proceed with the implementation of the proposed interim facility type solutions as identified in Table 10 with the goal of implementing the ultimate solution in the proposed timeline.

Implementing other Network Aspects

In addition to the facilities that are implemented a connected and continuous A.T. network requires other design treatments. Other design treatments included network amenities, transitions between different facility types, crossings of major and minor roadways and trailheads. Amenities that are implemented along A.T. routes can include bicycle parking, rest / staging areas, washrooms, end-of-trip facilities (e.g. showers) etc. The implementation of route amenities has been known to influence the level of comfort of different user groups e.g. rest areas for seniors that can directly influence the number of users. Leamington's commitment to active transportation and recreation is evident by the existing amenities (e.g. trailheads, signage, seating areas, waste receptacles, etc.) implemented throughout the Municipality– see examples in **Figure 18**.

Figure 18 - Existing Trail Amenities in Leamington
Source: MMM Group

Though there are existing amenities, with the expansion of the A.T. network, the Municipality should explore the design and implementation of a wider variety of amenities, crossings, transition points, etc. As part of the development of the A.T.P., the project team identified locations where "network enhancements" (in the form of additional design treatments) can be made. The location and proposed design application for these enhancements is illustrated on **Maps 7a** and **7b** and **Figure 20**. In addition, as noted in **section 3.0** the project team also evaluated the design and implementation of bicycle parking corrals in select locations throughout the municipality.

Once the Plan is adopted, the Municipality and its partners should move forward with the implementation of network enhancements identified on **Maps 7a** and **7b** as segments of the network are completed. In addition, the municipality should refer to the separately bound **Technical Appendix A-5** bicycle parking recommendations and should move forward with the implementation of bicycle parking in strategic locations throughout the municipality.

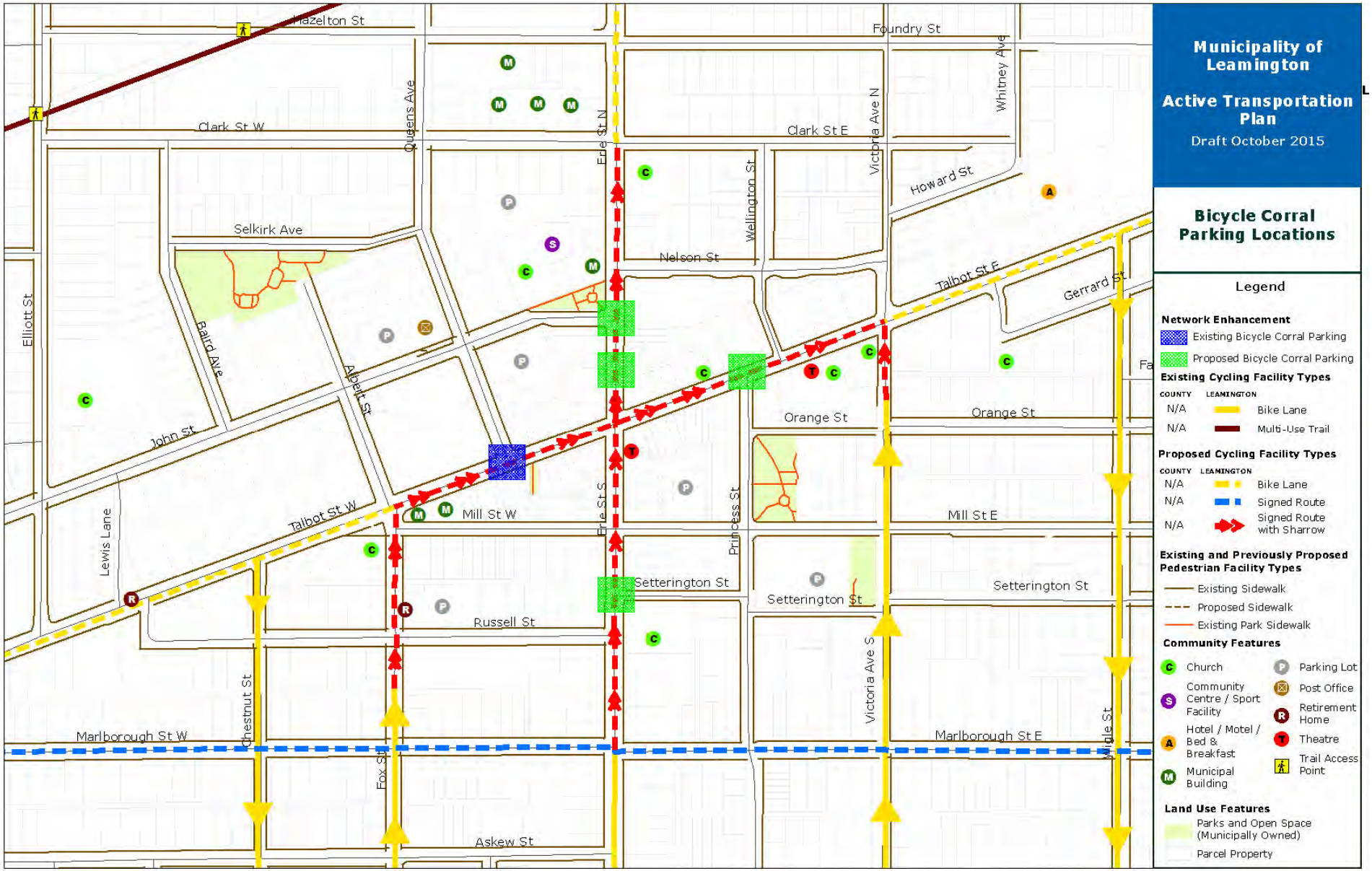


Figure 19 – Existing and Proposed Locations of Bicycle Corral Parking in Leamington

Municipality of Leamington

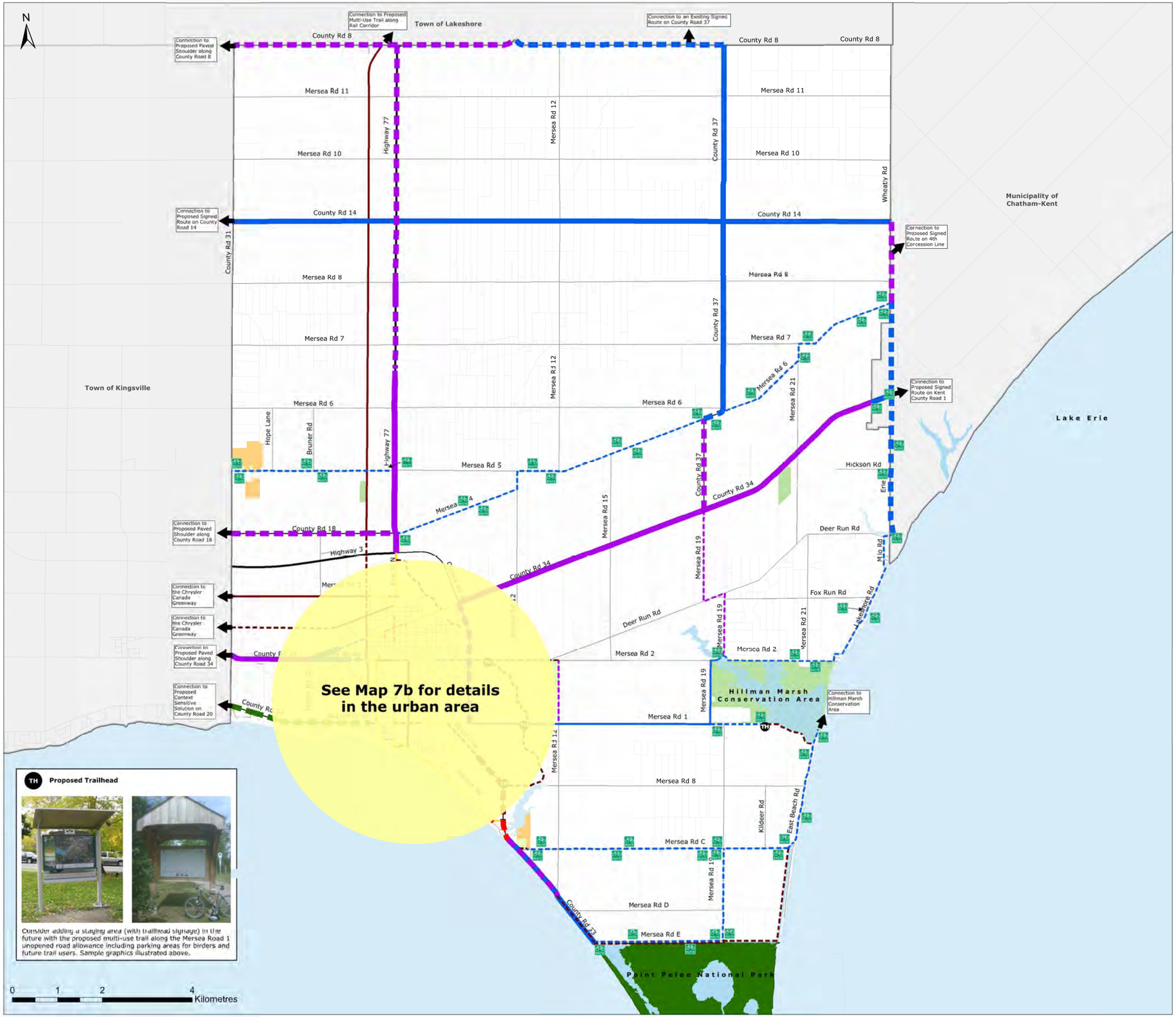
Active Transportation Plan

Final July 2016

Map 7a

Proposed
Network Enhancements

Municipal-wide
Rural Area Map



Legend

Existing Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail[1]

Proposed Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
		Connection to Surrounding Municipality

Network Enhancements

- Proposed Bicycle Route Marker Sign
- Proposed Trailhead

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad[3]
- Proposed Road

Land Use Features

- Parks and Open Space (Municipally Owned)
- Conservation Area
- Point Pelee National Park
- Campground
- Property Line
- Watercourse

Municipality of Leamington

Active Transportation Plan

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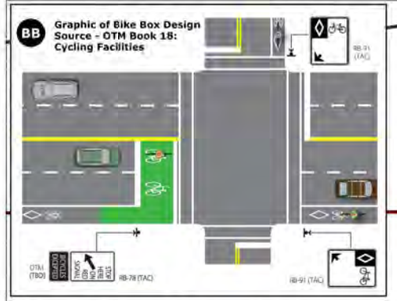
Map 7b

Proposed Network Enhancements Urban Area Map

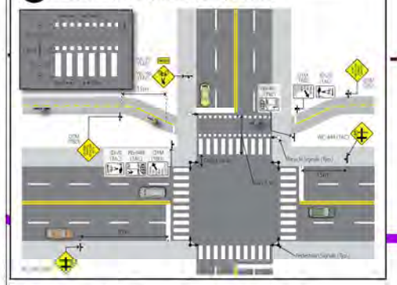
N

0 0.25 0.5 1 Kilometres

BB Graphic of Bike Box Design
Source - OTM Book 18: Cycling Facilities



CR Graphic of Separate Pedestrian and Cyclist Crossride
Source - OTM Book 18: Cycling Facilities



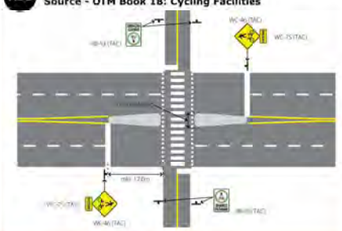
IPS Graphic of Signalized Intersection Crossing Sign
Source - OTM Book 18: Cycling Facilities

Ra-14L(R) (OTM)

Consider installing Dismount and Walk sign with IPS.

RB-91 (TAC)

MBC Graphic of Midblock Crossing
Source - OTM Book 18: Cycling Facilities

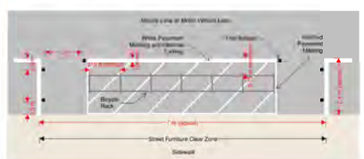


TH Proposed Trailhead
Sample graphics illustrated above.

LEAMINGTON Proposed Signed Route with Sharrows

Implement **Green Backed Super Sharrows** along Talbot Street (Fox Street to Victoria Avenue South) and Erie Street North (Clark Street to Marlborough Street). Graphic above provides example of green backed super sharrows on King Street, Kitchener, Ontario.

PBC Proposed Bicycle Parking
Mid-frame Bicycle Corral Parking Facility Diagram



Intersection identified for construction of a traffic signal system (2015 Capital Budget). Install an Intersection Pedestrian Signal (IPS) for cyclists and pedestrians. Install Dismount and Walk sign.

Install Intersection Pedestrian Signal at the north side of the Leamington Kinsmen Recreation Complex crossing for pedestrians and cyclists.

Install Dismount and Walk sign (see graphic on right).

