THE CORPORATION OF
THE COUNTY OF ESSEX

D16-010-45

Prepared for the Corporation of the County of Essex

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS) MASTER PLAN

Final Report

September 2012

MMM GROUP

TransActive Solutions

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The County of Essex Wide Active Transportation (CWAT) Master Plan Team would like to express their appreciation to the following individuals that contributed to the development of this Plan, as well as the many other stakeholders and members of the public who through their input, contributed to the development of this Master Plan.

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EXECUTIVE SUMMARY

The County of Essex has developed a comprehensive Active Transportation (walking and cycling) Master Plan to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities over the next 20 + years. The master plan study was initiated in January of 2010 when the County retained active transportation specialists led by the MMM Group to assist in the development of a comprehensive active transportation network and supporting active transportation policies and initiatives.

The County and local area municipalities, through their respective planning, engineering/capital works and policy plans, have a number of existing policies that support active transportation (AT). However, the County and area local municipalities were in need of a comprehensive network, policy framework and implementation strategy that could clearly present a long term strategy to improve conditions for active transportation. In addition a plan was needed to identify roles and responsibilities and guide and support the County, the Essex Region Conservation Authority (ERCA) and local area municipalities to partner and work together to implement an AT Plan that can meet the needs of all residents in the County of Essex.

The County of Essex has developed a comprehensive Active Transportation (walking and cycling) Master Plan to guide the County in implementing a County-wide network of cycling and pedestrian facilities over the next 20 + years.

The County-wide Active Transportation (CWAT) Master Plan documented in this report includes a proposed network of cycling routes that were identified through an iterative process that involved public and stakeholder input at various stages of the study.

The County of Essex Official Plan encourages high quality pedestrian facilities along arterial and collector roads. A number of pedestrian and bicycle related policies such as those pertaining to the Chrysler Canada Greenway/Trans Canada Trail indicate Essex County's desire to improve their active transportation infrastructure. The Essex-Windsor Regional Transportation Master Plan (2005) advances the basic transportation related policies in the Official Plan by encouraging the integration of all new active transportation facilities with existing ones throughout the roads of local area municipalities of Essex County as well as the County's regional roads. Each local area municipality in Essex County has an Official Plan which speaks to the desire to plan for future cycling and pedestrian transportation demand. The CWAT Master Plan has been developed in response to these policies and initiatives as well as to establish a County-wide vision for the future of active transportation in Essex.

The County-wide Active Transportation (CWAT) Master Plan documented in this report includes a proposed network of cycling routes that were identified through an iterative process that involved public and stakeholder input at various stages of the study. Key steps in the process included the application of route selection criteria to develop a candidate network concept plan, investigation of the concept in the field, public review of candidate routes, and a second round of consultation with residents, County staff and local agencies. Central to the development of this plan was the input, review and guidance provided by the County's Steering Committee appointed to guide the development of this Plan. The Plan also includes planning, design and operations guidelines for the cycling network along with supporting policies and programs. Some key details from each of these components of the plan have been highlighted and provided below.

VISION AND OBJECTIVES

As part of the master planning process, a vision was developed by the study team and steering committee which was reviewed, refined and confirmed. The vision for the CWAT Master Plan is as follows:

"The County of Essex and its seven 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."

A set of objectives that support this vision for Active Transportation throughout the County were developed following the development of the vision. The objectives were reviewed by County staff as well as members of the steering committee and the public. These objectives include:

- Recommend actions to improve conditions for walking, cycling and active transportation in the County of Essex for people of all ages by providing an on-road corridor and off-road trails system which integrates a number of facility types for both recreation and utilitarian use;
- Identify the elements of an Active Transportation network that are appropriate for the County of Essex, that will improve consistency and coordination throughout the county, and will provide appropriate connections to the neighbouring municipalities of Chatham-Kent and the City of Windsor;
- Develop an effective and practical implementation strategy that will identify priorities, annual costs, best practices for facility design and support an improved active transportation network;
- Identify and recommend strategies and programs that the County as well as local municipalities can lead, or partner with others, to encourage more people to walk and bicycle more often for utilitarian and recreational purposes; and
- Identify roles and responsibilities for the County, Local Municipalities and other partners in facilitating walking, cycling and active transportation.

The first phase in developing the draft network involved the preparation of an inventory of existing and previously proposed on and off-road cycling and trail facilities in the County.

EXISTING AT CONTEXT IN ESSEX

The first phase in developing the draft network involved the preparation of an inventory of existing and previously proposed on and off-road cycling and trail facilities in the County. This task included a review of the County Official Plan, the Essex -Windsor County Transportation Master Plan as well as local municipal planning documents. Information was also assembled

based on discussions with County and Local Municipal staff and other stakeholders.

County staff provided the study team with a digital Geographic Information System (GIS) database as well as digital ortho (aerial) photography of the County. In addition, local municipal staff provided the study team with key GIS information regarding Land Use and Active Transportation. The information included:

- Existing roads;
- Average Annual Daily Traffic (AADT);
- Location and Types of County traffic signals;
- Posted speed limits;
- Existing Sidewalks and walkways;
- Points of interest and attractions (including recreational facilities and schools);
- Existing and proposed on-road cycling routes;
- Existing and proposed trails; and
- Parks, lakes and rivers.

The existing policies and active transportation systems and trails served as the framework to build upon in developing the County-wide Active Transportation Master Plan (CWAT).

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The existing policies and active transportation systems and trails served as the framework to build upon in developing the County-wide Active Transportation Master Plan (CWAT). All the information available regarding existing or planned cycling and trail facilities was then consolidated and used to prepare inventory maps. These maps were reviewed in detail by the Steering Committee, which included County and Local Municipal staff.

Major Attractions and Destinations

Major active transportation and active recreation attractions and destinations in the County were identified with input from the Steering Committee and other stakeholders. This stage of the study identified some of the key recreational, commuter and utilitarian destinations for cyclists, trail users and pedestrians in the County. These generally include all settlement areas, tourist attractions, colleges, major employment centres, civic centres including libraries, wineries, major retail centres or shopping districts and recreational facilities. In addition, major land uses and natural areas such as national parks and conservation areas, public lands, water bodies, roads, residential areas, publicly accessible woodlots and wetlands were identified. The major attractions and destinations information reviewed as part of this

study was used to inform the study team during the selection of candidate network routes.

CONSULTATION

An important component of the study process for developing the CWAT Master Plan was consulting with County and local municipal staff, members of the public as well as the Steering Committee and local stakeholders. The involvement of members of the public was essential in creating an interest throughout the County for the CWAT Master Plan, building momentum for the plan, and increasing awareness of the benefits of implementing active transportation related facilities, routing and programming

An integral component of the consultation process was to draw upon the knowledge of the Steering Committee, the people who live and work in the County of Essex and its local municipalities, as well as those who will be responsible for the implementation of the CWAT Master Plan. Meaningful and authentic consultation was the cornerstone in the development of the CWT Master Plan.

An integral component of the consultation process was to draw upon the knowledge of the Steering Committee, the people who live and work in the County of Essex and its local municipalities, as well as those who will be responsible for the implementation of the CWAT Master Plan.

Consultation with the public was undertaken through a multi-faceted approach which included newsletters, postings on the County's website, an online questionnaire and two public information centres (PICs), one of which was held at the Ruthven Apple Festival. In addition, residents had the opportunity to submit comments and ideas to the study team over the course of the study.

A total of 302 people responded to the online questionnaire. The questionnaire revealed that residents are very supportive of the County's investment in active transportation and trail improvements that lead to the increased opportunities for alternate transportation modes. In addition, residents also indicated specific facility types that they would feel more comfortable using and would increase their likelihood to explore alternate transportation modes. These included a more positive support for multi-use trails found in parks and natural areas as well as multi-use trails within rights-of-way along county roads and bike lanes or paved shoulders. Attendees of the Public Information Centres were encouraged to provide their comment to the study team members through discussions with study team attendees, on comments forms as well as directly on the maps provided displaying the proposed candidate route network. In addition, the public were

provided the opportunity to participate in an additional survey by the Go for Health Windsor-Essex and Windsor-Essex County Health Unit.

Comments received from the public, stakeholders, ERCA and local municipal staff were reviewed and considered in detail for inclusion in the Master Plan report.

THE RECOMMENDED CWAT NETWORK

The network development process for the CWAT Master Plan included an inventory of existing conditions, establishing route selection principles, selecting candidate routes, and recommending and overall AT network and associated facility types. With the information and documentation gathered from the assessment of existing conditions, candidate routes were selected based on the following principles:

- Safety;
- Visible;
- Direct / Connected;
- Destinations;
- Integration with Other Modes;
- Different routes for different users.
- Cost Effective;
- Supporting Services and facilities;
- Diverse Experience;
- Easily Accessible;
- Attractive and Scenic; and

Based on this approach, a set of on and off-road candidate routes were identified linking key destinations and local municipalities throughout the county. The candidate routes were further refined based on input from the Steering Committee, County & local municipal staff, as well as key stakeholders and the public.

The refined candidate route alternatives were then investigated in the field to confirm their suitability for inclusion as part of the proposed active transportation network. Route selection was based on the application of the principles, the experience of the study team, observations made in the field and local insight from members of the Steering Committee. In addition, consideration was given to information such as missing links, traffic volumes (where available), road and rights-of-way width, distance from key destinations and the nearest proposed route, and the cost effectiveness of

Route selection was based on the application of the principles, the experience of the study team, observations made in the field and local insight from members of the Steering Committee.

implementing an active transportation facility. **Figures EX-1, 2 and 3** illustrate the recommended AT route network and associated facility types

IMPLEMENTATION OF THE CWAT NETWORK

The success of the CWAT Master Plan is dependent on the initial and on-going support of the County of Essex Council and staff in all levels and departments of the County and its local area municipalities. The CWAT Master Plan includes an implementation strategy to guide the County in improving its active transportation infrastructure over the next 20+ years and beyond. The proposed implementation plan consists of several phases to be coordinated where possible, with the County's plans for capital projects. These phases include

- Short (0-5 years)
- Medium (6- 10 years); and
- Long (11 – 20+ years) Term projects.

In addition to infrastructure investments, the Plan calls for program development and operations funding to support successful implementation and monitoring.

Outreach, Enforcement and Education

Public outreach will be an important element in the implementation of the CWAT Master Plan. Outreach involves social marketing and raising public awareness for cycling initiatives in the County and these can be delivered through a number of initiatives, such as education, encouragement and enforcement. The outreach strategy presented in this plan is built on current initiatives in place at the County-wide level and may involve partnerships with local community groups and agencies. The successful implementation of the CWAT Master Plan must involve public outreach, as it will help both cyclists, pedestrians and motorists better understand their relationship and roles when using the network, and will help to communicate and promote the benefits of cycling and walking to residents and visitors of Essex County.

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The Plan summarizes the many benefits to investing in active transportation infrastructure and programs and builds a business case why the County, local municipalities, ERCA and Go for Health Windsor-Essex and the Windsor-Essex County Health Unit's commitment to implementing the CWAT Master Plan is so important.

Funding and the CWAT Master Plan

Funding the Plan is essential if the benefits are to be realized. The CWAT Master Plan recommends the provision of funding and staff resources on an annual basis. It establishes a principle of partnering with Go for Health Windsor-Essex and Windsor-Essex County Health Unit, ERCA and local area municipalities to implement elements of the CWAT Plan. The Plan summarizes the many benefits to investing in active transportation infrastructure and programs and builds a business case why the County, local municipalities, ERCA and Go for Health Windsor-Essex and the Windsor-Essex County Health Unit's commitment to implementing the CWAT Master Plan is so important. To assist the County in funding the recommendations in this Plan, the County is encouraged to seek out other sources of revenue from its partners, which may include future funding opportunities from the Province of Ontario and the Federal Government.

Table EX-1 presents the implementation cost summary for the CWAT Master Plan. Additional details regarding this long term proposed investment in active transportation, trails and the associated benefits of improving the health and quality of life of County of Essex residents is provided in chapter 7.

SUMMARY OF PLAN RECOMMENDATIONS

The County of Essex County Wide Active Transportation Master Plan contains 46 recommendations and additional guidelines pertaining to planning, design, implementation and management of the active transportation network. A compilation of the proposed policies and recommendations identified in the various sections of the CWAT Master Plan can be found in Chapter 8 of the report.

The County of Essex Active Transportation Master Plan is an important and essential tool to assist the County of Essex, the Essex Region Conservation Authority, local municipalities and other partners in their common sustainable and active transportation goals. One of these primary goals is to encourage walking and cycling for recreation and utilitarian trips (e.g. commuting to school, work etc.) and reduce the reliance on single occupant motor vehicle use, especially for trips less than 10 kilometres. As fuel oil prices continue to rise it will become increasingly important that a well

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE EX-1: CWATS NETWORK WITH FACILITY TYPES

Figure EX-1 represents the active transportation network within the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types of the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figures EX-2 and EX-3 for CWATS Network Routing in Urban Areas.

Please refer to the Windsor BUMP (2001) for additional Active Transportation Connections to Windsor.

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail / Pathway
N/A		Multi-Use Trail / Pathway w/ Bike Lane
N/A		Multi-Use Trail / Pathway w/ Signed Route
N/A		Context Sensitive Solution

OTHER CWATS INFORMATION

- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities
- Network Intersection with Highway / Freeway

LOCAL NETWORKS

LOCAL / ERCA ROUTES

Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway
- Populated Area (Refer to Figures 5-7B and 5-7C for Cycling and Trail Routing in Urban Areas)

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N W E S

4 2 0 4 Kilometres

SEPTEMBER 2012

City of Windsor

DETROIT RIVER HERITAGE PARKWAY

Tecumseh - See EX-3

Puce, Emeryville, Belle River - See EX-2

Stoney Point - See EX-2

Lighthouse Cove - See EX-2

Town of Lakeshore

Oldcastle - See EX-3

LaSalle - See EX-3

Town of LaSalle

Town of Tecumseh

Comber - See EX-2

Essex - See EX-3

McGregor - See EX-3

Town of Kingsville

Town of Leamington

Cottam - See 5-9B

Town of Essex

Amherstburg - See EX-3

Town of Amherstburg

Ruthven - See EX-2

Kingsville - See EX-2

Leamington - See EX-2

Harrow - See EX-3

Colchester - See EX-3

Point Pelee National Park

Pelee Island

Potential Connections in Leamington and Kingsville Populated Areas to Pelee Island are via Ferry.

Please refer to the Chatham-Kent Trails Master Plan (2009) for additional information regarding potential Active Transportation connections to Chatham Kent.

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE EX-2: CWATS NETWORK WITH FACILITY TYPES - URBAN AREAS

SEPTEMBER 2012

Figures EX-2 and EX-3 represent the active transportation network within the urban areas of the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types of the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figure EX-1 for the CWATS Network throughout the entire County.

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail / Pathway
N/A		Multi-Use Trail / Pathway w/ Bike Lane
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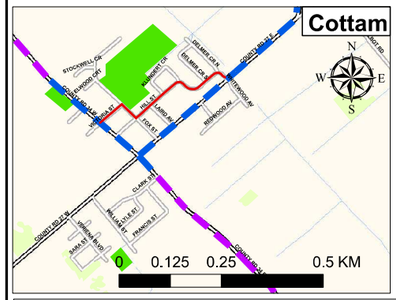
LOCAL NETWORKS

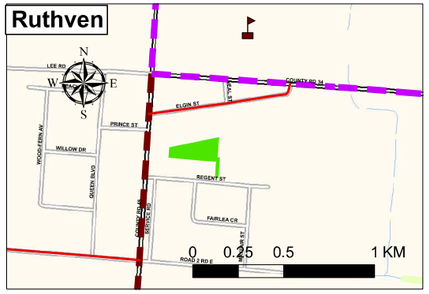
LOCAL / ERCA ROUTES

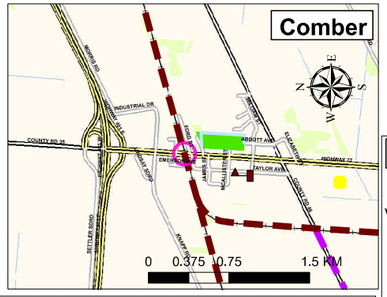
Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

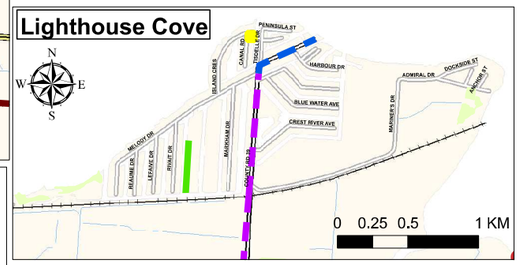
OTHER

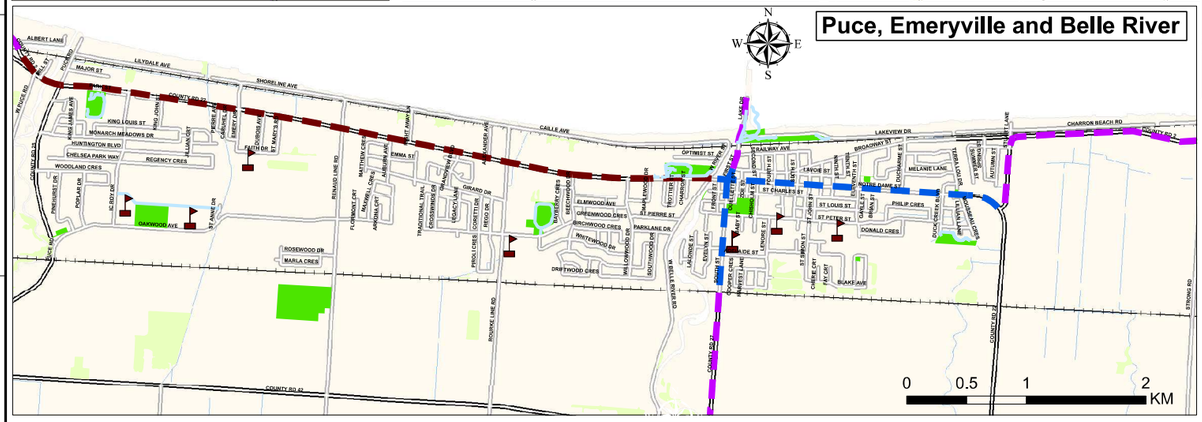
- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

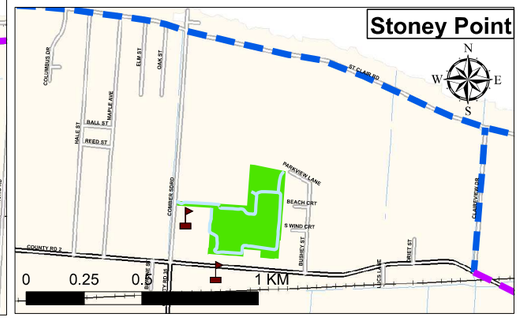


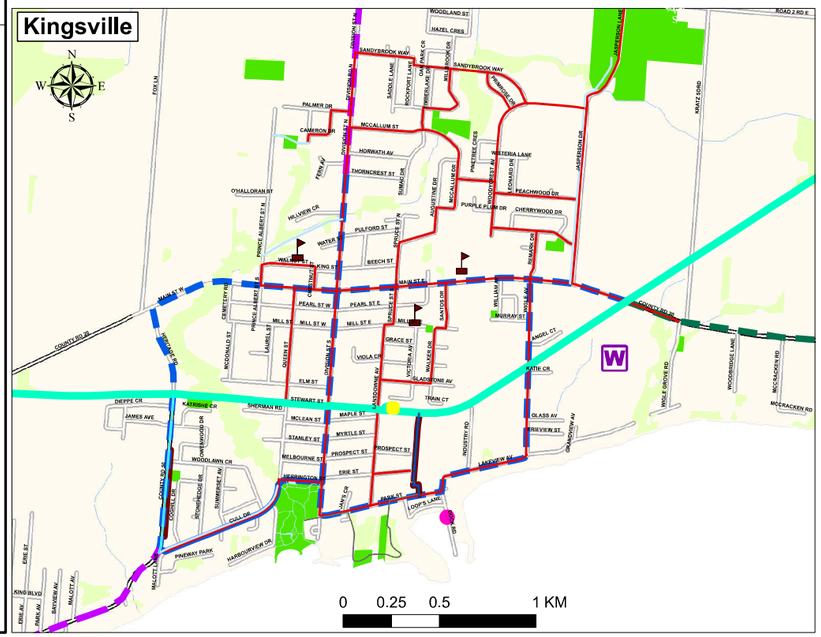


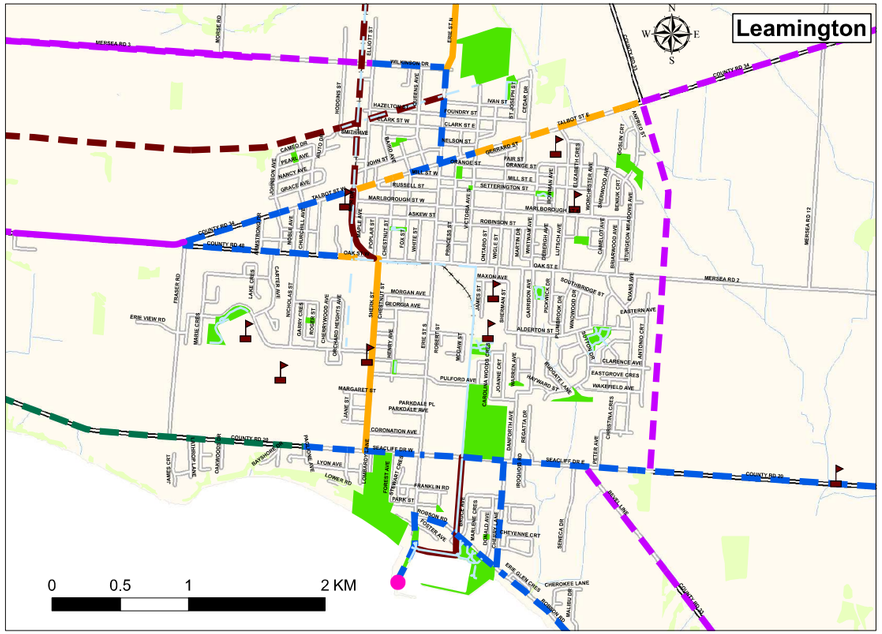












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COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE EX-3: CWATS NETWORK WITH FACILITY TYPES - URBAN AREAS

Figures EX-2 and EX-3 represent the active transportation network within the urban areas of the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types for the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

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SEPTEMBER 2012

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
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		Paved Shoulder
		Multi-Use Trail / Pathway
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OTHER CWATS INFORMATION

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- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities
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LOCAL NETWORKS

LOCAL / ERCA ROUTES

Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

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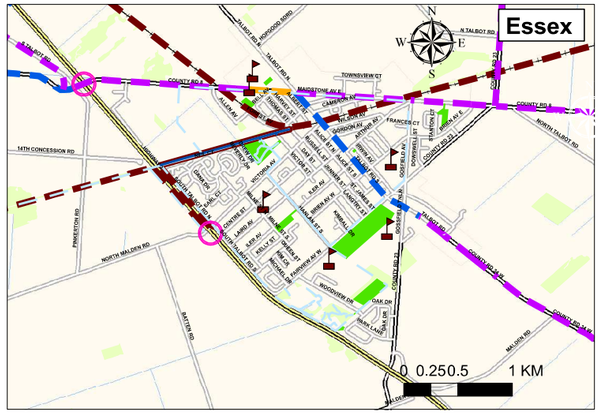
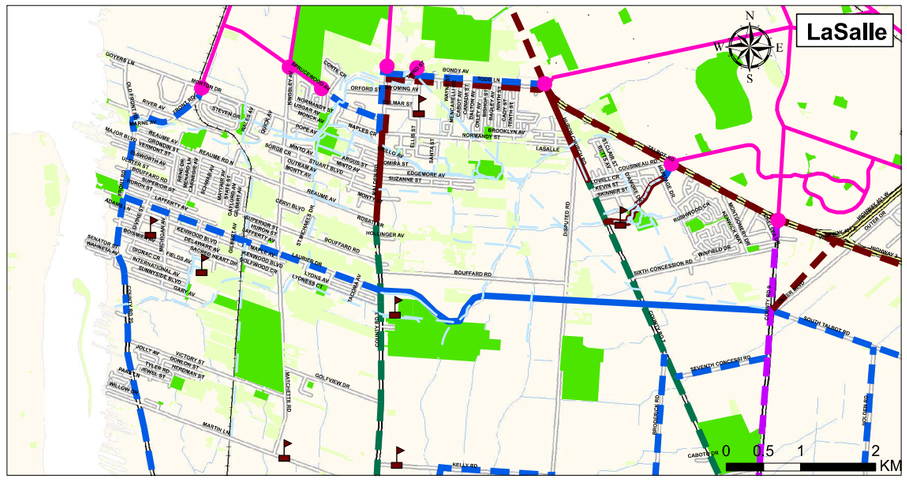
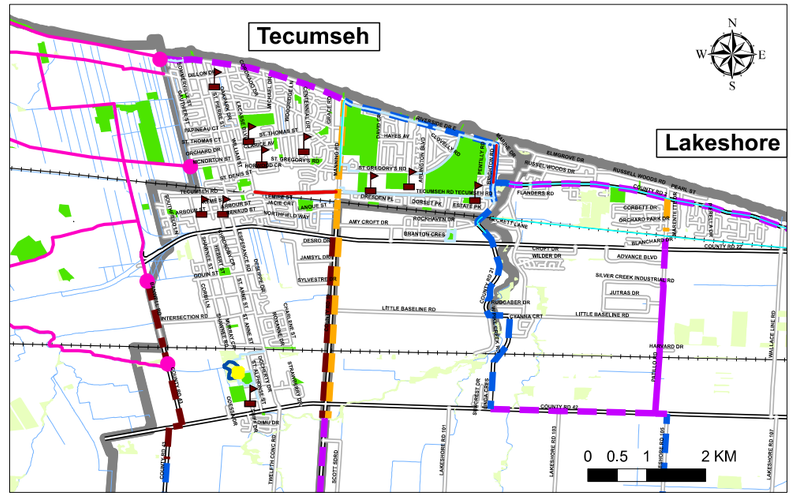
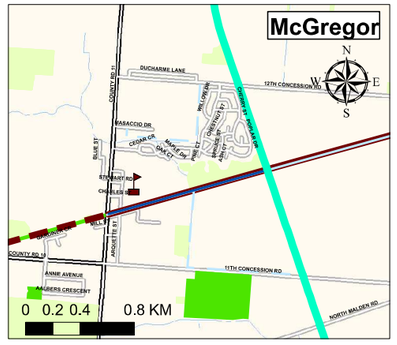
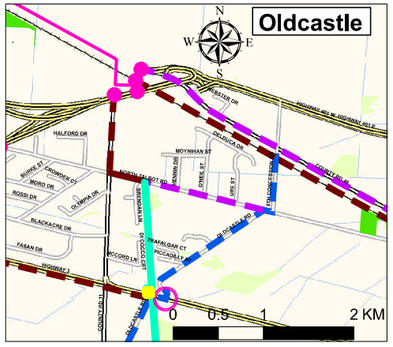
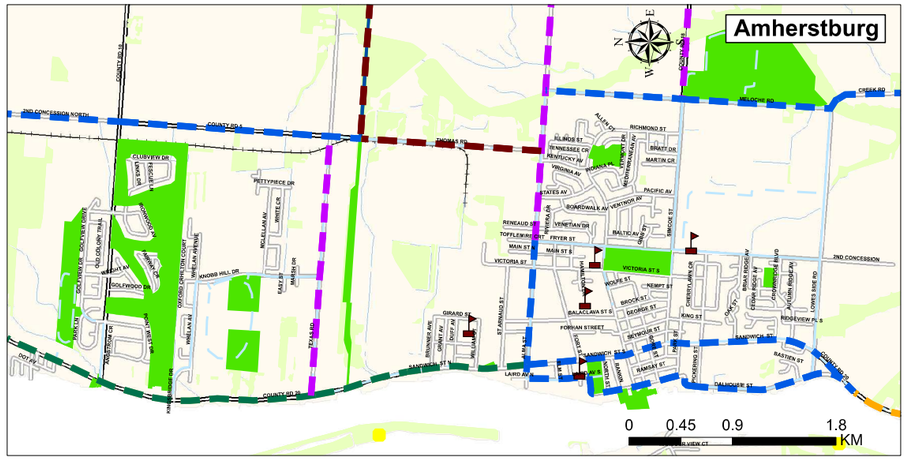


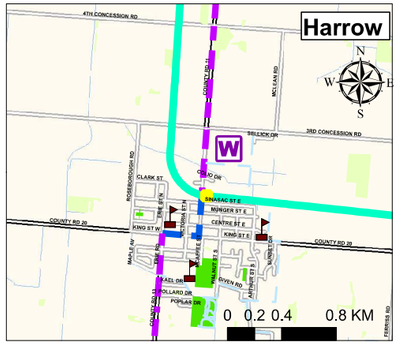


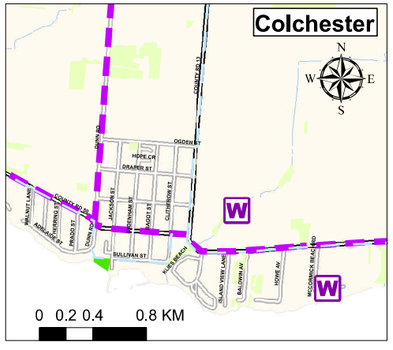












CWAT PLAN COST IMPLEMENTATION SUMMARY (BY PHASE and JURISDICTIONAL COST SHARE)									
	By Phase[1,2]				By Jurisdictional Cost Share[2,3]				
JURISDICTION	**Phase 1 (Years 1-5)**	**Phase 2 (Years 6-10)**	**Phase 3 (Years 11-20+)**	**TOTAL**	**COUNTY OF ESSEX TOTAL**	**LOCAL MUNICIPAL TOTAL**	**PROVINCIAL TOTAL**	**ERCA TOTAL**	**TOTAL**
Amherstburg	$ 854,000	$ 2,826,400	$ 3,414,440	**$ 7,094,840**	$ 3,615,240	$ 2,679,600		$ 800,000	**$ 7,094,840**
Essex	$ 3,951,200	$ 522,000	$ 1,505,000	**$ 5,978,200**	$ 3,321,520	$ 2,024,680	$ 400,000	$ 632,000	**$ 6,378,200**
Kingsville	$ 3,435,320	$ 2,284,600	$ 2,468,420	**$ 8,188,340**	$ 5,640,540	$ 2,411,800		$ 136,000	**$ 8,188,340**
Lakeshore	$ 962,840	$ 7,523,260	$ 1,683,680	**$ 10,169,780**	$ 4,668,380	$ 2,885,900		$ 2,920,000	**$ 10,474,280**
LaSalle	$ 539,800	$ 242,800	$ 3,674,300	**$ 4,456,900**	$ 2,703,900	$ 1,796,400		$ 16,000	**$ 4,516,300**
Leamington	$ 2,747,980	$ 2,552,000	$ 647,000	**$ 5,946,980**	$ 2,405,980	$ 3,301,000		$ 240,000	**$ 5,946,980**
Tecumseh	$ 250,940	$ 279,200	$ 2,519,060	**$ 3,049,200**	$ 978,760	$ 1,682,340	$ 600,000	$ 752,000	**$ 4,013,100**
Segments along Common Municipal Boundaries	$ 202,540	$ -	$ 4,469,940	**$ 4,672,480**	$ 3,944,680				**$ 3,944,680**
Province of Ontario	$ 1,000,000	$ -	$ 1,045,000	**$ 2,045,000**		$ -	$ 1,045,000	$ -	**$ 1,045,000**
TOTAL - NETWORK	**$ 13,944,620**	**$ 16,230,260**	**$ 21,426,840**	**$ 51,601,720**	**$ 27,279,000**	**$ 16,781,720**	**$ 2,045,000**	**$ 5,496,000**	**$51,601,720**
OUTREACH / PROMOTION									
CWAT Partnership Fund	$ 500,000	$ -	$ -	**$ 500,000**	$ 500,000	$ -	$ -	$ -	**$ 500,000**
AT Promotion via Windsor Essex County District Health Unit	$ 125,000	$ 125,000	$ 250,000	**$ 500,000**	$ 500,000	$ -	$ -	$ -	**$ 500,000**
GRAND TOTAL - NETWORK, OUTREACH / PROMOTION	**$ 14,569,620**	**$ 16,355,260**	**$ 21,676,840**	**$ 52,601,720**	**$ 28,279,000**	**$ 16,781,720**	**$ 2,045,000**	**$ 5,496,000**	**$ 52,601,720**

NOTES:

[1] Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in the jurisdictional totals.

[2] The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.

[3] Local Municipal Shares of Segments along Common Municipal Boundaries have been included Local Municipal Totals, where applicable.

Table EX-1:
CWAT MASTER PLAN COST IMPLEMENTATION SUMMARY

planned and designed active transportation system forms part of a County and local municipal multi-modal transportation strategy. The CWAT Master Plan will assist the County and local area municipalities in meeting their community planning and transportation objectives for the future. It will provide guidance as future transportation infrastructure improvements are considered. Perhaps the most important, the implementation of the County Wide Active Transportation Master Plan will contribute towards meeting the County and local municipal strategic goal of fostering a healthy and more sustainable community that will benefit all residents.

1.0 INTRODUCTION

The County of Essex is committed to developing and implementing a County Wide Active Transportation plan that embodies a comprehensive strategy to promote and increase awareness regarding active transportation within the County of Essex. The active transportation study proposes a set of policies and a detailed network on both local and County roads that is intended to facilitate both recreational and utilitarian transportation as well as increased connectivity and partnerships among the local municipalities.

1.1 WHAT IS A MASTER PLAN?

Master Plans are long-range plans that integrate infrastructure requirements for existing and future land use with environmental assessment principles. These plans examine the entire infrastructure system as a group of related projects, or an overall system, in order to strategically plan out the future needs of the County. The County Wide Active Transportation Study (CWAT) is framed by a vision as well as objectives, recommendations, and performance measures. Each of these are introduced and described in subsequent chapters. An explanation of these terms is presented below.

Master Plans are long-range plans that integrate infrastructure requirements for existing and future land use with environmental assessment principles.

A Vision statement articulates how active transportation should be in the County of Essex in the future (i.e. a connected County supportive of active

The purpose of this County Wide Study is to improve conditions for active transportation facilities throughout the County...

transportation activities) and is the desired product of the goals, objectives, and recommended actions set out in the County Wide Study. Achieving the vision will require the efforts of many key agencies, organizations and individuals throughout the County.

Objectives are broad, but begin to identify specific strategies and actions for accomplishing the vision.

Recommendations are specific activities that should be undertaken not only by the County, but also by County and local municipal partners in order to achieve the objectives. Actions typically have a specific timeframe and are usually assigned to a specific agency, organization, municipality, division or section.

Performance measures provide a method of measuring how the actions are fostering progress towards reaching the objectives of the study. They can be used to measure progress at one specific point in time or can be used annually, biannually, or some other regular time frame to provide ongoing information on what progress is being made. They typically require the establishment of some initial benchmark against which future changes can be viewed.

The purpose of this County Wide Active Transportation Study is to improve conditions for active transportation facilities and increase connectivity between local municipalities throughout the County. This will be achieved by creating a set of on and off-road active transportation facilities and, where necessary, identifying missing links on County roads, as well as recommending a strategy for improvements that promote and encourage greater use of active transportation travel modes. The primary objectives of the County Wide Active Transportation Study included:

- Consult with and engage staff, stakeholders and the public at key stages of the study development;
- Establish a vision for active transportation in the County of Essex;
- Examine indicators of existing active transportation demand using a public opinion questionnaire and other existing research data;
- Identify opportunities and destination points for active transportation throughout the County;
- Identify a continuous and connected active transportation system in urban and rural (inter-urban) areas of the County;

- Establish or amend existing policies;
- Develop programs to encourage active transportation;
- Develop a comprehensive and feasible implementation strategy;
- Recommend education, enforcement and promotion policies and supporting implementation strategies;
- Estimate the cost of network and program improvements, recommend short, medium and long term priorities as well as maintenance and monitoring strategies;
- Identify implementation responsibilities and appropriate partnerships to reduce costs and support implementation; and
- Identify performance measures.

The County Wide Active Transportation Master Plan documented in this report is the product of an extensive process and set of tasks that satisfies each of these objectives.

A key part of the approach was the development of an integrated active transportation network supporting both walking and cycling as well as other non-motorized transportation modes.

1.2 THE STUDY PROCESS

The County of Essex County Wide Active Transportation Study was initiated in January of 2010 by the County of Essex. The MMM Group led team was retained by the County to develop a county wide comprehensive active transportation plan designed to link existing facilities and identify future connections throughout each of the municipalities and bordering municipalities.

The approach of the County Wide Active Transportation Study was to meet the specific objectives established in the Terms of Reference and reflect the active transportation related planning initiatives of the County of Essex as well as its local municipalities. This approach was based on the need to integrate the existing local municipal active transportation, pedestrian and cycling networks and policies, provide routes on County Road right-of-ways, and recommend a coordinated policy and implementation framework that the County and local municipalities could work within to achieve the common goal of improving conditions for active transportation.

The study approach that led to the development of the overall County Wide Active Transportation Study included the following phases:

The County of Essex County Wide Active Transportation Study has been designed to be a living document that is flexible and capable of evolving over time.

Phase 1: Understanding the Resources – This phase included the development of a communication strategy, vision and objectives for the plan as well as design guidelines. The study and guidelines were developed to understand the various active transportation initiatives undertaken by a variety of municipalities across Ontario and Canada as well as internationally and in addition, document the current state of active transportation in the County of Essex. Existing and previously proposed active transportation policies and initiatives were assembled and reviewed to provide a clear understanding of the existing network and facilities in place throughout the County and local municipalities. Public and stakeholder consultation was also conducted in this phase through a number of methods including a County-wide newsletter, a public and stakeholder open house/workshop and the development and execution of a County-wide online questionnaire. The online questionnaire, which was developed on www.surveymonkey.com, was used to identify active transportation opinions and needs in the County of Essex. A Background Working Paper was then developed that summarized all tasks which were undertaken throughout Phase 1 of the Study.

Phase 2: Network and Policy Development – This Phase included extensive field investigation and a detailed inventory of existing conditions in order to develop the draft candidate active transportation route. Following this, the draft active transportation network, facility types and active transportation policies and recommendations were developed and finalized. The second study newsletter was developed, confirmed and distributed to County and local municipal staff as well as members of the public and local stakeholders. The public was invited to comment on various aspects of the plan at a series of open houses.

Phase 3: Developing the Plan – Phase 3 of the study focused on assessing the role of participants that are involved in making decisions regarding the active transportation network and program implementation, as well as supporting the financial framework. In addition to the detailed implementation strategy, the active transportation policies and recommendations were finalized along with the draft study report and the final study newsletter.

A key component of the approach was the development of an integrated active transportation network supporting both walking and cycling as well as other non-motorized transportation modes. The network approach and process involved a set of iterative steps which were used to establish a

recommended active transportation network for the County of Essex and its local municipalities. The network development approach included:

- An inventory of existing conditions: which compiled and digitally mapped existing or previously planned active transportation facilities (pedestrian and cycling) in the County of Essex. These included both on and off-road facilities, in order to establish a base condition.
- A route selection process: which included a set of principles and supporting qualitative and quantitative criteria for determining the preferred route and facility types; and
- Selecting candidate routes and finalizing active transportation system improvements and the network: this involved identifying missing links and evaluating each for feasibility and inclusion as part of the County-wide active transportation network.

The proposed County Wide Active Transportation network consists of on and off-road pedestrian and cycling facilities which include, but are not limited to, multi-use trails, bike lanes, signed bike routes and paved shoulders with edgelines where necessary to connect missing links. The network as well as the proposed active transportation facilities will be explored in detail later in the report.

The Study Team met with a Technical Steering Committee consisting of County staff and staff representatives from each of the local municipalities and the Essex Region Conservation Authority (ERCA) on a regular basis to receive input on the study direction, findings and recommendations.

The proposed County Wide Active Transportation Network consists of on and off-road pedestrian and cycling facilities which include, but are not limited to, multi-use trails, bike lanes, signed bike routes, paved shoulders with edgelines and sidewalks where necessary to connect missing links.

1.3 ORGANIZATION OF THE STUDY REPORT

The County of Essex County Wide Active Transportation Study has been designed to be a living document that is flexible and capable of evolving over time. It is intended to maintain and enhance existing programs and infrastructure, while guiding the development and implementation of new active transportation facilities and programs. Implementation of the County Wide Active Transportation Study is aimed at encouraging people to leave their cars at home and use non-motorized modes of transportation for recreational as well as utilitarian purposes throughout the County and its local municipalities.

The County Wide Active Transportation Master Plan report includes the following chapters:

Chapter 1 provides the background behind development of the County Wide Active Transportation Master Plan.

Chapter 2 provides information on the vision and objectives for the study, the current active transportation needs for the County as well as the benefits associated with active transportation.

Chapter 3 addresses the existing active transportation conditions within the County and the existing system in place. This chapter also addresses the Federal, Provincial, County and local municipal policies that affect active transportation activities in the County of Essex.

Chapter 4 details the consultation methods that were undertaken throughout the Study Process, documents the comments that were received and outlines the way in which the comments were incorporated.

Chapter 5 outlines the approach used to develop the active transportation network as well as the final proposed active transportation network with associated facility types.

Chapter 6 is the Network Designer's Toolbox which provides details on the facility types, users needs and design parameters.

Chapter 7 outlines the proposed Implementation Strategy. This chapter defines the role of the County as well as its local municipalities in implementing the County Wide Active Transportation Study. It also recommends the timeline and costs associated with implementing the plan.

Chapter 8 is a summary of each of the active transportation related policies and recommendations that were found throughout the body of the report.

Chapter 9 outlines the next steps to move forward in order to effectively begin implementing the County Wide Active Transportation study for the County of Essex and the local partners.

2.0 THE NEED FOR AN ACTIVE TRANSPORTATION (AT) MASTER PLAN

There is a growing demand for active transportation (pedestrian and cycling) facilities throughout Ontario and across North America for both utilitarian and recreational purposes. Initiatives addressing this growing demand are supported on a federal, provincial, regional, county and local municipal level through the development and implementation of policies and strategies. With a growing awareness of the negative impacts that a lack of physical activity has on all age groups, as well as the benefits of reducing motor-vehicle use and increasing multi-modal transportation choices, there is a growing need and demand for active transportation options. The County of Essex and its local municipalities acknowledge the importance of future investment in active transportation facilities and opportunities as shown in many of the policies and strategies currently in place.

The County's Official Plan sets out a policy to support walking and cycling that states:

"Local municipalities are encouraged to consider the development of pedestrian walkways and bicycle paths as part of development proposals and

There is a growing demand for active transportation facilities throughout Ontario and across North America for both utilitarian as well as recreational purposes.

park development to provide for the safe and convenient movement of cyclists and pedestrians. Local municipalities are encouraged to plan new pedestrian and bicycle paths in a manner that ensures their interconnectivity, where possible, with existing and proposed paths including the paths within the City of Windsor. Pedestrian and bicycle crossings of major barriers, such as railways and expressways, should be comprehensively planned and integrated where possible with street crossings. Any proposed pedestrian and bicycle crossings of a provincial highway requires the prior approval of the Ministry of Transportation or the appropriate road authority."

The Essex-Windsor Regional Transportation Study comments on the importance of walking and cycling and acknowledges the importance of the Chrysler Greenway in the County as well as the growing need to focus active transportation investment in areas where the greatest benefit will be realized in terms of use.

In addition, the Essex-Windsor Regional Transportation Study comments on the importance of walking and cycling and acknowledges the importance of the Chrysler Greenway in the County as well as the growing need to focus active transportation investment in areas where the greatest benefit will be realized in terms of use. This implies prioritizing improvements to routes, connections and facilities in and around urban areas as well as connecting communities in the County. The policies and initiatives pertaining to active transportation (walking or cycling) as well as multi-modal transportation choices will be further outlined in Chapter 3 of the Study Report.

There are also existing local municipal policies related to cycling and pedestrian facilities for a number of municipalities in the County. Examples include the Town of Essex Trails, Walkways and Bikeways Plan, Municipality of Leamington Long Range Transportation Action Plan and Trails Strategic Plan, and the Town of Lakeshore Trails Master Plan. In addition, a number of the local municipalities have developed additional policy through their transportation master plans and official plans which address the provision of alternative modes of transportation to include active transportation facilities. These are described in further detail in Chapter 3 of the report. The Active Transportation Master Plan for the County of Essex is designed to build upon these key policies and initiatives to achieve a network of facilities which connect the local municipalities and provide residents and visitors with multiple recreational and utilitarian active transportation choices. The following sections will outline the vision and objectives of the study and provide further examples of the increasing demand for active transportation facilities and the benefits that these types of facilities can bring to a County and local communities such as those found within the County of Essex.

2.1 VISION AND OBJECTIVES

A County Wide Active Transportation Study is guided by a vision and objectives that establish targets for the future and guides the successful implementation of the Plan. The following vision and objectives for CWATS were prepared based on consultation with County and local municipal staff as well as the Study Team.

Vision

"The County of Essex and its seven 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."

Objectives

The following objectives that support the vision/goal for the County Wide Active Transportation Study were prepared and finalized by the Project Steering Committee. Consultation with County, Local Municipal, and key agency staff (e.g. ERCA), stakeholder groups, and members of the public who provided input:

- Recommend actions to improve conditions for walking, cycling and active transportation in the County of Essex for people of all ages by providing an on-road corridor and off-road trails system which integrates a number of facility types for both recreation and utilitarian use;
- Identify the elements of an Active Transportation network that are appropriate for the County of Essex, that will improve consistency and coordination throughout the county, and will provide appropriate connections to the neighbouring municipalities of Chatham-Kent and the City of Windsor;
- Develop an effective and practical implementation strategy that will identify priorities, annual costs, best practices for facility design and support an improved active transportation network;

Recommend actions to improve conditions for walking, cycling and active transportation in the County of Essex for people of all ages by providing an on-road corridor and off-road trails system which integrates a number of facility types for both recreation and utilitarian use.

Identify roles and responsibilities for the County, Local Municipalities, County, and other partners in facilitating walking, cycling and active transportation.

- Identify and recommend strategies and programs that the County as well as local municipalities can lead, or partner with others, to encourage more people to walk and bicycle more often for utilitarian and recreational purposes; and
- Identify roles and responsibilities for the County, local municipalities, ERCA and other partners in facilitating walking, cycling and active transportation.

2.2 SUPPORTS THE DEMAND FOR THE COUNTY

Public opinion research consisting of statistically valid data collected from Canadians including Windsor and Essex County residents as part of the National Active Transportation Survey 2004, Cycling Public Opinion Surveys as well as the South-western Ontario *in motion* Physical Activity Survey Report 2009 was collected and reviewed. The surveys as well as the results, outlined in further detail below, demonstrate the increasing demand for active transportation (cycling and pedestrian) facilities within and surrounding the County of Essex.

National Active Transportation Survey (2004)

In 2004 the Canadian Fitness and Lifestyle Research Institute conducted the National Active Transportation Survey on behalf of Go for Green and the Public Health Agency of Canada. The purpose of the survey was to examine opportunities and participation in active transportation and commuting (walking and cycling) in adults and school-aged children and to serve as a follow-up to a similar survey done in 1998.

The survey was based on a sample of 1,640 Canadians aged 15 or older evenly distributed across the country according to the sizes and populations of each province and territory in Canada.

The following key findings from the 2004 survey provide some valuable information that can be used in the County Wide Active Transportation Study.

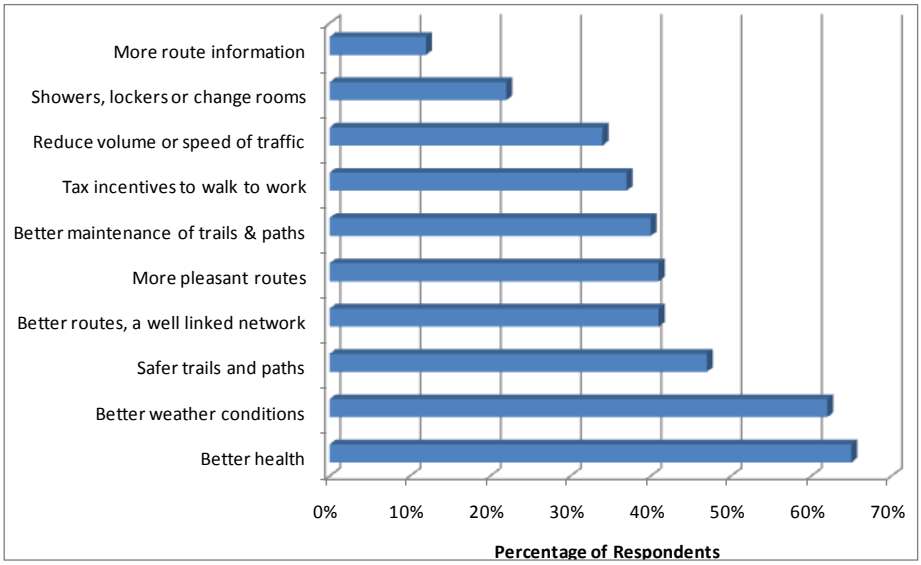
- Trends were similar to an earlier1998 national study;
- Most Canadians (78%) walk as a leisure or recreational activity;
- Few walk to work (70% never do);
- Less than 1/4 walk to a transit stop (58% never do);

- About 1/3 sometimes walk to visit friends or family, or to shop and do errands, or to leisure/recreation activities (52% never do);
- 60% of Canadian adults own or use a bicycle;
- 82% of those cycle for leisure or recreation;
- Very few cycle to work (76% never do);
- About 1/3 sometimes cycle to the place they most often pursue leisure activities;
- About 1/4 sometimes cycle to visit friends or family;
- Few do so for errands, to shop or to get to public transit
- About 27% of adults work at home or telecommute;
- 62% travel to work by car most of the time;
- 86% own or have regular use of a car;
- 11% travel by public transit most of the time or always;
- 45% of adults have changed the amount they walked compared to the previous year. Of those, 61% walk more;
- 15% of adults would like to cycle much more and 59% would like to cycle more; and
- 39% of adults have changed the amount they cycled compared to the previous year. Of those, 50% cycle more.

45% of adults have changed the amount they walked compared to the previous year. Of those, 61% walk more.

Figures 2.1 and 2.2 illustrate some of the key responses Canadians gave regarding steps that could be taken to improve conditions for walking and cycling.

Figure 2.1 – Steps to Facilitate Walking



The majority of people surveyed indicated that better personal health and weather conditions will encourage them to walk more.

The majority of people surveyed indicated that better personal health and weather conditions would encourage them to walk more. A large percentage of people also indicated that a well linked network of pleasant routes will further encourage walking trips. This is followed by improved maintenance of trails, tax incentives for walking, the reduction of traffic speed and the provision of trip-end facilities such as showers or lockers.

Figure 2.2 – Steps to Facilitate Cycling

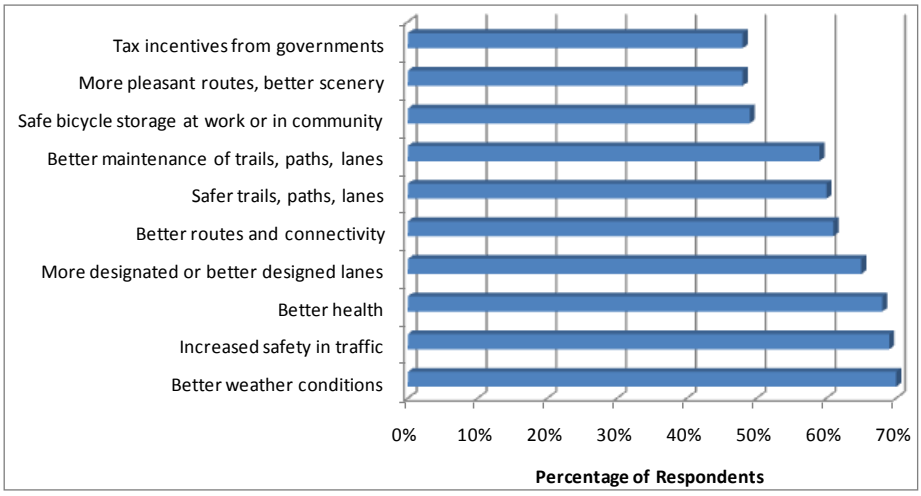


Figure 2.2 suggests that many steps can be taken to facilitate and encourage cycling. A majority of respondents indicated that implementing new, safer routes that are maintained will encourage them to bicycle. Additionally, the provision of a secure bicycle storage facility at their workplace or in their community will also increase the likelihood that they will choose to cycle for their trip.

Two of the key findings that emerged from the 2004 National Active Transportation Survey that are relevant for decision makers at all levels of government include the following:

- 84% of Canadian adults somewhat or strongly agree that they would support spending government money on more dedicated bicycle paths in my community to make streets safer for cyclists, cars and pedestrians; and
- 65% of Canadian adults somewhat or strongly agree that if there was a dedicated bike lane which would take them to their workplace in less than 30 minutes at a comfortable pace, they would definitely use it.

Cycling Public Opinion Surveys

The following data was gathered from a review of statistically valid public opinion studies by Decima Research Inc. and Ipsos Reid. A number of public opinion research reports conducted in Ontario municipalities over the past decade were reviewed for relevant data related to people's attitudes toward cycling. These studies vary in many ways, including the sample size used, date of study and variations in the municipalities surveyed, so the results are presented for information purposes. The studies selected are listed below in Table 2-1.

Table 2-1: Public Opinion Surveys Selected for Review

Study	Year	Sample Size	Margin of error
City of Toronto Cycling Study	2009	1000	3.1%
Niagara Region Cycling Study	2001	202	6.9%
Region of Waterloo Cycling Study	2002	371	8% - 40%
Windsor Area Cycling Study	2002	501	4.8% - 16.6%
City of Ottawa Cyclist Profile Survey	2003	1001	3.1%

In each survey, several questions were asked related to cycling, some of which were specific to each municipality. However, some questions were common to all five studies and these questions are presented below. Although there were minor variations in wording, generally speaking the following questions were asked as part of each survey:

- For each of the following statements please answer yes or no: Would you say you are comfortable cycling:
  - On major roads without bike lanes?
  - On major roads with a wide curb lane but no separate bike lane?
  - On major roads with bike lanes?
  - On residential streets?
  - On rural roads with paved shoulders?
  - On bike paths or trails?

In each survey, several questions were asked related to cycling, some of which were specific to each municipality.

- What concerns if any do you have about cycling or cyclists in the municipality? (choose from a list)
- What one thing do you feel the municipality or your employer or school could do to improve cycling in the municipality? (choose from a list)

The findings of the review are presented below in Figures 2.3 to 2.5.

Figure 2.3 –Cycling Comfort Levels

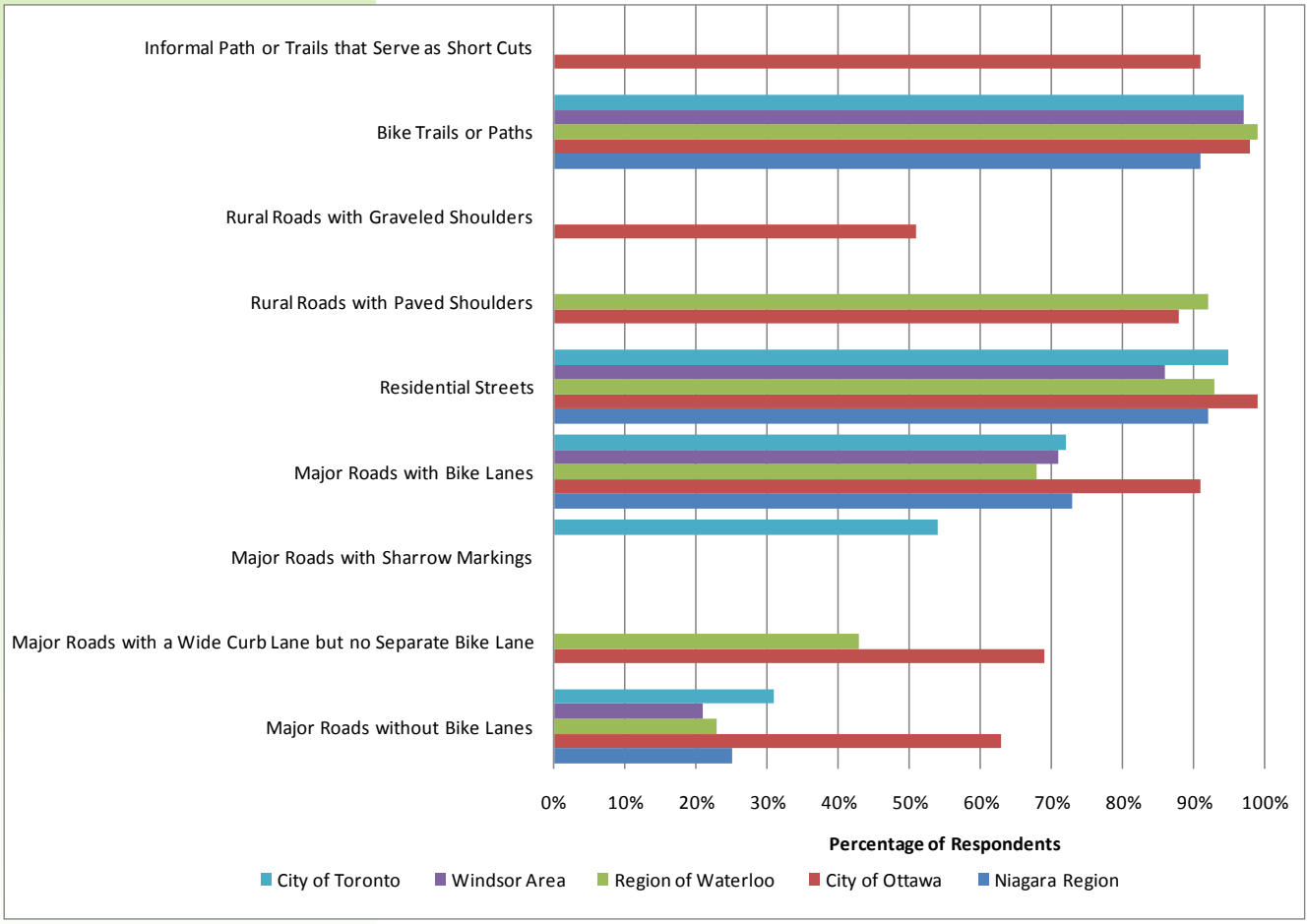
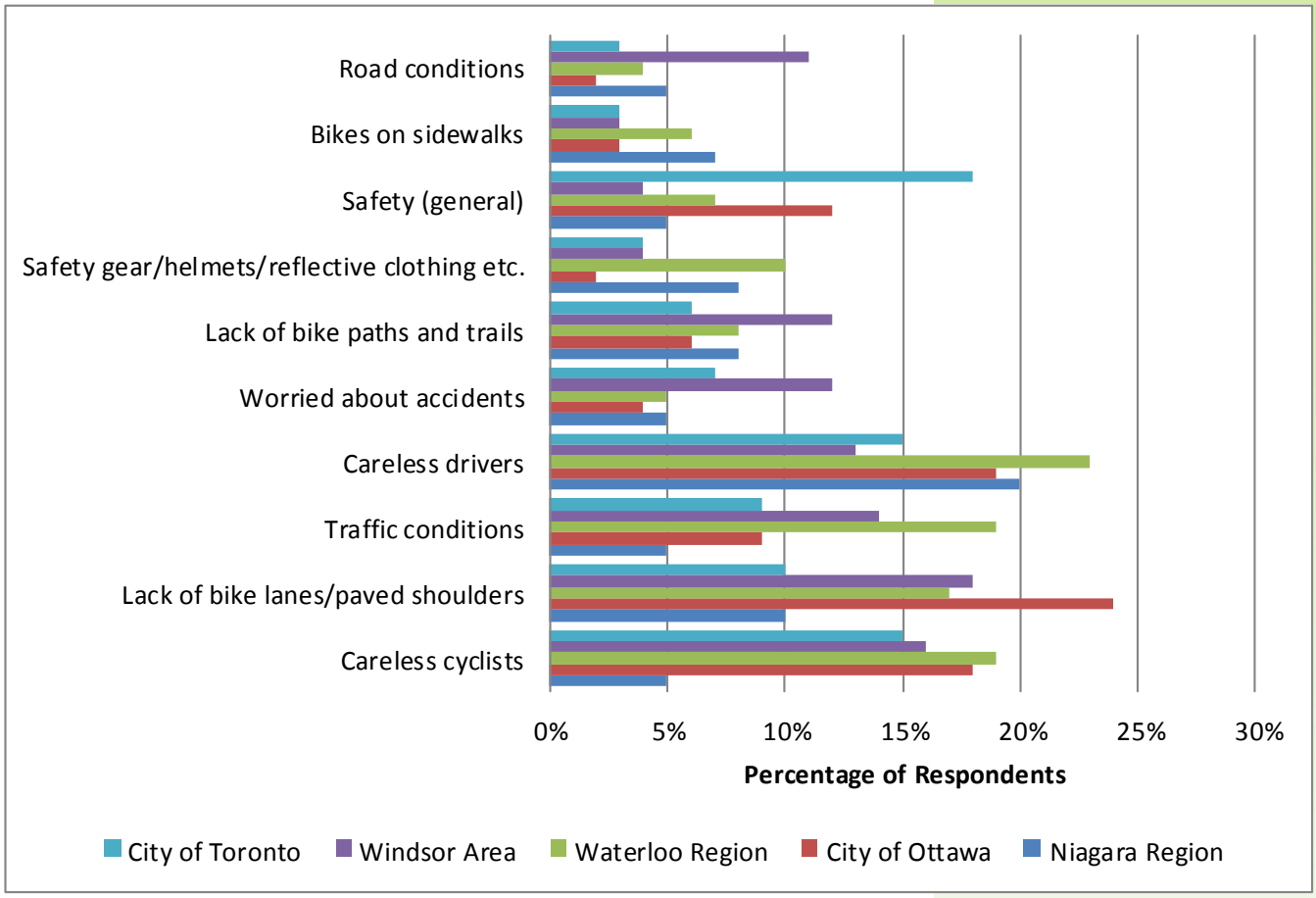


Figure 2.4 – Concerns about Cycling

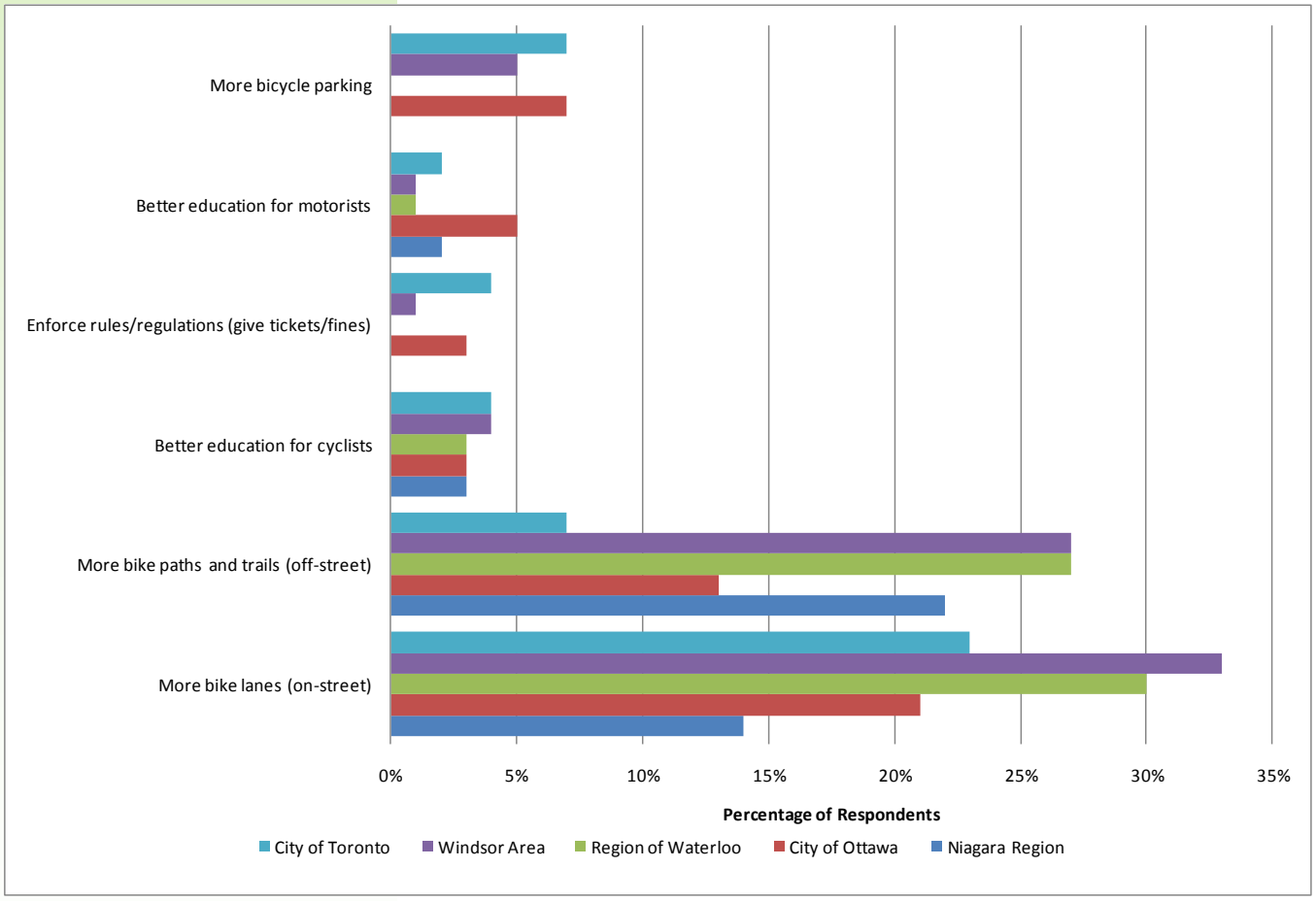


One of the key factors in encouraging more people to cycle more often is an individual's perception of cycling comfort. Public opinion research conducted in both the United States and Canada suggests that in order to encourage more people to cycle more often, a municipality needs to provide the appropriate type of facility and promote its use. The results illustrated in Figure 2-3 reinforce this finding. In terms of cycling comfort, cyclists prefer bike trails/paths, cycling on local residential low volume streets and then bike lanes on major roads. With the exception of Ottawa, where there exists long established cycling culture and a history of riding on major roads with or without bike lanes, all of the other municipal surveys clearly indicate a very strong preference for bike lanes on major roads. Members of the public are more comfortable and therefore more likely to consider cycling on major

roads with bike lanes than on those without. Therefore, if the objective is to increase the number of people who cycle, bike lanes or separated bike ways (such as cycle tracks) need to be part of a comprehensive cycling network strategy. Another interesting concept to explore on streets without the width for bike lanes is the use of "Sharrow" markings, which have been moderately successful in Toronto.