Install Intersection Pedestrian Singal on the south side of Countess Street. Consider location of the transit stop (move further south as needed).

Intersection identified for construction of a traffic signal system (2015 Capital Budget).

Consider adding a bike box on County Road 20 (Seacliff Drive W) to facilitate left-turn movements on Sherk Street.

Lake Erie

Legend Note:

1. The Municipality of Leamington installed a temporary bicycle corral during the summer months at Queens Avenue and Talbot Street West.

Legend

Existing Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
	N/A	Paved Shoulder
N/A		Multi-Use Trail

Proposed Cycling Facility Types

COUNTY	LEAMINGTON	
N/A		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail
	N/A	Context Sensitive Solution
		Signed Route with Sharrow
N/A		Buffered Bike Lane
N/A		Desired Connection

Existing and Previously Proposed Pedestrian Facility Types

- Existing Sidewalk
- Proposed Sidewalk
- Existing Park Sidewalk

Network Enhancements

- Existing Trail Access Point
- Existing Bicycle Parking[1]
- Proposed Bicycle Route Marker Sign
- Proposed Bicycle Parking
- Proposed Bike Box
- Proposed Crossride
- Proposed Intersection Pedestrian Signal
- Proposed Midblock Crossing
- Proposed Trailhead
- Proposed Traffic Signal System

Transportation Features

- Provincial Highway
- County Road
- Local Road
- Railroad
- Proposed Road

Land Use Features

- Parks and Open Space (Municipally Owned)
- Campground
- Uptown Commercial District
- Future Planned Development
- Parcel Property
- Watercourse

LEAMINGTON A.T. PLAN (2016)

Network Development & Operations Recommendations

R10 **The proposed facility type should be confirmed at the time of implementation to accommodate new opportunities or changes that have arisen since completion of the A.T.P. Where proposed changes involve the location or facility type of C.W.A.T.S approved routes, Leamington shall work with the County of Essex and C.W.A.T.S Committee to formally request the change.**

R11 **Leamington should work with the County of Essex to support the implementation of C.W.A.T.S. routes that provide direct connections to surrounding municipalities.**

R12 **Leamington should implement A.T. routes that provide walking and cycling opportunities with a focus on the urban area complemented by linkages to surrounding semi-urban and rural areas.**

R13 **Leamington should proceed with the implementation of the proposed interim facility type solutions as identified in Table 10 with the goal of implementing the ultimate solution in the proposed timeline.**

R14 **Once the Plan is adopted, the Municipality and its partners should move forward with the implementation of network enhancements identified on Maps 7a and 7b as segments of the network are completed.**

R15 **Leamington should refer to separately bound Technical Appendix A-5 bicycle parking recommendations and should move forward with the implementation of bicycle parking in strategic locations throughout the municipality.**

4.2.2 Design & Accessibility

Design is a key consideration of the development of a connected and continuous network of on and off-road active transportation and recreation facility types. When developing Leamington's A.T. network the routes and facility types are designed with comfort and safety in mind and were shaped by five key principles:

- The application of consistent design guidelines for a variety of facility types;
- Consideration of and design for different types of pedestrians and cyclists;
- Consideration for users of different abilities with a focus on providing accessible alternatives;
- Establishing complementary signage and wayfinding that help to enhance user experience; and
- Consideration for areas of conflict and transition and potential mitigation measures.

Apply Consistent Design Guidelines

When designing pedestrian and cycling facility types, consistency is paramount. Facility selection, design and implementation should be guided by existing standards, guidelines and best practices. For Leamington's A.T.P. a set of design guidelines were developed (see separately bound **Technical Appendix A-7**). The content of these guidelines is consistent with and reinforces the current provincial guidelines and standards described in O.T.M. Book 18: Cycling Facilities, O.T.M. Book 15: Pedestrians, Transportation Association of Canada Bikeway Traffic Control Guidelines (2008), Ministry of Transportation Ontario Bikeways Design Guidelines (2013) and the Accessibility for Ontarians with Disabilities Act (2005).

The Municipality of Leamington should use O.T.M. Book 18 and 15 as primary references for the design of pedestrian and cycling facilities in conjunction with the design guidelines prepared for the A.T.P.

Though it is important to be consistent with current guidelines and standards it is also important to acknowledge that context-sensitive design solutions may be required. Described in **section 3.1.1**, context sensitive solutions are only identified on roads under the County's jurisdiction. There are no context sensitive solutions identified on municipal roadways as part of the Leamington A.T.P; however, the County of Essex has identified a couple of locations – as part of the C.W.A.T.S. – where these solutions are preferred.

Provide Guidance on User Groups & Facility Types

One of the primary goals of Leamington's A.T.P. is to identify infrastructure improvements to increase walking and cycling community-wide. In order to design facilities that accommodate various users, it is important to understand who the users may be. For the Leamington A.T.P. there are two primary groups that were considered – pedestrians and cyclists. Pedestrians typically include walkers, hikers, joggers / runners and people using mobility aids. Pedestrians typically use sidewalks within road rights-of-way and trails outside of road rights-of-way. As such, there are typically fewer pedestrian considerations when selecting facility types as part of a comprehensive A.T. network.

Cyclists, however, are considered vehicles under the Highway Traffic Act, as such cyclist facility types are designed within and outside road rights-of-way. Because cyclists are expected to use the roadway, key determinants of facility design and selection include level of comfort and skill. Research undertaken in Portland has helped to define cyclists by these two criteria. **Figure 20** illustrates and defines the four cyclist categories identified through this research which were considered when designing the cycling components of Leamington's A.T. network.

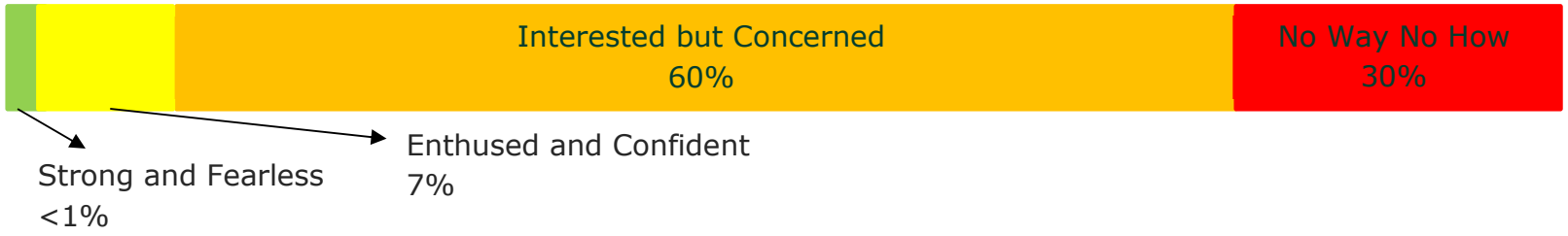


Figure 20 - Groups of Cyclists: Source – Portland, Oregon

The following assumptions can be made about cyclists in each of these categories:

- **Strong and Fearless:** Those that are highly committed to cycling, are already cycling regularly and will likely cycle regardless of whether or not infrastructure is available to use. They are comfortable and confident sharing road space with motor vehicles;
- **Enthused and Confident:** Those that have a high interest in cycling, are confident in their cycling abilities and will make efforts to cycle as long as reasonable facilities are provided;

- **Interested but Concerned:** A wide cross-section of individuals who have an interest in cycling as part of their regular travel needs, but have some significant concerns regarding safety and convenience that limits their desire and commitment to cycle; and
- **No way, no how:** Those who are unlikely to use active transportation facilities and are not interested in cycling for a variety of reasons e.g. age, health, disability or other issues.

To a network that is considered comfortable by the widest range of users, the plan aims to design facilities that are attractive for "interested but concerned" users while accommodating the "enthused and confident" and the "strong and fearless". This can be achieved by identifying and implementing a range of facility types throughout the network including long-distance signed routes to fully separated multi-use trails.

In addition to the different modes of A.T., walking and cycling routes can also be defined by trip purpose. Based on trends and best practices these trip types generally fit into one of three categories:

- **Recreational Trips:** Where the primary objective is to enjoy one's experience. Pedestrians and cyclists tend to use A.T routes for fitness or leisure. Trips are typically taken on the weekend and will be used to access community destinations or areas of cultural and natural significance.
- **Utilitarian Trips:** Within Leamington there are significant number of agricultural businesses that employ migrant workers. Many of these workers rely on walking and cycling as their primary mode of transportation between the rural and semi-urban / urban areas of the Municipality which leads to a higher rate of utilitarian trips than what is typically experienced in Municipalities of this size.
- **Touring Trips:** Where the primary objective is to cover longer distances for both utilitarian and recreational trips. Pedestrians and cyclists may engage in full day or multi-day excursions and may plan trips in advance.

There are a range of facility types which can be considered in various contexts such as shared, designated or separated facilities. The intent for the Leamington A.T.P. was to recommend facility types for pedestrians and cyclists within the appropriate context. **Table 11** provides a more detailed description of these facility type categories, the different facilities that considered within each category and how both pedestrians and cyclists are accommodated.

Table 11 - Facility Type Categories

Shared Facilities	Designated Facilities	Separated Facilities
Description: Facilities where the cyclists share the roadway with motorists.	**Description:** Facilities that provide a separated space for cyclists on the roadway.	**Description:** Facilities that are: (i) within the roadway and separated from motor vehicle traffic by a buffer, (ii) within the road right of way but separated from vehicle traffic and (iii) those that are outside of the road right-of-way.
Types of Facilities: *Cyclists:* ► Signed Bike Route ► Signed Bike Route with Sharrow *Pedestrians:* ► Sidewalk ► Shoulder	**Types of Facilities:** *Cyclists:* ► Signed Bike Route with Paved Shoulder ► Bike Lane *Pedestrians:* ► Sidewalk ► Shoulder	**Types of Facilities:** *Cyclists:* ► Buffered Bike Lane ► In-Boulevard Multi-Use Trail ► Off-Road Multi-Use Trail *Pedestrians:* ► Sidewalk ► Shoulder ► In-Boulevard Multi-Use Trail ► Off-Road Multi-Use Trail
Application: Facilities that are comfortable predominantly for the enthused and confident cyclist. On local roads they may be used for short-distance trips by interested but concerned cyclists.	**Application:** Facilities that are comfortable for a range of cyclists but predominantly the enthused and confident as well as interested but concerned.	**Application:** Facilities that are comfortable for the greatest range of cyclist types.

Though pedestrians and cyclists are the focus of this strategy, there are other user groups that use some of these facilities, where feasible and permitted. Other users include individuals with mobility limitations, including those who require assistive devices, as well as users of e-bikes.

E-Bikes are a relatively new phenomenon in Canada. They are an attractive form of transportation for several reasons; they are affordable both in terms of the initial purchase cost and cost to operate; they are small, light and can be easily maneuvered; they are easy to park and can travel along very narrow corridors. Growing in popularity, they are now regularly seen in urban environments traveling in bike lanes and linear trail corridors.

MTO defines e-bikes as "motorized bicycles that can look like conventional bicycles, scooters or limited-speed motorcycles". The Ontario Highway Traffic Act (HTA) states that a power-assisted bicycle is a bicycle that:

a) is a power-assisted bicycle as defined in subsection 2 (1) of the Motor Vehicle Safety Regulations made under the Motor Vehicle Safety Act (Canada),
b) bears a label affixed by the manufacturer in compliance with the definition referred to in clause (a),
c) has affixed to it pedals that are operable, and
d) is capable of being propelled solely by muscular power; ("bicyclette assistée")

MTO launched a three-year pilot program in 2006 to evaluate whether electric vehicles (e-bikes) could be safely integrated on Ontario roadways. For the first time, the pilot program allowed the use of e-bikes on public roads where conventional bicycles were permitted. E-bike users were required to follow the same rules and regulations of a cyclist with the exception that e-bike users had to be 16 years or older and users had to wear an approved helmet at all times.

MTO evaluated the success of the pilot program and consulted with road safety, environmental and cycling experts, as well as key stakeholders representing e-bike riders, cyclists, retailers, manufacturers and law enforcement. The results of the evaluation period and safety review concluded that e-bikes should continue to operate on Ontario public roads where conventional bicycles are permitted, but that municipalities can still choose to limit locations where e-bikes are permitted through a municipal by-law.

The following safety and operator requirements have been outlined by MTO for use of e-bikes on public roads:

- E-bikes must not weigh more than 120 kg (includes the weight of bike and battery).
- All operators and passengers must be at least 16 years of age.
- All operators and passengers must wear an approved bicycle or motorcycle helmets.
- All electrical terminals must be completely covered.
- Two independent braking systems consistent with requirements for motorcycles and motor-assisted bicycles (mopeds) that applies force to each wheel and is capable of bringing the e-bike, while being operated at a speed of 30 km/h, to a full stop within 9 metres from the point at which the brakes were applied.
- The minimum wheel width or diameter cannot be less than 35mm/350mm.