When asked what their primary concerns were with regard to cycling, the majority of respondents to each of these municipal public opinion surveys identified careless drivers, careless cyclists, followed by a lack of bike lanes and paved shoulders, as the top three concerns. These were followed by traffic conditions, lack of bike paths and trails and safety.

Figure 2.5 – Changes That Would Improve Cycling



One of the key findings from these public opinion surveys is the level of importance given by the public to improving cycling infrastructure. When asked what the key changes are that should be made to improve cycling, the majority of respondents clearly indicated more on-street bike lanes and off-street bike paths. Other key areas identified included education for cyclists, enforcement, improved education for motorists and more bike parking.

When asked what the key changes are that should be made to improve cycling, the majority of respondents clearly indicated more on-street bike lanes and off-street bike paths.

South-western Ontario *in motion* Physical Activity Survey Report

In south-western Ontario, physical activity levels are considered to be lower than the provincial average by as much as 4.3%. In particular, the Windsor-Essex Health region ranked 55th out of 83 regions in Canada where adults were sufficiently active.

In the summer of 2009, Southwest Ontario *in motion* created an online survey to determine the physical activity levels of residents in the tri-county area: Windsor-Essex, Chatham-Kent, and Lambton. The surveys were distributed across the three jurisdictions and a total of 869 surveys were completed and used to yield findings for the report. Some of the questions posed included how often people participated in physical activities, what types of activities they participated in and other characteristics / tendencies associated with physical activities.

Some of the key findings from the report include:

- Respondents reported a wide variety of physical activities such as jogging, yoga, cycling, soccer, swimming, walking, squash, canoeing, and dancing;
- 75% of Windsor-Essex respondents considered walking outdoors as the most frequent activity they participated in while only 27% reported cycling as the most frequent activity;
- Few respondents are involved in active transportation. 20% of respondents indicated that they did no walking, and 60% reported that they spent less than 2 hours per week of walking to work, school or doing errands; and
- 70% indicated never using a bike for active transportation. This means that respondents are not getting active as part of their daily routine for transportation and need to get the activity elsewhere.

The low level of respondents participating in active transportation in the tri-county area suggests that much work needs to be done to promote the

With seven area municipalities in the County of Essex, a key element to developing a County Wide Active Transportation Study is ensuring consistent coordination with each of the municipal governments, their staff, and active transportation related committees.

benefits of walking and cycling to work for health and for environmental reasons. The County Wide Active Transportation Study intends to be a part of this solution.

2.3 A NEED FOR COORDINATION

With seven area municipalities in the County of Essex, a key element to developing a County Wide Active Transportation Master Plan is ensuring consistent coordination with each of the municipal governments, their staff, and active transportation related committees.

2.4 BENEFITS OF ACTIVE TRANSPORTATIONS

Active Transportation activities provide significant health and fitness, transportation, environmental, economic and tourism benefits. Municipalities in southern Ontario and throughout North America are implementing initiatives to promote and encourage active transportation activities as a feasible alternative to the private automobile for short-distance trips and as a method of promoting a more active and healthy lifestyle.

2.4.1 Health and Fitness

Walking and cycling provide an enjoyable, convenient and affordable means of exercise and recreation. Research suggests that the most effective fitness routines are moderate in intensity, individualized and incorporated into our daily activities. In addition, studies have shown that people who use active transportation are, on average, more physically fit, less obese and have a reduced risk of cardiovascular disease[1].

Increased physical activity such as walking, cycling and other trail related activities could help to reduce the risk of coronary heart disease, premature death, high blood pressure, obesity, adult-onset diabetes, depression and colon cancer.

In 2001, approximately $2.8 billion was spent on health care due to physical inactivity in Canada, which could be reduced by $280 million if physical activity was increased by 10%[2].Our health system is shifting from protecting

[1] Reynolds, Conor C.O., Meghan Winters, Francis J. Ries, and Brian Gouge. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." Editorial. *National Collaborating Centre for Environmental Health* June 2010: 1-15. *National Collaborating Centre for Environmental Health*. National Collaborating Centre for Environmental Health, June 2010. Web. June 2010. <www.ncceh.ca>.

[2] The Business Case for Active Transportation, The Economic Benefits of Walking and Cycling; Section 4.7.2; Go for Green, March 2004

people from hazards in the environment to developing healthy environments in which people can live. Evidence suggests that improved cycling facilities lead to increased bicycle use[3]. Increased physical activity such as walking, cycling and other trail related activities can help reduce the risk of coronary heart disease, premature death, high blood pressure, obesity, adult-onset diabetes, depression and various types of cancer. A more active population can in turn reduce the cost of medical care, decrease workplace absenteeism, and maintain the independence of older adults and younger children exploring potential new active transportation options.

Sedentary lifestyles have serious consequences for public health. The most visible is the sharp rise in obesity across Canada in recent years. Almost half of Canadians ages 12 and over report being physically inactive and 26% of youth between the ages of 2 and 17 years old are overweight or obese (Statistics Canada 2005). In Canada, the prevalence of obesity has more than doubled in the last 20 years (Katzmarzyk & Mason, 2006). Comparatively, the proportion of overweight and obese adolescents aged 12-17 doubled from 14% to 29% between 1979 and 2004, and today only 12% of children and youth get adequate levels of physical activity. There is strong evidence to suggest that that people who commute to work via cycling or walking are likely to be fitter and less likely to be overweight or obese then those who use motorized modes[4]. It is important to educate and inform adolescents at an early age about the importance of living active and healthy lifestyles.

There are other health benefits in addition to the physical fitness gains. Exploring different modes of active transportation can enhance one's mental outlook and well-being, improve self-image, social relationships and increase self-reliance by instilling a sense of independence and freedom. These can contribute to healthier and happier personal relationships, and improve work and school productivity.

Walking and cycling are both popular recreational activities and a means of transportation that are efficient, affordable and accessible. They are the most energy efficient modes of transportation that generate no pollution

[3] Bridging the Gaps: How the Quality of a Connected Bikeway Network Correlation with Increasing Bicycle Use, July 27, 2005, Mia Burke and Roger Geller

4 Reynolds, Conor C.O., Meghan Winters, Francis J. Ries, and Brian Gouge. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." Editorial. National Collaborating Centre for Environmental Health June 2010: 1-15. National Collaborating Centre for Environmental Health. National Collaborating Centre for Environmental Health, June 2010. Web. June 2010. <www.ncceh.ca>.

Improving active transportation methods such as walking and cycling and reducing automobile traffic can help make communities more liveable by creating an environment that is pleasant and safe with reduced noise and pollution. This can help to encourage more social interaction within a neighbourhood and create a stronger sense of community. Active transportation (AT) modes can provide a form of mobility for people who do not have regular access to an automobile and live in communities with limited transportation choices.

Making strategic investments, through partnerships when feasible, in both infrastructure and outreach to support active transportation in daily commuting habits, fitness and active recreation can help to promote a healthy and active lifestyle for County of Essex residents and can have other valuable benefits.

2.4.2 Transportation

Walking and cycling are both popular recreational activities and a means of transportation that are efficient, affordable and accessible. They are the most energy efficient modes of transportation that generate no pollution. The transportation benefits of walking, cycling and other active transportation modes include reduced road congestion and maintenance costs, less costly infrastructure, increased road safety and decreased user costs. In general, active transportation modes provide no emissions during use and have low lifecycle greenhouse gas emissions[5]. In many cases, for distances up to 10 km in urban areas, cycling can be the fastest of all modes from door to door.

Canadians make an average of 2,000 car trips per year over distances less than 3 km. Surveys show that 66% of Canadians would like to cycle more than they presently do. Seven in ten Canadians say they would cycle to work if there "were a dedicated lane which would take me to my workplace in less than 30 minutes at a comfortable pace".[6] These facts clearly demonstrate the

5 Reynolds, Conor C.O., Meghan Winters, Francis J. Ries, and Brian Gouge. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." Editorial. National Collaborating Centre for Environmental Health June 2010: 1-15. National Collaborating Centre for Environmental Health. National Collaborating Centre for Environmental Health, June 2010. Web. June 2010. <www.ncceh.ca>.

6 Ontario Trails Strategy, Ministry of Health Promotion, 2005, Province of Ontario.

potential for increasing the number of trips by bicycle, especially in the more urban areas of the County.

There is strong evidence that given complete networks of high-quality cycling routes, a significant number of people will cycle. The value of such complete networks is demonstrated in many communities such as Portland, Oregon; Davis, California; and Boulder, Colorado. With between 10% and 20% of trips by bicycle, these communities have the highest levels of bicycle usage in North America. This high level of cycling is facilitated by mature networks, which include bike lanes on almost all of their arterial roads and extensive off-road commuter bicycle paths. Residents can simply get on their bicycles with confidence knowing there will always be a safe route to their destination (British Columbia Cycling Coalition Budget Submission, 2007).

Congestion costs in Ontario were estimated to be $6.4 billion annually and could grow by an additional $7 billion annually by 2021 without increased investment in alternative modes of transportation.[1]

The addition of even a small volume of traffic to a congested road can create enormous delays for all users. In fact, at capacity conditions, increasing traffic by 5% can reduce speeds by up to 25%. Congestion costs in Ontario were estimated to be $6.4 billion annually and could grow by an additional $7 billion annually by 2021 without increased investment in alternative modes of transportation.[7] Shifting a little traffic off busy roads can create substantial time savings for individuals as well as time-sensitive commercial vehicles[8].

It has been estimated that due to rising gasoline prices, more than 10 million cars – mostly belonging to low income families – will disappear in the US in the next five years, and a similar trend is expected in Canada (CIBC World Markets, 2008). Providing safe options for bicycle and pedestrian travel is going to become increasingly important.

Typical roadway funding requirements include maintenance costs, safety and enhancement costs plus the addition of roadway capacity through lane widening or additions. Furthermore, the costs for road construction, reconstruction and maintenance are usually paid for by road users through property and gas taxes. An emphasis on walking, cycling and other active

7 Transportation Demand Management Strategy, City of Ottawa - TravelWise (Transportation, Utilities and Public Works), April 2003.

8 Transportation Demand Management Strategy, City of Ottawa - TravelWise (Transportation, Utilities and Public Works), April 2003.

A roadway can carry 7 to 12 times as many people per lane per hour by bicycle compared to that of motor vehicles in urban areas operating at similar speeds.

transportation modes can result in a reduction in roadway costs. Bicycles are lightweight vehicles that take up little space and cause little wear and tear on a road surface.

Road improvements to increase the safety of pedestrians and cyclists can and should enhance the safety of other road users. The U.S. Federal Highway Administration reports that paved shoulders on two-lane, rural roads have been shown to reduce run-off-the-road, head-on and sideswipe collisions by 30% to 40%. In addition, many municipalities have found that paved shoulders reduce maintenance costs related to shoulder deterioration, grading and snow removal.

A roadway can carry 7 to 12 times as many people per lane per hour by bicycle compared to that of motor vehicles in urban areas operating at similar speeds. It is also much cheaper to provide paved shoulders on a road for cyclists than to provide two additional motor vehicle travel lanes. A small portion of a municipality's transportation budget can be used to facilitate high levels of bicycle use.

Another benefit of reduced car use is a decrease in the number of parking spaces required. For example, encouraging more people to walk and cycle to work could lead to a reduction in the number of parking spaces required at a place of employment. Bicycle parking facilities could be provided in an existing surface or underground parking lot with no additional parking lot expansion required.

2.4.3 Environment

Active Transportation activities are energy-efficient, non-polluting modes of travel. Short distance motor vehicle trips are the least fuel efficient and generate the most pollution per kilometre. These trips have the greatest potential of being replaced by walking or cycling trips and integrated walking-transit and cycling-transit trips.

Reducing the number of motor vehicles on the road decreases the number of pollutants released into the atmosphere by motor vehicles. The effects of climate change can be reduced by encouraging drivers to use other modes, or to travel outside rush hours. Motor vehicles, roads and parking facilities are major sources of water pollution and hydrologic disruptions due to such

factors as road de-icing, air pollution settlement, roadside herbicides, road construction along shorelines, and increased impervious surfaces.

Motor vehicles generate various types of unwanted noise that cause disturbance and discomfort to residents. This includes engine acceleration, tire/road contact, braking, horns and vehicle theft alarms. Bicycles make little noise, and are not disruptive to communities from a noise perspective. Automobile dependent communities require more land for road rights-of-way and parking than communities that are not as reliant on the automobile. Making communities less auto-dependant by providing infrastructure for alternative transportation modes, such as walking, cycling and public transit, can reduce the amount of land required to construct new communities, thus creating more compact subdivisions that make more efficient use of available land.

The effects of climate change can be reduced by encouraging drivers to use other modes, or to travel outside rush hours.

Given the important role that cycling plays in reducing emissions of air pollutants and greenhouse gases, and fostering good health directly, it is important to create bicycle connectivity that has the potential to create a desirable cycling environment. A literature and best practices review suggests that the number of beginner or infrequent cyclists increases when:

- Neighbourhoods and communities accommodate a cycling network that includes bike lanes and off-road cycling or multi-use trails;
- Roads with speeds over 60km/h have separated lanes or wider paved shoulders that are part of the road, not sidewalk, infrastructure;
- Roads with speeds between 50-60 km/h have marked bicycle lanes;
- Roads with speeds under 40 km/h are shared;
- Priority is given to cyclists in intersections;
- Residents have access to trip end facilities such as secure long-term bicycle parking (e.g. lockers), secure short-term bicycle parking (e.g. bicycle racks), and showers in commercial buildings; and
- All streets, roadways, and designated bike routes are maintained to be free of deterrents to bicycling (such as potholes, debris, and overgrown landscaping).

A study published by Go for Green in March of 2004 establishes a convincing Business Case for Active Transportation in the report entitled “The Economic Benefits of Walking and Cycling”.

In order to support the inclusion of these community design elements in future development in the County of Essex, it would be helpful if local municipalities incorporated in their planning policy an active transportation

review for cycling and pedestrian connectivity and safety for planning applications[9].

2.4.4 Economic

A study published by Go for Green in March of 2004 establishes a convincing Business Case for Active Transportation in the report entitled "The Economic Benefits of Walking and Cycling"[10]. These benefits include:

- Reduction in road construction, repair and maintenance costs;
- Reduction in costs due to air pollutants and greenhouse gas emissions;
- Reduction in health care costs due to increased physical activity and reduced respiratory and cardiac disease;
- Reduction in fuel, repair and maintenance costs to users;
- Reduction of costs due to increased road safety;
- Reduction in external costs due to traffic congestion;
- Reduction in parking subsidies;
- Reduction of costs due to air pollution;
- Reduction of costs due to water pollution;
- The positive economic impact of bicycle tourism;
- The positive economic impact of bicycle sales and manufacturing;
- Increased property values along greenways and trails; and
- Increased productivity and reduction of sick days and injuries in the workplace.

There is ample evidence that on and off-road active transportation facilities provide significant economic benefits for adjacent landowners and local businesses. Active transportation provides benefits to the local economy during both construction and operation. The construction of these active transportation facilities results in direct benefits such as jobs, including the supply and installation of materials. Following construction, benefits emerge in the form of expenditures by active transportation facility users. A few examples include:

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[9] Creating Walkable and Transit-Supportive Communities in Halton, Halton Region, February 2009

[10] The Business Case for Active Transportation, Go for Green, Better Environmentally Sound Transportation – BEST, March 2004.

- The Adanac Bikeway in Vancouver was completed in 1993 and bicycle volumes increased 225% during the period from 1992 to 1996;
- Trails in New Brunswick employ around 1500 people for an average of six months per year;
- 70% of Bruce Trail users cite the trail as the main reason for visiting the area, and they spend an average of about $20.00 per user per visit within a 10 km corridor on either side of the trail;
- Annual expenditures linked to La Route Verte rose to $95.4 million in 2000, representing 2,000 jobs and $15.1 million and $11.9 million for the governments of Quebec and Canada, respectively;
- In 2002, Quebec hosted 190,000 bicycle tourists who spend an average of $112 per day and an average of 6.5 nights compared to $52 per day and an average of 3.1 nights spent by other tourists; and
- In Ontario, the Eastern Ontario Trails Alliance estimated that at the end of a ten year build-out period, 320 km of their system, constructed at a cost of $5.4 million, will generate approximately $36 million in annual economic benefits in the communities through which it passes, and create/sustain over 1,100 jobs.

Annual expenditures linked to La Route Verte rose to $95.4 million in 2000, representing 2,000 jobs and $15.1 million and $11.9 million for the governments of Quebec and Canada, respectively

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

Bicycle manufacture, sales and repairs, as well as bicycle tourism, recreation and delivery services contribute to the economy with little to no public investment or subsidy. In 2002, Canadian households spend an average of $42 on bicycles, parts and accessories for a total of approximately $500 million[11].

2.4.5 Tourism

It has been shown that there is a growing demand for cycling and eco-tourism throughout Southern Ontario and North America. The demand stems from an increasing desire to explore new areas through an active mode of

[11] The Business Case for Active Transportation, Better Environmentally Sound Transportation - BEST, Go for Green, March 2004. Section 4.5.4, pg. 24

transportation and experience one's natural surroundings. In all cases the increase in cycling and active tourism has a direct impact on the economic standing of the City, Town, County or Region it is emphasized or implemented in.

A study done by the Victoria Transport Policy Institute shows that walking and cycling facility improvements and promotion programs have a direct impact on economic development by increasing shopping opportunities and tourism activities.

A study done by the Victoria Transport Policy Institute shows that walking and cycling facility improvements and promotion programs have a direct impact on economic development by increasing shopping opportunities and tourism activities. More specifically, "one study estimates that rail trails in Australia provide an average of $51 to the regional economy per cycle tourist per day (Beeton, 2003)". A number of studies show a direct correlation between the implementation of well-planned, non-motorized transportation improvements and an increase in local tourism economies[12].

In the United States, studies have shown that trails and greenways have been able to stimulate tourism and recreation-related spending and that trail and greenway systems have become the central focus of tourist activities in some communities. In these communities, this push in active tourism can be a key means of "kick-starting" the economy.

When looking at pedestrian, cycling and trail related tourism one must also look at the other expenditures associated with the trips. These include the food and beverage, maintenance, and lodging related costs which can be accrued over time. In one study undertaken throughout the United States, the expenditures on three multi-purpose trails were compared. On two rural multi-purpose trails in Iowa and Florida, the expenditures were US $9.31 and US $11.02 respectively. For an Urban multi-purpose trail in California, the expenditure was US $3.97. Though lower for the urban trail, with higher visitation levels the expenditures can provide significant monetary benefit for the region[13].

Though tourism benefits from AT and Trail facilities prove to provide an injection into the local economy there are also a wide range of social, environmental and health benefits associated with AT and trail tourism.

Though tourism benefits from AT and Trail facilities prove to provide an injection into the local economy there are also a wide range of social, environmental and health benefits associated with AT and trail tourism. As

[12] Litman, T. Quantifying the Benefits of Non-motorized Travel, Civtoris Transport Policy Institute (2010).

[13] Litman, T. Quantifying the Benefits of Non-motorized Travel, Civtoris Transport Policy Institute (2010).

people become increasingly more aware of the benefits to trail use and pedestrian and cycling activities there tends to be a continuous increase in the number of cycling tourists who will provide further benefits to their communities and the communities to which they visit.

Over the last ten years, the concept of active transportation and pedestrian and cycling network development has been gaining popularity because of the health; social, environmental, economic and tourism benefits are so substantial. There is clear evidence of benefits associated with designing active transportation, cycling and pedestrian friendly communities and encouraging people to be more active by walking and biking more often for both recreation and utilitarian purposes. Promoting active transportation, especially through the development of an integrated on and off-road system that provides transportation and recreation options, is a simple and obvious strategy that can encourage people to reduce their use of the personal automobile, and create sustainable, more livable, safe and active communities.

3.0 EXISTING CONTEXT

3.1 ESSEX COUNTY AND ITS EXISTING AT SYSTEM

3.1.1 County Profile

The County of Essex is located in south-western Ontario and covers an area at the southernmost tip of Canada. Based on data from the 2006 census, the population of the County was 176,929, comprised of seven local municipalities including Amherstburg, Lakeshore, Essex, Kingsville, LaSalle, Tecumseh, and Leamington. Overall, the County of Essex has a population density of 103.8 people per square kilometre dispersed over a total land area of 1704.4 square kilometers, indicative of a rural area. The average median age in the County of Essex is 38.7 while the average median household income is $74,098 suggesting large working population with a growing number of families. The County is bordered by the Municipality of Chatham-Kent to the east and the City of Windsor to the west and contains many kilometers of shoreline on Lake St. Clair and Lake Erie. It is a key goal for the County to enhance the area's attraction for new investors and innovative sustainable development through a substantial commitment by local governments to establish broadband connectivity across the County.

It is a key goal for the County to enhance the area's attraction for new investors and innovative sustainable development through substantial commitment by local governments as a means of establishing a broadband connectivity across the County.

Currently 4.8% of people either walk or cycle as their primary mode of transportation. Overall, the use of active transportation within the region varies between the municipalities in the County of Essex.

Due to its location in Canada, the County supports a unique climate with the mildest winters and the longest growing season. This ideal climate condition has fostered a growing wine industry as well as its reputation as one of Canada's most important agricultural areas, supporting the largest concentration of greenhouse vegetable production in North America. The County supports a number of natural features and attractions which provide significant opportunities for environmentally sustainable uses for both residents and visitors. Trolley tours, parks, wineries and other key environmental and tourist attractions make Essex County a year round destination for both residents and visitors. The County's proximity to the United States has also been an important factor for tourism. Lucrative Michigan, Ohio, and Indiana markets are within a day's drive of the border[1]. Key destinations such as these increase the demand for a connected network of multi-modal active transportation options.

Based on data gathered in the latest Statistics Canada Census (2006), detailed information regarding the travel mode share for the County was documented. It was observed that the use of the automobile or truck dominated the mode share with 86.6% of trips within County of Essex. As there are currently limited public transit services in the area, the public transit mode share was relatively low with only 4.8% of people walking or cycling as their primary mode of transportation. Overall, the use of active transportation within the region varies between the municipalities in the County of Essex. Through the implementation of this County Wide Active Transportation Master Plan this percentage will increase in years to come.

In the 2006 Census, the County of Essex was grouped with the City of Windsor in one census district. Similarly, a review of the Windsor – Essex County Population Report 2009 prepared by the Go for Health Windsor-Essex and Windsor-Essex County Health Unit includes the same demographic data as presented by Statistics Canada. For the purposes of this County-focused study, it does not include the City of Windsor. To provide further regional context, Table 3-1 provides a summary of the Community Profiles for the Municipality of Chatham-Kent, the City of Windsor, the

1 "COUNTY OF ESSEX: Welcome to Essex County." County Of Essex: Home. County of Essex. Web. 11 June 2010. <http://www.countyofessex.on.ca/wps/wcm/connect/coe/COE/ABOUT ESSEX COUNTY/>.

Windsor-Essex Region (as outlined in the 2006 Census), and the County of Essex.

Table 3-1: Community Profile for County of Essex, Chatham-Kent and Windsor

Indicator	Municipality of Chatham-Kent	City of Windsor	Windsor-Essex Region	County of Essex [3]
Total population	108,177	216,473	393,402	176,929
Population density per square kilometre	44.0	1473.5	212.5	103.8
Land area (square km)	2458.1	146.9	1851.3	1704.4
Median age	41.2	37.5	37.9	N/A
Median household income (2005)	$63,388	$50,884	$59,752	N/A
Mode Share				
Car; truck; van; as driver	81.7%	79.3%	82.8%	86.6%
Car; truck; van; as passenger	9.2%	8.1%	7.9%	7.6%
Public transit	0.9%	4.3%	2.4%	0.3%
Walked or bicycled	**7.2%**	**7.1%**	**6.0%**	**4.8%**
All other modes	1.0%	1.1%	0.9%	0.7%
Total	100.0%	100.0%	100.0%	100.0%

Source: Statistics Canada (www.statcan.ca), 2006 Census

Note-3: County of Essex data was not available. Population, density, area and mode share was derived from the census data by removing the City of Windsor values from the Windsor-Essex census district. Median age and median household income could not be directly derived.

Figure 3.1 illustrates the modal share data presented in Table 3-1. The City of Windsor has a considerable impact on the modal share of the overall Windsor-Essex Region according to data from Statistics Canada. Both the Municipality of Chatham-Kent and the City of Windsor have higher walking and cycling modal share than the County of Essex.

All of these regions have recently developed pedestrian and cycling or active transportation or trails master plans.

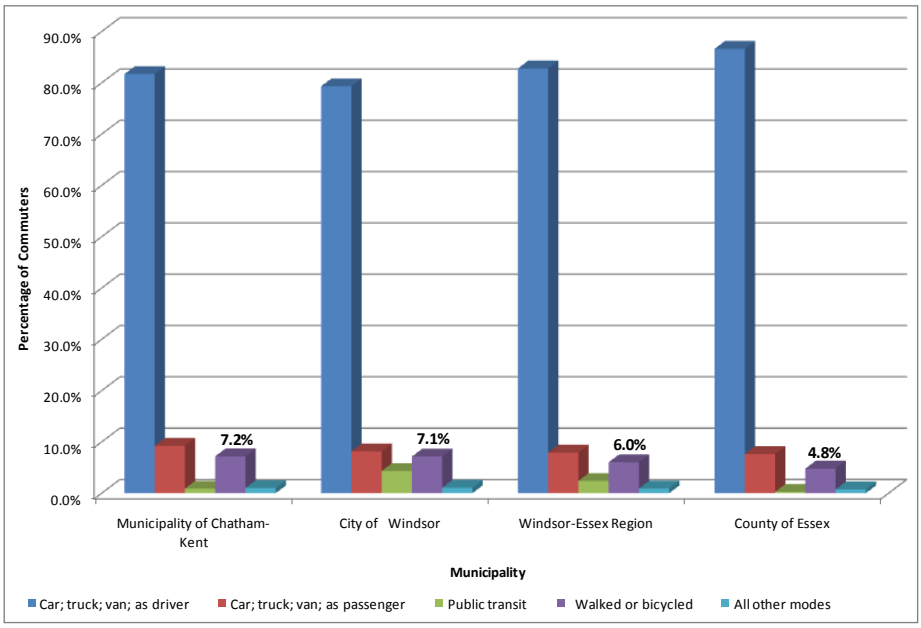


Figure 3.1 – Modal Split for County of Essex, Chatham-Kent and Windsor

To provide context regarding the transportation characteristics of the County of Essex, several regional municipalities were chosen for comparison. These regional municipalities include Waterloo Region, Durham Region, Niagara Region, Ottawa, York Region, and Dufferin County. Each of these municipalities has had varying success with walking and cycling and were chosen based on similar demographic characteristics. Furthermore, all of these regions have recently developed plans related to the implementation and encouragement of active transportation. The modal share comparison for the various regional municipalities is depicted in Figure 3.2.

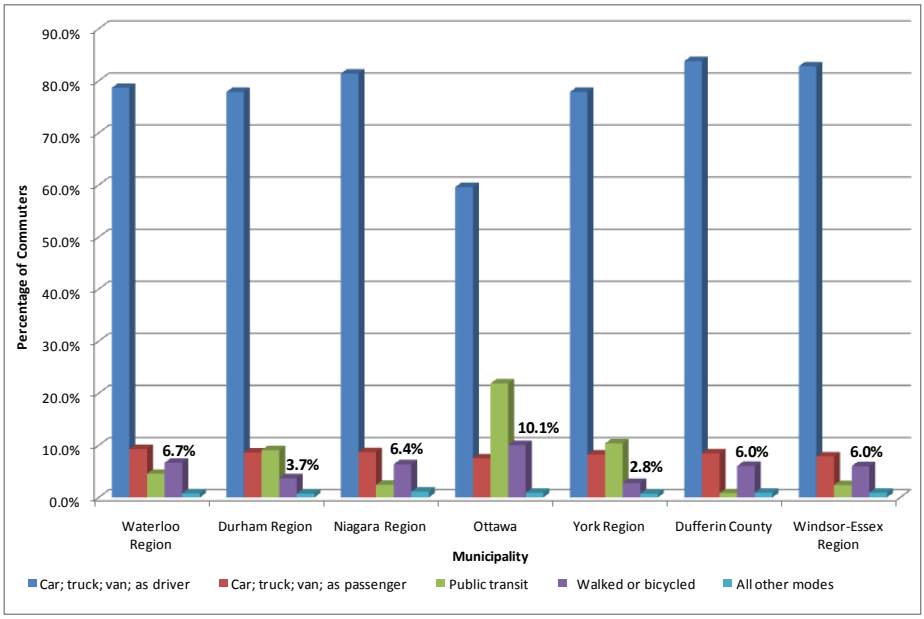


Figure 3.2 – Regional Municipality Modal Share Comparison

While driving a motor vehicle is the predominant mode of transportation across these regional municipalities, the Windsor-Essex Region has a comparatively high modal share for automobile use at 82.8% of trips, second to Dufferin County. The other regional municipalities have developed public transit systems that influence and reduce their motor vehicle travel mode share. With regard to cycling and walking, the County of Essex is at the sample average of 6.0%.

As outlined above, there are seven local area municipalities which make up the County of Essex. These individual municipalities have their own distinct characteristics and environments. The characteristics are key considerations for the development of the county wide active transportation study to achieve a coordinated network of facilities throughout the County. In the following section, details pertaining to the statistics and existing active transportation facilities in each of the municipalities have been illustrated and compared based on the findings of the Benchmarking Report developed in Phase 1 of the study process. These findings are an effective means of furthering the understanding of the future active transportation needs of the local municipalities as well as the County of Essex as a whole.

These individual municipalities have their own distinct characteristics and environments. The characteristics are key considerations for the development of the County Wide Active Transportation Study to achieve a coordinated network of facilities throughout the County.

3.1.2 Municipal Profiles

A community profile for each of the local municipalities within the County of Essex was documented and created in April 2010 based on data from the latest Statistics Canada Census undertaken in 2006. The study team's experience in developing active transportation plans and similar cycling and pedestrian studies for various local and regional municipalities made it possible to establish key indicators for the purpose of comparison. An "indicator" is defined as a piece of information, either qualitative or quantitative, that can be used to compare municipalities and provide insight on the future development of the active transportation network and facilities. The indicators selected for this comparison included the total population, population density per square kilometre, land area, median age of the population, median household income, and mode of transportation to work or mode share. A summary of the data gathered for comparative purposes for this study is presented below in Table 3-2.

Table 3-2: Community Profile Summary

Indicator	Town of Amherstburg	Town of Essex	Town of Kingsville	Town of Lakeshore	Town of LaSalle	Municipality of Leamington	Town of Tecumseh	County of Essex
Total population	21,748	20,032	20,908	33,245	27,652	28,833	24,224	176,929
Population density per square km	117.1	72.1	84.7	62.7	423.8	110.1	255.8	103.8
Land area (square km)	185.7	278.0	246.8	530.3	65.3	261.9	94.7	1704.4
Median age	38.6	40.8	39.9	37.5	37.3	37.1	39.9	N/A
Median household income (2005)	$73,653	$62,743	$66,319	$81,556	$89,269	$54,940	$90,206	N/A
Mode Share								
Car; truck; van; as driver	89.1%	87.4%	82.8%	90.2%	89.9%	76.1%	N/A	86.6%
Car; truck; van; as passenger	6.2%	7.1%	7.5%	6.6%	7.0%	12.5%	N/A	7.6%
Public transit	0.1%	0.1%	0.2%	0.3%	0.5%	0.1%	N/A	0.3%
Walked or bicycled	**3.8%**	**4.6%**	**8.6%**	**2.4%**	**2.0%**	**10.1%**	**N/A**	**4.8%**
All other modes	0.8%	0.8%	0.9%	0.5%	0.6%	1.1%	N/A	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	N/A	100.0%

Source: Statistics Canada (www.statcan.ca), 2006 Census

Note-1: Transportation mode share data was not available for the Town of Tecumseh.

Note-2: County of Essex data was not available. Population, density, area and mode share was derived from the census data by removing the City of Windsor values from the Windsor-Essex census district. Median age and median household income could not be directly derived.