- No modifications to the motor to allow it to exceed a power output greater than 500W and a speed greater than 32 km/h.

Although they are defined in provincial legislation, their use is not clearly regulated and municipalities are challenged to address where they should be permitted and how to enforce improper use. Many municipalities are challenged by simply trying to define various types of e-bikes and develop rules regarding their use. For example, scooter type e-bikes are typically much heavier and are more similar to mopeds and small motorcycles. Scooter type e-bikes are thought by many municipalities not to be appropriate for multi-use trails where pedestrians share the space, especially along trails in parks and recreational green space. Many Ontario municipalities have by-laws in place that restrict e-bikes on park trails. For example City of Windsor Traffic By-law 9148 prohibits e-bikes from riding on sidewalks or pathways shared by pedestrians and bicycles or on a pedestrian trail.

Leamington should ensure that their by-laws provide clear direction on how to address e-bikes on A.T. facilities throughout the municipality. The traffic by-law should be updated and this process should include consideration for the following:

- Preparing definitions for, and adding e-bikes to the list of permitted vehicles of municipal roadways;
- Allowing the use of e-bikes by police and emergency services in the line of duty so these can be used for use for patrols and emergency access;
- Allowing the use of e-bikes by municipal staff while performing duties, should the municipality wish to use e-bikes for some duties in the future rather than full sized service vehicles or gators; and
- Monitoring evolving best practices related to e-bikes, including any changes in legislation at the provincial level given this is a new issue that many municipalities are challenged to resolve.

It is recommended that the Municipality of Leamington permit the use of e-bikes on all municipal roadways and on linear off-road major rail to trail corridors where cycling is currently permitted e.g. the existing north / south multi-use trail along the abandon rail corridor west of Highway 77. With the exception of trails along former rail corridors, the use of e-bikes should not be permitted on recreational multi-use pathways in other green space or in park spaces. It is recommended that Leamington establish a bylaw that clearly specifies where e-bikes are permitted, similar to the City of Windsor bylaw.

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R16 **The Municipality of Leamington should permit the use of e-bikes on all municipal roadways and on linear off-road major rail to trail corridors where cycling is currently permitted e.g. the existing north / south multi-use trail along the abandon rail corridor west of Highway 77.**

R17 The Municipality of Leamington should establish a by-law that clearly specifies where e-bikes are permitted within the municipality.

Source: County of Essex, C.W.A.T.S. webpage

Designing with Accessibility in Mind

Approximately one in eight Canadians suffer from some type of physical disability. Mobility, agility and pain-related disabilities are by far the most common, each accounting for approximately 10% of reported disabilities nationally. The Accessibility for Ontarians with Disabilities Act (A.O.D.A.) promotes the goal of making Ontario accessible for people with disabilities by 2025. The Accessibility Standards for the Built Environment applies to pathways, trails and sidewalks (see separately bound **Technical Appendix A-1** for more information on the 2005 A.O.D.A.) with the overall goal of designing spaces that remove barriers to buildings and outdoor amenities. It is important to note that the standard only applies to new construction and extensive renovation and is not mandatory for the design of on-road cycling facilities.

When designing and implementing off-road A.T. facilities and multi-use trails, the Municipality should refer to the guidelines outlined in the Built Environment Standards to ensure that the needs of all user groups are accommodated. The Municipality should also strive to satisfy the requirements of the A.O.D.A. to the greatest extent possible, given the context of each trail's location, the surrounding environment and type of trail experience that is desired.

Sections 80.8 and 80.10 of the Accessibility Standards for the Built Environment provide the technical requirements for multi-use recreational trails.

Accessibility is not only about providing people with mobility limitations with appropriate facilities but also about ensuring that spaces are designed with connectivity in mind. Providing multi-modal opportunities and options for residents and visitors to get to key community destinations such as the downtown core, schools, community centres, Point Pelee, etc. is another important aspect of designing with accessibility in mind. The primary system provides the municipality with a spine network of facilities which provide direct connections to these destinations. The secondary system complements the primary network and provides residents and visitors with alternatives which can be used depending on their level of comfort and skill.

Implementing both the primary and second system is an important component of network implementation. The phasing plan has been developed to ensure that sufficient facilities are implemented within each phase to allow for connectivity and access municipality-wide.

Clear Signage & Wayfinding

An accessible and connected A.T. system requires clear direction and an understanding of what to anticipate while one is on a walking or cycling route. As described earlier, designing for different users includes significant consideration for the users' level of comfort. When pedestrians and cyclists know where to go next, understand their destination, how long it will take to get there, etc. they will feel more comfortable using the route and may be more likely to try other routes. This can be achieved through the implementation of various types of signage and wayfinding.

As noted in **section 3.1.1**, the Municipality and its partners have implemented branded signage and wayfinding to provide A.T. users with directional guidance municipality-wide for regional systems e.g. C.W.A.T.S., Trans Canada Trail and the Waterfront Trail. In addition, the Municipality has implemented "Share the Road" signs at strategic locations along existing on-road cycling routes. Though there is a strong base of route signage it is also important, as routes are implemented, to ensure that both regulatory (e.g. green bike route signs) as well as branded (e.g. C.W.A.T.S. signage along designated C.W.A.T.S. routes) is implemented.

As part of the C.W.A.T.S., the County established a route brand which has been used to establish route signage. The Trans Canada Trail and Waterfront Trail each have their own branded signage which has been implemented at regular intervals (approximately 1 km) along existing routes. The Municipality in partnership with the County of Essex, E.R.C.A., Trans Canada Trail and Waterfront Trail should continue to implement regional signage as the brands are established and provide users with visual cues to help navigate each route. The regional signs should be complemented by regulatory signs (see O.T.M. Book 18 for appropriate signage for each facility type proposed) (e.g. Green Bike Route Signage, Bike Lane Signage, etc.) which will be implemented by the Municipality.

Though it is important to have both branded and regulatory signage it is of vital importance that signage remain clear and not overwhelming. Where there are proposed facilities along existing Regional connections or County roadways, the Municipality should work with its partners to ensure that the appropriate signage is implemented and is done so at the time of implementation in a consistent manner.

Facility Transitions & Designing Conflict Points

To maximize network connectivity, pedestrians and cyclists should be able to transition between facilities and cross conflict points in a way that is considered (by the user) to be both safe and comfortable.

There are a number of different design solutions to facilitate the transition between different on-road and off-road pedestrian and cycling facilities. The most common and simple design to accommodate a transition between off-road and on-road facilities is a curb cut. The off-road facility should be flush with the pavement surface for the full width of the facility so pedestrians and cyclists can make a smooth transition.

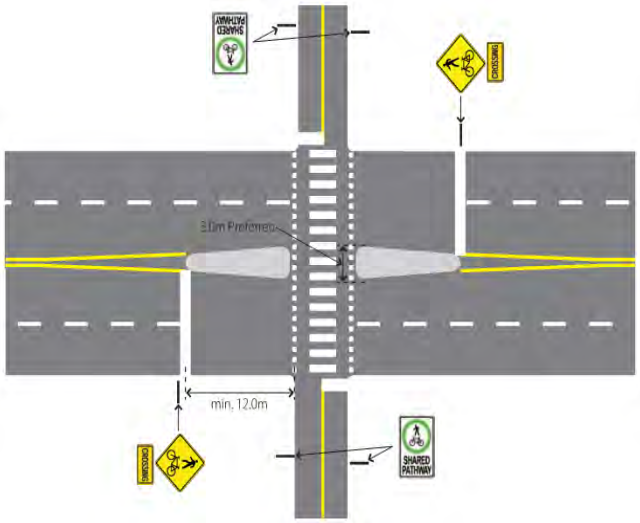

Figure 21 – Midblock Crossride
Source: O.T.M. Book 18 (2013)

Transitions should not be placed near conflict points where motor vehicles may cross the path of a cyclist that has just entered an on-road facility. Although drivers may see a cyclist using the off-road facility prior to the transition, they may not be aware of the transition ahead and the impending conflict.

In locations where cyclists are transferring to or from an off-road facility that runs perpendicular to the roadway, practitioners should consider providing a mid-block crossride. A mid-block crossride will allow cyclists to cross over without dismounting to continue along the off-road facility. **Figure 21** Provides a graphic of a cross-ride from O.T.M. Book 18: Cycling Facilities. The Municipality should refer to O.T.M. Book 18 for additional consideration when designing transitions between on-road and off-road facilities.

Most conflicts occur between motorists, cyclists and pedestrians at intersections as this is a point where different modes of transportation cross paths. Most frequently conflicts occur between various user groups when an individual is trying to make a right or left-turn. Intersection treatment such as bike boxes, advanced stop bars, bicycle actuated signals, crossrides and intersection pedestrian signals can improve a user's ability to cross a roadway more comfortably and safely.

A more detailed description of some of these design features is provided below:

- A bike box is a designated area between the crosswalk and the stop bar for motorized traffic at a signalized intersection. The designated area is intended to increase a cyclist's visibility for motorists and allows cyclists to proceed ahead of motorists on the green traffic signal. The Municipality should consider installing bike boxes at intersection with high traffic volumes and where a large number of cyclists could be expected. In addition, bike boxes can be provided in locations with high volumes of cyclists making a left-turn or when a bicycle route connects with another on-road facility.
- At intersections where bicycle facilities are proposed, the Municipality should consider the design of signal heads, signal timing and detector loops to accommodate cyclist travel. Passive bicycle detectors such as in-pavement loops, microwave or infrared detectors should be used in located where a bicycle signal is traffic responsive.
- Signage and pavement markings should be used to guide cyclists on their appropriate positioning over the detector loop. Where the signal actuation is activated through a push-button, a Signalized Intersection Crossing signs should be installed at the push button.

When developing the A.T. network for Leamington, consideration was given to key conflict points within the Municipality's urban area. These points were identified and a proposed design treatment was selected for consideration as the facilities are implemented. The locations of these conflict / transition points as well as the potential treatments are illustrated on **Maps 7a** and **7b**. For additional design details and alternatives regarding intersection treatments and the design of facility transitions Municipal staff should refer to O.T.M. Book 18 section 4.2.1.4

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Design & Accessibility Recommendations

R18 The Municipality of Leamington should adopt and use O.T.M. Book 18 and 15 as primary references for the design of pedestrian and cycling facilities in conjunction with the design guidelines prepared for the A.T.P.

R19 As Leamington moves forward with the design and implementation of A.T. routes / segments they should review and confirm the preferred facility type. Where the context warrants, the Municipality should consider the design and implementation of context sensitive solutions.

R20 When developing the A.T. network and proposed facility types / network improvements, accessibility for people of all ages and abilities should be considered.

R21 When designing and implementing off-road A.T. facilities and multi-use trails, Leamington should refer to the guidelines outlined in the Built Environment Standards to ensure that the needs of all user groups are accommodated.

R22 Leamington should also strive to satisfy the requirements of the A.O.D.A. to the greatest extent possible, given the context of each trail's location, the surrounding environment and type of trail experience that is desired.

R23 Leamington should refer to the phasing plan and the suggested timeline for the implementation of the primary and secondary system to achieve connectivity and access throughout the municipality.

R24 Leamington in partnership with the County of Essex, E.R.C.A., Trans Canada Trail and Waterfront Trail should continue to implement regional signage as the brands are established and provide users with visual cues to help navigate each route.

R25 Regional signage implemented throughout Leamington should be complemented by regulatory signs (e.g. Green Bike Route Signage, Bike Lane Signage, etc.) along municipal roadways which will be implemented by the Municipality.

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R26

Leamington should consider implementing design treatments / applications for potential points of conflict in the A.T. network. The municipality should refer to Maps 7a and7b and the design treatments outlined in O.T.M. Book 18 to provide direction for pedestrians, cyclists and motorists within these areas.

4.2.3 Planning & Process

Beyond implementation and design, there needs to be a process in place to move projects from the master planning stages through the next steps needed to proceed with construction and operation. The master plan was conducted in accordance with phases 1 and 2 of the M.C.E.A. and should continue through this process and the necessary next planning steps. This section outlines four strategic actions for considerations by the municipality including:

- A proposed process to guide future implementation of the A.T. network;
- The next steps associated with the M.C.E.A. approach and considerations for different types of projects;
- A proposed approach to ensure that municipal policies include supportive wording and recommendations; and
- Land-use planning considerations related to A.T. facility interaction with various rural land uses.

Defining A.T. in the Development Process

The A.T.P. is not intended to be prescriptive. When proceeding to the detailed design and implementation phase, the necessary next steps will evolve through environmental assessment (as noted above), planning and capital budget processes. Priorities should be identified following the completion and adoption of the master plan and updated every five years. A step-by-step process to guide implementation on a project by project basis has been identified. **Figure 22** illustrates the proposed process which is intended to be used by the Municipality when moving from planning through to design and implementation. **Table 12** summarizes details for each step.