The results for each of the individual indicators as outlined above are illustrated in Figures 3.3 to 3.8. The results shown below are based on each of the indicators and shows the responses based on the County of Essex as well as each of the area municipalities. The results provide an effective means of understanding the relationship between the municipalities and the County.

All of the municipalities are generally similar in population from 20,032 for the Town of Essex up to 33,245 for the Town of Lakeshore.

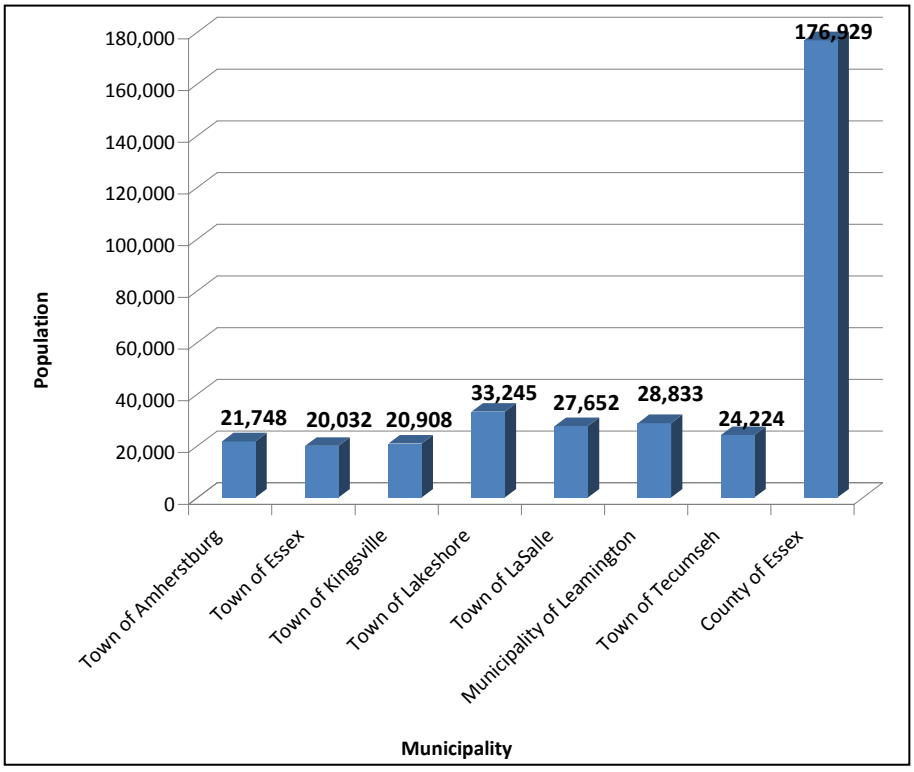


Figure 3.3 – The Total Population

Figure 3.3 is a comparison of the total population within the County of Essex and is based on data from the 2006 Statistics Canada Census. All of the municipalities are generally similar in population from 20,032 for the Town of Essex up to 33,245 for the Town of Lakeshore.

As the population of each of the municipalities is relatively similar, the fluctuations in the population density can be attributed to the land area of the municipality.

Figure 3.4 – Population Density

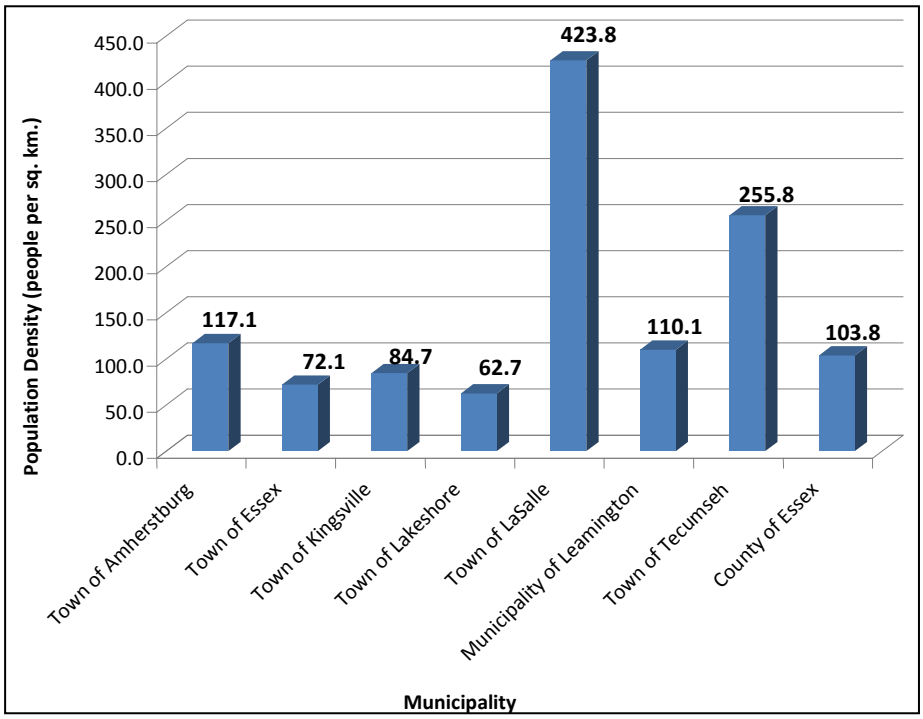


Figure 3.4 illustrates the population density for each municipality in the County. The population density varies greatly throughout County of Essex. The lowest population density is in the Town of Essex with 72.1 people per square kilometre. In contrast, the Town of LaSalle has the highest population density at 423.8 people per square kilometre.

Figure 3.5 – Land Area

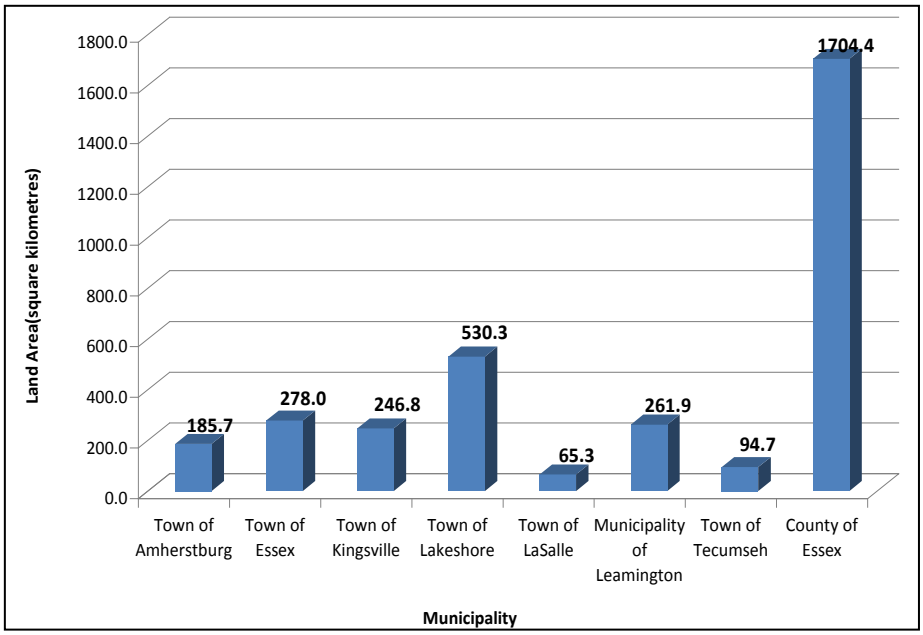


Figure 3.5 compares the amount of land area within each municipality. The figure highlights the vast differences in land area between the municipalities. The Town of Lakeshore is the largest of the County's local municipalities with and area of 530.3 square kilometres. The smallest municipality within the County of Essex is the Town of LaSalle with 65.3 square kilometres.

Figure 3.6 – Median Age of the Population

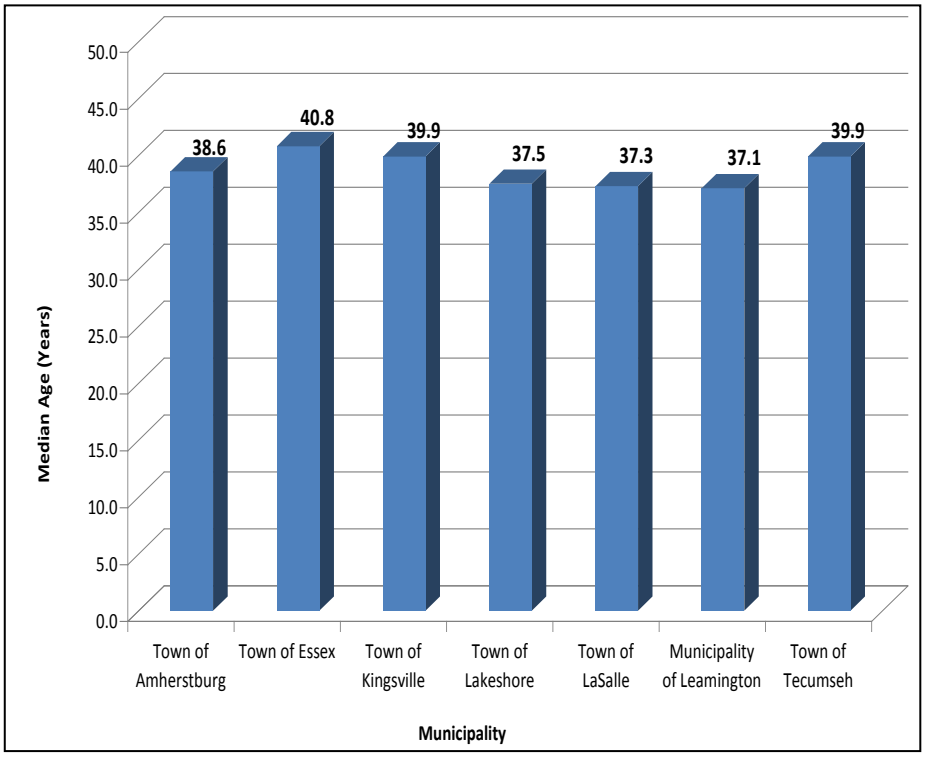


Figure 3.6 depicts the median age for each municipality. The median age within County of Essex ranges between 37 and 41 years of age.

The median age within County of Essex is fairly similar and range between 37 and 41 years of age.

The values for median household income range from $54,940 in the Municipality of Leamington to $90,206 in the Town of Tecumseh.

Figure 3.7 – Median Household Income

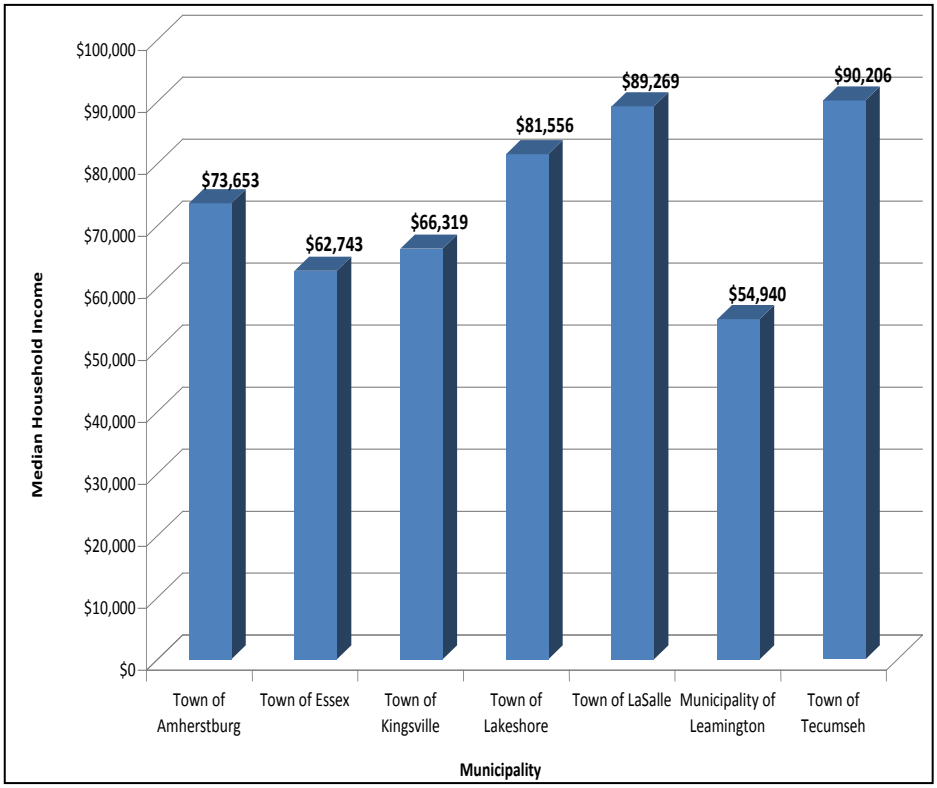


Figure 3.7 compares the median household income across the County of Essex and is based off of 2005 data. The values for median household income range from $54,940 in the Municipality of Leamington to $90,206 in the Town of Tecumseh.

Figure 3.8 – County of Essex Modal Split

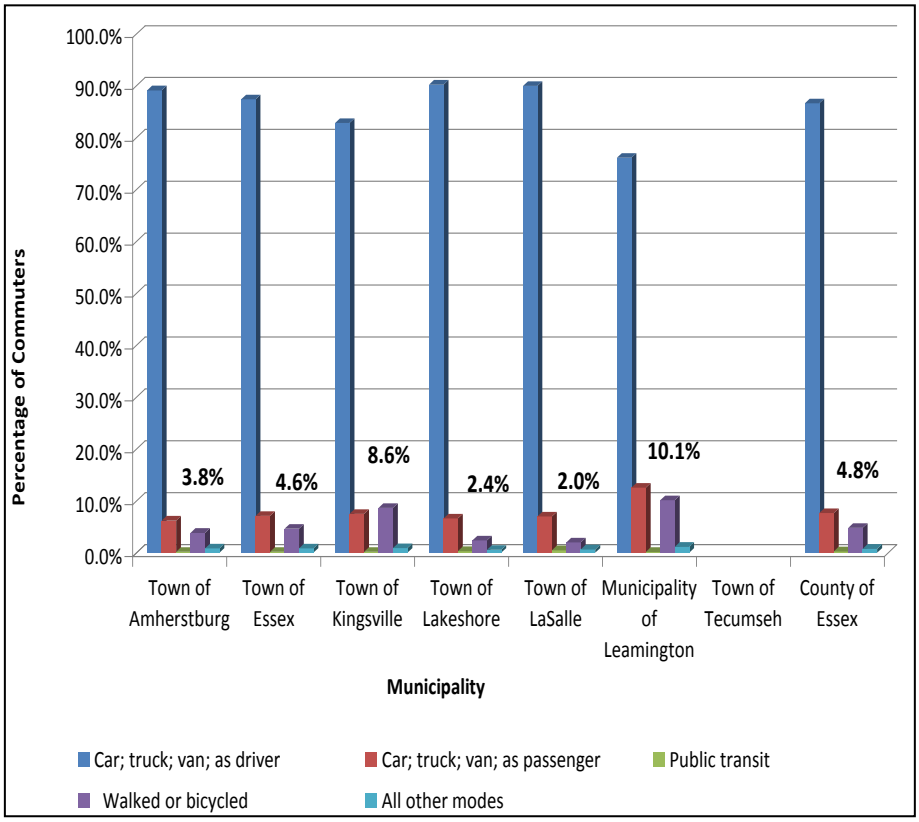


Figure 3.8 illustrates the travel modal split. The use of active transportation within the region varies between the municipalities in the County of Essex. The Municipality of Leamington leads the County for walking and cycling mode share at 10.1%. This may be attributed in part to a larger migrant worker community in Leamington who rely on walking and cycling as their primary mode of transportation.

3.1.3 How Does the County Compare

The case for Active Transportation in the County of Essex is a strong one. Walking and cycling modal splits in areas such as Leamington and Kingsville are relatively high for communities of their size. Overall, the County has a strong baseline from which to build upon.

The Existing Policy Review shows that there is a strong policy base for active transportation within the County, particularly at the local municipal level. Examples include the Town of Essex Trails, Walkways and Bikeways

The Existing Policy Review shows that there is a strong policy base for active transportation within the County, particularly at the local municipal level.

Plan, Municipality of Leamington Long Range Transportation Action Plan and Trails Strategic Plan and the Town of Lakeshore Trails Master Plan. In addition, a number of the townships and towns have developed additional policies in their Transportation Master Plans and Official Plans which support the provision of alternative modes of transportation, including active transportation facilities.

3.2 EXISTING POLICIES & INITIATIVES

Policies pertaining to active transportation including cycling, pedestrian, trails and alternative modes of transportation are provided by the Country, Province, the County and its local area municipalities. This section identifies and discusses key policies that directly influence active transportation connecting each of the seven local area municipalities, establishing a base to build upon for the County Wide Active Transportation Master Plan.

Policies pertaining to active transportation including cycling, pedestrian, trails and alternative modes of transportation are provided by the Country, Province, the County as well as many of the local area municipalities.

3.2.1 Federal

Transport Canada

Transport Canada released the "Strategies for Sustainable Transportation Planning: A Review of Practices and Options" report in 2005. This report provides a foundation on which to build a set of guidelines for incorporating sustainable transportation principles into municipal transportation plans.[2] Some of these principles include the creation of policies related to walking and cycling that can be used to develop effective, implementable transportation plans that promote sustainable transportation on a federal level. Some relevant strategies and policies are listed below:

Integration with Land Use Planning

- Encourage desirable land use form and design (e.g. compact, mixed-use, pedestrian/bike-friendly) through transportation plan policies.

Environmental Health

- Identify strategies to mitigate the impacts of transportation activities on air quality;

[2] IBI Group. "Strategies for Sustainable Transportation Planning: A Review of Practices and Options." Editorial. *Transport Canada: Transportation Planning* Summer 2005. Print.

- Identify strategies to mitigate the noise impacts of transportation activities;
- Identify ways that transportation systems influence the achievement of the community's economic and social objectives. Provide support in the plan's strategic directions;
- Recognize the importance of ensuring access to opportunities for disabled and low-income persons, recent immigrants, youth and the elderly. Set goals and objectives for reducing the need to travel, improving transit mobility, and preserving minimum levels of service on roadways. Identify related strategies;
- Address the transportation needs of persons with disabilities, notably with regard to public transit service and barrier-free design in public rights-of-way;
- Recognize the public health impacts of transportation activity arising through road safety, pollution and physical activity levels. Identify effective strategies to strengthen positive impacts and lessen negative ones; and
- Recognize the impact of transportation related death and injury on quality of life and the economy. Set goals and objectives for multimodal road safety. Identify effective road safety strategies.

Recognize the impact of transportation related death and injury on quality of life and the economy. Set goals and objectives for multimodal road safety. Identify effective road safety strategies.

Modal Sustainability

- Identify strategies, policies, facilities and services to increase walking, cycling, other active transportation, transit, ridesharing and teleworking;
- Recognize synergies and tensions among different modes (e.g. potential for multimodal cycling-transit trips, potential for modal shift from transit to ridesharing). Address possible implications for transportation objectives;
- Include objectives, strategies, policies, facilities and services to make transit operations more sustainable.

3.2.2 Provincial

The following section summarizes provincial policies and initiatives that relate to active transportation.

Bill 51 – Planning Reform

Bill 51 includes reforms to the Planning Act, which provides the legislative framework for land use planning in Ontario. Bill 51 includes changes to the

planning process that are intended to support intensification, sustainable development and protection of green space by giving municipalities greater powers, flexibility and tools to use land, resources and infrastructure more efficiently.

Bill 51 is in line with Ontario's recent policy shift towards sustainable land use development and planning. For instance, Bill 51 permits municipalities to require environmental sustainability design requirements for both individual buildings and entire neighbourhoods. It also adds sustainable development as a provincial interest in the Provincial Policy Statement.

Bill 51 includes changes to the planning process that are intended to support intensification, sustainable development and protection of green space by giving municipalities greater powers, flexibility and tools to use land, resources and infrastructure more efficiently.

Provincial Policy Statement

The Provincial Policy Statement (PPS) sets the foundation for regulating land use and development within the Province and supports Provincial goals. The PPS provides for appropriate development and protects resources of provincial interest. The vision of the land use planning system in PPS is that the "long-term prosperity and social well-being of Ontarians depend on maintaining strong communities, a clean healthy environment and a strong economy".[3]

The PPS promotes transportation choices that facilitate pedestrian and cycling mobility and other modes of travel. The term "transportation systems" under the PPS means a system consisting of corridors and rights-of-way for the movement of people and goods and the associated transportation facilities, which include cycling lanes and park'n'ride lots. Policies pertaining to transportation, such as cycling, pedestrians and transit are found throughout the PPS.

Municipal Act, 2001

The new Municipal Act, 2001 gives municipalities a broad new flexibility to deal with local circumstances, and to react quickly to local, economic, environmental or social changes. It recognizes municipalities as responsible, accountable governments with respect to matters within their jurisdiction.[4] The Municipal Act, 2001 provides policies relating to the municipalities

[3] Provincial Policy Statement, Ministry of Municipal Affairs and Housing, 2005.

[4] Ministry of Municipal Affairs and Housing: ww.mah.gov.on.ca/userfiles/HTML/mts_1_7748_1.html

jurisdiction over municipal highways and the maintenance of those highways, which has an impact on cycling.

Highway Traffic Act

Bicycles as defined in the Highway Traffic Act (HTA) are recognized as a vehicle. With the exception of controlled access highways such as the 400-series highways or roadways designated by municipal by-law, bicycles are permitted on all public roadways with the same rights and responsibilities as motor vehicles. The Highway Traffic Act contains a number of policies relating to bicycles, including bicycle lanes on municipal roadways, vehicles interacting with bicycles, bicycles being overtaken, and regulating or prohibiting bicycles on highways.

Bicycles are recognized as a vehicle, as defined in the Highway Traffic Act (HTA), which can operate on public roadways with the same rights and responsibilities as motor vehicles.

3.2.3 County of Essex

County of Essex Official Plan

The County's Official Plan was adopted in July 2005 and is a piece of policy which strongly encourages high quality pedestrian facilities along arterial and collector road systems. There are a number of pedestrian and bicycle policies such as those pertaining to the Chrysler Canada Greenway/Trans Canada Trail, the development of pedestrian and cycling paths as a consideration in the review of all development proposals, new paths to be interconnected with other existing paths and the integration of crossing major barriers with street crossings.

More specifically, section 2.9.3 speaks to pedestrian and bicycle policies and their future development throughout the County. The Chrysler Canada Greenway, also part of the Trans Canada Trail, is shown on Schedule "D" of the Official Plan. Local municipalities are encouraged to consider the development of pedestrian walkways and bicycle paths as part of development proposals and park development to provide for the safe and convenient movement of cyclists and pedestrians. Local municipalities are also encouraged to plan new pedestrian and bicycle paths in a manner that ensures their interconnectivity with existing and proposed paths including the paths within the City of Windsor. Pedestrian and bicycle crossings of major barriers, such as railways and expressways, should be comprehensively planned and integrated where possible with street crossings. Any proposed pedestrian and bicycle crossings of a provincial highway requires the prior approval of the Ministry of Transportation or the appropriate road authority.

Cycling can be used for recreational and/or utilitarian (i.e. commuting) purposes, with most trips being less than four kilometres in length. As is the case with walking trips, the number of trips made by bicycle decreases after four kilometres.

Essex-Windsor Regional Transportation Master Plan

The County of Essex in collaboration with the City of Windsor developed a Regional Transportation Master Plan in 2005 to guide future transportation development throughout the region.

The predominant walking and cycling facility in the Essex-Windsor region, outside of the City of Windsor's parks and trails system, is the Chrysler Canada Greenway. Owned and managed by the Essex Region Conservation Authority, the 50km abandoned railway corridor has been transformed into a multi-use recreation trail, underground utility corridor and a natural green space. It extends from the Oldcastle area of the Town of Tecumseh south to Harrow and then east through Kingsville to Ruthven. The trail connects natural areas and historically significant features, and links to 25 otherwise separate natural areas and three watersheds within the County.

Additional pedestrian and cycling facilities, including trail networks such as the Town of LaSalle's multi-purpose recreation ways, are also found within the urban settlement areas of the County as part of parks, open space and natural areas. In the City of Windsor, there are presently six trail routes open to the public, plus eight neighbourhood walking paths. The Bicycle Use Master Plan calls for a cycling network of bike lanes, multi-use trails and signed bike routes.

The Essex-Windsor Regional Transportation Master Plan illustrates that when distances over two kilometres, the percentage of trips made by walking decreases dramatically. Cycling can be used for recreational and/or utilitarian (i.e. commuting) purposes, with most trips being less than four kilometres in length. As is the case with walking trips the number of trips made by bicycle decreases after four kilometres. Both walking and cycling trips are dependent on climate conditions. Both forms of transportation are encouraged by City and County Official Plan policies (see Section 2.2.4).

In addition to the specific references made to the development of a walking and cycling system, section 3.3.3 of the Essex-Windsor Regional Transportation Master Plan also identifies future opportunities for the provision of pedestrian and cycling facilities. It notes that the greatest demand for walking and cycling in the Essex-Windsor region is expected in the urbanized areas where the population base and higher densities exists. It

is here that a shift to non-motorized modes for short distance trips should be encouraged, with "short distance" being less than 2.5 km.

With limited financial resources to spend on non-motorized transportation, it is important that investments are made in locations where the largest possible usership and benefit is or will be available. This includes new inner city redevelopment areas, "brownfield" projects and suburban developments that provide opportunities to extend existing trails and bikeways, as well as the extension of the Chrysler Greenway that forms the spine of rural walking and cycling routes. As growth in the periphery of the City of Windsor and abutting municipalities continues, other opportunities should be found to link the Greenway and County trails with the City's bikeway and trail network. Walking and cycling routes also need to be linked with transit to encourage modal shifts to all three modes.

With limited financial resources to spend on non-motorized transportation, it is important that investments are made in locations where the largest possible usership and benefit is or will be available.

In addition to the extensive support for the development and provision of sustainable alternative modes of transportation on the part of the County, many of the local area municipalities have also developed active transportation related policies. These policies and initiatives are outlined below.

3.2.4 Local Municipalities

Official Plans of the seven local municipalities were examined in preparing the County Wide Active Transportation Master Plan. Local Municipal Official Plans contain policies related to cycling, pedestrian, parking, traffic, transit and alternative modes of transportation.

Transportation Studies / Transportation Master Plans

A number of the local municipalities have developed transportation master plans and studies to guide the future of transportation opportunities. These municipalities include the Town of Essex Transportation Study, the Town of Kingsville Transportation Master Plan (2009), the Town of Lakeshore Transportation Master Plan (2008), the Municipality of Leamington Long Range Transportation Action Plan (2007), the Town of LaSalle Pedestrian and Bicycle Facility Policy Statement Plan of Action (1999), and the Town of Tecumseh Transportation Master Plan (2009). Many of these policies and initiatives speak extensively to sustainable and alternative modes of transportation and the growing demand for, and necessary development of these types of networks and facilities. The local area municipalities all

identify the many benefits and contributions which active transportation facilities and opportunities provide to community health and the future of sustainable transportation.

Trails Master Plans / Bikeway & Walkway Studies

Some initial work has been done with regards to the development of trails master plans and bikeway and walkway studies throughout the area municipalities in the County of Essex. The municipalities which have developed such policies thus far include the Town of Essex Trails, Walkways and Bikeways Plan and the Town of Lakeshore Trails Master Plan. These policies play a key role in emphasizing the understanding and appreciation of the increasing demand and need for active transportation facilities throughout the County.

Both of these policies / networks have been incorporated into the County Wide Active Transportation Master Plan to achieve an inter-connected network of sustainable active transportation options.

These policies play a key role in emphasizing the understanding and appreciation of the increasing demand and need for active transportation facilities throughout the County.

4.0 ENGAGING THE PUBLIC & STAKEHOLDERS IN THE DEVELOPMENT OF CWATS

An important component of the study process for developing the CWAT Master Plan was consulting with County staff and Council, members of the public as well as the Steering Committee and local stakeholders. The involvement of members of the public was essential in creating an interest throughout the County for the CWAT Master Plan, building momentum for the plan, and increasing awareness of the benefits of implementing active transportation related facilities, routing and programming.

An integral component of the consultation process was to draw upon the knowledge of the Steering Committee, the people who live and work in the County of Essex and its local municipalities, as well as those who will be responsible for the implementation of the CWAT Master Plan.

A communication strategy was developed at the outset of the County Wide Active Transportation Master Plan Study in order to provide a framework for engaging stakeholders, local committee and agency members and members of the public. The communication strategy developed for this study was designed to facilitate a wide range of consultation methods to gauge input

A communication strategy was developed at the outset of the County Wide Active Transportation Master Plan Study in order to provide a framework for engaging stakeholders, local committee and agency members and members of the public.

from County and local municipal staff, members of the public, stakeholders and agency members. The methods of consultation as well as the results which were integrated into the development of the County Wide Active Transportation Master Plan will be further described in detail below.

The questionnaire, although not statistically valid, provided the study team with useful information and input regarding opinions on active transportation throughout the County.

4.1 ONLINE QUESTIONNAIRE RESULTS

As part of the County Wide Active Transportation Study, a web-based questionnaire was developed and hosted using the online service SurveyMonkey (www.surveymonkey.com). The questionnaire, which was issued in February 2010 and concluded in October 2010, was also accessible to residents and stakeholders during the first and second round of public information centres (PICs) and stakeholder workshops.

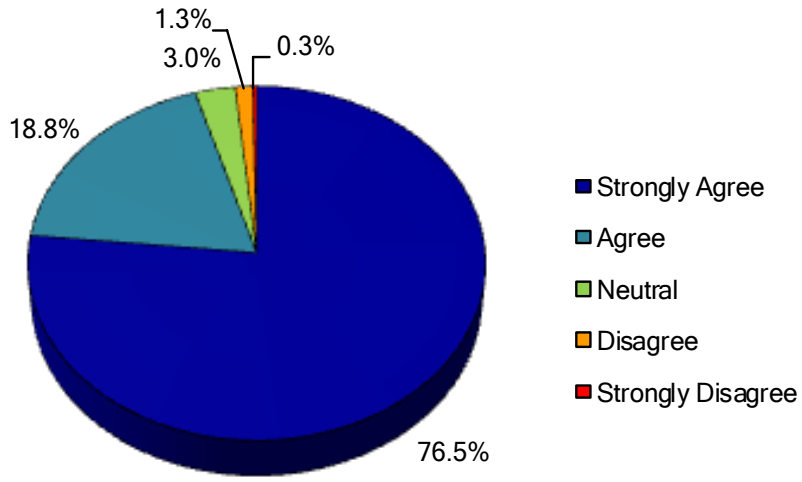
The questionnaire, although not statistically valid, provided the study team with useful information and input regarding opinions on active transportation throughout the County. These included:

- The frequency of use for multiple active transportation modes;
- The types of uses for the new active transportation study;
- The motivation behind the use of AT facilities and improvements; and
- The reasons for implementing an AT study for the County.

The final survey results are based on the 302 respondents, of which 244 completed the entire survey. The following is a summary of the key findings from the survey. Key findings from the online survey include the following:

- Over 95% of survey respondents agreed that the County of Essex should invest in improvements that provide opportunities for trail and active transportation use in the County as illustrated in Figure 4.1;

Figure 4.1 – Proportion of support for making investments for trail and active transportation improvements in the County of Essex

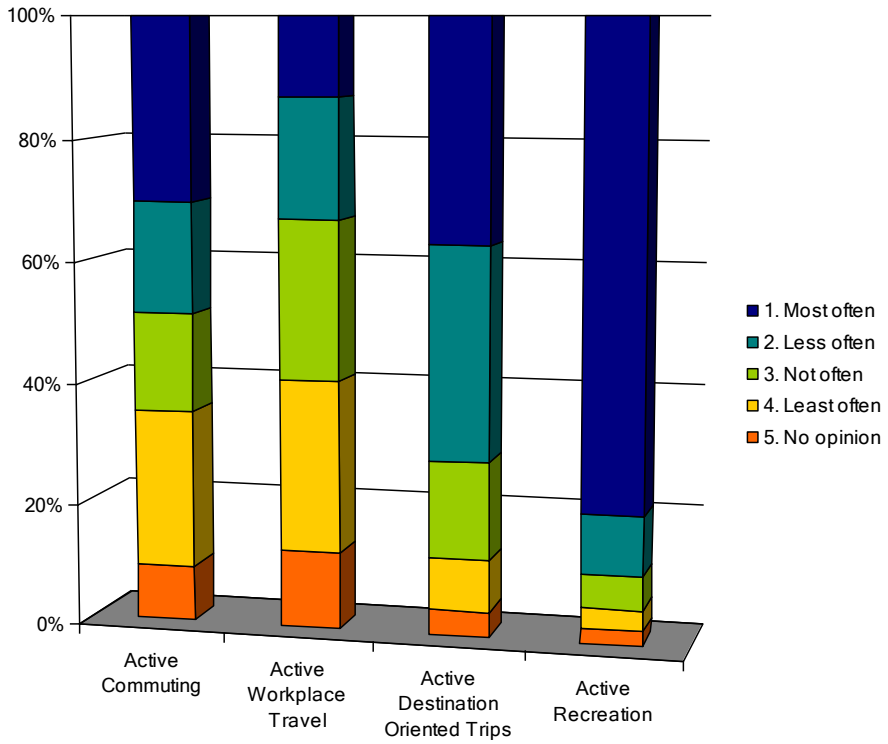


- The primary use for existing AT systems in the County of Essex is walking, jogging and cycling. At least 44% of respondents indicated that they walk or jog and almost 35% cycle at least a few times a week. Hiking (15%) and rollerblading or skateboarding (9%) are less common occurrences on a weekly basis; and
- Recreation or fitness is a primary motivator for cycling with almost 78% of respondents indicating that it motivates them at least sometimes to use the AT system. As well, the majority of respondents are motivated to use the AT system for commuting to work and destination oriented trips, which includes trips to and from shops, visiting friends or running errands. However, trips for workplace travel during the work day are currently not motivators for cycling in the County. The comparison of responses is illustrated in Figure 4.2.