Figure 22 - Step-by-Step Development Process

Table 12 - Summary of Step-by-Step Process for Implementation

Step	Description
STEP I: Preliminary Review	► When an A.T. project is advanced to the planning stage or a new opportunity arises the preliminary review should be undertaken including: o Identification of jurisdictional responsibility; o Comparing timing of the project to master plan priorities; o Assessing whether an A.T. facility can be implemented cost effectively; and o Determining whether feasibility assessment is required.
STEP II: Feasibility Assessment	► If confirmed through Step I a brief feasibility assessment should be undertaken; ► The Feasibility Assessment should consider: o Route Selection Criteria and design principles; o Roadway characteristics – A.A.D.T. Volumes, collision data and commercial vehicle percentage; and o Context sensitive issues through field checks. ► A Preliminary Functional Design should be prepared including cost/benefit analysis, timing, costs and efficiencies achieved, less costly alternatives and their relationship to the overall network and next steps. ► Process may take place in conjunction with a roadway or public works M.C.E.A. or functional design.
STEP III: Detailed Design, Tender & Implementation	► Once approval has been obtained, detailed design should be completed which can be coordinated with primary capital roads projects. ► This should also include the exploration of possible partnerships for cost sharing and should be scheduled into roads programs and a budget allocated to proceed to tender. ► If, through detailed design, the decision is made not to proceed with the project the network should be updated to reflect this change. ► The design of A.T. facilities should be completed in accordance with the design guidelines (separately bound **Technical Appendix A-7**), O.T.M. Book 18 and 15 as well as the Provincial Built Environment Standards. ► Phasing for the master plan should be consistent with the strategy outlined in the A.T. plan with priorities adjusted as necessary based on opportunities that arise, community demand or direction from Municipal Council.
STEP IV: Monitoring	► Once the facility has been constructed the design and use should be monitored to ensure that they function as intended. ► The facility should be properly / regularly maintained and when necessary the facility should be upgraded.

Step	Description
STEP V: Official Plan Updates	► When necessary the transportation components of the O.P. should be updated to reflect the A.T. network or for the network to be included as a schedule in the O.P.

Streamlined Implementation: The M.C.E.A. Approach

The M.C.E.A. process was established in 2010 and has had a number of amendments which allow for more swift approval of A.T. projects. Due to an amendment that was passed in 2014, under the M.C.E.A. process, the construction or operation of sidewalks, bicycle paths or bike lanes designed within the "existing" road right-of-way (where no change to the width or alignment of the roadway is needed) is considered pre-approved. These types of projects fall into the category of Schedule A+ projects. Both schedule A and A+ projects, do not require a full E.A. to be completed but require formal public notification at the commencement of the project.

A "road diet" is the reallocation of existing General Purpose Lanes (G.P.L.) through the application of signage or pavement modifications and does not require physical construction modifications. For new parking or turning lanes, the conversion of a roadway from one-way to two-way and the conversion of a G.P.L. to a High Occupancy Vehicle (H.O.V.) lane, these fall under the requirements of a Schedule A or A+. The Ministry of the Environment, in 2015, issued a Road Diet Clarification to allow municipalities to repurpose a G.P.L. as a cycling lane and would be included as a Schedule A+ project with no financial limitation. The Road Diet Clarification states that:

There may be situations, particularly in densely populated urban areas where the pedestrian volumes may compete with vehicular traffic volumes, where there is a desire to reconstruct a roadway with fewer travel lanes. Reconstruction projects of this nature are frequently referred to as Road Diets and involve the reduction of through lane capacity with the retention of turn lanes at intersections.

Where it can be demonstrated through the completion of a traffic study that sufficient capacity in the roadway will remain following the removal of travel lanes (e.g. the capability of the roadway remains the same), project proponents may determine, through the use of their engineering judgement, that the objective and application of the roadway remain unchanged and the volume, size and capability do not

exceed the minimum municipal standard, or the existing rated capacity, and that on this basis, a road diet may be more appropriately subject to a Schedule A+ process under Activity No. 19.

It can generally be concluded that 4 lane roads with an A.A.D.T. of less than 15,000 may be considered "good candidates" for a road diet consistent with the recommendations found in A.A.S.H.T.O. 2012 and O.T.M. Book 18: Cycling Facilities. For each project identified as part of the A.T. network, the study team reviewed the proposed facility type and the anticipated impacts on the roadway and cost. Using this information, the study team was able to determine the anticipated M.C.E.A. schedule on a project by project basis. The results of this exercise were documented in a summary table which is provided in the separately bound **Technical Appendix A-8**.

The majority of the proposed facility types require no changes to the existing road right-of-way nor is it anticipated that a significant impact will occur to the current traffic volumes. As such, the majority of the routes are either an A or A+ project. There are, however, a couple of projects that have been identified as Schedule B – see **Table 13**. For these projects, due to the current conditions of the roadway e.g. right-of-way width, widening or a reduction in the number of motor vehicle lanes is required to accommodate the proposed facility type. These changes may impact the flow and volume of traffic accommodated on these roadways. As such, an E.A. is required to address potential environmental impacts and to evaluate the feasibility of the proposed improvement

Table 13 – Summary of Schedule B M.C.E.A. Projects

I.D.	Route Segment Name	From	To	Length	Facility Type	M.C.E.A. Schedule
28	Erie Street South	Seacliff Drive West	Park Street	0.36	Bike Lanes	Schedule B
29	Erie Street South	Park Street	Erie Street South bulb out	0.32	Bike Lanes	Schedule B
30	Erie Street South	Countess Street	Seacliff Drive West	0.90	Buffered Bike Lanes	Schedule B

For schedule B projects, the requirements include the completion of Phases 1, 2 and 5 of the M.C.E.A process. Through this master plan, the municipality will have completed Phases 1 and 2. As such, the municipality should move forward with the required steps in Phase 5 of the M.C.E.A process consistent with the proposed phasing identified in the master plan – see **Figure 23.**

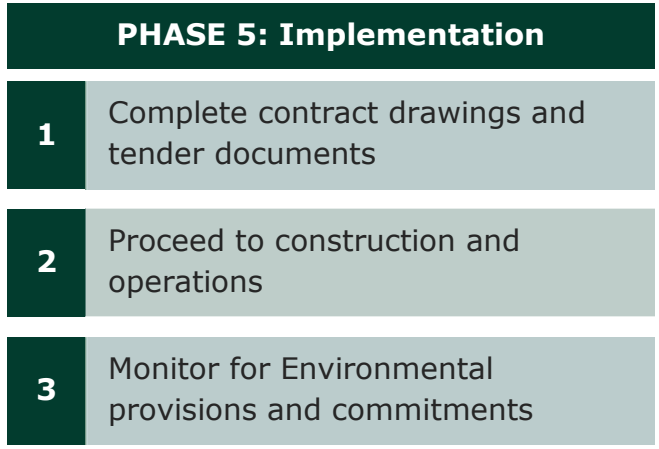

Figure 23 – Overview of Phase 5 Municipal Class E.A. Requirements

Defining Roles & Responsibilities

The implementation of the A.T.P. will require ongoing communication and coordination between the Municipality, the County and its partners. Potential partners that the Municipality is encouraged to coordinate and collaborate with are identified in **section 4.2.4**. A selection of the primary partners will be involved in the ongoing planning and implementation of the master plan. The roles and responsibilities for these groups need to be defined through the master plan so the preferred approach to communication and coordination can be embedded into future decision making processes.

Coordinated and effective decision making can be achieved through the use of an efficient reporting and implementation structure that is well-managed and involves relevant decision makers. The study team reviewed the Municipality and County's current reporting structure and process and have identified the following structure for the management and implementation of the A.T.P. The structure is illustrated in **Figure 24**. There are three key areas of contribution that have been identified:

- **Day-to-day decision makers:** provide input on the implementation of all aspects of the A.T. network
- **Input on key connections:** provide input on the implementation of select aspects of the network for routes found under their jurisdiction
- **Agency input and programming / outreach support:** provide input on a project by project basis as needed with a focus on supporting and partnering with the Municipality for specific programs and initiatives.

There are some assumptions that have been generated related to the roles and responsibilities identified. These assumptions are to be reviewed by Leamington and its partners and adopted by staff to inform the implementation of the network and supportive recommendations:

- Staff from the Municipality's Infrastructure Services Department are proposed to lead the implementation of the master plan network and will be responsible for coordinating involvement with other municipal staff from other departments;
- Staff from the County's Roads Department will continue to lead the implementation of the C.W.A.T.S. network and will coordinate with other County staff and departments as needed;
- The Municipality will work with the County and the C.W.A.T.S. Steering Committee to discuss connectivity and continuity between the networks and identify network and programming priorities and initiatives;

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- The C.W.A.T.S. Steering Committee and the Municipal Infrastructure Services department will engage specific land-owners and stakeholders on a project by project basis based on jurisdiction and directly impacted partners; and
- The agencies / groups identified to help support programming and outreach are not inclusive of all groups. The Municipality and County should work with these groups and identify other potential partners as the plan is implemented.

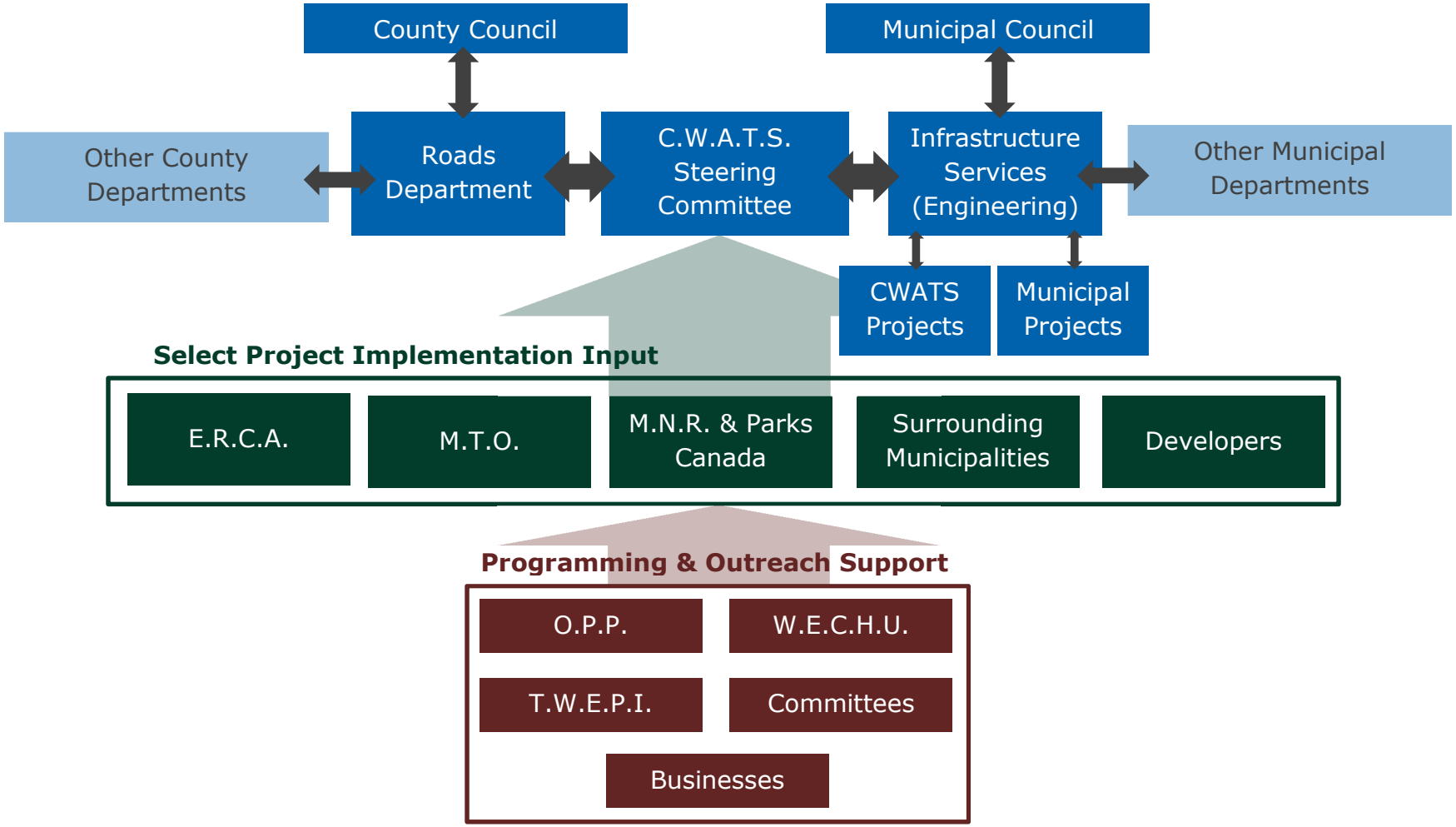

Figure 24 – Proposed Leamington A.T.P. Roles & Responsibilities

Revising & Updating Supportive Policies

Policies and plans are the basis from which future change is achieved. The proposed A.T. routes and recommendations identified in the master plan should be further reinforced by local municipal policies. As noted in the background information summary there is already a significant amount of support for future active transportation and recreation improvements at the Provincial and County level. The municipality should ensure that their policies are in-line with these policies and is consistent with the goals and objectives set-out by the active transportation master plan.