Recreation or fitness is a primary motivator for cycling with almost 78% of respondents indicating that it motivates them at least sometimes to use the AT system.

Respondents are most comfortable with AT use on multi-use trails typically found in parks and natural areas (68%), multi-use trails within rights-of-way along County roads and cycling on County roads with bike lanes or paved shoulders (36%).

Figure 4.2 – Motivators for AT and trail use in the County of Essex



The following three improvements were selected as the most important by respondents for encouraging AT facility use in the County: more on-road cycling routes (68%), more recreational multi-use hiking and cycling trails (66%) and better connections to key destinations (46%). Additionally, the majority of respondents also indicated that access to an AT route map, better education for all users of the road, and the provision of secure bicycle parking would encourage further AT facility use.

Respondents are most comfortable with AT use on multi-use trails typically found in parks and natural areas (68%), multi-use trails within rights-of-way along County roads and cycling on County roads with bike lanes or paved shoulders (36%). In contrast, almost 61% of respondents are least comfortable with cycling and sharing the road with motor vehicle traffic on County roads without cycling facilities and 36% of respondents are least comfortable on local streets without cycling facilities. The comfort level of respondents varied with walking or hiking along County roads with paved shoulders.

The majority of respondents suggest that an on and off-road cycling network should be developed for the County of Essex for the following reasons (listed in order from greatest importance to least importance):

- To improve quality of life and health of County residents (71% of respondents);
- To provide places to walk and cycle within local communities (66% of respondents);
- To improve walking and cycling as a transportation option (53% of respondents);
- To improve connectivity between communities (36% of respondents);
- To provide access to recreational facilities (35% of respondents);
- To provide access to institutional uses (26% of respondents);
- To provide access to commercial areas (23% of respondents);
- Tourism (19% of respondents); and
- To provide access to industrial and business park areas (12% of respondents)

Respondents were also given the opportunity to highlight key destinations and connections that should be considered within the overall cycling network. Respondents suggested several preferred connections of key municipalities for potential cycling routes, these included:

- Amherstburg to LaSalle;
- Amherstburg to Essex;
- Leamington to Kingsville;
- Windsor to Essex;
- Amherstburg to Windsor;
- Leamington to Point Pelee; and
- Old Malden Township to Amherstburg Proper.

In addition to these connections there were also specific corridors and routes which were identified for consideration throughout the development of the AT Network. These included:

- County Road 19 from County Road 22 to County Road 42;
- County Road 31 from County Road 2 to County Road 42;
- County Road 50 from Malden Centre to Leamington;
- County Road 20 to County Road 31;

The first event was the Stakeholder Consultation session which was made up of two parts, the first being a presentation to the attendees regarding the current state of transportation in Ontario, Canada and internationally as well as typical design standards and benefits of implementing active transportation networks and facilities

- County Road 22 from Old Tecumseh Road to East Puce Road;
- County Road 22 from the Arena to the Library; and
- County Road 20 between Leamington and Kingsville.

These comments were taken into consideration during the network development process outlined in Chapter 5. All responses from the online survey are summarized and presented in Appendix A.

4.2 PUBLIC INFORMATION CENTRES / STAKEHOLDER WORKSHOPS

In addition to these comments there were a large number of responses which spoke specifically to potential routes and facility types for the proposed AT network throughout the County.

In Phase 1 of the study process, a two phased consultation session was undertaken. In an effort to gain input from residents as well as local agencies and stakeholders, a stakeholder workshop was held prior to an open house style public information centre. Study team members and County staff were present for the duration of each of the events held on May 13, 2010.

The first event was the stakeholder consultation session which was made up of two parts, the first being a presentation to the attendees regarding the current state of transportation in Ontario, Canada and internationally as well as typical design standards and benefits of implementing active transportation networks and facilities. The presentation was then followed by a focus group session which allowed the attendees to provide their input on the proposed candidate routes developed by the Study Team, County and local municipal staff. The stakeholder workshop was held in the County Council Chambers between 1:00 p.m. and 4:00 p.m. and gave the stakeholders an opportunity to view the materials and displays provided for the public information centre and ask the study team questions.

Following the workshop, an open-house style public information centre was held from 4:00 p.m until 7:00 p.m. The public information centre was used to give members of the public a chance to comment on the planning and network work which had been done and ask members of the study team questions.

The second event was a combination of a publically attended and executed event by the County of Essex and a public information centre at the Town of LaSalle and Tecumseh that provided the public with the proposed candidate route network as well as some draft recommendations for the County Wide Active Transportation Maser Plan.

The first event was the 31st Annual Ruthven Apple Festival which was held at Colasanti's Tropical Gardens on Saturday, September 25th from 7:00 a.m. to 6:00 p.m. and Sunday, September 26th from 10:00 a.m. to 5:00 p.m. The study team set up a tent which displayed key information regarding the study, and provided space for the public to fill out comment forms. Attendees were also provided the opportunity to complete the independent survey developed by Go for Health Windsor-Essex and the Windsor-Essex County Health Unit (WECHU). The survey was also provided to attendees of the two public information centres held at the Town of LaSalle and the Town of Tecumseh described in further detail below. A summary of the results of the WECHU survey is provided in section 4.3.1.

On Monday September 27th between 3:30 p.m. and 8:00 p.m. two public information centres were held at the Town of LaSalle and the Town of Tecumseh. Attendees of these public open houses were also given the opportunity to fill out comment sheets, the online questionnaire as well as provide comments on the map boards and ask questions of the study team.

The comments gathered from these events provided the study team with a great number of responses and valuable input that informed the study process. These results / commentary were documented, and assessed and used to develop the AT network and policies for the master plan. The following provides a summary of some of the key results from each of the consultation methods undertaken.

4.3 SUMMARY OF PUBLIC INPUT

These results / commentary were documented and assessed and used to develop the AT network and policies for the master plan.

In order to document comments received throughout the study process in the most efficient and effective way possible, a consultation record was developed which summarized and addressed the comments from the public, stakeholders, committee members etc. In addition to the consultation record, the online questionnaire results were frequently gathered and assessed throughout the study process. The following outlines the results gathered from both methods of public consultation.

Public Information Centres / Stakeholder Workshops

Throughout the study process all comments were documented in a consultation record which was used as a means of tracking both the comments as well as the responses to each inquiry. Some of the key

In addition to these comments there were a large number of responses which spoke specifically to potential routes and facility types for the proposed AT network throughout the County.

comments which were documented in the consultation record throughout the study process included:

- There is a shortage of multi-use trails and bike lanes and the existing trails and lanes do not connect adequately;
- Increased safety to cyclists throughout the County;
- Increase bicycle facilities including bicycle racks, storage, trip end facilities and rest areas;
- Provide more public education and awareness programs with regard to the benefits of an active transportation network and facilities;
- Connectivity between the local municipalities should increase through the provision of cycling and walking facilities;
- Awareness for multiple different user groups who will require a wide range of facility types;
- Increase the amount of signage on both on and off-road routes throughout the County;
- Increase the number of facility types throughout the County to include but are not limited to: paved shoulders, rail trails, off and on-road multi-use trail, sharrows, separated bike lanes etc.; and
- Connect to key destinations throughout the County such as wineries, existing trails such as the Chrysler Greenway Trail, schools, community centres etc.

In addition to these comments there were a large number of responses which network throughout the County. These comments were consolidated and summarized in the Consultation Record which can be found in Appendix F.

County Wide Active Transportation Study Feedback Survey

The County of Essex, along with Go for Health Windsor-Essex and the Windsor-Essex County Health Unit (WECHU) developed a survey to promote the County Wide Active Transportation Study (CWATS) and gauge resident support for the CWATS. The survey assessed whether or not formal public gatherings (like the Ruthven Apple Festival) were effective in collecting public input, and whether or not, as well as why residents would use facilities proposed in the CWATS. Results from the survey indicated that bringing CWATS information to a public event was successful, as more than 400 people attended the booth with 361 survey responses from the three public consultation venues. As illustrated in Figure 4.3, there were a great number of respondents from Essex, Kingsville and Leamington due to the

close proximity to the Ruthven Apple Festival. Windsor may have also yielded a greater number of responses as it has a significantly higher population than other municipalities in the Windsor-Essex County Area[1].

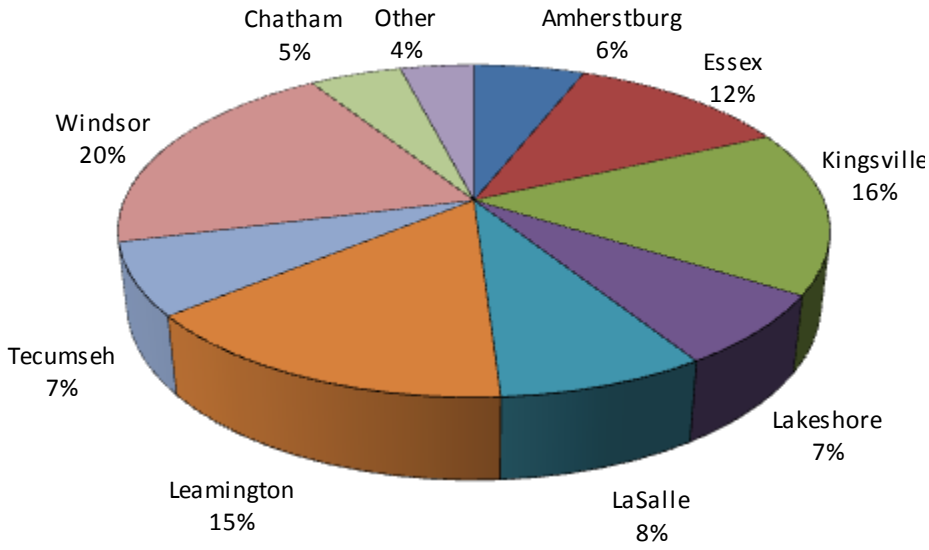


Figure 4.3 – Survey respondents by municipality that participated in the CWATS feedback survey.

From the surveys completed, responses showed that while over 64.5% were aware of the study, there were quite a few who did not know about the CWATS prior to visiting the booth.

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From the surveys completed, responses showed that while over 64.5,% were aware of the study, there were quite a few who did not know about the CWATS prior to visiting the booth. These results suggest that there continues to be a need for more public awareness of CWATS. With the total of 361 responses to the survey, 128 indicated their awareness while 233 were being made aware of the study for the first time. These results are illustrated in Figure 4.4. The results from this question suggest that while bringing information to a public event is effective, more promotional work may need to be done to raise awareness of active transportation related initiatives in the future.

[1] County Wide Active Transportation Study (CWATS) Feedback Survey Summary Report. September 2010, Go For Health Windsor-Essex & Windsor-Essex County Health Unit (WECHU).

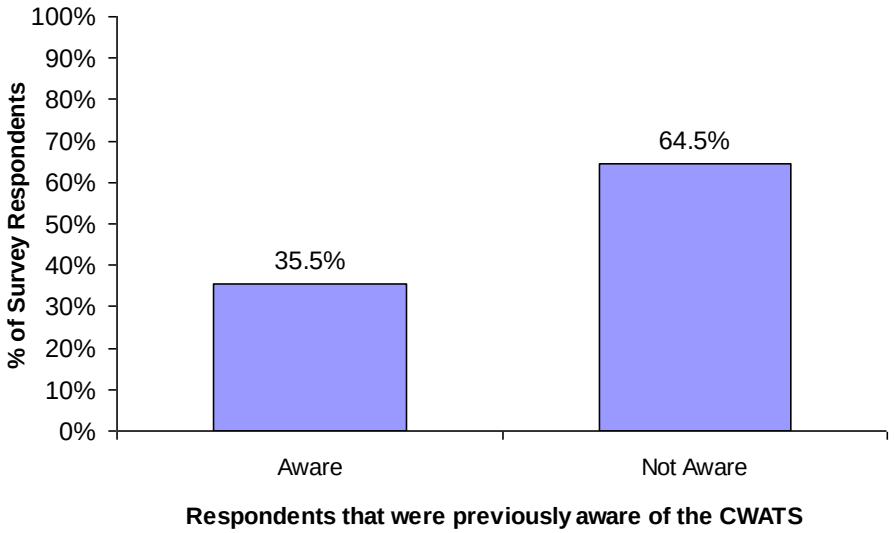


Figure 4.4 – Survey Respondents that were aware of the CWATS prior to these public interventions in September 2010.

The survey also showed that almost all respondents would use the CWATS facilities, with recreational use, enhancing quality of life and health, and the environment being the top three reasons why.

The survey also showed that almost all respondents would use the CWATS facilities, with recreational use, enhancing quality of life and health, and the environment being the top three reasons why. To a lesser extent, respondents cited commuting, workplace travel and destination oriented trips as well, but it should be recognized that more than half of all respondents cited multiple reasons why they would use the active transportation trails. Figure 4.5 illustrates these findings.

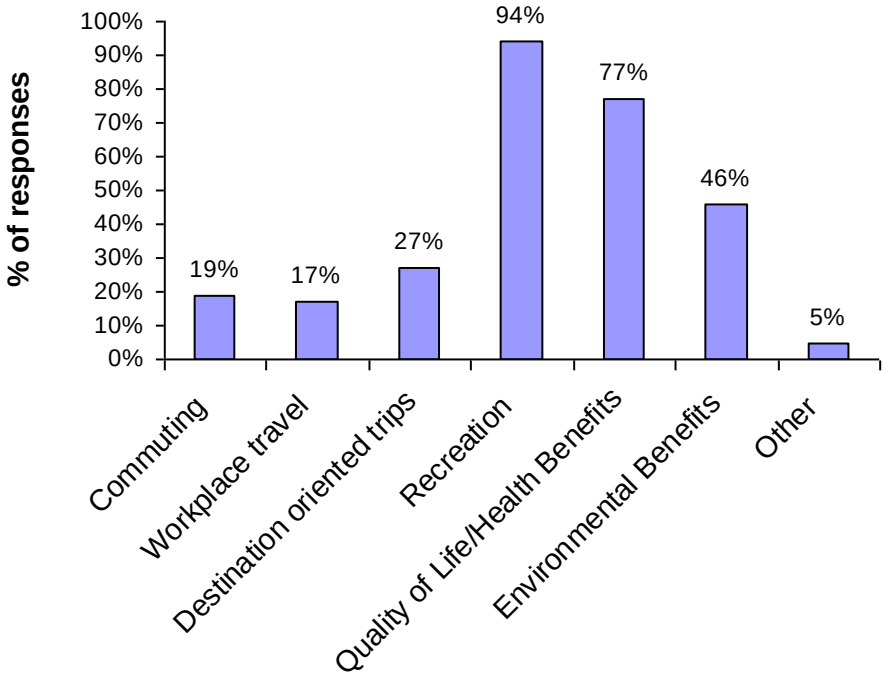


Figure 4.5 – Reasons why the public would use active transportation trails

As shown above and in results from the online questionnaire over 70% of people would use trail systems for Quality of Life / Health Benefits and over 90% would use the system for recreational purposes. From these results, the survey concluded that bringing CWATS information to a public event (like the Ruthven Apple Festival) was effective. Not only did the study team conclude that there was support for the CWATS and there is demand for increase public awareness, they also gathered information on effective community consultation, and which aspects of active transportation the public is most interested in.

As shown above and in results from the online questionnaire over 70% of people would use trail systems for Quality of Life / Health Benefits and over 90% would use the system for recreational purposes.

4.4 HOW WE INCORPORATED YOUR COMMENTS

The consultation program provided the study team with a wide range of comments and ideas from members of the public, Council, committees and agencies. These comments were reviewed and where applicable, they were incorporated in the Master Plan. Comment forms were provided at the PICs,

the online survey was maintained and updated frequently throughout the study, and interested parties were encouraged to contact the Project Manager from the Town and MMM Group.

Based on the study team's review of the comments received, some common themes became apparent. These included:

- Increased connectivity throughout the County of local municipalities as well as bordering regions / counties;
- A wide variety of facility types of accommodate people of all ages and abilities;
- Facilities for cyclists and pedestrians which increase safety;
- Increased signage throughout the County to ensure awareness and comfort for users;
- Increased educational programs from people of all ages and abilities with regards to cycling and active living; and
- Increased number of routes which connect to key destinations throughout the County.

4.5 BRANDING CWATS

Establishing a visual brand to help market and promote CWATS is an important part of the study. Go For Health Windsor-Essex was very fortunate to receive funding from the Ministry of Health and Long-term to assist with this advocacy component of the CWATS. Through partnership with the County of Essex and the Windsor-Essex County Health Unit, Go For Health Windsor-Essex was able to design a public outreach contest that further engaged the public in CWATS. It helped to establish a slogan that is proposed to be used in public outreach strategies for the next 20 plus years.

The "Slogan U Like" Contest was developed to get the public's input on which slogan they thought would be representative of the CWATS. The three contest slogans came from the Active Communities Summit that was held in Essex, Ontario in Fall 2011. At this Summit, every participant, whether they were: an elected official, planner, engineer, Chief Administrative Officer, cycling advocate or resident created and submitted a slogan they thought would support CWATS outreach. After the Summit a sub-committee then filtered through the 60 plus slogan suggestions and choose three that they thought would represent CWATS over the next 20

years. These were the final three slogans that were used in the "Slogan U Like" Contest:

1. Walk, Ride, County Wide
2. I Move for the Health of It
3. Actively Discover Your County

The contest was promoted daily on a local radio station, electronically through e-mail, and posters were hung at select locations around Essex County. The contest ballot was available in hardcopy at: a municipal community centre in each of the seven municipalities within Essex County, all Windsor-Essex County Health Units, and the County of Essex offices. The contest was also available electronically on the www.goforhealth.ca website and electronically sent to over 500 contacts around the region. After the 20-day contest, over 700 ballots were completed, with quite even participation from the municipalities around Essex County. In the end, it was a majority vote, where over 62% selected: Walk, Ride, County Wide! The selected slogan was then published via all of the communication outlets used for the contest.

As a result of this contest, Go For Health, Windsor-Essex County Health Unit and the County of Essex were able to develop a logo for the CWATS public outreach strategy as illustrated to the right. This new logo is proposed to be used to assist in branding the CWATS network through signs and marketing material.

Proposed Logo for the CWATS Strategy

5.0 THE PROPOSED ACTIVE TRANSPORTION NETWORK

This section presents the proposed active transportation network. It includes a description of the process that was undertaken in developing the network recommended in the County Wide Active Transportation Master Plan, including the guiding principles for route selection and recommended facility types. This section should be read in conjunction with Chapter 7.

The intent of County Wide Active Transportation Master Plan is to build upon work that has already been completed through other studies and initiatives such as the County of Essex Official Plan and the Essex-Windsor Regional Transportation Master Plan. It is intended that this plan will support and strengthen the active transportation plans and policies of all local municipalities. Part of this support includes recommendations for a comprehensive network of on-road and off-road trails and active transportation corridors that connect urban and rural communities and promote active transportation. Active transportation is generally defined as:

- Active Commuting - which involves journeys to and from work;
- Active Workplace Travel - which includes trips during working hours such as the delivery of materials or attending meetings;

An approach involving a set of steps that builds upon one another was used to establish a recommended active transportation network for the County of Essex.

- Active Destination Oriented Trips - which includes trips to and from school, shops, visiting friends and running errands; and
- Active Recreation - which involves the use of an active transportation mode for fitness or recreational pursuits, such as hiking or cycling.

5.1 NETWORK DEVELOPMENT APPROACH

An approach consisting of a set of steps that builds upon one another was used to establish a recommended active transportation network and associated facility types, as well as the implementation and costing for the County of Essex Active Transportation Master Plan. The active transportation network development approach included:

An approach consisting of a set of steps that builds upon one another was used to establish a recommended active transportation network and associated facility types, as well as the implementation and costing for the County of Essex Active Transportation Master Plan.

1. Collect and Assemble Background Information

- The network development process began with the consolidation and digital mapping of all previously planned active transportation facilities (pedestrian and cycling) in local municipalities in the County of Essex and connections to the City of Windsor and Municipality of Chatham-Kent. These included both on and off-road facilities provided by the municipal representatives on the Steering Committee.

2. Review Consolidated Base Mapping with Steering Committee

- Base mapping was reviewed with the Steering Committee on several occasions with the goal of clearly understanding current conditions as well as any previously approved plans in place for facilities (includes facilities within the road-right of way as well as those outside of the road right-of-way).

3. Develop Route Selection Principles

- A set of qualitative principles was developed to guide the selection of routes for consideration at the Candidate Routes level. These principles were reviewed with the Steering Committee and revised where applicable. Note that these principles should also be referred to in future when changes to the route network are being contemplated, and again as part of the preliminary design stage to ensure that the route still satisfies these principles.

4. Prepare Candidate Routes Mapping using the following inputs

- Consolidated base mapping;
- Route selection principles;
- Consultation with the Steering Committee;
- Expertise of the Study Team; and
- Desktop analysis using the County's High Resolution Aerial Imagery, aerial imagery and street view images (where available) in Google Earth.

5. Direct input to the proposed network and route selection principles

- County and Local municipal staff were consulted at this stage through direct discussions with the Technical Advisory Committee. In addition, input was received from the public and local stakeholders based on comments provided at the first Public Information Centre / Stakeholder Workshop held in May 2010. The network was then further refined through responses from the online questionnaire.

6. Field Review and assess Candidate Routes

- Travel and collect information for each candidate route (ground-proof in the field); and
- Using the route selection criteria, information collected in the field combined with the technical expertise of the study team, plus input from the Steering Committee and the public.

Using the route selection criteria, information collected in the field combined with the technical expertise of the study team, plus input from the Steering Committee and the public

7. Accept or reject each candidate route based on Step 6

8. Suggest an appropriate Facility Type

- For each accepted route based on the results of Steps 1 through 7 and consideration of a number of factors including:
  - *Geographic location* ;
    - (urban area vs. rural area)
  - *Facility type noted in any relevant Environmental Assessment* (where applicable);
  - *Planned facility types* ;

It should be noted that in areas where there is a wide enough curb lane for vehicles and cyclists to share, the preference would be to recommend a higher order facility such as bike lane.

- provided by local municipal representatives on the Steering Committee (where applicable)

- *Current road cross section;*
  - curbed vs. shoulder and ditch,
  - permitted on-street parking vs. prohibition of on-street parking
  - single lane in each direction vs. multiple lanes in each direction. For example in urban areas where there may be 4 or 5 five lane roadway with a wide enough curb lane and a posted speed of 50 km/h, a signed route with sharrows lane marking would be viewed as a suitable facility type, allowing for cyclists to share the lane with vehicles and for vehicles to appreciate the anticipated travel patterns of cyclists on the roadway.
  - current lane widths - in particular those locations where other data collected suggested that a bicycle lane would be preferred and that field observations revealed the potential to add bicycle lanes through simply repainting lane markings. It should be noted that in areas where there is a wide enough curb lane for vehicles and cyclists to share, the preference would be to recommend a higher order facility such as bike lane. However, where the recommended minimum of 1.5 m for a designated bike lane is not available a lower order facility type such as a signed route with or without shared lane markings and signage should be considered.
- *Current character of the corridor;*
  - Land uses along corridor/type of destinations along the route or nearby the route)
  - Number of road intersections and/or private entrances along corridor
  - Facility type that is being connected to (where they currently exist/where applicable)
  - Distance from key destinations not directly on proposed corridor
- *Current Traffic Characteristics;*
  - Traffic volume (where data is available and was provided)
  - Commercial vehicle/heavy vehicle/transit vehicle percentage (where data is available and was provided),

- Posted speed limit
- Operating speed and speed differential between cyclists and motor vehicles
- Field observations

- *Right-of-way width;*
- *Distance to nearest proposed route; and*
- *Technical expertise of the study team.*

- The observations by the study team were then balanced by comments received from County and Local municipal representatives on the CWATS Steering Committee, as well comments received from the public and local stakeholders.

9. Direct input on the Candidate Routes and Recommendations

- Input regarding the draft candidate routes as well as the proposed AT related recommendations from the County and local municipalities were gathered through direct discussions with the Steering Committee. The public as well as local stakeholders were able to provide their comments on the proposed network through a second round of public information centres held between September 25, 2010 and September 27, 2010. Results from the online questionnaire were also utilized throughout this stage of the study.

Input regarding the draft candidate routes as well as the proposed AT related recommendations from the County and local municipalities were gathered through direct discussions with the Steering Committee.

10. Confirm Suggested Facility Type with the Steering Committee

- The Suggested Facility type is being used at the master planning level to develop an order of magnitude cost estimate for the implementation of the network; and
- It is also important to note that as part of the implementation of each route segment, a more detailed assessment will be undertaken at the segment specific level to confirm the route and facility type for the purposes of detail design. This 5 step process will be clearly described in the Implementation chapter of the CWATS report.

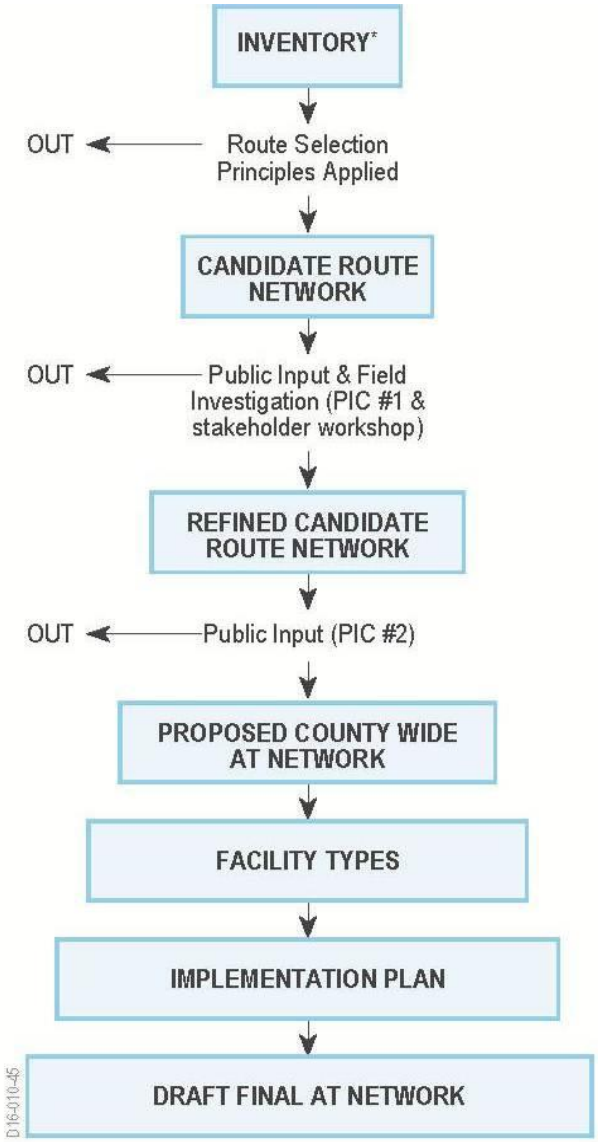
11. Implementation/Phasing Plan

- Refer to the memo circulated at the last Steering Committee Meeting regarding the process that is being used to develop the recommended Implementation/Phasing of the network.

The proposed County Active Transportation Network is a key outcome of this study, and consists of on and off-road active transportation facilities which include, but are not limited to, multi-use trails, bike lanes, signed bike routes and paved shoulders.

The proposed County Active Transportation Network is a key outcome of this study, and consists of on and off-road active transportation facilities which include, but are not limited to, multi-use trails, bike lanes, signed bike routes and paved shoulders.

The figure identifies the key steps of the study as well as ways in which potential routes were removed or determined.



** Existing and previously planned routes, local policies and plans and steering committee input.*

Recommendation 5-1: The active transportation network as identified in the CWAT Plan should be adopted by the County, ERCA and local municipalities.

5.1.1 Existing Context

The first phase in developing the draft network involved the preparation of an inventory of existing and previously proposed on and off-road cycling and trail facilities in the County. This was crucial in order to understand where and what types of facilities currently exist in the County, regardless of jurisdiction.

The first phase in developing the draft network plan involved the preparation of an inventory of existing and previously proposed on and off-road cycling and trail facilities in the County.

This task included a review of the County Official Plan, the Essex -Windsor County Transportation Master Plan as well as local municipal planning documents. Information was also assembled based on discussions with County and local municipal staff and other stakeholders.

County staff provided the study team with a digital Geographic Information System (GIS) database as well as digital ortho (aerial) photography of the County. In addition, local municipal staff provided the study team with key GIS information regarding Land Use and Active Transportation. The information included:

- Existing roads;
- Average Annual Daily Traffic (AADT);
- Location and Types of County traffic signals;
- Posted speed limits;
- Existing Sidewalks and walkways;
- Points of interest and attractions (including recreational facilities and schools);
- Existing and proposed on-road cycling routes;
- Existing and proposed trails; and
- Parks, lakes and rivers.

The existing policies and active transportation systems and trails (as identified and reviewed in Chapter 3), served as the framework to build upon when developing the County Wide Active Transportation Network Plan. In addition, the following sources were incorporated directly into the inventory mapping:

Major attractions and destinations...generally include all settlement areas, tourist attractions, colleges, major employment centres, civic centres including libraries, wineries, major retail centres or shopping districts and recreational facilities.

- Various County of Essex and local municipal Environmental Assessments (County Roads 19, 22, 43);
- Ontario Southwest Bike Train Route; and
- Local Municipal Planning and Policy Documents (see Chapter 3).

All the information available regarding existing or planned cycling and trail facilities was then consolidated and used to prepare inventory maps. These maps were reviewed in detail by the Steering Committee, which included County and local municipal staff.

5.1.1.1 Major Attractions and Destinations

Major active transportation and active recreation attractions and destinations in the County were identified with input from the Steering Committee and other stakeholders. This stage of the study identified some of the key recreational, commuter and utilitarian destinations for cyclists, trail users and pedestrians in the County. These generally include all settlement areas, tourist attractions, colleges, major employment centres, civic centres including libraries, wineries, major retail centres or shopping districts and recreational facilities. In addition, major land uses and natural areas such as national parks and conservation areas, public lands, water bodies, roads, residential areas, publicly accessible woodlots and wetlands were identified. Examples of some of the key attractions and destinations include:

- Populated Areas of Local Municipalities in the County;
- Point Pelee National Park;
- Chrysler Canada Greenway;
- Conservation Areas; and
- Local Wineries.

The major attractions and destinations information reviewed as part of this study was used to inform the study team during the selection of candidate network routes.

5.1.2 Route Development and Selection Principles

The following is a list of guiding principles that were used to develop the network component of the County Wide Active Transportation Study. These principles were reviewed with the public at the first public information centre / stakeholder workshop as well as with County and Local Municipal staff through a Technical Advisory Committee (TAC). The principles were then refined and then confirmed by the study team. The route development and

selection principles were based on an industry standard approach to route selection as well as from observations of existing conditions, input from public and stakeholder consultation and the review of background documents by the study team.

- Safety: Reducing risks to users and providing comfortable facilities will be key considerations when selecting routes for the network. The confidence and acceptance of the network can be instilled in users by reducing real and perceived risk.
- Visible: The active transportation (pedestrian, cycling etc.) routes should be a visible component of the transportation system (e.g. signage / marking, illustrated on maps, located on key local and County roads etc.).
- Direct / Connected: The County network should link communities, key destinations and connect with local municipal on and off-road networks.
- Destinations: Active Transportation routes should provide access to major destinations in the County and its local municipalities including town and city centres, natural, cultural and service facilities, as well as routes to school, community and neighbourhood parks, shopping facilities and employment areas.
- Integration with Other Modes: The active transportation network should be integrated with other modes of transportation, including public transit.
- Attractive and Scenic: Active Transportation routes should take advantage of attractive and scenic areas, views and vistas.
- Diverse Experience: The active transportation network should provide a diverse on and off-road walking and cycling experience throughout the County and local municipalities.
- Easily Accessible: Active Transportation routes should be easily accessible from local neighbourhoods within the County and its local municipalities. Every effort should be made to integrate the existing and future routes of the area municipalities.
- Different routes for different users: The system should appeal to a range of user abilities and interests. This requires the design of a variety of route types.
- Cost Effective: The cost to implement and maintain proposed AT network facilities and supporting programs should be phased over time and designed to be affordable and appropriate in scale for the

Easily Accessible: Active Transportation routes should be easily accessible from local neighbourhoods within the County and its local municipalities. Every effort should be made to integrate the existing and future routes of the area municipalities.

A set of on and off-road candidate routes were identified and mapped using the information collected from the County and local municipalities as well as the route selection and development principles.

County and its individual municipalities. Opportunities for partnership funding from other non-local government sources (e.g. Provincial and Federal Governments, Essex Region Conservation Authority and the private sector) should be pursued.

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

5.1.3 Candidate Routes

A set of on and off-road candidate routes were identified and mapped using the information collected from the County and local municipalities as well as the route selection and development principles. Connections to Windsor, Chatham-Kent, and the existing Essex Regional Conservation Authority network were also taken into account.

The candidate routes were further refined based on input from the Steering Committee, County and local municipal staff, as well as key stakeholders and the public. Input was received from a Public Information Centre / Stakeholder Workshop held in May 2010, and responses from the online questionnaire. Some route alternatives were removed or added based on comments received.

The refined candidate route alternatives were then investigated in the field to confirm their suitability for inclusion as part of the proposed active transportation network. Route selection was based on the application of the principles, the experience of the study team, observations made in the field and local insight from members of the Steering Committee. In addition, consideration was given to information such as missing links, traffic volumes (where available), road and rights-of-way width, distance from key destinations and the nearest proposed route, and the cost effectiveness of implementing an active transportation facility. Figures 5.1 A/B/C illustrate the candidate route network.

These figures also present the existing context, routes previously planned by local municipalities, the Essex Region Conservation Authority (ERCA) or the County of Essex, as well as some key attractions and destinations within the County.

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-1A: CANDIDATE CWATS ROUTES WITH EXISTING AND PREVIOUSLY PLANNED CYCLING + TRAILS CONTEXT

LEGEND

CANDIDATE CWATS ROUTES

- Candidate Route (identified by CWATS Study Team)
- Previously Planned Routes (identified in other studies i.e. municipal master plans)
- Existing CWATS Route
- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Municipalities
- Network Intersection with Highway / Freeway

OTHER

- Existing Local / ERCA Routes
- Proposed Local / ERCA Routes
- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway
- Populated Area (Refer to Figures 5-1B and 5-1C for Cycling and Trail Routing in Urban Areas)

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GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority. 2010.

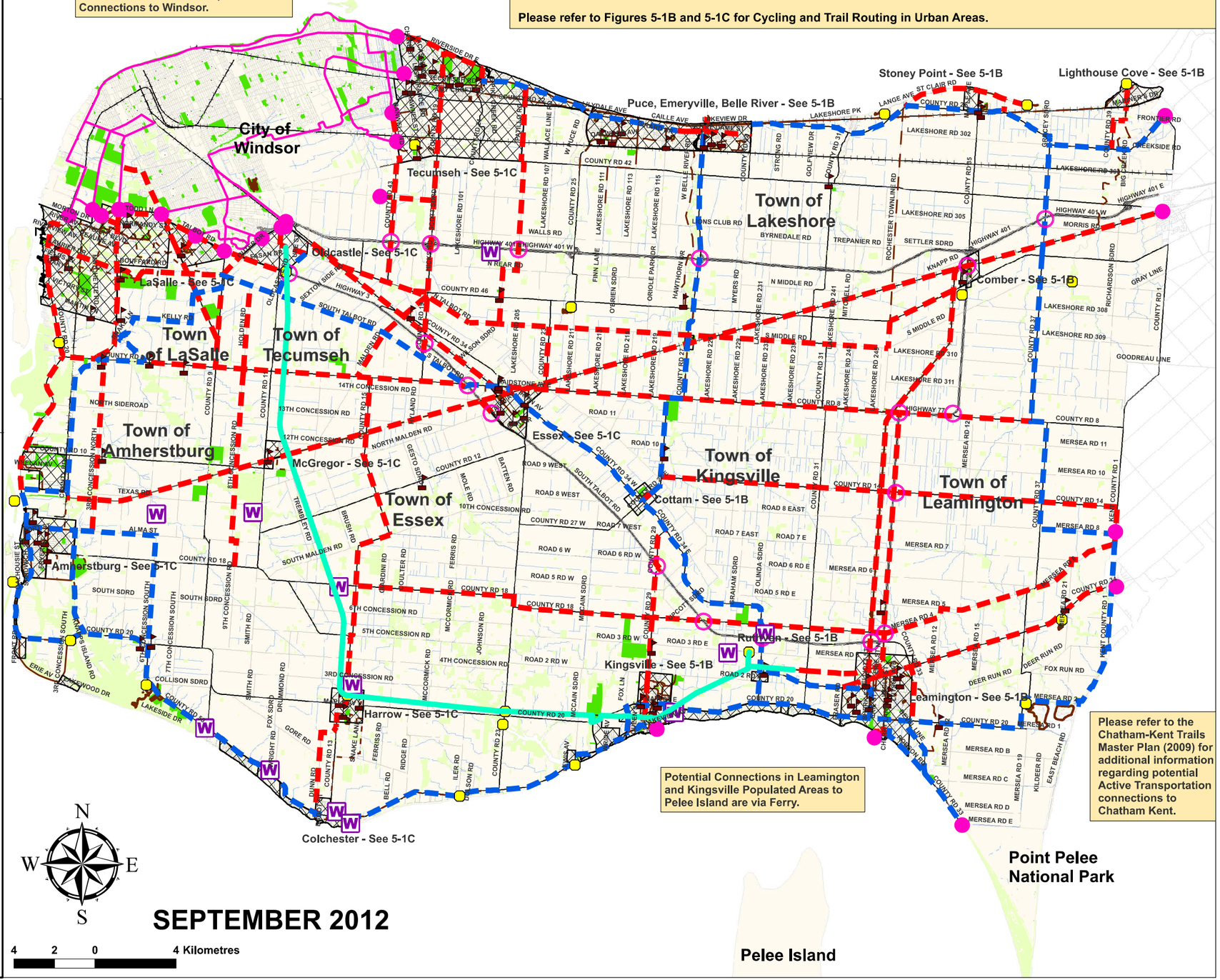
Please refer to the Windsor BUMP (2001) for additional Active Transportation Connections to Windsor.

Figure 5-1A represents existing, previously planned and additional candidate cycling and trail routes within the County of Essex. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of a County Wide Active Transportation network.

The dashed blue lines represent the previously recommended bike routes from County information. The dashed red lines represent preliminary candidates suggested from the Technical Advisory Committee, public consulation via Online Survey Results and the Study Team's desktop application of the route selection criteria.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figures 5-1B and 5-1C for Cycling and Trail Routing in Urban Areas.



COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-1B: CANDIDATE CWATS ROUTES WITH EXISTING AND PREVIOUSLY PLANNED CYCLING + TRAILS CONTEXT - URBAN AREAS

Figures 5-1B and 5-1C represents existing, previously planned and additional candidate cycling and trail routes within the populated areas of the County of Essex. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of a County Wide Active Transportation network.

The dashed blue lines represent the previously recommended bike routes from County information. The dashed red lines represent preliminary candidates suggested from the Technical Advisory Committee, public consulation via Online Survey Results and the Study Team's desktop application of the route selection criteria.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figure 5-1A for Cycling and Trail Routing throughout the entire County.

SEPTEMBER 2012

LEGEND

CANDIDATE CWATS ROUTES

- Candidate Route (identified by CWATS Study Team)
- Previously Planned Routes (identified in other studies i.e. municipal master plans)
- Existing CWATS Route
- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Municipalities
- Network Intersection with Highway / Freeway

TOWN/ LOCAL/ERCA ROUTES (EXISTING + PREVIOUSLY PLANNED)

TOWN / LOCAL	ERCA	
		Trails / Bike Routes (Existing)
		Trails / Bike Routes (Previously Proposed)

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

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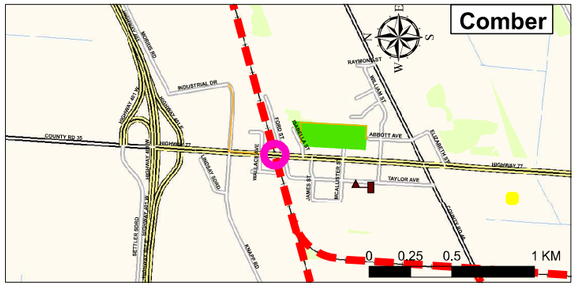
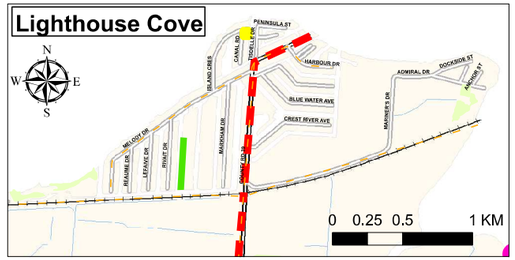
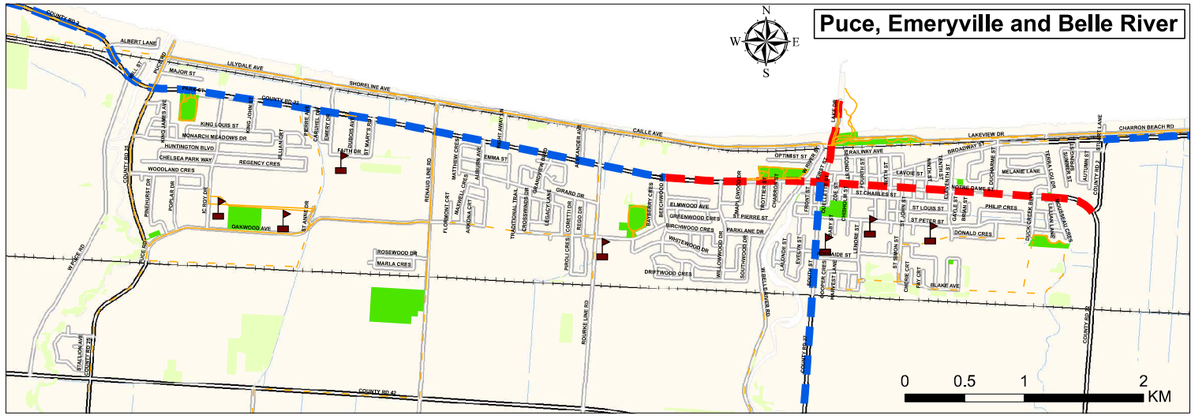
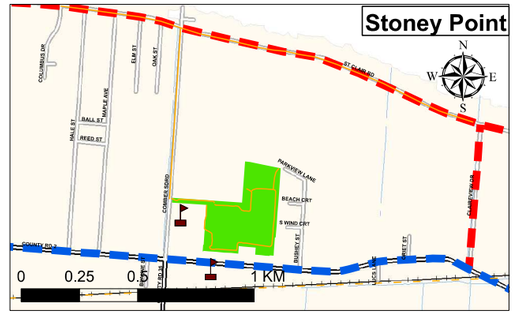
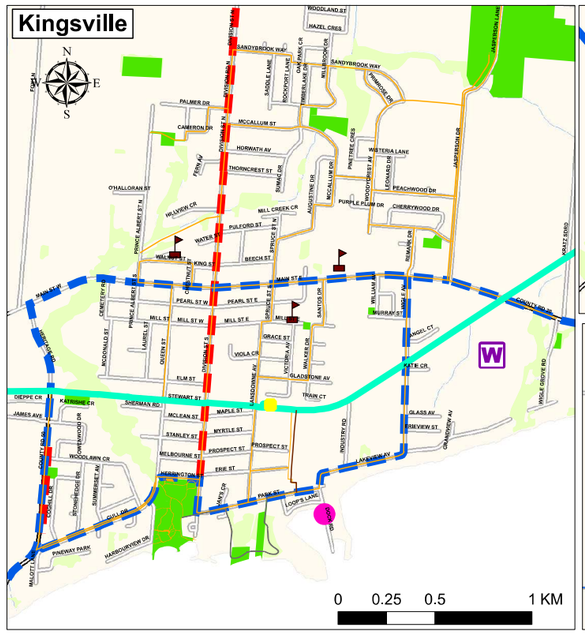
GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority, 2010.

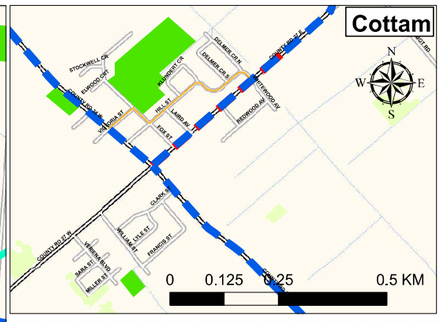


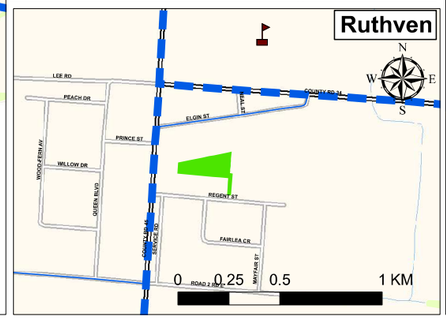


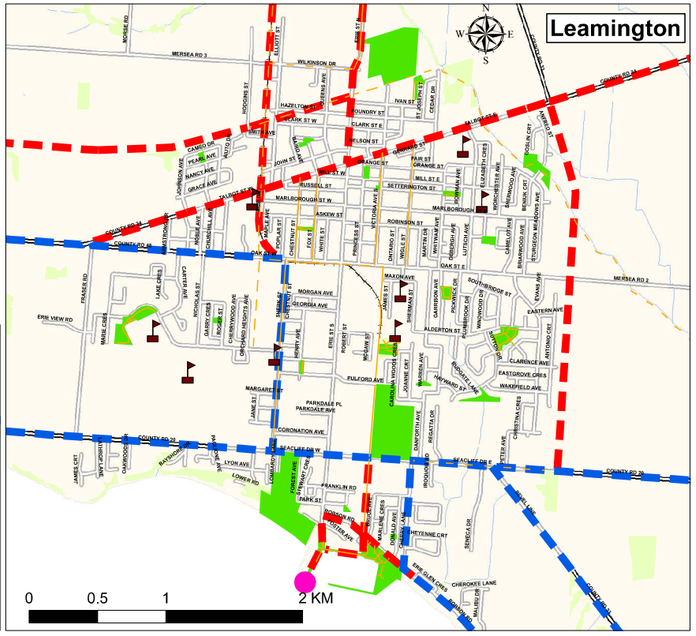












COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-1C: CANDIDATE CWATS ROUTES WITH EXISTING AND PREVIOUSLY PLANNED CYCLING + TRAILS CONTEXT - URBAN AREAS

Figures 5-1B and 5-1C represents existing, previously planned and additional candidate cycling and trail routes within the populated areas of the County of Essex. The information presented is intended to identify an initial network concept to be reviewed and built upon in the development of a County Wide Active Transportation network.

The dashed blue lines represent the previously recommended bike routes from County information. The dashed red lines represent preliminary candidates suggested from the Technical Advisory Committee, public consulation via Online Survey Results and the Study Team's desktop application of the route selection criteria.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figure 5-1A for Cycling and Trail Routing throughout the entire County.

SEPTEMBER 2012

LEGEND

CANDIDATE CWATS ROUTES

- Candidate Route (identified by CWATS Study Team)
- Previously Planned Routes (identified in other studies i.e. municipal master plans)
- Existing CWATS Route
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- Potential Connection to Adjacent Municipalities
- Network Intersection with Highway / Freeway

TOWN/LOCAL/ERCA ROUTES (EXISTING + PREVIOUSLY PLANNED)

TOWN / LOCAL — ERCA

- Trails / Bike Routes (Existing)
- Trails / Bike Routes (Previously Proposed)

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

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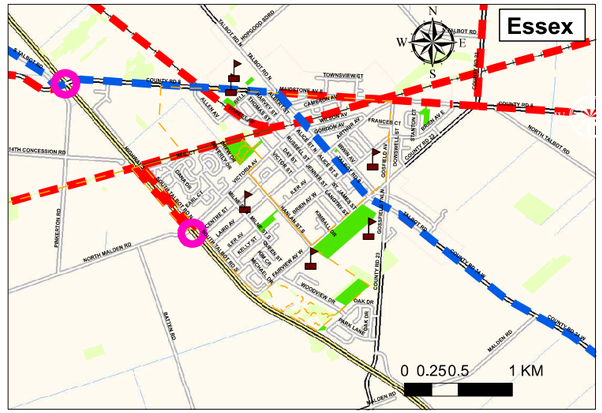
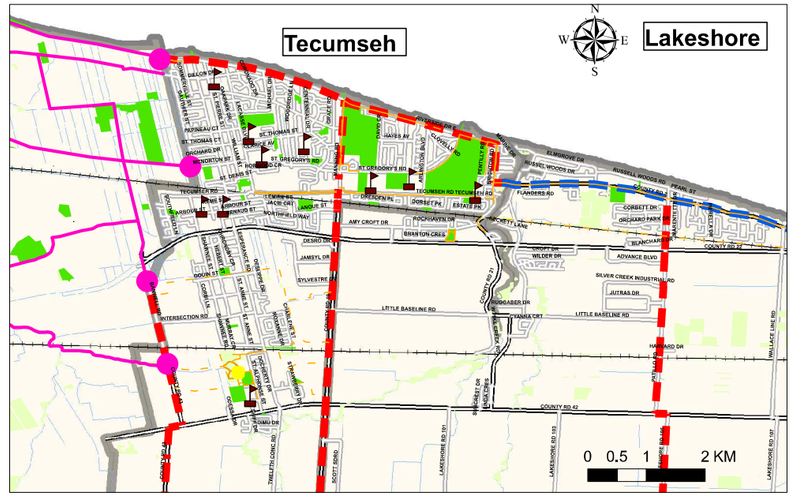
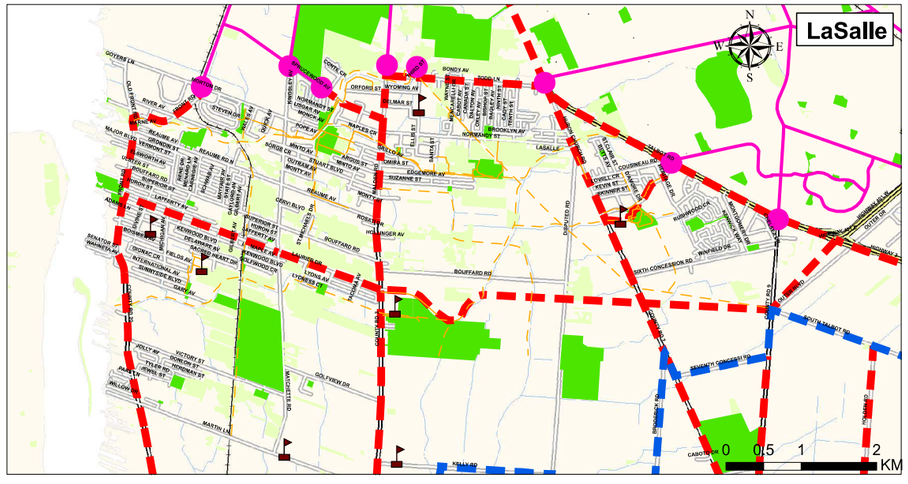
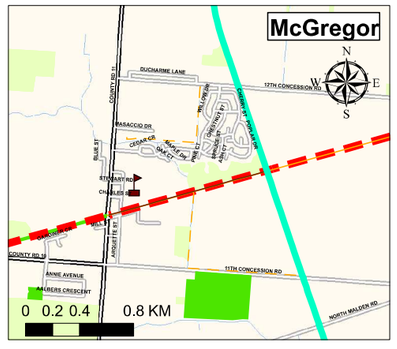
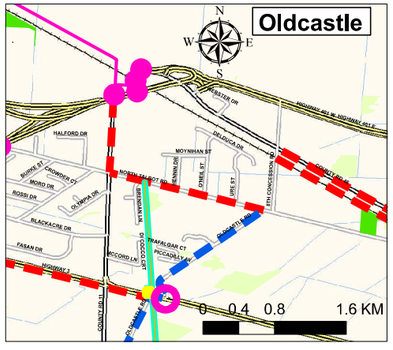
GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority, 2010.

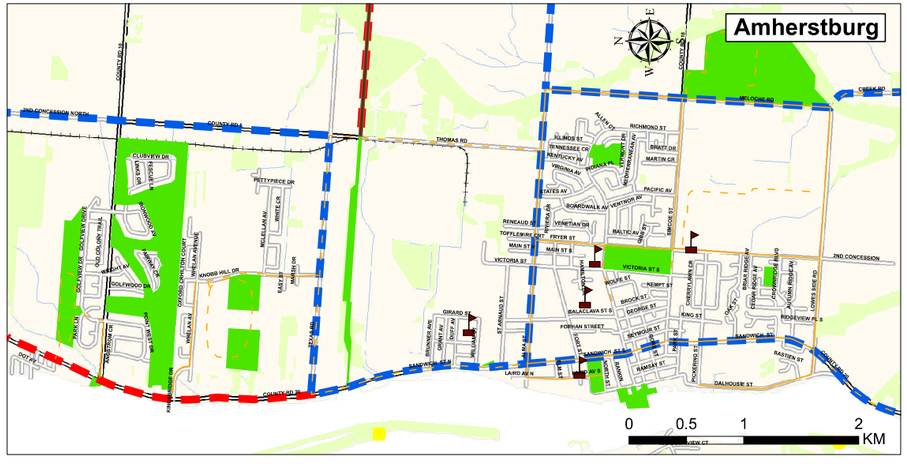


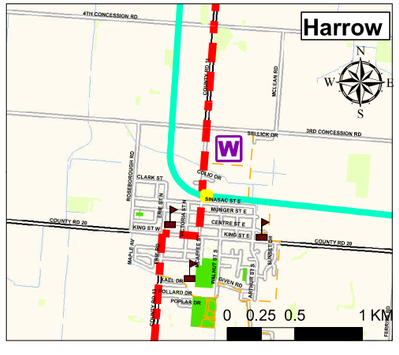


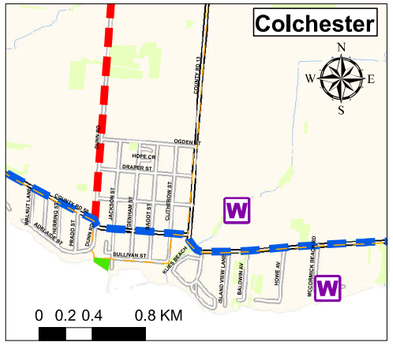












Potential active transportation routes were further screened by revisiting the route selection principles and through additional field investigation. In addition, the routes were also screened based on additional input provided by County and Local Municipal staff, and the Essex Regional Conservation Authority. Those candidate routes considered less desirable compared to a parallel route were then eliminated from further consideration. A refined route network was then identified along with proposed facility types, which formed a proposed draft active transportation network for the County of Essex. The network can be enhanced at the local level should there be a desire to create a 'local' connection within the network.

The proposed pedestrian component of the network focused on trails, connections to local municipal sidewalk systems and the development of a set of pedestrian supportive actions and guidelines for both the County and Local Municipalities.

The draft network was then presented to the public at a second set of Public Information Centres held on September 25th, 26th and 27th, 2010 for review and comment. The input received was documented and assessed at which time the network was further refined and finalized.

5.2 PROPOSED AT FACILITY TYPES

Proposed network facility types are fully addressed in the Network Designer's Toolbox, found in Chapter 6.0 of this Master Plan. The following highlights key facility types proposed for the County of Essex.

5.2.1 Multi-use Trails

A multi-use trail is a facility that is separate from the travelled portion of a roadway, and may take the form of an in-boulevard trail in a public road right-of-way or an off-road multi-use trail within a greenway, abandoned rail corridor, or utility/hydro corridor. These types of trails are typically designed to support the widest range of users including pedestrians, cyclists, in-line skaters and skateboarders where trail surfaces permit. Multi-use trails located in parks primarily serve recreational users but may also serve active commuting, active workplace travel and active destination oriented trips. These can include trails along valley lands, river and canal corridors, active or abandoned rail lines, hydro corridors and other linear routes.

Typical multi-use trails for cycling purposes should have a minimum 3.0m width to facilitate two-way travel. The width of the trail may be widened to accommodate a higher volume of users.

Like cyclists using the road, trail users on boulevard multi-use trails or pedestrians on sidewalks have the right-of-way as they intersect private driveways.

In some areas, where trail use is expected to be high and adequate space exists, it may be appropriate to provide physically separated trails within the same corridor to create opportunities for both higher speed users (cyclists) and lower speed users (pedestrians). Where this design treatment is appropriate, separation of the two facilities can be created by distance, grade, or planted buffers. Signs to identify permitted uses for each trail should be used to communicate intent and ensure the integrity of the separated system.

Like cyclists using the road, trail users on boulevard multi-use trails or pedestrians on sidewalks have the right-of-way as they intersect private driveways. That said, every intersection, including driveways and intersecting roadways is a potential conflict point. Intersecting roadways are a particular concern as motor vehicles making right hand turns may not be anticipating the speed at which some users of the boulevard multi-use trail may be traveling (i.e. cyclists and in-line skaters). Figure 5.2 illustrates a typical in-boulevard multi-use trail. Typical multi-use trails for cycling purposes should have a minimum 3.0m width to facilitate two-way travel. The width of the trail may be widened to accommodate a higher volume of users.

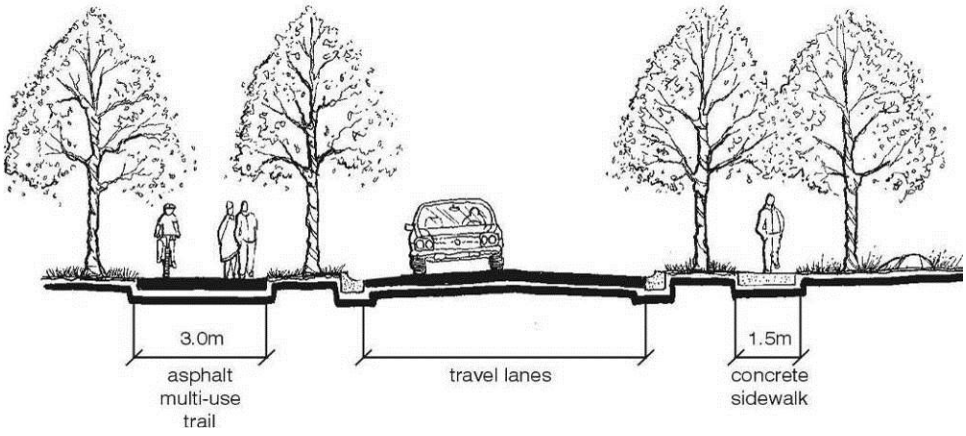


Figure 5.2 – Typical In-boulevard Multi-use Trail

The following are some general roadway conditions where the application of a boulevard trail may be considered:

- Urban arterial, collector or rural roads where there is ample right-of-way between the edge of the road (curb for urban cross section and shoulder for rural cross section) and the limit of the right of way to maintain a minimum separation between the road and the trail;

- Routes that provide connections between important destinations or links between off-road trails where no parallel route(s) exist nearby;
- Routes that are intended to provide short connections between long off-road trail segments (i.e. 4 – 6 blocks or less where other alternatives are not available); and
- Along corridors where there are limited commercial or residential driveway crossings.

In areas where adequate space does not exist to create the desired separation between the back of the curb and the trail it is possible, but not preferred to develop the multi-use trail directly abutting the back of the curb. Where the desired separation cannot be achieved, some form of a setback is still recommended (i.e. flexible bollards, coloured concrete strip, painted line etc.).

5.2.2 Context Sensitive / Interim Design Solution

An interim, context sensitive solution is being recommended for key network routes on County Road 20 between Leamington and Kingsville and between Amherstburg and LaSalle as they are considered highly desirable active transportation routes at the current time. A 1.8-2.0m wide multi-use path/cycle track behind the curb on each side of the road will provide space for pedestrians and less confident cyclists. Actual width of the proposed facility will be determined upon a more detailed analysis of each section of the route. This facility is proposed to be combined with "share the road" signing to accommodate more confident/more experience cyclists who prefer to use the road. The proposed design solution is illustrated in Figure 5.3.

If a trail in an active rail corridor is planned, the trail should also be physically separated from the rail facility. This can be accomplished through the provision of planted berms where sufficient right-of-way exists.

An interim, context sensitive solution is being recommended for key network routes on County Road 20 between Leamington and Kingsville and between Amherstburg and LaSalle as they are considered highly desirable active transportation routes at the current time.

Figure 5.3 – Context Sensitive / Interim Design Solution

Between Amherstburg and LaSalle a similar facility is recommended. Over the long term when County Road 20 requires reconstruction (i.e. new road bed and new curbs) the facility type would be evaluated with a view towards providing more space on the road for cyclists as well as a facility for pedestrians. For instance it may be determined that bike lanes with a barrier curb is the most appropriate design solution, along with a sidewalk for pedestrians in areas where demand for pedestrian facilities is high.

5.2.3 Rails with Trails

The network as proposed includes trails in place of abandoned railway lines. At some point in the future there may be an opportunity to developed rail with trails where ROW for trail corridors are wide enough to safely accommodate a multi-use trail in addition to existing rail operations, while other existing rail corridors may be too narrow to have a trail and active rail line in the same corridor. This can be an issue if an abandoned rail corridor is developed as a trail and then a decision is made to re-introduce an active rail service in the future. A number of municipalities are now considering

"rails with trails", particularly for low volume, low speed rail lines and light rail transit corridors.

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

An example of a rail with trails cross section is included below. This specific cross section, along with the image provided on the right hand side of the page above, is from a rail trail facility developed in Guelph, ON.

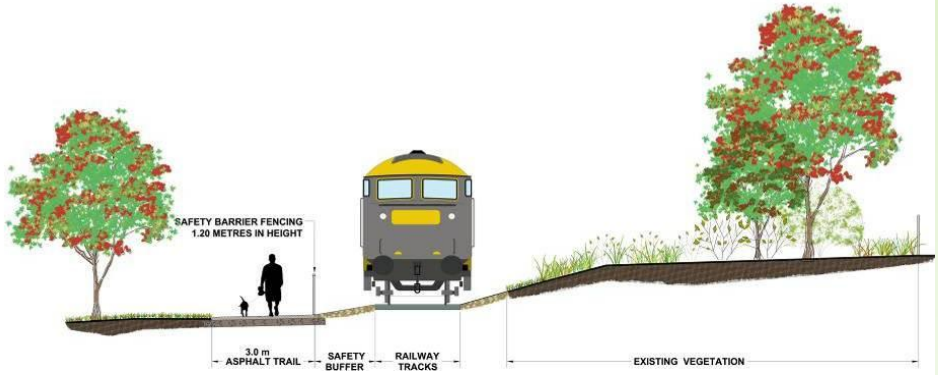


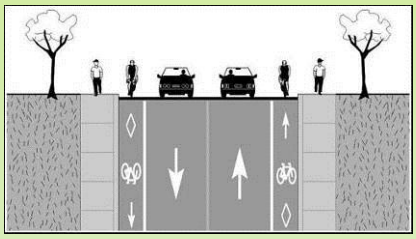
Figure 5.4 – Example of a Rail with Trails

5.2.4 On-road Routes

Bicycles are designated as a vehicle under the Highway Traffic Act (HTA) and as such, cyclists are required to obey all of the same rules and regulations as automobiles when operating on a public roadway. The Ministry of Transportation (MTO) and the Transportation Association of Canada (TAC) have developed standards for the design of on-road facilities and signing for on-road-bicycle systems. The County of Essex working collaboratively with its local municipalities should explore a number of options that exist for on-road cycling routes including bicycle lanes, cycle tracks, paved shoulders or shared lanes and signed routes. In addition to the commonly encountered situations to which relatively simple guidelines can be applied, there are often situations where the proper design requires a bicycle system design

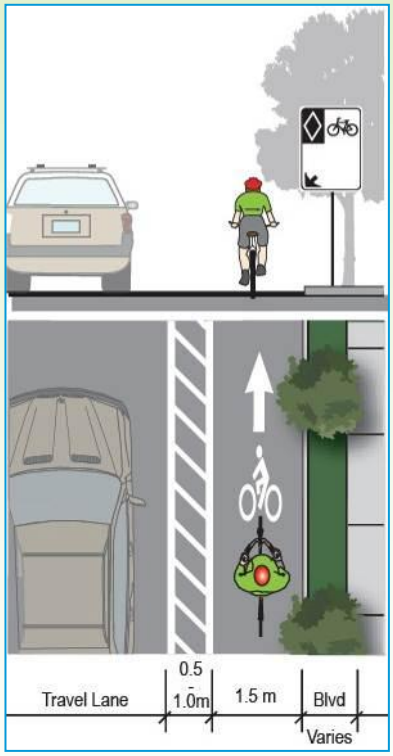
In some urban locations it is desirable to provide a bike lane adjacent to on-street parking. Bike lanes on roads with on-street parking are located to the left of and adjacent to vehicles parked along the curb.

specialist who is familiar with the common guidelines, and innovative techniques, successfully applied elsewhere.



Conventional Bike Lanes

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



Buffered Bike Lanes

Buffered bike lanes are similar to conventional bike lanes but include an additional 0.5m to 1.0m painted buffer that provides additional separation between cyclists and the adjacent motor vehicle travel lane.