The Official Plan is the Municipality overarching guiding document for future community development. It is meant to be a visionary document which sets out future planning objectives in all areas of growth municipality-wide. There are existing A.T. supportive statements in the current Official Plan, however, due to the time at which the O.P. was last updated, it reflects the municipality's Trails Strategic Development Plan and does not reflect the prioritization of other on-road A.T. facilities.

The policies included in the Municipality's Official Plan should reflect the priorities and objectives related to active transportation and recreation which it is next updated. When the Municipality next undertakes an update to their O.P., the recommendations contained in the A.T.P. should be reviewed and incorporated where appropriate. Similar to the approach taken in the current O.P. the municipality is encouraged to include the A.T. network as a schedule in the O.P. document to reinforce the integration of all aspects of transportation and land-use planning. In addition, if the Municipality explores the development of other planning policies e.g. a strategic plan or makes revisions to their development process, the A.T.P. should be referenced and consistent processes and policies should be incorporated where appropriate.

Land-use & Facility Types

As discussed in earlier sections of the A.T.P. the municipality is made up of different geographic areas which each contain their own set of land-uses. When designing A.T. facilities it is important to understand the different land uses and how they influence the planning and design of routes and facility types. In the Municipality's Official Plan, Schedule 'A', specific land uses are identified which determine how future growth will occur. The different land uses identified in the Municipality of Leamington include:

- **Employment lands:** found predominantly within the urban and semi-urban areas of the municipality and separated into six different commercial districts, industrial areas and business parks.
- **Natural Features and areas:** including provincially significant wetlands and natural environment areas.
- **Other Land uses:** including agricultural, residential, rural residential, hamlet, recreational commercial and open space recreational.

The majority of the primary / spine routes were identified to provide connectivity to and through the commercial districts and industrial areas and out to hamlets and rural residential areas. The secondary system provides access to and through many of the residential areas and some of the business parks. There are, however, other land uses where the implementation of active transportation and recreation are more sensitive, including provincially significant wetlands (P.S.W.) and agricultural areas. For the provincially significant wetlands, the proposed alignment of the majority of the routes follows that of the roadway. There is, however, one proposed trail facility identified in a P.S.W. which will need to be investigated in more detail to ensure that the design is consistent with permitted uses e.g. passive recreation / open space use.

The municipality will need to work with the Ministry of Natural Resources to discuss future development opportunities and to ensure that the appropriate processes and protocols are followed to ensure that these connections are approved and implemented. For those routes that are proposed within agricultural lands, concern has been expressed of the potential conflict which can arise between trail users and agricultural uses e.g. spraying, agricultural vehicles on roadways / A.T. routes, particularly during spring planting and fall harvest seasons. As the A.T. network is implemented in and around these lands, the Municipality and its partners should develop and implement consistent signage and education programs to inform all trail and A.T. users that agricultural activities occur in adjacent areas. Additional design considerations should also be explored to delineate the trail space including but not limited to fencing and regular trail crossings for farming operations.

Planning for Future Routes

The A.T.P. is not only a design and implementation tool but is also meant to provide the Municipality with recommendations and strategies that address next steps in the planning process. Prior to the implementation of the network, the municipality must ensure that the land is under their jurisdiction or within their ownership. If this is not the case, the municipality must, at the very least, ensure that an agreement is in place to ensure that they can proceed.

The majority of the A.T. routes proposed as part of the Leamington A.T. network are identified on lands that are found under the municipality's ownership. For these routes, the municipality is able to proceed without additional agreements. Though the majority of the routes are found on municipality owned lands, there are some routes which are proposed on lands that are either under the County's jurisdiction, on County Roads (e.g. County Road 34), under the Province's jurisdiction, on highways (e.g. Highway 77) and new development areas (e.g. Golfview Estates Subdivision). New development areas or secondary plan areas will ultimately become part of the Municipality's land base once development occurs.

For these routes, the Municipality should work with the County, province and local developers to ensure that the vision / proposed routes identified in the master plan are implemented. As needed the municipality should work with these partners and their processes (e.g. County and province) to ensure that implementation is achieved.

There are also other routes that have been identified on privately owned lands not found under the jurisdiction of a public entity nor has the municipality engaged in discussions with these owners. These are identified as "desired connections" as part of the network mapping and are illustrated using a dotted red line (**Maps 5a** and **5b**). There are still a number of steps, including future land acquisition and securement or coordination with the land owners, to move these projects forward. The Municipality is encouraged to explore / plan for these connections in the future, should the land owner(s) be willing to enter into an easement and agreement. In such cases, permission for access or a strategy to ensure ownership will be required in advance of further planning, design and construction.

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Planning & Operation Recommendations

R27 **Priorities should be identified following the completion and adoption of the master plan and updated every five years.**

R28 **The step-by-step implementation process outlined in Figure 22 and described in detail in Table 12 is the process that is intended to be used by the Municipality when moving from planning through to design and implementation. Leamington should adopt this process and integrate it into their planning and development process.**

R29 **For Schedule B projects as identified in Table 13 of the A.T.P., Leamington should refer to the phasing plan and should move forward with the required steps, consistent with Phase 5 of the M.C.E.A. process (see Figure 23).**

R30 **Leamington should review the proposed roles and responsibilities identified in Figure 24 and should adopt the reporting structure as the preferred method for decision making when implementing the A.T.P.**

R31 **The assumptions identified in the A.T.P. related to implementation roles and are to be reviewed by the Municipality and its partners and adopted by staff to inform the implementation of the network and supportive recommendations.**

R32 **When the Municipality next undertakes an update to their O.P., the recommendations contained in the A.T.P. should be reviewed and incorporated where appropriate.**

R33 **When and if Leamington develops other planning policies e.g. a strategic plan or makes revisions to the development process the policies, processes and recommendations identified in the A.T.P. should be referenced and consistent processes and policies should be incorporated where appropriate.**

R34 **Leamington should work with the Ministry of Natural Resources to discuss future development opportunities and to ensure that the appropriate processes and protocols are followed to ensure that these connections are approved and implemented.**

R35 **As the A.T. network is implemented adjacent to agricultural lands, Leamington and its partners should develop and implement consistent signage and education programs to inform all trail and A.T. users that agricultural activities occur in adjacent areas.**

R36 **Prior to the implementation of the network, Leamington must ensure lands are under their jurisdiction or within their ownership. If this is not the case, the municipality must ensure that an agreement is in place to ensure that they can proceed.**

R37 **Leamington is encouraged to explore / plan for desired connection. The municipality should work with land owner(s) to enter into an easement and agreement in advance of further planning, design and construction.**

4.2.4 Promotion & Outreach

The use of A.T. facilities and the promotion of walking and cycling as a viable mode of transportation requires both infrastructure as well as an approach to address education, partnerships, encouragement, programming and outreach. Through this section five strategies have been identified to address this including:

- An approach to move forward with future walking and cycling education to improve awareness;
- A strategy to work with local stakeholder including recommended partners;
- Opportunities to enhance Leamington as a cycling and walking tourism destination;
- Strategies to encourage residents and visitors to walk and cycle when in the community; and
- Suggested next steps with the aim of achieving bicycle friendly community status.

Active Transportation Education

Residents need to be educated about walking and cycling skills, routes, and related information to give them the confidence and support that they need to engage in active forms of transportation and recreation. There are many different types of education and awareness programs related to safe and enjoyable walking and cycling. Cycling education and awareness is also heavily promoted as an important component of well-used network of facilities through the Province's #CycleON Action Plan.

"**Action 1:** Design healthy, active and prosperous communities by: Developing an education program for provincial and municipal staff on cycling planning (2015)"

"**Action 4:** promoting cycling awareness and behavioural shifts by: delivering cycling-related education programs and collaborating on local cycling initiatives through local public health units."

The Municipality should explore the development of education and awareness programs related to walking and cycling that provide users with information on how to safely use facilities and how to confidently operate as a cyclist or pedestrian. A couple of examples of education programs that could be explored by the Municipality include:

- **Bike RODEO** – for younger children which includes basic information about essential bicycle handling and traffic skills presented in a fun and enjoyable atmosphere. Introductory information such as helmet fitting, bicycle maintenance, signalling, gears, etc. are provided.

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- **Commuter Cycling Safety** – gaining a better knowledge of traffic theory as well as different cycling techniques that improve cycling confidence and provide assertive cycling skills
- **Rural Cycling for Youth** – designed for youth, these lessons provide teenagers with riding experience and safe cycling lessons in rural areas including but not limited emergency manoeuvres
- **Share the Road Safety Campaign –** Preparing education materials and supportive documents that provide awareness about how motorists should Share the Road with cyclists and vice versa
- **Safe Routes to School –**establishing a set of routes and a coordinated program to allow children of various ages to walk to school. Routes are delineated using signage / wayfinding and are reinforced by educational materials at school.

The County should explore partnership opportunities with local agencies and organizations e.g. Windsor Essex County Health Unit, Greater Essex County District School Board, Windsor-Essex Catholic District School Board, Ontario Provincial Police etc. to select preferred education and awareness courses and develop new or enhance existing programs on an annual basis as the network is implemented.

Establishing Partnerships

Implementation will require coordination between the Municipality of Leamington and its partners. The successful implementation of various education, outreach and promotional programs will need to be driven by partnerships to ensure that all aspects of development and implementation are achieved. Of the partners that the Municipality is able to work with, there are some that will likely play a more prominent role in the design, development and implementation of supportive programs. As such, the proposed municipal partners have been organized by the level of influence and involvement in future decision making.

Two categories have been identified - **infrastructure** and **programming and outreach** partners. Some of the partners may be involved as a regulatory or approval body and others may be responsible for providing input based on context sensitive issues. **Table 14** summarizes the potential primary and secondary partners that have been identified to help with the implementation of the A.T.P. The proposed partners are intended to be reviewed and revised as necessary based on input from Municipal and County staff.

Table 14 - Summary of Potential Partners to Facilitate Implementation

	Infrastructure Partners	Programming & Outreach Partners
Description	Responsible for reviewing and providing input to projects that directly or indirectly impact lands under their jurisdiction.	Engaged on an as needed basis to help develop and implement A.T. programs and initiatives. Some may wish to be informed and provide input on select linkages at the concept development level.
Partners	► Municipality of Leamington ► County of Essex ► Surrounding Municipalities (e.g. Town of Kingsville, Town of Lakeshore and Municipality of Chatham-Kent) ► Conservation Authorities (e.g. Essex Region Conservation Authority) ► School Boards ► Ministry of Transportation Ontario ► Trans Canada Trail ► Waterfront Trail ► First Nation Groups	► Ontario Provincial Police ► Parks Canada ► Provincial Parks ► Windsor Essex County Health Unit ► Ministry of the Environment and Climate Change ► Ministry of Natural Environment ► Tourism Windsor Essex Pelee Island ► Local Businesses ► Interest Groups ► Committees to Council ► Public Representatives

Cycling & Trail Tourism

Investing in active transportation and recreation has the potential to generate numerous economic benefits. The A.T. network that has been developed and the key community destinations which it will connect to has been identified with the aim of increasing business activity, opportunities for future employment and the opportunity for funding and grant support from the Provincial and Federal governments.

A report published by Ontario by Bike and Transportation Options – From Niche to Now: Cycle Tourism in Ontario – defines a cycle tourist as someone who has travelled 40+ km from their place of residence and is including cycling as their main trip purpose or as a secondary activity on their trip (February 2015). The report also indicates that 67% of cyclists participating in events took part in other non-cycling activities including visits to museums, breweries, wineries and engaged in outdoor activities. Research shows that there is significant economic and tourism potential attributed to cycle tourism in Ontario including:

- 69% of cycle tourists spend over $50 per night on accommodations;
- 81% of cycle tourists spend over $26 of food and beverage per day; and
- 95% of cycle tourists spend 25% of the cycling vacation budget on tourist activities.

Cycle Tourism is a strategic objective for the Municipality of Leamington as well as the County of Essex and its partners. The potential for inter-regional partnerships and opportunities for future growth and development are significant highlighting key tourist destinations such as Point Pelee National Park (an existing active transportation destination) as well as other natural and cultural significant points of interest. Many of the short-term projects / infrastructure actions have been selected because of the direct connections provided to surrounding municipalities – facilitating regional connectivity and tourism; local tourism destinations – such as waterfronts and parks; and regional tourist destinations – such as wineries, breweries and local events.