Bike Lanes with On-Street Parking

In some urban locations it is desirable to provide a bike lane adjacent to on-street parking. Bike lanes on roads with on-street parking are located to the left of and adjacent to vehicles parked along the curb. Designing this type of cycling facility must take into consideration the potential hazard to cyclists of car doors opening into the traveled portion of the bike lane. In order to allow clearance for vehicle doors, and to minimize collisions with cyclists, the combined bicycle/parking lane should be a minimum of 4.0 m wide. This width allows for a 1.8 m bike lane and a 2.2 m wide curbside-parking stall. The extra distance added to the typical 2.0 m wide parking stall provides space for the opening of car doors, and encourages cyclists to travel a safe distance from the parked vehicles. Bike lanes on roads with on-street parking should be considered in commercial and residential areas where the demand for, and turnover of parking is high, and where commercial and residential property owners may not accept the reduction or prohibition of on-street parking.

Where the road right-of-way or other factors limit the opportunity to provide parking bays, standard on-street curb parking should be assumed. For both applications, the desired width of the parking lane should be a minimum of 2.2 m; with the adjacent bike lane 1.8 m. Figure 5.5 illustrates a typical bike lane with on street parking.

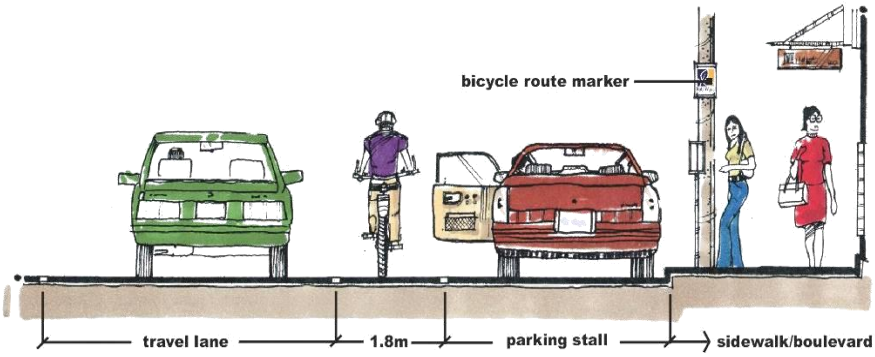


Figure 5.5 – Typical Bike Lane with On Street Parking

Paved Shoulders and Signed Bike Routes

Paved shoulders provide a space for cyclists on rural cross-section roads (with shoulders, no curb and gutter). Pedestrians can use partially paved or granular shoulders where necessary (pedestrians should travel in a direction facing traffic / cyclists travel in the same direction as traffic). Partially paved shoulders (1.5m to 2.0m of the existing granular shoulder is paved or all of the shoulder if it is narrow) are typically recommended on rural cross section roads where traffic volume and speed are moderate to high. Poor sight lines and high truck volume are additional situations where paved shoulders should be considered. Figure 5.6 illustrates a typical paved shoulder.

Signed Routes with paved shoulders may form part of the spine and local community systems in rural areas. Where funding is limited, adding or improving shoulders on uphill sections will give slow moving cyclists needed manoeuvring space and may decrease potential conflicts with faster moving motor vehicle traffic. On rural roads, a marked edge line is typically used to designate a paved shoulder. Signs are used to designate the route and indicate the presence of cyclists.

Paved shoulders provide a space for cyclists on rural cross-section roads (with shoulders, no curb and gutter). Pedestrians can use partially paved or granular shoulders where necessary (pedestrians should travel in a direction facing traffic / cyclists travel in the same direction as traffic).

Signed routes are typically found along roads where traffic volumes and/or vehicle operating speeds are low.

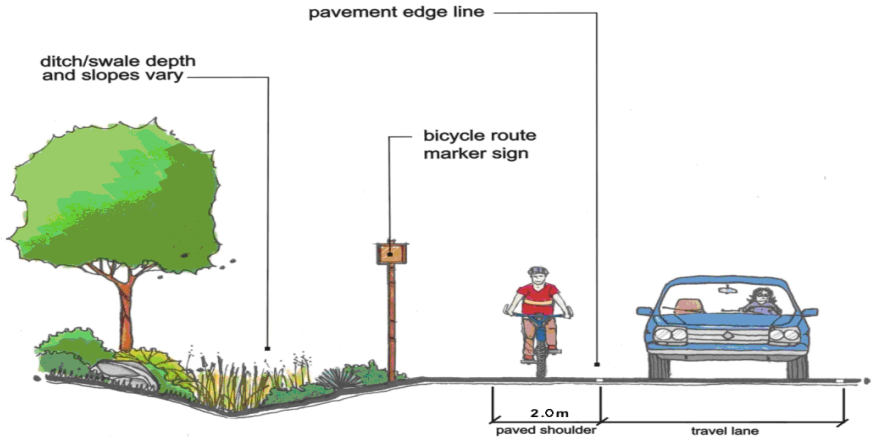


Figure 5.6 – Typical Paved Shoulder

Signed Routes

Signed routes are typically found along roads where traffic volumes and/or vehicle operating speeds are low. Typical of quieter residential streets (low volume and low speed), core urban areas (higher volume and low speed) and lower order rural roads (low volume and moderate speed), cyclists can share the road with motor vehicles and there is no need to create a designated space for cyclists. Signs located at intersections and at regular intervals in rural areas help users navigate through the system.

In areas where the pavement width is narrow, "share the road" signs can also be erected along the road side to encourage cooperative behaviour between cyclists and motorists.

Signed bicycle routes with wide curb lanes should be encouraged for all classes of roads to provide cycling friendly streets, whether they are designated as part of the cycling network or not. Figure 5.7 illustrates a signed only bike route on wide curb lanes.

Research indicates that as lane widths exceed 4.0m it leads to confusion and improper lane use by motor vehicles in congested urban environments, and may encourage unsafe passing manoeuvres and higher speeds. The recommended curb lane width for roads that are proposed for designation as on-road cycling routes is 3.5m to 4.0m.

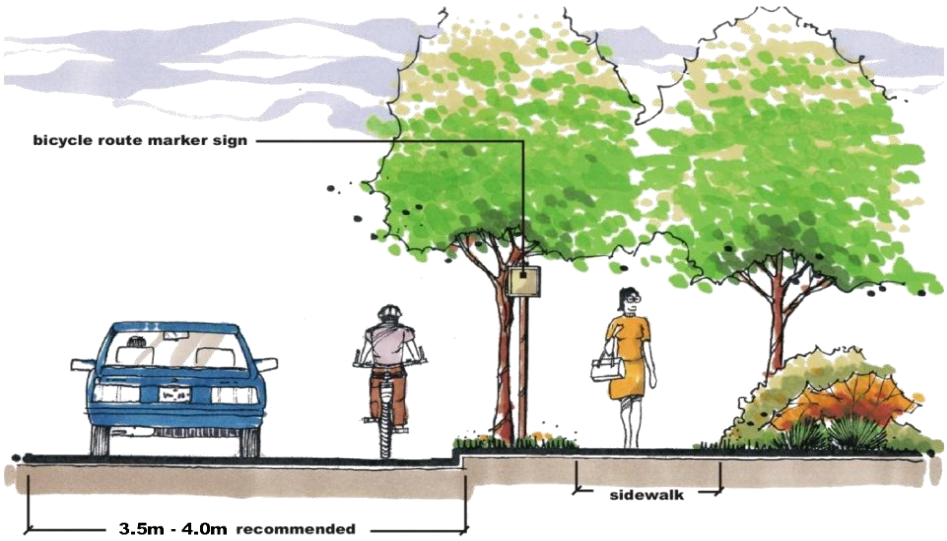


Figure 5.7 – Signed Only Bike Route on Wide Curb Lane

Signed Routes with Shared Use Lane Markings

Shared use lane markings, also called "sharrows", are symbols placed on the pavement surface in the intended area of bicycle travel and may be appropriate for application along some signed only bicycle routes with wide curb lanes. The symbols raise awareness to both cyclists and motorists of the correct cyclist positioning in the lane and help to deter unsafe passing.

Sharrows may be considered as an additional measure for certain roads (context specific) that are signed routes where vehicle speeds or traffic volumes are high but where there is insufficient width to accommodate a bike lane (e.g. arterial and collector roads). Where necessary or desirable, the shared use arrow or "Sharrow" can be painted on the road at regular intervals to inform road users to expect cyclists, and to assist the cyclist in understanding the preferred location to travel.

Existing roads that are recommended as part of the active transportation network should not be prematurely signed or identified as part of the network if the right-of-way available to cyclists is too narrow, traffic volumes are high, or if the roadway is in poor condition. Roads that are presently not suitable for on-road cycling facilities but are recommended for implementation in the future should be upgraded to at least minimum standards before being signed as part of the cycling/active transportation network.

One of the challenges with standard bike lanes in urban areas, especially where on-street parking is provided is that cyclists often find themselves "sandwiched" between parked cars and moving motor vehicles, including trucks and buses in the adjacent travel lane.

Cycle Tracks

One of the challenges with conventional bike lanes in urban areas, especially where on-street parking is provided is that cyclists often find themselves "sandwiched" between parked cars and moving motor vehicles, including trucks and buses in the adjacent travel lane. The opportunity for conflict is higher in this condition as motor vehicles cross the bike lane to park or exit parking. Cyclists are also thought to be at increased risk from motorists in parked or stopped vehicles who open the vehicle door into the bike lane at the same time a cyclist is approaching (known as "dooring"). Delivery trucks, buses and taxis can also be found blocking the bike lane from time to time forcing the cyclist to divert into the adjacent general purpose travel lane or wait for the vehicle to move on.

One alternative to standard on-road bike lanes now being considered by a number of municipalities in North America is the separated bicycle lane, also known as the Cycle Track. The concept is based on on-street bikeways and bikeway boulevards popular in some European countries, especially the Netherlands. The facility is located on the road surface or above and adjacent to a roll curb in the boulevard, and is typically unidirectional on each side of the road. Although there are examples of bi-directional facilities on one side of the road, the unidirectional lane is recommended over the bidirectional facility. Figure 5.8 illustrates some examples of cycle tracks.

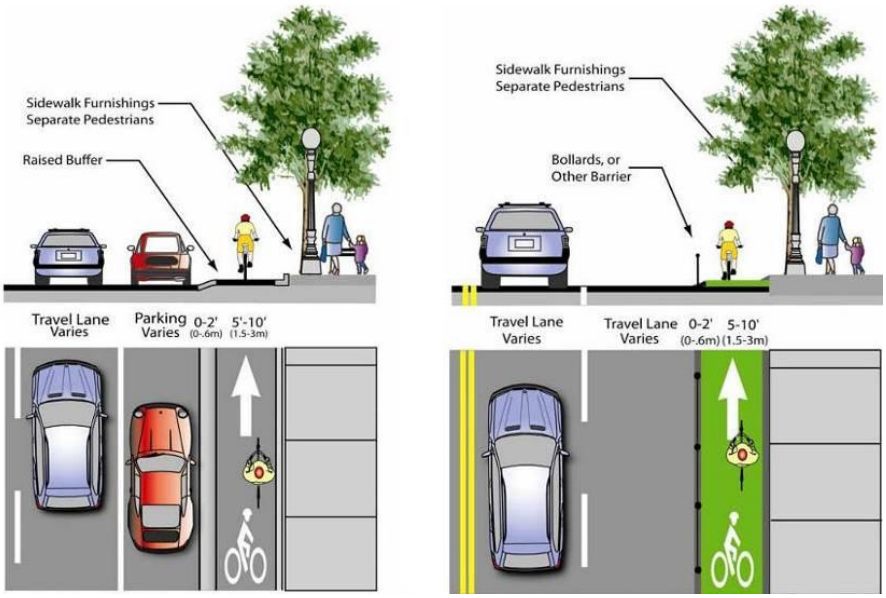


Figure 5.8 – Cycle Tracks Examples

5.2.5 Pedestrian Facilities

A sidewalk is located within the road right-of-way but separate from the traveled portion of the roadway. Sidewalks are typically made of concrete, are a minimum width of 1.5 m and are designed primarily for pedestrians. Existing and future pedestrian sidewalks should be incorporated into the County and neighbourhood systems in urban areas for all system segments proposed within road rights-of-way. Sidewalks are preferred on both sides of all streets in the urban areas that are designated Active Transportation routes and those roads which are served by transit service (for both new street construction and retrofitting of existing streets).

Existing and future pedestrian sidewalks should be incorporated into the County and neighbourhood systems in urban areas for all system segments proposed within road rights-of-way.

Where this cannot be achieved a sidewalk should be provided on at least one side for all streets other than cul-de-sacs and laneways. In locations where traffic volume is extremely low, pedestrians may be able to safely share the street with motor vehicles (context and location specific). In the County of Essex, local municipalities are responsible for sidewalks on both Local and County Roads.

A "buffer" zone should also be provided between the sidewalk and roadway where applicable to separate pedestrians from the road. Buffer zones may vary depending on the nature of the area they serve and is context sensitive.

5.2.6 Network Facility Type Selection Process

The network facility types proposed in the CWATS plan were selected based on the network develop approach presented in this chapter and field investigations. The confirmation of routes and facility types for individual segments is expected to be an outcome of the design feasibility review process (presented in Chapter 7 of this Plan) which is proposed to be completed at the time of implementation or as input to a Class EA or proposal to widen and/or resurface a roadway. The design feasibility review process may suggest a change in route, facility type or propose a context sensitive design solution that meets the needs of the County and the local municipality in which the segment is located. A context sensitive solution could include a range of facility types (see Appendix B - Typical Facility Type matrix) or some form of hybrid that responds to site specific criteria and design challenges or opportunities.

5.3 THE PROPOSED ACTIVE TRANSPORTATION NETWORK

The recommended network presented in the County Wide Active Transportation Study is composed of a mix of on-road and off-road facilities designed to respond to the needs of a range of users (i.e. recreation and utilitarian/commuter), age and skill levels.

One of the primary objectives of the County Wide Active Transportation Study is to identify a continuous and connected county wide active transportation network that builds upon, connects and supports existing and planned local municipal routes and facilities, cycling as a utilitarian and recreational activity, and public transit use. Furthermore, the network should minimize risk to users and be integrated with other facilities (local, bordering municipalities, end of trip, etc.).

County and municipal boundaries are usually not apparent to cyclists and pedestrians. However, a municipal boundary can sometimes become the "end of the road", simply because a proper active transportation connection has not been made to the neighbouring County or municipality. In developing the CWATS every effort has been made to connect to local municipal facilities as well as all surrounding municipalities. The network development approach described in section 5.1, which involved a set of iterative steps, was followed to establish the County Wide Active Transportation network for the County of Essex.

The candidate route map shown in Figures 5.1A/B/C (as provided in section 5.1.3) was developed and reviewed with the study team, and then field investigated in the spring and summer of 2010. Alternative (candidate) routes were assessed based on the route selection principles and field investigations. Based on these assessments, and where stakeholder and public commentary were consistent with the route selection criteria, a draft Active Transportation network map was developed.

Figures 5.9 A/B/C illustrate the recommended draft Active Transportation network, including the recommended facility types. Although some of the routes proposed utilize existing or previously proposed local municipal routes, the majority of the network utilizes County roads and corridors currently (or proposed to be e.g. CASO Rail Trail) under the jurisdiction of ERCA.

Over the next approximately 20 years, the recommended Active Transportation network is proposed to include 779.7 kilometres of designated active transportation facilities. Of the ultimate network total, 74.8 km are existing and 704.9 km are proposed. On-road active transportation facilities (bike lanes, paved shoulder and signed routes) will make up 579.0 km of the

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-9A: CWATS NETWORK WITH FACILITY TYPES

Figure 5-9A represents the active transportation network within the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types of the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figures 5-9B and 5-9C for CWATS Network Routing in Urban Areas.

Please refer to the Windsor BUMP (2001) for additional Active Transportation Connections to Windsor.

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail / Pathway
N/A		Multi-Use Trail / Pathway w/ Bike Lane
N/A		Multi-Use Trail / Pathway w/ Signed Route
N/A		Context Sensitive Solution

OTHER CWATS INFORMATION

- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities
- Network Intersection with Highway / Freeway

LOCAL NETWORKS

LOCAL / ERCA ROUTES

Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway
- Populated Area (Refer to Figures 5-7B and 5-7C for Cycling and Trail Routing in Urban Areas)

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COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-9B: CWATS NETWORK WITH FACILITY TYPES - URBAN AREAS

SEPTEMBER 2012

Figures 5-9B and 5-9C represent the active transportation network within the urban areas of the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types of the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figure 5-9A for the CWATS Network throughout the entire County.

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail / Pathway
N/A		Multi-Use Trail / Pathway w/ Bike Lane
N/A		Multi-Use Trail / Pathway w/ Signed Route
N/A		Context Sensitive Solution

OTHER CWATS INFORMATION

- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities
- Network Intersection with Highway / Freeway

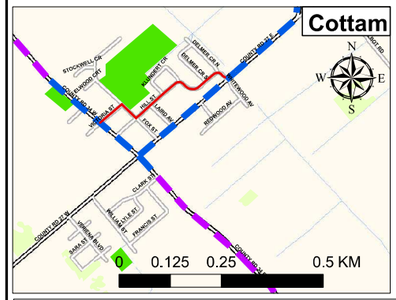
LOCAL NETWORKS

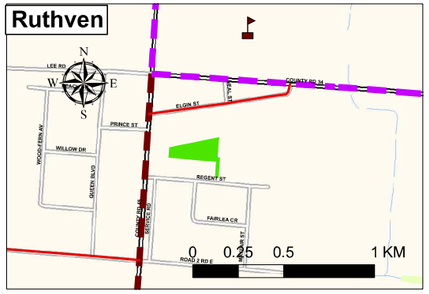
LOCAL / ERCA ROUTES

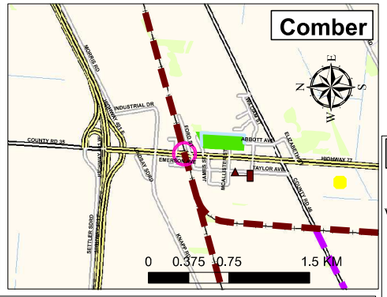
Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

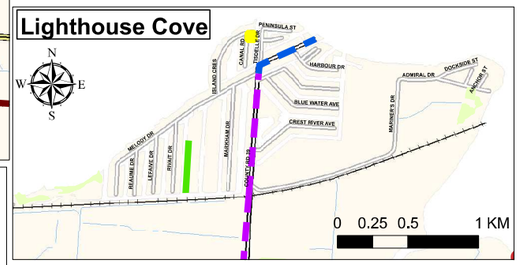
OTHER

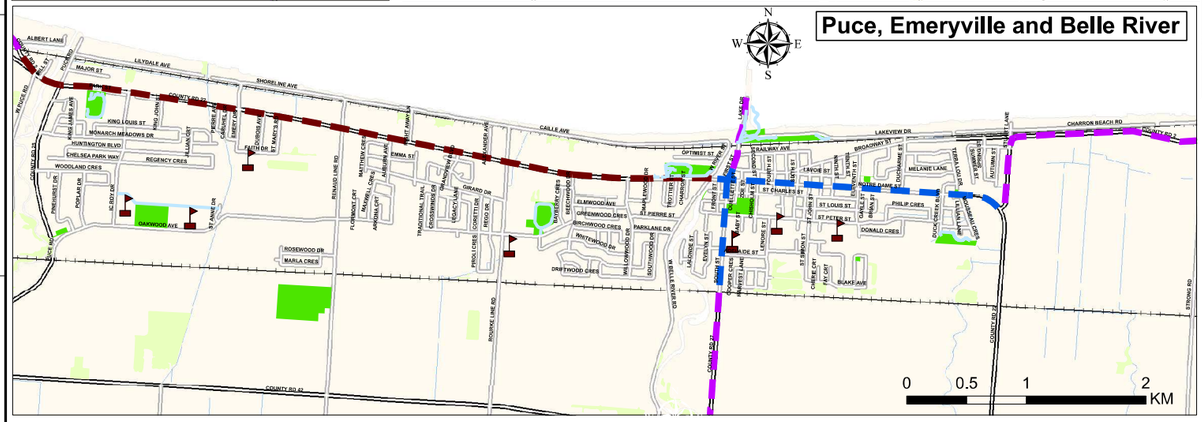
- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

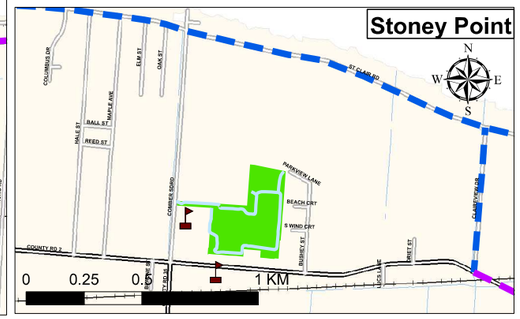


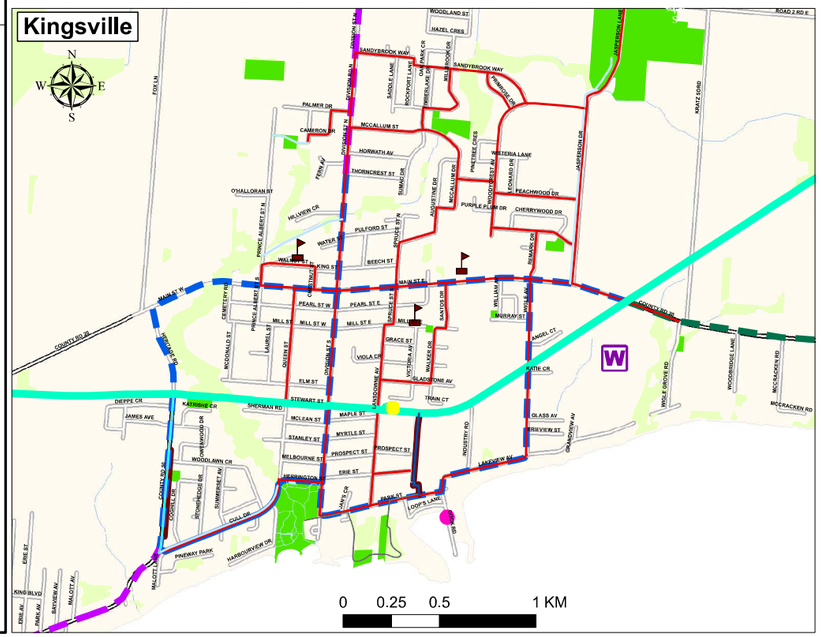


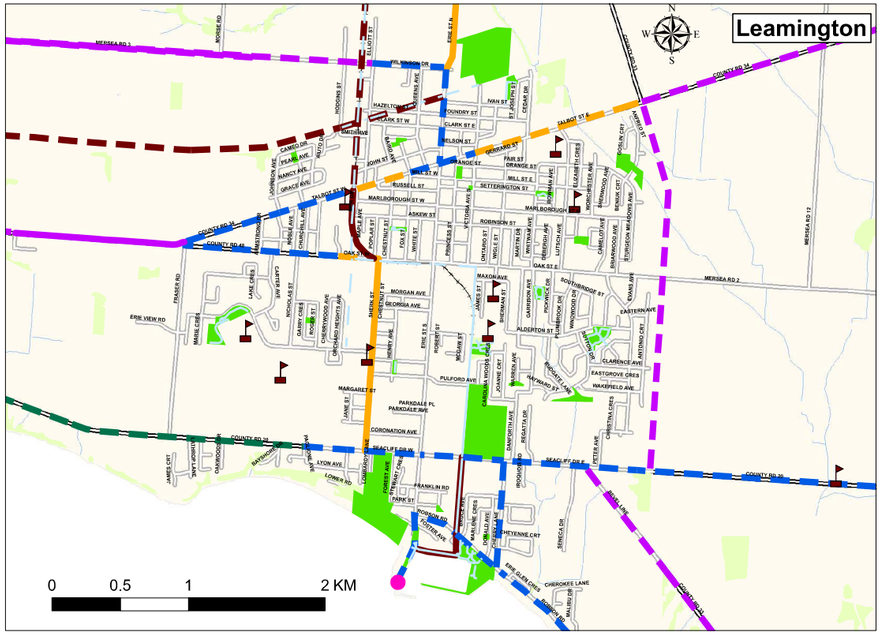












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COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 5-9C: CWATS NETWORK WITH FACILITY TYPES - URBAN AREAS

Figures 5-9B and 5-9C represent the active transportation network within the urban areas of the County of Essex. The thicker dashed and solid lines represent the various on and off road facility types for the County Wide Active Transportation Network. The thinner solid and dashed lines represent local municipal cycling and trail systems.

The data used to assemble this map was taken from GIS information provided to the Study Team by the County of Essex, ERCA, and all local municipalities.

Please refer to Figure 5-9A for the CWATS Network throughout the entire County.

SEPTEMBER 2012

LEGEND

CWATS NETWORK

CWATS FACILITY TYPES

EXISTING	PROPOSED	
		Bike Lane
		Signed Route
		Paved Shoulder
		Multi-Use Trail / Pathway
N/A		Multi-Use Trail / Pathway w/ Bike Lane
N/A		Multi-Use Trail / Pathway w/ Signed Route
N/A		Context Sensitive Solution

OTHER CWATS INFORMATION

- Chrysler Canada Greenway (Trans-Canada Trail)
- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities
- Network Intersection with Highway / Freeway

LOCAL NETWORKS

LOCAL / ERCA ROUTES

Existing	Proposed	
		Local On-Road Cycling Routes
		Local Multi-Use Trails / Pathways
		ERCA Trails

OTHER

- Highway / Freeway
- County Road
- Local Road
- Schools
- Wineries
- Parks / Open Space / Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Rivers and Creeks
- Railway

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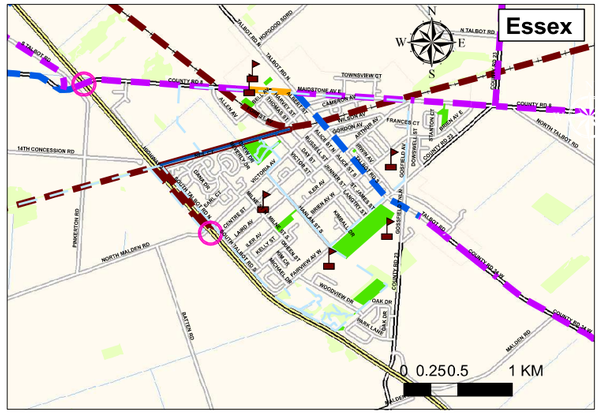

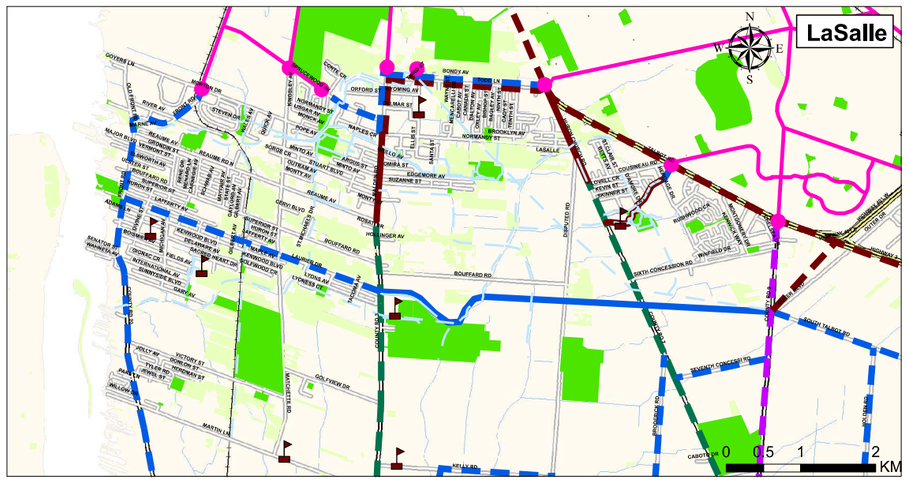

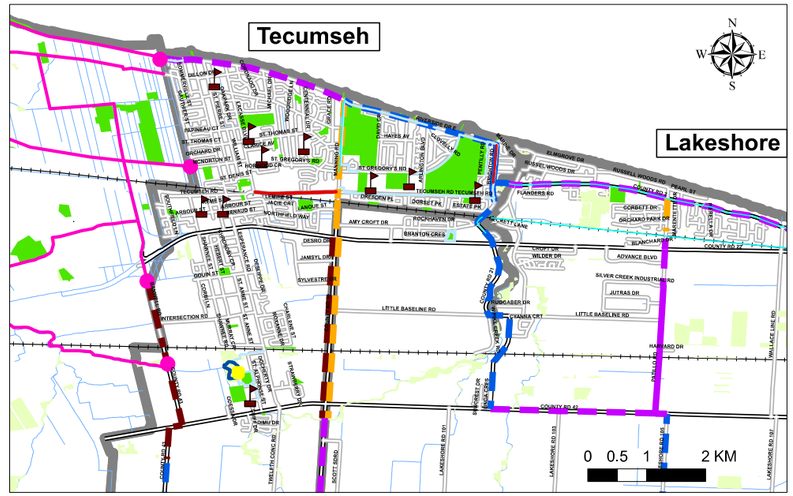

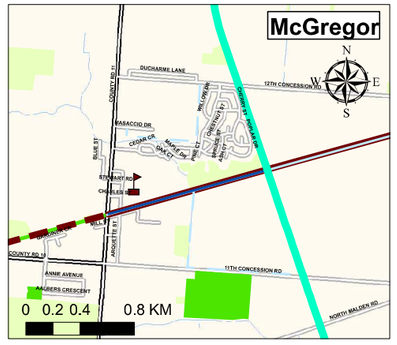

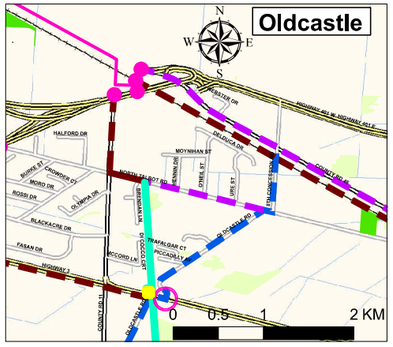

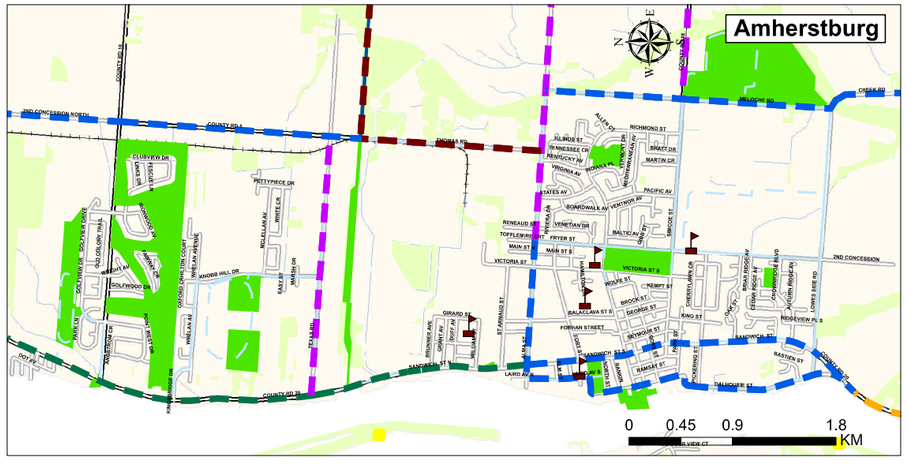

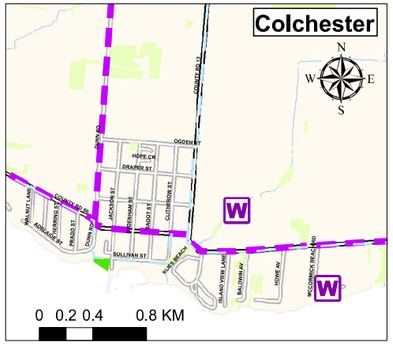

network and 171.2 km will be multi-use trail routes in the boulevard of roadways, in existing parks, greenways, and abandoned rail corridors. 29.5 km of the network will be the context sensitive/interim design solution. Also included in this total is a proposed multi-use trail utilizing the Canada Southern rail corridor, which is expected to cease "rail" operation in the next few years (e.g. 2013 / 2014). Table 5-1 illustrates the proposed length of the County Wide Active Transportation Network by Facility Type and Jurisdiction in detail.

The recommended network presented in the County Wide Active Transportation Study is composed of a mix of on-road and off-road facilities designed to respond to the needs of a range of users (i.e. recreation and utilitarian/commuter), age and skill levels. Given there is no one facility type that meets the needs of all users, route and facility selection was based on the route selection principles established and confirmed with County staff as well a the Steering Committee and the public early on in the study. The Steering Committee played a key role in the development of the Active Transportation Plan. Throughout the network development process the steering committee was provided the opportunity to comment on the network as well as the facility types proposed. Their input and comments were incorporated and refine the network through a number of network iterations.