These attractions and destinations are consistent with the Southwest Ontario Tourism Corporation (S.W.O.T.C.)'s strategic market sectors which makes them a logical partner for future growth. The S.W.O.T.C. works with several Destination Marketing organizations and tourism industries across Southwestern Ontario to promote this area as a prosperous tourism region. Leamington is encouraged to partner with the Southwest Ontario Tourism Corporation (S.W.O.T.C.), the provincially mandated Regional

Tourism Organization for Southwestern Ontario to increase active transportation and recreation tourism in Leamington.

Encouraging Increased Activity

Increasing A.T. within the Municipality can typically be achieved by developing and implementing programs and initiatives that encourage people to increase their levels of walking and cycling activity or to participate for the first time. The goal of developing encouragement programs is to overcome barriers that limit the reach of traditional awareness campaigns. For the purposes of the Leamington A.T.P., encouragement programs are intended to specifically influence three areas:

- Youth walking and cycling to school;
- Local residents walking and cycling to work; and
- Local residents and visitors walking and cycling for recreation.

Similar to the educational programs, there are a number of different encouragement techniques that could be explored for the municipality to improve / increase numbers of individuals walking and cycling in these three categories. Encouragement programs should be explored by the Municipality in partnership with local stakeholders, interest groups and public agencies including but not limited to:

- **Walk at Work Programs** – partner with large employers within the municipality to design and promote walking routes within the community to encourage people to walk or bike to work or as a group during work hours.
- **Mileage Clubs** – use online or community-based programs where people are encouraged to walk or cycle and their kms are tracked and used to reach mileage goals either as a community, school or employer. This can also be done on an individual basis, however, there should be a clear goal and possible incentives to encourage participation.
- **Providing Maps & Supportive Products** – provide understandable and clear information about walking and cycling routes, facilities, events and programs at key destinations throughout the community and make them available (free of cost) to local employers, schools and businesses.
- **Car Free Day** – identify a day throughout the year where people are encouraged not to drive their cars and use an alternate mode. The Municipality can explore shutting down major streets on the weekend and promoting the experience as an event (e.g. within the downtown commercial area).

- **Bike Corrals at Local Events** – At local events, the municipality could provide preferential parking for cyclists in the form of a bike corral where people can safely and securely leave their bicycle for the day in an easily accessible location.

Establishing a Bicycle Friendly Community

As a means of further promoting increased active transportation and recreation as well as realizing funding and partnership opportunities, the Municipality should explore applying to become a bicycle friendly community. The program was launched by the Share the Road Cycling Coalition in 2010 and is an award recognition program for Ontario based municipalities. The following initial the steps would help Leamington determine if bicycle friendly community status should be pursued:

- **Step 1: Collect information needed for the application** – application check list can be accessed using this link: http://www.sharetheroad.ca/files/BFC_Checklist.pdf
- **Step 2: Review the application to see how bicycle-friendly Leamington is today** - including but not limited to the existence of an A.T. related committee e.g. the C.W.A.T.S. Committee. The online application form can be accessed online and all complete applications must be submitted online
- **Step 3: Plan a strategy for pitching bicycle-friendly improvements** – depending on the level of political involvement and community enthusiasm the approach may vary. The Municipality should identify local Council members or stakeholders who will help to promote cycling in the community and pursue cycling related initiatives
- **Step 4: Gather support** – inquire about a letter of recommendation from an organization that might support cycling within the community e.g. a local bike club, environmental group, businesses or corporate sponsor
- **Step 5: Making a decision** – the municipality should review the information gathered and determine the most appropriate next step i.e. whether to explore applying to become a bicycle friendly community

There are a number of other steps involved in the suggested process, however, the Municipality is encouraged to explore these initial steps to see if receiving bicycle friendly community status is an option. Applicants are judged in five key areas, the majority of which have been identified / highlighted in this master plan - engineering, education, encouragement, enforcement and evaluation. Applications can be submitted by a Municipal staff member or someone working collaboratively with municipal staff with a letter of support from the municipality. There are a total of 24 communities within Ontario who have already received

recognition for their efforts in the promotion of cycling. Many of these communities have been able to leverage this for future funding as well as commitment from local businesses and partners. The Municipality is well positioned to be another Bicycle Friendly Community and should explore these steps to work towards achieving this status.

Safe Routes to School

Research indicates that 42% of children are driven to school despite the fact that the majority want the opportunity to walk and cycle more. The Active and Safe Routes to School program (www.saferoutestoschool.ca) provides support for communities that are looking to establish greater community involvement in the design and use of walking and cycling routes for children. There are a number of programs that can be initiated to help encourage this:

- School travel planning toolkit;
- Walk/wheel on Wednesdays;
- Walking school buses;
- IWALK Club; and
- Idle Free Zones.

In 2012, the Windsor Essex County Health Unit launched its Active & Safe Routes to School (A.S.R.T.S.) program to promote and encourage students to engage in active transportation and recreation.

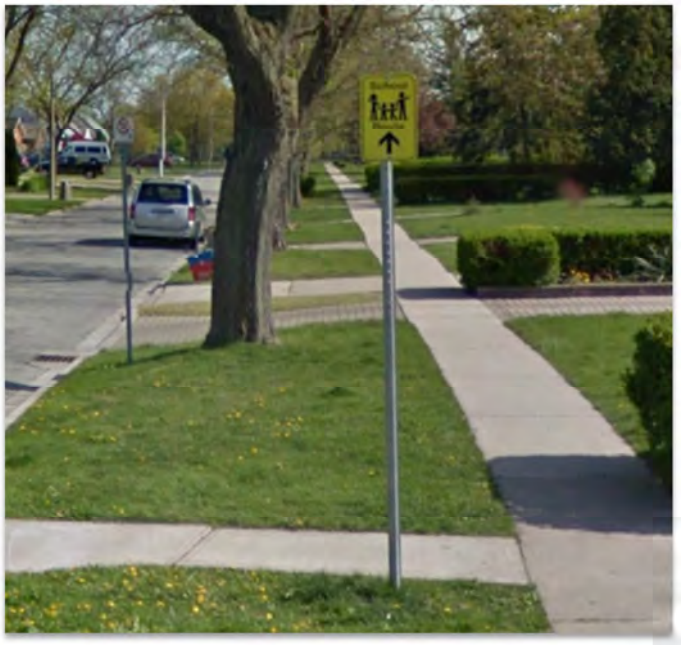

Figure 25 – Signed Safe Route to School for Princess Elizabeth Public School, Windsor

The A.S.R.T.S. program, with funding from The Heart and Stroke Foundation, provides partnering schools and municipalities with signs to mark designated walking routes along local roadways. **Figure 25** illustrates an example of a signed school route along a local roadway in Windsor, ON.

The Municipality of Leamington in partnership with the Windsor-Essex County Health Unit, the Greater Essex County District School Board and the Windsor-Essex Catholic District School Board should explore initiatives, such as the A.S.R.T.S. program, to educate and promote walking and cycling to parents and students in

Leamington. As part of the development of the A.T. network for Leamington, the project team mapped and reviewed the location of each school and consulted with representatives from the local bussing group. In doing so, walking and cycling routes and facilities were identified that provide direct connections from local neighbourhoods to the local schools. The municipality should continue to work with school boards and local transportation providers to ensure that there is support for and a commitment to increasing youth activity.

Promotion & Outreach Recommendations

R38 **The Municipality of Leamington in partnership with the Windsor-Essex County Health Unit, the Greater Essex County District School Board and the Windsor-Essex Catholic District School Board should explore initiatives, such as the A.S.R.T.S. program, to educate and promote walking and cycling to parents and students in Leamington.**

R39 **Leamington should continue to work with school boards and local transportation providers to ensure that there is support for and a commitment to increasing youth activity.**

R40 **Leamington should explore the development of education and awareness programs related to walking and cycling that provide users with information on how to safely use facilities and how to confidently operate as a cyclist or pedestrian (see suggested programs in Section 4.2.4).**

R41 **Leamington should explore partnership opportunities with local agencies and organizations e.g. Windsor Essex County Health Unit, Greater Essex County District School Board, Windsor-Essex Catholic District School Board, Ontario Provincial Police etc. to select preferred education and awareness courses and develop new or enhance existing programs on an annual basis as the network is implemented.**

R42 **Leamington should review the proposed partners identified in Table 14 and the reporting structure identified in Figure 24 to determine those partners who would be involved in the implementation of the A.T. network and supportive programs / initiatives.**

R43 **Leamington is encouraged to partner with the Southwest Ontario Tourism Corporation (S.W.O.T.C.), the provincially mandated Regional Tourism Organization for Southwestern Ontario to increase active transportation and recreation tourism in the Municipality.**

R44 **Leamington should explore the development of initiatives and programs that aim to encourage people use engage in active transportation and recreation more frequently and should do so through partnerships with the programming and outreach partners identified in Table 14.**

R45 **Leamington should review the steps outlined in the A.T.P. to become a bicycle friendly community and should determine whether to move forward with an application.**

4.3 Refining: Preserving & Enhancing the Network

4.3.1 Operations & Maintenance Considerations

The A.T.P. is intended to be an implementation and operations guide. As the municipality moves forward with next steps, it should be acknowledged and funding should be allocated not only for the design and construction of each project but also for the operation and maintenance of those linkages to ensure elements of the network are sustained. Operation costs that should be considered by the municipality as they proceed with the implementation of the A.T. network include:

- Establishing an on-going funding program for the implementation of the plan;
- Preparing annual progress reports to Council regarding implementation;
- Working with partners (Conservation Authorities, County, local municipalities, Windsor Essex County Public Health, etc.) to develop and delivery promotion and outreach programs; and
- Maintaining facilities in a good state of repair.

At full build-out, the network will include 123.1km of on-road (including in-boulevard) facilities and approximately 21.4km of off-road facilities. When developing the A.T.P., maintenance was taken into consideration but an absolute dollar value by location and facility type was not calculated as the budget will need to grow incrementally to reflect the growth of the A.T. network. As each new section is implemented, staff should provide a summary of potential impacts to the operations budget. The dollar amount should be calculated and included in updated budgeting information for the year.

Maintenance costs for on-road facilities are estimated at $1,000.00 to $3,000.00 per km per year depending on the facility types, proportion of urban vs. rural routes. In addition economies of scale can also be gained from incorporating facility maintenance into current road maintenance projects and building on current

maintenance practices. Annual maintenance can include pavement markings and stencil reapplication, sign replacement, replacement of sharrows or bike lanes on local roads, minor asphalt repair, sweeping, snow plowing and replacement of older style catch basin grates with bicycle friendly grates;

Maintenance of mature off-road multi-use trails in urban areas particularly in park spaces and greenways which can range in maintenance cost from $2,000.00 to $5,000.00 per km per year depending on the level of service standard set out by the Municipality, County, etc. and trail conditions.

Maintenance of rural off-road trails (e.g. rail-trails) can be considerably lower. The maintenance of off-road trails typically includes drainage and storm channel maintenance, sweeping, clearing of debris, trash removal, weed control and vegetation management, mowing of grass along shoulders, minor surface repairs, repairs to trail fixtures and staging areas and other general repairs.

R46 **Leamington should explore the identification of a funding program to identify funds on an annual basis – as part of the capital budgeting process – to allocate funds for the implementation of the A.T.P.**

R47 **Municipal staff should prepare an annual progress report to update Council and other municipal departments on the progress of the A.T.P. implementation and to prioritize future implementation and improvements.**

R47 **Leamington should define a preferred standard of maintenance for both walking and cycling facilities based on current design guidelines and best practices and should allocate funds on an annual basis to support this.**

4.3.2 Seasonal Considerations

Although many pedestrians and cyclists are active throughout the year, the number of pedestrians and cyclists tends to decrease throughout the winter months. However, given that Leamington has the second warmest climate in Canada, there is significant opportunity to implement measures with the goal of maintaining current mode splits and walking / cycling rates on a year round basis.

Leamington's Winter Control Level of Service Standards provides a general guide for snow clearing and removal on Municipal Roads. **Table 15** summarizes Leamington's snow removal program. It is important to

note that the level of service standards are only for local roadways and do not address winter maintenance of County roads found within the Municipality.

Table 15 - Municipality of Leamington Winter Control Level of Service Standards

Priority	Roads
Immediate Response	► Major collector routes, hospital routes, ambulance routes, senior homes and bus routes will receive salting and plowing of roads to bare pavement ► Hard surface paved rural roads will at minimum have stop bars, curves and bends salted
Secondary Response	► All hard surface rural roads are plowed ► Local streets and residential subdivisions will receive plowing and salting ► Gravel surface rural roads will at minimum have stop bars, curves and bends salted. If appropriate, the whole road will be plowed.

Using the descriptions noted for the immediate and secondary response routes, there are some A.T. routes that are found within the road right-of-way. The facilities found on these roadways should be defined as part of the "winter system network" and should be promoted as such.

There may, however, be other primary A.T. routes that are not found as part of the immediate or secondary response system. For primary routes that are identified within the road right-of-way, the municipality could include them as part of the secondary response system to ensure that connectivity is facilitated. For off-road, multi-use facilities such as the Chrysler Greenway, there is limited maintenance as they convert to Cross Country Ski and Snowshoe Routes. For future extensions of the system or the new development of off-road multi-use trail linkages, the Municipality must define the expected maintenance levels and frequency prior to opening the facility for public use. Although it may not be feasible or necessary, consideration should be given to clearing trails that provide key connections or links to "primary" segments of the network.

In addition to the on-road maintenance provided, the Municipality's Winter Control Level of Service Standards also provides provisions for the removal and clearing of snow on municipal sidewalks. The intent is to complete snow removal and clearing within 24 hours of snowfall ending. The following are provisions for sidewalks identified by the Municipality to be completed in order:

- Salting and plowing of the downtown core to commence before regular business hours;
- Salting and plowing of major collectors; and
- Residential subdivisions.

Following the end of winter, the use of cycling facilities can be delayed due to accumulated snow and or debris that may still be present in locations where the sun does not reach until later in the season. Should a small section of the network be blocked by snow and debris accumulation, it could affect an entire area. Several weeks of system use could be added to the year with well-timed snow and debris cleaning throughout the year.

It is important to note that all maintenance practices and protocols should be clearly documented. The documentation – in a report to Council or staff – should be submitted on an annual basis and used to adapt / improve maintenance practices as additional A.T. facilities are implemented.

R49 **Leamington's Winter Control Level of Service Standards (outlined in Table 15) and their impact on the maintenance of A.T. facilities should be reviewed a general guide for snow clearing and removal on Municipal Roads should be established.**

R50 **Municipal staff should prepare and submit a summary report on an annual basis to adapt and improve maintenance practices as additional A.T. infrastructure is implemented.**

4.3.3 Risk Management & Liability

When considering route design, implementation and maintenance another key consideration and aspect of the network to address is liability. On-road facilities typically fall into the same liability category as roadways and sidewalks. This means that the Municipality would be partially liable if the facility is improperly designed, constructed or maintained. For off-road facilities such as trails, as they are typically separated from roadways, those that permit cycling may still require the same treatment. This is the case due to the fact that a bicycle is considered a vehicle under the Highway Traffic Act and where permitted, the conditions should be similar. Because the courts could make this interpretation, cycling facilities would be considered under many of the same basic immunities as other Highways. This further reinforces the importance of adhering to provincial and national design guidelines and standards as they provide the greatest legal protection.

In addition to the interpretation noted above, the following are some other risk and liability consideration related to on and off-road active transportation facility design that the Municipality should review and incorporate into their day-to-day practices:

- Improve the physical environment, increase public awareness of the rights and obligations of users and improve access to educational programs;
- Select, design and designate facilities in compliance with the highest prevailing standards. The design of on-road cycling facilities should be consistent with O.T.M. Book 18. Regulatory signs, consistent with the O.T.M. Book 15, should be used;
- Design concepts should comply with all applicable laws and regulations (e.g. Ontario Highway Traffic Act, current Municipal and County by-laws, etc.);
- Conform to acceptable standards.
- Monitor on and off-road facilities through regular patrols and document the physical conditions and operations. All reports of hazardous conditions should be promptly and thoroughly investigated. If hazards cannot be removed they should be isolated with a barrier or notified by clear warning signs;
- Written records of all monitoring and maintenance activities should be documented and maintained;
- Avoid using description such as “safe” or “safer” for on or off-road routes when promoting use. Industry practices suggest that users prefer to assess their own capabilities or level of comfort;
- Maintain proper insurance coverage as a safeguard against having to draw payment for damages from the public treasury;

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- When considering new trail or cycling routes or proposing modifications to the approved network, document the assessment tool used to select the preferred facility similar to the one presented in O.T.M. Book 18 and the separately bound **Technical Appendix A-7** of the A.T.P.; and
- Consider the use and application of the principles outlined in the Centre for Sustainable Transportation's Child and Youth Friendly Land Use and Transport Planning Guidelines (Ontario) for unique safety and transportation needs of children and youth.

R51 **When selecting, designing and designating facilities, it should be done so in compliance with the highest prevailing standards e.g. O.T.M. Book 18.**

R52 **When considering new trail or cycling routes or proposing modifications to the approved network, document the assessment tool used to select the preferred facility similar to the one presented in O.T.M. Book 18 and the separately bound Technical Appendix A-7 of the A.T.P.**

4.3.4 Monitoring & Evaluating the Success of the A.T.P.

Implementation does not end with construction. Collecting data to evaluate user behaviour will assist in assessing the effectiveness and contribution of facilities and programs in achieving the A.T. vision and objectives for Leamington.

The development and application of performance measures can effectively examine user performance, levels of use and other factors for A.T. facilities that are implemented on an annual basis. Data collected from these reviews could help to inform decision making and may also contribute to the identification of future priorities and budget allocation.

Potential performance measures have been identified based on the following key areas of focus – **engineering, education** and **encouragement** and **enforcement**.

Engineering:

- **Existing Use –** the assessment of the number of different users, proximity to A.T. routes, demographics of A.T. users and duration of typical pedestrian / cycling trip
- **Network Provisions –** an assessment of the amount of the network that has been built and the provision of typical end-of-trip facilities or staging areas
- **Investment –** the amount of municipal funds made available for the implementation of the A.T.P.
- **Comfort and Convenience –** the number of A.T. facilities on Municipal roadways and County roadways that are plowed as well as the number of Municipal destinations found along the proposed route(s)

Education & Encouragement:

- **Partnership and Recognition –** local events and businesses that help to support A.T. use and external recognition for the Municipality commitment (e.g. Cycling Friendly Community status)
- **Outreach and Provision –** the amount of educational materials that are developed and provided such as maps, newsletters, educational brochures, etc.

- **Public Engagement –** a range of opportunities for the public to be involved e.g. events, educational programs that have been implemented (at the Municipal or County level), the amount of media coverage generated for A.T. facilities / experiences, the number of views on local or County webpages that promote A.T., the amount of community support from stakeholders and the amount of tourism that is generated and the amount that they spend when they visit.

Enforcement:

- **Safety –** the overall safety of cyclists assessed by the number of collisions and injuries, the safety of trail users assessed by reported incidents and the use of a Share the Road campaign to promote safe use on facilities in the community.
- **Citations and Ticketing –** involves the police service and how many citations or positive reinforcement campaigns they undertake to enforce safe use of the facilities or to recognize positive community impacts.

The proposed performance measures should be reviewed, revised as necessary and adopted by the Municipality to gather input following the initial implementation of infrastructure and programming. Should the Municipality move forward with data collection and analysis it is recommended that they establish a process where data / information is collected every two to three years at a maximum of every 5 years.

The collection of data should occur at the same time / season each year to ensure consistency of characteristics. The results that are gathered should be reported to Municipal and County Councils as part of an annual information report to provide updates regarding the implementation of the A.T. plan and the progress in achieving Municipal goals and objectives.

R53 **The proposed performance measures should be reviewed, revised as necessary and adopted by the Municipality to gather input following the initial implementation of infrastructure and programming.**

R54 **Leamington should establish a process where data / information is collected every two to three years to measure the performance of infrastructure, policies and programs.**

R55 **Data collection should occur at the same time / season each year to ensure consistency with an annual report prepared to Council documenting the results generated and the status of implementation.**

4.4 Investing: A Funding Strategy

Research shows that investing in A.T. can lead to a significant improvement in the quality of life of residents, economic growth and environmental sustainability. As these benefits are realized in the Municipality of Leamington, it may help to justify future investments made by municipal Council.

Costs associated with the implementation of an A.T. network are not only limited to the monies associated with the planning, design and construction of infrastructure. There are also costs associated with the operation and maintenance of infrastructure as well as local promotion, outreach and education geared towards making Leamington a more safe and comfortable place to walk and cycle.

The information provided in this section is intended to be used as a tool by Municipal Staff to determine how funds – associated with all aspects of the A.T. network – are to be allocated. In turn, it will be easier and less time consuming for Municipal staff to determine capital and operating budgets annually.

4.4.1 How Costs were Estimated

The proposed A.T. network was cost was developed by applying unit costs from recent construction projects throughout Ontario as well as accepted costing used for the C.W.A.T.S. network and past A.T. infrastructure assignments completed by the Municipality.

When developing the network costing, the project team assumed typical or normal / average conditions for construction and also takes into consideration various context (e.g. urban and rural areas, various surface types, retrofitting vs. new build). The costing does not include:

- Property acquisition, utility relocation, driveway / entrance, restorations, permits or approvals for construction;
- Annual inflation (including increased cost of labour, materials, fuel, etc.);
- Professional services and / or staff time for detailed design; and
- Applicable taxes.

A summary of unit cost assumptions is presented in the separately bound **Technical Appendix B-1**. The unit costing spreadsheet is intended to be used as a tool by the Municipality to inform future budgeting and cost allocation. As needed, the spreadsheets should be updated to reflect any changes to costing to ensure that the information is applicable over the course of the network's implementation. The information is presented in excel which can be integrated into the Municipality's existing capital costing and tracking tools for municipal infrastructure.

4.4.2 What is the Estimated Network Cost?

Based on the assumptions noted above, network costing was developed for the Municipal-wide A.T. network for Leamington. Costing reflects full build-out of the network and is broken down by phase. A summary of the cost of implementation over phase 1 (short-term) through 3 (long-term) are provided in **Tables 16a** and **16b**.

Table 16a summarizes the estimated cost for the A.T. network that includes the currently approved C.W.A.T.S. facility types on C.W.A.T.S. routes in the Municipality of Leamington (e.g. routes and facility types illustrated in **Maps 4a** and **4b**).

Table 16b summarizes the estimated cost for the A.T. network including proposed revisions to C.W.A.T.S. approved facility types (e.g. routes and facility types illustrated in **Maps 4c** and **4d)**.

Table 16a - Summary of Network Costs for A.T. Network Including Approved C.W.A.T.S. Facility Types

	Phase 1 (0 – 5 years)		Phase 2 (6 – 10 years)		Phase 3 (10+ years)				Total
	M.L.	C.O.E.	M.L.	C.O.E.	M.L.	C.O.E.	M.T.O.	E.R.C.A.	
Total Estimated Cost[1]	$2,239,684	$1,016,151	$1,062,280	$471,258	$2,607,480	$761,200	$1,053,800	$184,000	**$9,395,853**
% of Total Cost	24%	11%	11%	5%	28%	8%	11%	2%	**100%**

M.L. – Municipality of Leamington
C.O.E. – County of Essex
M.T.O. – Ministry of Transportation Ontario
E.R.C.A. – Essex Region Conservation Authority

Note:

1. Cost estimates are based unit prices included in C.W.A.T.S., C.W.A.T.S. Leamington 11A, B, C County Road 20 Feasibility Study and additional input provided by Municipal and County staff.

Table 16b- Summary of Network Costs for A.T. Network Including Proposed Revisions to Approved C.W.A.T.S. Facility Types

	Phase 1 (0 – 5 years)		Phase 2 (6 – 10 years)		Phase 3 (10+ years)				Total
	ML	COE	ML	COE	ML	COE	MTO	ERCA	
Total Estimated Cost[1]	$3,010,018	$1,400,130	$1,262,380	$604,658	$2,607,480	$761,200	$1,053,800	$184,000	**$10,883,667**
% of Total Cost	28%	13%	12%	6%	24%	7%	10%	2%	**100**%

M.L. – Municipality of Leamington
C.O.E. – County of Essex
M.T.O. – Ministry of Transportation Ontario
E.R.C.A. – Essex Region Conservation Authority

Note:

1. Cost estimates are based unit prices included in C.W.A.T.S., C.W.A.T.S. Leamington 11A, B, C County Road 20 Feasibility Study and additional input provided by Municipal and County staff.

The estimated costs to implement the full build-out network (10+ years) in **Table 16a** is **$9,395,853**, of which **$5,909,444 is Leamington's share**, $2,248,609 is the County's share, $1,053,800 is the Ministry of Transportation Ontario's share and $184,000 is the Essex Region Conservation Authority's share.

The estimated costs to implement the full build-out network in **Table 16b** is **$10,883,667** of which **$6,879,878 is Leamington's share,** $2,765,989 is the County's share, $1,053,800 is the Ministry of Transportation Ontario's share and $184,000 is the Essex Region Conservation Authority's share.

The detailed network costing for facility types costed in **Table 16b** are presented in the separately bound **Technical Appendix B-1**. Similar to the unit cost spreadsheet, the network costing spreadsheet is intended to be used as a tool. Key highlights from the spreadsheet include:

- A visual representation of the line type that is being used on the network mapping;
- The assumed unit costs (consistent with the unit costing spreadsheet);
- The cost sharing break-down as determined outlined in the C.W.A.T.S. municipal partnership strategy;
- The segment I.D. and break-down of route segments (start and end point);
- The jurisdiction under which the route falls;
- The total length of the route segment;

- Whether the route is proposed as part of the C.W.A.T.S. network;
- The route context e.g. urban, rural or combined;
- The proposed phasing (colour coded and consistent with **Maps 6a** and **6b**); and
- The identification of network quick-wins, municipal priorities and county priorities.

The estimated network costs associated with Phase 2 and Phase 3 would need to be revisited as the plan is implemented. The budget associated with these linkages will be dependent on achieving economies of scale through future capital plans as well as priorities identified by Leamington and County partnerships.

The network costing reported in and the separately bound **Technical Appendix B-1** does not include potential savings which could be realized through other avenues such as external funding opportunities and partnerships. It is suggested that Leamington allocate $50,000 per year to the development and initiation of potential education, encouragement and evaluation initiatives in partnership with the County and local stakeholders e.g. E.R.C.A. Potential initiatives could include developing a municipal-wide active transportation map, signage, application of bicycle parking at select locations, etc. The estimated cost to implement the A.T. network and facility types illustrated in **Maps 4a** and **4b** (A.T. network costed in **Table 16a** above) and programming / outreach initiatives is $10,145,853 over a 15 year horizon or $10,395,853 over a 20 year horizon. Calculations are provided below:

	15 Year Horizon	20 year Horizon
Programming & Outreach • *Assumes $50,000 annual budget for promotion and outreach initiatives*	$750,000	$1,000,000
Total Estimated Capital Cost (All Phases) + Programming & Outreach Costs	$10,145,853	$10,395,853
Estimated Cost per person in the Municipality of Leamington • *Based on Statistics Canada 2011 population of 28,403*	$357	$366
Estimated Cost per person, per year in the Municipality of Leamington	$24	$18

The per capita cost to implement the A.T. network illustrated in **Maps 4a** and **4b** (total estimated capital cost plus programming and outreach costs) is estimated to be $357 per person over a 15 year horizon, or $366

per person over a 20 year horizon. This equates to $24 per person per year over a 15 year horizon, or $18 per person per year over a 20 year horizon.

The estimated cost to implement the A.T. network and facility types illustrated in **Maps 4c** and **4d** (A.T. network costed in **Table 16b**) and programming / outreach initiatives is $11,633,667 over a 15 year horizon or $11,883,667 over a 20 year horizon. Calculations are provided below:

	15 Year Horizon	20 year Horizon
Programming & Outreach • *Assumes $50,000 annual budget for promotion and outreach initiatives*	$750,000	$1,000,000
Total Estimated Capital Cost (All Phases) + Programming & Outreach Costs	$11,633,667	$11,883,667
Estimated Cost per person in the Municipality of Leamington • *Based on Statistics Canada 2011 population of 28,403*	$410	$418
Estimated Cost per person, per year in the Municipality of Leamington	$27	$21

The per capita cost to implement the A.T. network illustrated in **Maps 4c** and **4d** (total estimated capital cost plus programming and outreach costs) is estimated to be $410 per person over a 15 year horizon or $418 per person over a 20 year horizon. This equates to $27 per person per year over a 15 year horizon or $21 per person per year over a 20 year horizon.

R56 **Leamington should use the unit costing spreadsheet as a tool to inform future budgeting and cost allocation. As needed, the spreadsheets should be updated to reflect any changes to costing to ensure that the information is applicable over the course of the network's implementation.**

R57 **As the plan is implemented, the cost associated with Phase 2 and 3 should be revisited and revised to reflect up to date unit costing and confirmed facility types.**

4.4.3 How might it be Funded?

Implementation of the A.T.P. can only be successful if funding and staff resources are committed by the Leamington and its partners on an annual basis. The Municipality should establish a strategic approach to the annual funding of program, infrastructure, maintenance and operation costs. In addition to the Municipality and County's annual budgeting process, other sources of funding and opportunities for budget efficiencies should be explored. The following sections outline recommended funding strategies for the Municipality to consider as they proceed with the implementation of the A.T.P.

Coordination with Capital Projects

The implementation of the A.T. network should be included in the Municipality's operating and capital budget and should reflect opportunities and infrastructures objectives for the upcoming year(s). As Council determines the amount of funding to be allocated (as part of the annual budgeting process), staff should review the phasing plan and costing to determine the preferred projects which can be implemented within that year – on municipal roadways.

It is expected that many of the capital costs related to the construction / implementation of on-road and in-boulevard facilities will be included within planned local roadway construction or resurfacing projects, or other County projects.

Leamington should also consider the costs associated with maintenance of facilities and should include these when identifying annual operations budgets for on and off-road facilities. The information presented in **section 4.3.1** should be reviewed and the appropriate budgets should be identified.

The proposed phasing for C.W.A.T.S. routes identified in the Leamington A.T.P. is consistent with the County's planned implementation schedule identified on the C.W.A.T.S. webpage (www.cwats.ca). As part of the County's annual budgeting process, staff should proceed with allocating budget to implement the C.W.A.T.S. network and coordinate with the Municipality of Leamington to ensure connectivity and continuity.

Cost Sharing with the County

The proposed A.T. network has been identified on roads that full u under ownership of the Municipality, County, M.T.O. and E.R.C.A. Typically, it would be the sole responsibility of the owner of said roadway to pay for the construction and maintenance of the specific roadway. However, in some cases, agreements may be in place which identifies shared responsibility. As part of the C.W.A.T.S., the County developed a cost sharing strategy and agreement with its local municipalities which outlines assumptions about the way different routes will be paid for. The strategy was developed based on the following principles:

- Funding by the Municipality and its partners should be confirmed on annual basis;
- When a project is scheduled and designated to be cost-shared but one of the funding partners is unable to fund their share (e.g. a Municipal Council selects not to fund the project in the year designated) the project may be deferred until such time funding becomes available;
- The County is responsible for providing all C.W.A.T.S. signs on both County and Municipal road segments. On local Municipal roads the County will provide the sign but the Municipality is responsible for installation (pole and sign). The County is also responsible for providing Share the Road signs and posts on C.W.A.T.S. segments;
- The County will be responsible for 100% of implementation cost for routes on County Roads that are located in rural areas;
- The cost for on street bike lanes / paved shoulders / context sensitive solutions proposed on a County road or County Connecting Link (per C.W.A.T.S.) in within a settlement area is to be shared 60% Municipality and 40% County;
- The cost for on street bike lanes / paved shoulders / multi-use trail / context sensitive solutions proposed on all Local roads is 100% of the Municipality's responsibility;
- The cost for paved shoulders on a M.T.O. roadway is 100% of the M.T.O.'s responsibility;
- The cost for signed routes and signed routes with sharrows on a County or Local road that was previously identified in the C.W.A.T.S. study is 100% of the County's responsibility;
- The cost for signed routed and signed routes with sharrows on a Local road that was not previously identified in the C.W.A.T.S. study is 100% of the Municipality's responsibility;
- The cost for new multi-use trails within a Municipal road right-of-way or located in lands owned by the Municipality of 100% of the Municipality's responsibility; and
- The cost for new multi-use trails located on lands owned by E.R.C.A. is 100% of E.R.C.A.'s responsibility.

Based on these assumptions, the project team applied the cost sharing structure to the proposed facility types identified as part of the Municipality's A.T. network. **Table 17** summarizes how the cost of proposed routes and facility types in the Municipality will be shared by the Municipality (M.L.), County (C.O.E.), Ministry of Transportation (M.T.O.) and the Conservation Authority (E.R.C.A.).

Table 17 – Leamington A.T.P Cost-Sharing Application

Facility Type / Context	M.L.	C.O.E.	M.T.O.	E.R.C.A.
On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution On a County road, Rural Area	0%	100%	0%	0%
Bike Lanes / Paved Shoulder / Multi-use Trail / Context Sensitive Solution On a County road / County Connecting Link, within a Settlement Area	60%	40%	0%	0%
On Street Bike Lanes / Paved Shoulder / Multi-use Trail with or without separation/ Context Sensitive Solution On a Local Road, Anywhere	100%	0%	0%	0%
Paved Shoulder On a Ministry of Transportation Ontario (M.T.O.) road, Anywhere	0%	0%	100%	0%
Signed Routes and Signed Routes with Sharrows On a County road / County Connecting Link or Local road, identified in the C.W.A.T.S. network	0%	100%	0%	0%
Signed Routes and Signed Routes with Sharrows On a Local road, Rural or Urban area - Not identified in the C.W.A.T.S. network	100%	0%	0%	0%
Multi-Use Trails Within a Local road right-of-way, Anywhere	100%	0%	0%	0%
Multi-Use Trails Outside of a road right-of-way, located in lands owned by the Municipality of Leamington	100%	0%	0%	0%
Multi-Use Trails Outside of a road right-of-way, located in lands owned by the Essex Region Conservation Authority (E.R.C.A.)	0%	0%	0%	100%

Facility Type / Context	M.L.	C.O.E.	M.T.O.	E.R.C.A.
On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution On a County road, Rural Area	0%	100%	0%	0%

Funding Opportunities

The implementation of the A.T.P including design, implementation and maintenance of facilities should be a collaborative effort based on the pursuit of external funding sources and partnership opportunities.

Table 18 highlights some potential funding sources which could be explored at the federal and provincial levels to fund facility developments and programming at the A.T.P. In addition to those highlighted in **Table 18**, future funding from the Province for cycling infrastructure may be made available through the #CycleON Action Plan. The municipality should ensure that they remain aware of the potential funding sources as they become available and identify opportunities to acquire additional monies to support the implementation of the A.T. network.

Table 18 - Funding Opportunities for A.T Infrastructure

Funding Opportunities	Additional Details
Federal / Provincial Gas Tax	► For the federal program please refer to: http://www.infrastructure.gc.ca/plan/gtf-fte-eng.html ► For the provincial program please refer to: http://www.mto.gov.on.ca/english/service-commitment/gas-tax-programs.html
ecoMobility (TDM) Grant Program	► For details on the ecoMobility Grant Program please refer to: http://data.tc.gc.ca/archive/eng/programs/environment-ecomobility-menu-eng-144.htm
Federation of Canadian Municipalities Green Municipal Fund	► For additional details regarding the Green Municipal Fund and potential funding alternatives please refer to: http://www.fcm.ca/home/programs/green-municipal-fund.htm
Healthy Communities Fund	► For additional details regarding the Healthy Communities Fund please refer to: http://www.mhp.gov.on.ca/en/healthy-communities/hcf/default.asp
Trans Canada Trail Funding and Federal Fund Matching	► For additional information regarding trail funding alternatives please refer to: http://old1.tctrail.ca/trail_funding.php

Funding Opportunities	Additional Details
Federal and Provincial Infrastructure / Stimulus Programs	► For Federal Government infrastructure stimulus fund details please refer to: http://www.bcfontario.ca/english/isf/guide.html ► For Provincial Government infrastructure stimulus fund details please refer to: http://www.moi.gov.on.ca/en/infrastructure/stimulus.asp
Ontario Trillium Foundation	► For details regarding potential funding alternatives please refer to: http://grant.otf.ca/
Corporate Environmental Funds (Shell and MEC)	► For additional details regarding MEC's fund to preserve recreationally significant landscapes please refer to: http://www.mec.ca/AST/ContentPrimary/Community/CommunityContributions/LandAcquisition.jsp
Corporate Donations	► Money or service in kind and have been contributed by a number of large and small corporations over the years

R57 **Leamington should review the proposed funding opportunities and should explore those that are applicable to fund future implementation – infrastructure or programming - initiatives. Funding alternatives should be reviewed on an annual basis during the capital budgeting process.**

4.5 Conclusions

Leamington's Active Transportation Plan has been developed as a long-term guide and flexible tool to facilitate the implementation of a system of on and off-road active transportation and recreation facilities and supportive programs that:

- Encourage walking and cycling for short-distance local as well as long-distance touring trip;
- Achieve Regional connectivity not only within the Municipality but to surrounding areas;
- Accommodate different user groups as well as people of different ages and abilities through the design of routes and facilities;
- Builds upon the work completed by the County of Essex and other Municipal partners;
- Responds to issues and opportunities found within the urban, semi-urban and rural communities; and
- Help to achieve long-term strategic goals and objectives of the Municipality.

Leamington and its partners are encouraged to use this plan and the resources found within it to move forward with the implementation of the proposed network and suggested actions in the areas of network development and operation, design and accessibility, planning and process as well as promotion and outreach. The tools, recommendations and strategies have been designed specifically for the Municipality of Leamington to provide direction on how to initiate the development of the A.T. network in a feasible and realistic manner.

The information included in the report builds upon the input provided by members of the public, stakeholders and interest groups and staff from the Municipality, County and surrounding municipalities. The study team would like to thank all of those who were involved in the development of the A.T.P. which will lay the groundwork for future collaboration, coordination and communication related to the planning, design and implementation of A.T. supportive initiatives within the Municipality.