The complete recommended Active Transportation network should be viewed as a connected system of different facility types (e.g. multi-use trails, sidewalks, bike lanes, signed-only routes, etc.) that are designed to be comfortable and convenient for both existing and future users.

In addition, consideration was given to connectivity, roadway characteristics (i.e. vehicle speed, truck volumes, number of lanes, transit routes, crossings of major barriers, adjacent streetscape and land uses, etc.) and on the study team's understanding of the types of users who would most likely benefit from the identified routes and facilities.

For example, young children (11 and under), new adult cyclists and some older adults often note that they would prefer to cycle on multi-use trails in parks or in roadway boulevards or on facilities separated from motor vehicle traffic on "busy" roads. On the other hand more experienced commuter cyclists often note that they prefer the most direct route, want to operate their bike as a vehicle (since a bike is legally classified as a vehicle under the Highway Traffic Act) and prefer bike lanes (or paved shoulders on roads without curbs) while other experienced cyclists are generally comfortable sharing a travel lane with motor vehicle traffic, but would prefer a slightly wider lane for this purpose. Some pedestrians indicated a preference to walk on trails and sidewalks where cycling was prohibited while other pedestrians were comfortable with the option of sharing an in-boulevard multi-use trail with other trail users (cyclists, joggers, in-line skaters etc.) on one side of the

It is expected that pedestrian activity will generally take place in and very nearby urban/built up areas and at key destinations such as conservation areas in the rural parts of the County.

road, while still having the choice to walk on the other side of a road on a dedicated pedestrian sidewalk.

In developing the network plan careful consideration was given to balancing the needs of users with appropriate routes and facility types. The complete recommended Active Transportation network should be viewed as a connected system of different facility types (e.g. multi-use trails, sidewalks, bike lanes, signed-only routes, etc.) that are designed to be comfortable and convenient for both existing and future users. The recommended County Wide Active Transportation network is also intended to be flexible. The Implementation Strategy set out in Section 7.0 of this Master Plan provides a recommended process to review and confirm the route and facility type at the time a network segment is scheduled for detail design and implementation. For example, the feasibility process may determine that a route on a roadway that is proposed to have bike lanes in the master plan may be built with a physically separated cycle track, in-boulevard multi-use trail or separated cycling and pedestrian facilities in the boulevard (dedicated bike path and separate sidewalk) when it is re-evaluated as part of its implementation. This flexibility allows planners and designers to tailor the facility type to the user needs at the time of implementation, to develop facility types that complement the surrounding community fabric, and to implement new facility designs that were not available at the time the master plan was developed...

5.3.1 Network Features

There are a number of parallels between Niagara Region and Essex County (the southwestern portion of the province).

- The area contains large rural agricultural areas interspersed with small urban centres/built up areas;
- Agriculture is a very important part of the local economy, including specialty fruits and vegetables and the wine industry;
- The geography and climate are very conducive to active transportation (particularly cycling) for both commuting and recreation/tourism purposes; and
- The County has many miles of shoreline along the Great Lakes system.

Over the past decade and a half, Niagara Region has taken a very proactive approach to cycling in particular as an active mode of transportation as well

TABLE 5-1 - PROPOSED LENGTH OF COUNTY WIDE ACTIVE NETWORK BY FACILITY TYPE AND JURISDICTION[1]

Jurisdiction	Existing					TOTAL DISTANCE (EXISTING)		Proposed Routes[2]					TOTAL DISTANCE (PROPOSED)	
	Multi-Use Trail	Bike Lane	Paved Shoulder	Signed Route	Context Sensitive Solution	Total (km)	% of Total	Multi-Use Trail[3]	Bike Lane	Paved Shoulder	Signed Route	Context Sensitive Solution	Total (km)	% of Total
	Distance (km)	Distance (km)	Distance (km)	Distance (km)	Distance (km)			Distance (km)	Distance (km)	Distance (km)	Distance (km)	Distance (km)		
Province of Ontario	0.0	0.0	4.4	0.0	0.0	**4.4**	5.9%	4.0	0.0	9.5	0.0	0.0	**13.5**	1.9%
ERCA	52.5	0.0	0.0	0.0	0.0	**52.5**	70.2%	n/a	n/a	n/a	n/a	n/a	**0.0**	0.0%
Local Municipality														
CWATS Route Segments on Shared Local Municipal Boundary Roads[4]	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0%	3.0	3.6	35.2	27.4	0.0	**69.2**	9.8%
Amherstburg	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0%	11.6	2.5	25.8	44.0	9.1	**93.0**	13.2%
Essex	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0%	7.9	0.4	48.5	10.4	0.0	**67.2**	9.5%
Kingsville	0.5	0.0	0.0	1.0	0.0	**1.5**	2.0%	3.2	0.0	50.4	23.9	6.4	**83.9**	11.9%
Lakeshore	0.0	0.0	2.2	0.0	0.0	**2.2**	2.9%	42.5	0.6	51.9	65.3	0.0	**160.3**	22.7%
LaSalle	3.6	0.0	5.5	0.0	0.0	**9.1**	12.2%	3.2	0.0	0.0	23.4	11.1	**37.7**	5.3%
Leamington	0.6	2.4	1.2	0.0	0.0	**4.2**	5.6%	25.2	2.0	25.7	63.0	2.9	**118.8**	16.9%
Tecumseh	0.0	0.0	0.3	0.6	0.0	**0.9**	1.3%	13.4	1.7	11.5	34.7	0.0	**61.3**	8.7%
TOTAL (km)	**57.2**	**2.4**	**13.6**	**1.6**	**0.0**	**74.8**		**114.0**	**10.8**	**258.5**	**292.1**	**29.5**	**704.9**	

NOTES

1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.

2 - Future roads, where known, were taken into consideration when developing the network.

3 - Proposed Trails under the jurisdiction of ERCA (68.7 km) are included in the local municipal totals.

4 - CWATS routes on County Roads that also form the boundary between 2 or more local municipalities have been included in the County Road total.

5.6 Km of the trail componenet of the Detroit River International Crossing Project (DRIC) are located within the County of Essex. (3.5 km in LaSalle, 2.1 km in Tecumseh).

as a focus for the tourism industry, and they are reaping significant benefits. The County of Essex and nearby Chatham-Kent have an equal opportunity to capitalize on their unique assets and the proposed active transportation network has been designed with this in mind.

A key feature of the network is the opportunity for an extensive multi-use trail loop to throughout the County by connecting the Chrysler Canada Greenway with the Leamington-Comber abandoned rail corridor, the CASO corridor and the Pelton Spur the latter of the two of which are being considered for retirement in the near future An off road multi-use trail loop part of which includes the Trans Canada Trail, would be an exceptional tourism asset for the entire region and a unique feature of the Trans Canada Trail. Heading east of Comber on the CASO corridor provides a connection to Chatham-Kent. The Municipality of Chatham-Kent is currently re-evaluating the location of the Trans Canada Trail route in the western part of their municipality as they are anxious to make the connection to the County of Essex and this route may alleviate some of the challenges in both Chatham-Kent and the County of Essex in trying to develop the connection between Leamington and Wheatley.

A portion of this multi-use trail loop heading north out of Leamington in combination with the recommended multi-use facility along County Road 20 between Leamington and Kingsville also provides a key commuting route for large numbers of migrant workers employed in the Leamington area. Further to this, the Town of Leamington is working with the local greenhouse industry to intensify greenhouse production facilities along the Leamington-Comber corridor which will increase the need for an active commuting route for migrant workers.

Apart from the key multi-use trail connection described above, the remainder of the active transportation routes in the inter-urban (rural) area between urban/built-up areas consist of on-road routes. Though these cater primarily to cyclists, pedestrians are permitted to walk on road shoulders in the direction facing traffic. It is expected that pedestrian activity will generally take place in and very nearby urban/built up areas and at key destinations such as conservation areas in the rural parts of the County. Recommended active transportation routes in the rural areas are based on the application of the route selection principles and as such are intended to provide connections between built-up/urban areas, a regular spacing of east-west and north-south routes, and provide opportunities for loops of varying lengths and connecting

A number of these routes are proposed to have paved shoulders and in locations where traffic volumes are lower, signed routes are sufficient. Where “Share the Road” signage has already been implemented, it is recommended that bike route signs accompany them.

to various destinations, and are intended to provide the best crossings of significant barriers such as Highway 401.

Key north-south routes/spines include

- The combination of County Road 1, 14 and 37 in the east;
- County Road 29 and 27 in the central area;
- The combination of County Road 13, 15 and 19 in the central west area; and
- County Road 20 along the Detroit River.

Key east-west routes/spines include:

- The combination of County Road 20 and 50 in the south;
- The combination of Mersea Road 4 and County Road 18 in the south central area;
- Both County Road 8 and South Middle Road in the central area; and
- County Road 2 in the north.

A number of these routes are proposed to have paved shoulders and in locations where traffic volumes are lower, signed routes are sufficient. Where "Share the Road" signage has already been implemented, it is recommended that bike route signs accompany them. Bike routes could be named or branded to correspond to the different geographic areas in the County and these names transferred to County-wide bicycle route mapping that is made available to the public.

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In urban/built up areas the intent of the network is two fold:

- To provide direct connections through the built-up area along a designated and recognizable route; and
- To provide connections to local area networks where local networks have been developed. These connections are important as they allow local users to travel seamlessly from their local network onto network routes that they can follow across the County.

At the rural-urban transition points where the active transportation routes are desirable to continue a designated facility for cyclists (i.e. bike lane), this should be accompanied by sidewalks for pedestrians. In some locations the cycling facility transition from paved shoulder to designated bike lane can be accomplished through the simple reapplication of pavement markings,

without the need for road redesign/widening. However, recognizing the need to accommodate many uses and needs as part of a "complete streets" approach to design, the ability to provide continuous designated cycling facilities may not be possible. In these locations, the application of the "sharrow" marking in combination with bicycle route signing serves to inform the motorist and cyclist that road space is to be shared. In these locations traffic volumes may be high, but is often moves slowly block by block. Where these speed differentials are small, most cyclists are comfortable traveling with motor vehicle traffic. This allows the continuation of the cycling route while still accommodating other needs such as on street parking, pedestrian and sidewalk retail space (some locations this may include an enhanced pedestrian environment) as part of a more "complete streets" approach. The application of the "sharrow" is the recommended approach for signed routes through downtown areas such as Leamington, Kingsville, Amherstburg and Essex.

The network provides connections to trails currently being planned as part of the Detroit River International Crossing (DRIC), as well as connecting links into the Windsor urban area that are consistent with the city's on and off-road route network. Connections along the Chatham-Kent/County of Essex boundary are consistent with the Chatham-Kent Trail Master Plan, and as such coordination with those responsible for implementing the routes in Chatham-Kent will be necessary to ensure a clean transition and appropriate gateway signage. Finally, the route network provides the connection to Pelee Island via a direct network link to the island ferry terminal in Kingsville and Leamington.

The network provides connections to trails currently being planned as part of the Detroit River International Crossing (DRIC), as well as connecting links into the Windsor urban area that are consistent with the city's on and off-road route network.

Recommendations:

5-2: Recognize that the proposed CWAT network will change over time by adding missing links and opportunities offered by unopened road allowances, hydro rights-of-way, existing or abandoned rail corridors, open green-space and future roadway improvements

5-3: Consider the application of the Institute of Transportation Engineers (ITE) recommended practices for the application of site design guidelines that "Promote Sustainable Transportation Through Site Design"[1]

Chapter 5 of the County Wide Active Transportation Plan (CWATS) presented the recommended active transportation network plan. Chapter 6 sets out a comprehensive set of network and facility planning and design guidelines that are intended to guide and support the implementation of the proposed CWATS network plan for the County of Essex and its local municipalities, and support other local municipal Active Transportation facility initiatives.

6.0 NETWORK DESIGNER'S TOOLBOX

6.1 ABOUT THESE GUIDELINES

A well-designed and properly maintained active transportation system is a critical part of the user's experience. For some users the design and maintenance of a facility will influence their decision to use it again at a later date. Active transportation facilities that have been thoughtfully designed and constructed typically perform better over their lifespan, are easier to maintain and may result in few concerns or issues of liability.

Active Transportation (AT) facility users vary widely in age, motivation and physical ability. Therefore a "one size fits all" design approach does not apply and it is important to try and match the AT facility type and design with the type of experience that is desired. The AT network in the CWATS plan has been developed to achieve a predictable and recognizable quality and consistency in the design to enhance the experience, enjoyment and safety for a wide range of active transportation facility users and add value to the communities through which the facilities pass.

For some users, the design and maintenance of a facility will significantly influence their decision to use it again at a later date.

6.1.1 How to Use These Guidelines

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

Information included in these guidelines is based on currently accepted design practices in North America, and ongoing research and experience gained during the initial years of active transportation implementation.

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Information included in these guidelines is based on currently accepted design practices in North America, and ongoing research and experience gained during the initial years of active transportation implementation. The guidelines are not intended to be prescriptive, rather they are suggested guidelines which should be treated as a reference to be consulted during the development and construction of the AT network. They are not meant to be inclusive of all design considerations for all locations, nor are they meant to replace "sound engineering judgment". Thus the intent is to have regard to the individual guidelines when implementing AT facilities at specific locations to arrive at the most appropriate solution. In some cases an interim solution may be appropriate where the desired long term solution cannot be achieved in the short or midterm, provided that the interim solution meets users' needs and key safety considerations can be addressed.

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

"Minimum recommended" conditions typically reflect a situation that is considered minimally acceptable in terms of safety and level of service. These are usually based on a lower anticipated level of use that is anticipated for "preferred" conditions.

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

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

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

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

6.2 AT FACILITY USERS AND NEEDS

When developing and applying guidelines, it is important to consider the characteristics and preferences of potential users. In the County of Essex the potential user groups include pedestrians, cyclists, and users with mobility aids, all of which are self-propelled.

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

In the County of Essex the potential user groups include pedestrians, cyclists, users with mobility aids, all of which are self-propelled

6.2.1 Pedestrians

Pedestrians can generally be divided into several sub categories:

- Walkers;
- Hikers; and
- Joggers and runners.

Walkers

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

- Exercise / health (62%)
- Pleasure (30%)

- Practicality / convenience (24%)
- Environmental concern (10%)
- Saving money (9%) [1]

Because walking is such a basic activity and a freedom that is enjoyed by the majority of the population, planners and designers should also consider this mode as the base level for facility design in the County's urban/settlement areas. In these locations the needs of walkers with baby strollers or walking aids, carrying picnic baskets or other equipment, and walkers in pairs or in groups, such as a class of school children. Planners and designers need to be aware that potential users may be impatient, inattentive or have sensory, cognitive or ambulatory difficulties.

Walkers represent a wide range of interests and motives such as leisure, relaxation, socializing, exploring, making contact with nature, meditation, fitness, or dog walking.

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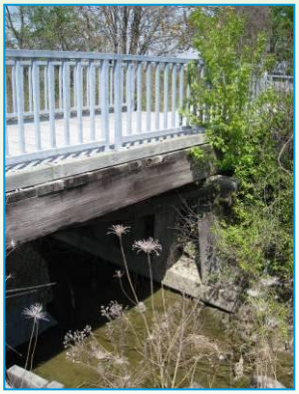
Walkers represent a wide range of interests and motives such as leisure, relaxation, socializing, exploring, making contact with nature, meditation, fitness, or dog walking. It is also important to consider pedestrians who walk for utilitarian or transportation purposes. This group tends to be more urban-focused, with trips focusing on shopping and errands and walking to work and school. In addition to using sidewalks, parking lots and urban plazas, the utilitarian walker will use trails where they are convenient, well designed and properly maintained. In many cases trails may provide a convenient "short cut" to traveling the sidewalk network to get to their destination. This group may represent a significant portion of users in the urban areas of the County of Essex. Where no sidewalks are provided and there are no shoulders, the Ontario Highway Traffic Act allows pedestrians to walk on the edge of the roadway, facing oncoming traffic [2]. Signs warning motorists of pedestrians ahead are recommended.



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

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[1] Environics International, 1998, p. 4-5
[2] Ministry of Transportation (MTO), 1990
[3] http://www.myhamilton.ca/NR/rdonlyres/3654FE08-9A49-4D7D-9595-23D3557BB77A/0/ShiftingGears.pdf

Hikers

Hikers are often considered more of the elite of the recreational walking group and may challenge themselves to cover long distances and be willing to walk on sections of rural roadway shoulder considered less safe or less interesting by the majority of leisure walkers. Active Transportation planners should assume that there will be keen pedestrian users, even in remote or highway environments despite the fact that the frequency may be very low. Some of the characteristics of this group include:

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

Runners and Joggers

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

6.2.2 Cyclists

The mechanical efficiency of the bicycle allows users of all ages to travel greater distances at a higher rate of speed than pedestrians. Some bicycles, including the "mountain" or "hybrid" can travel easily over stonedust and gravel surfaces, whereas, traditional narrow-tired touring and racing bicycles require very well compacted granular surfaces or hard surface pavements such as asphalt. Distances covered vary widely from a few kilometers to well over a hundred depending on the fitness level and motivation of the individual cyclist. Although cyclists have the right to access the extensive existing public roadway system, with the exception of the 400 series and major highways, many inexperienced cyclists feel unsafe sharing the road with automobiles. Some do not have the desire or skill level to ride in traffic. Off-road trails, shared with pedestrians offer the less experienced and less

Although cyclists have the right to access the extensive existing public roadway system, with the exception of the 400 series and major highways, many inexperienced cyclists feel unsafe sharing the road with automobiles.

confident cyclist a more comfortable environment. Cyclists that travel longer are more likely to focus a significant portion of their route on the roadway network, and often seek out quieter, scenic routes over busier roads.

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

Although the average travel speed for a cyclist on a trail is in the range of 15-20 km/h and on a road 18-30 km/h, speeds in excess of 50 km/h can be attained while traveling downhill on roads and some hard surface trails. Where excessive speed is a potential issue on trails, speed limits and warnings should be posted to discourage fast riding and aggressive behaviour. Cyclists other than young children should be discouraged from cycling on sidewalks because of potential conflicts with pedestrians and potentially dangerous intersections with private driveways. Many municipalities have prohibited sidewalk cycling through by-laws.

Skateboarding and the use of non-motorized scooters are becoming increasingly popular among all age groups, particularly in urban areas. No obvious solutions have emerged, and no standards have been widely

6.2.3 Skateboarders, Non-motorized Scooter Users

Skateboarding and the use of non-motorized scooters are becoming increasingly popular among all age groups, particularly in urban areas. No obvious solutions have emerged, and no standards have been widely adopted. In some municipalities, skateboarders and scooter users have been prohibited from using either roadways or sidewalks by local by-laws. Consequently, they are avid users of hard-surface off-road facilities and may travel some distance to reach a facility that suits their needs.

This user group prefers a very smooth, hard surface. Loose sand, gravel, twigs, branches, fallen leaves and puddles can be significant hazards. Though skateboarders and scooter users can quickly become pedestrians by dismounting, they too are vulnerable to the effect of grades (both up and downhill) and require ample maneuvering space. An inability to come quickly to a complete stop can be a significant concern for all but the most

[4] Segal, 2006.

experienced users in this group. Long or steep hills with limited visibility may be viewed as either challenging or terrifying depending on an individual's level of experience.

6.3 AT NETWORK DESIGN CONSIDERATIONS

6.3.1 Accessibility

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

The Accessibility for Ontarians with Disabilities Act (ODA) states that "The people of Ontario support the right of persons of all ages with disabilities to enjoy equal opportunity and to participate fully in the life of the province."[6] within the ODA, Bill 118[7].

The Accessibility for Ontarians with Disabilities Act (ODA) states that "The people of Ontario support the right of persons of all ages with disabilities to enjoy equal opportunity and to participate fully in the life of the province."[1]

As required by the AODA, the Minister of Community and Social Services appointed a Standards Development committee to develop a set of Accessibility Build Environment Standards. The document was developed and issued in July of 2010 by the committee and provides a definition of the built environment as well as accessibility standards for each. The definition includes buildings, site development, public ways and public parks, trails and playgrounds. As part of the standards developed, specific reference is made to paths and trails under section 11 (recreation elements and facilities) of the report. The rationale for the inclusion of these standards can be summarized in the following text:

"Opportunities for recreation, leisure and active participation should be available to all members of the community. Outdoor trails and pathways

[5] Social Development Canada, 2004, p. 2
[6] Ontarians with Disabilities Act, 2001
[7] Ontarians with Disabilities Act - Bill 118 and 125, 2001

which offer a range of levels of difficulty will allow each individual to choose their preferred route based on their abilities and desired level of challenge."

The accessibility strategy commonly applied to natural environments is to provide appropriate accessibility for persons with disabilities, wherever practical, and to provide relevant information on the grade, cross-slope, width, surface, or length of the trail where it is not practical or appropriate to fully comply with the requirements.

More specifically, section 11 focuses on the overall accessibility of trails that are found in the natural environment. As will be outlined in the following sections, the development of trails and active transportation facilities is not a one size fits all approach. Trails facilities are to be developed to accommodate all users including those with a variety of needs and levels of ability. The strategy outlines necessary criteria for the development and design of trails to accommodate such user groups. The criteria that has been developed includes but is not limited to:

- Operational Experience;
- Width;
- Running Slope;
- Cross Slopes;
- Total Slope;
- Surface;
- Changes in Level; and
- Signage

When designing and implementing active transportation facilities, the County of Essex should utilize the guidelines and requirements outlined in the strategy to ensure that the needs of all user groups are accommodated and satisfying the requirements of the AODA to the greatest extent possible, given the context of each trail's location, the surrounding environment and type of trail experience that is desired for that location.

To the extent that it is possible active transportation routes should be designed to allow users to feel comfortable, safe, and secure.

6.3.2 Personal Security

To the extent that it is possible active transportation routes should be designed to allow users to feel comfortable, safe, and secure. Although personal safety can be an issue for all, women, the elderly, children, are among the most vulnerable groups. Principles of Crime Prevention Through

Environmental Design (CPTED) should be considered and applied to help address security issues concerning trail use, particularly in locations where trails are lightly used, isolated or in areas where security problems have occurred in the past.

The four main underlying principles of CPTED are:

- Natural Access Control: deters access to a target and creates a perception of risk to the offender;
- Natural Surveillance: the placement of physical features and/or activities and people that maximizes natural visibility or observation;
- Territorial Reinforcement: defines clear borders of controlled space from public to semi-private to private, so that users of an area develop a sense of proprietorship over it; and
- Maintenance: allows for the continued use of space for its intended purpose[8].

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

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

Environmental Design (CPTED) should be considered and applied to help address security issues concerning trail use, particularly in locations where trails are lightly used, isolated or in areas where security problems have occurred in the past.

[8] CPTED Ontario, 2002

Guidelines:

6.1 The four main underlying principles of CPTED should always be considered when implementing the County's AT network:

- Natural Access Control;
- Natural Surveillance;
- Territorial Reinforcement; and
- Maintenance.

6.2 Properly located entrances, exits, fencing, landscaping and lighting should direct both foot and automobile traffic in ways that discourage crime.

6.3.3 Lighting

Active transportation routes within road rights-of-way will benefit from lighting that has been installed for the purpose of illuminating the roadway. Lighting of off-road trails outside of road rights-of-way trails must be carefully considered. Very few jurisdictions make the decision to light their entire off-road trail system for a number of important reasons, including:

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

Active transportation routes within road rights-of-way will benefit from lighting that has been installed for the purpose of illuminating the roadway. Lighting of off-road trails outside of road rights-of-way trails must be carefully considered.

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

6.4 CYCLING NETWORK FACILITY TYPES

The County's Active Transportation network has been divided into two classes of facilities:

- On-road bicycle based facilities; and
- Off-road, multi-use facilities.

Certain systems and facility types are designed specifically for on-road or off-road use. On-road routes refer to network facilities that operate on or along existing roads and are incorporated into the present or future street system.

Off-road facilities refer to routes that typically operate on their own right-of-way, independent of the existing street network, though they may include in-boulevard multi-use trails. Off-road routes typically operate through open spaces, valley and parklands, as well as power or transportation utility corridors and storm water retention ponds.

Connections between different facilities would be provided at locations where the two different classes of facility intersect. Ramps are also constructed in some locations to provide connections between two differing grade-separated facilities.

6.4.1 Cycling Facilities

In terms of public policy, it is important to acknowledge that a bicycle is formally recognized as a vehicle by the Province of Ontario, as outlined in the Highway Traffic Act, R.S.O., 1990. Therefore, cyclists have the right to share all classes of roadways, including highways, arterials, collectors and local streets, with the exception of the 400 series highways or other highways/roads where cycling has been prohibited by municipal by-laws. Motorists are prohibited by municipal by-law from driving or stopping in

A bike lane is defined as a facility located in the travelled portion of the street or roadway and is designed for one-way cyclist traffic. Bike lanes are identified on the road through pavement markings and signage.

designated bike lanes, except for emergency avoidance manoeuvres or breakdowns.

The fact that cyclists have a right to use most roadways leads to an important principle of roadway design, that "every road is a cycling road". Therefore, the County should consider bicycle friendly design guidelines for all streets, whether a road is designated as part of the cycling network or not. Bicycle friendly roadway features typically include, among other things, wide curb lanes plus drainage grates that are bicycle friendly and ideally located out of the desired path for cycling. Other features include traffic control devices that are programmed with bicycles in mind, particularly detector loops that have their sensitivity adjusted to allow bicycles to actuate a traffic signal.

As discussed in section 6.2, for routes that are served by bike lanes, it is expected that pedestrians will be accommodated on the sidewalk and off-road trails respectively.

Guideline:

6.3 The County of Essex should consider applying bicycle friendly design guidelines for all streets, whether a road is designated as part of the County Wide Active Transportation network or not.

6.4.1.1 Bike Lanes

A bike lane is defined as a facility located in the travelled portion of the street or roadway and is designed for one-way cyclist traffic. Bike lanes are identified on the road through pavement markings and signage. Bike lanes typically form part of the spine bicycle network, but may also form parts of the neighbourhood network. Bicycle lanes should be constructed on roads with an "urban" cross-section.

Bike lanes typically form part of the spine bicycle network, but may also form parts of the neighbourhood network.

Conventional Bike Lane Design

The minimum design width for a bike lane on a street with an urban cross-section without on-street parking should be 1.5 m from the face of the curb. A preferred width of 1.8 m is recommended, especially on roadways with higher average annual daily traffic (AADT) volumes, speed limits, and commercial vehicle volumes (trucks/buses) such as those on busy arterial roadways. This is consistent with both Ministry of Transportation (MTO)

and TAC guidelines[9]. Bike lane widths of 2.0 m should be considered on roads with motor vehicle operating speeds, or posted speed limits between 60 km/h and 80 km/h. Bike lane widths should not exceed 2.2 m because the excess width may encourage motorists to drive in the bike lanes, as they will be wide enough to accommodate a motor vehicle.

In constrained rights-of-ways and/or for short segments, a reduced width of 1.2 m may be acceptable for bike lanes. However, this should not be considered along high-speed roadways with high AADT volumes' and commercial vehicle volumes (see Section 6.4.1.3 Retrofitting Roads for suggested acceptable AADT and Commercial Vehicle thresholds for on-road cycling facilities). Lane widths less than 1.2 m should not be designated or signed as bike lanes. When the available lane width narrows below 1.2 m, bike lane signs and pavement markings should cease, and a "Bike Lane Ends" sign should be posted (refer to TAC Bikeway Traffic Control Guidelines for Canada)[10]. Table 6.1 summarizes the widths of bike lanes recommended for the County of Essex.

Table 6-1: Recommended Bike Lane Widths

Classification	Minimum Width	Desired Width
Standard Bike Lane	1.5 m	1.8 m
Bike Lane Adjacent to On-Street Parking Aisle	1.8 m	2.0 m
Bike Lanes on Rural Roads with Posted Speed Limit between 60 - 80 km/h [(a)]	1.5 m	2.0 m
Bike Lanes in Constrained Right-of-way	1.2 m	1.5 m

(a) Note: On-road cycling facilities are not recommended on roadways with posted speed limits greater than 80 km/h

Cyclists should not be encouraged to ride in this constrained space since a cyclist could strike a curb and may "bounce" back into the motor vehicle travel lane.

If the edge line does continue along a roadway following the termination of a bike lane along with the cycling route, and the available lane width between

9 Ontario Traffic Manual, Book II – Pavement Hazard and Delineation Markings, MTO, 2000 and Geometric Design Guide for Canadian Roads, TAC, 1999. (TAC Table 3.4.6.2)

10 Bikeway Traffic Control Guidelines for Canada, Transportation Association of Canada (TAC), (1999)

the edge line and the shoulder/curb of the roadway is less than 1.2 m, then the edge line should be removed or, as a minimum, be allowed to wear off. The risk is that cyclists may attempt to ride in the space provided by the edge line although it is less than 1.2 m in width. Cyclists should not be encouraged to ride in this constrained space since a cyclist could strike a curb and may "bounce" back into the motor vehicle travel lane. Therefore, curbed roadways with edge lines less than 1.2 m from the face of the curb should not typically be signed or marked as bike lanes. Once the edge lines have been removed or have worn away, bicycle route signs supplemented by "share the road" sign tabs should be implemented. That said, the use of edge lines 1.2 m to 1.5 m from the curb can serve as an alternative to formal bike lanes and could be combined with time of day parking restrictions to improve conditions for cycling, especially when children are travelling to and from school and peak commuting hours.

Figure 6.1 illustrates a typical urban road cross-section standard modified to accommodate bike lanes. The width and number of lanes, distance between the curb and sidewalk and number of sidewalks (one side or both sides) will vary depending on location.

Bike lanes should be clearly identified on roadways through bicycle route signing, bicycle symbol pavement markings and bike lane signs.

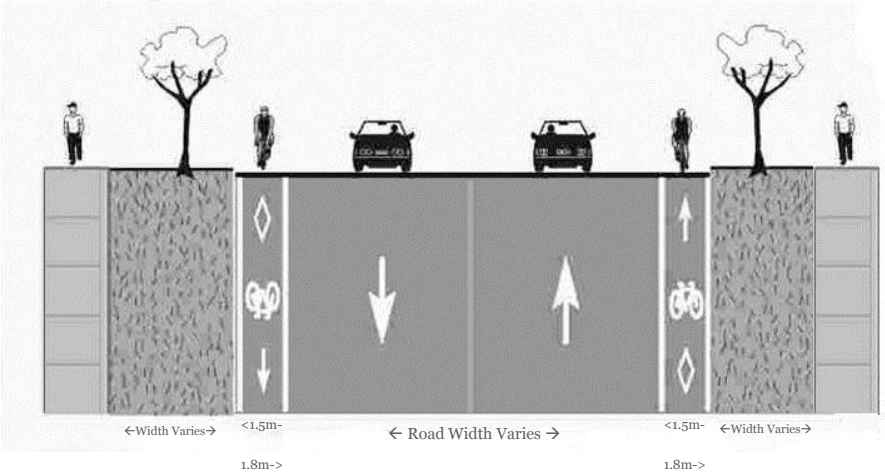


Figure 6.1 – Example of an Urban Road Cross Section with Bike Lanes

Whenever possible, it is recommended that bike lanes be provided on all collector and arterial roads designated to have cycling facilities, provided that there is sufficient roadway width and AADT volumes and commercial vehicle percentages are within acceptable limits. After review, in locations where a bike lane may not be deemed feasible, consideration should be given

to providing a signed only bicycle route (with or without edge lines). These cycling facilities are described in Section 6.3.1.3.

Bike lanes should be clearly identified on roadways through bicycle route signing, bicycle symbol pavement markings and bike lane signs.

Guidelines:

6.4 Bike lanes with a minimum width of 1.5 m are recommended as a standard, while a preferred width of 1.8 m should be considered on roadways with higher AADT volume's, speed limits, and truck volumes such as found on busy arterial roadways.

6.5 Bike lanes should be clearly identified on roadways through bicycle route signing, bicycle symbol pavement markings and bike lane signs.

6.6 Bike lanes are typically recommended where feasible for collector and arterial roads designated to have cycling facilities. In locations where a bike lane is not deemed feasible following a review, consideration should be given to providing a wide curb lane. If this is not possible, as a minimum, a signed only bicycle route should be provided if thresholds permit.

Bike Lanes with On-Street Parking

Bike lanes on roads with on-street parking are located to the left of and adjacent to parked vehicles along the curb. Designing this type of cycling facility must take into consideration the potential hazard to cyclists of car doors ("dooring") opening into the travelled portion of the bike lane and impacting a cyclist. In order to allow clearance for vehicle doors, and to minimize collisions with cyclists, the combined bicycle/parking lane should be a minimum of 4.0 m wide. This width for example, allows for a 1.8 m bike lane and a 2.2 m wide curb side-parking stall. The extra distance added to the typical 2.0 m wide parking stall provides space for the opening of car doors, and encourages cyclists to travel a safe distance from the parked vehicles. Figure 6.2 illustrates an example of bike lanes adjacent to on-street parking. As an alternative, the width of the bike lane may be reduced to 1.5 m if the parking aisle is greater than 2.4 m wide. Bike lanes on roads with on-street parking should be considered in commercial and residential areas where the demand for and turnover of parking is high, and where commercial and residential property owners may not accept the reduction or prohibition of on-street parking.

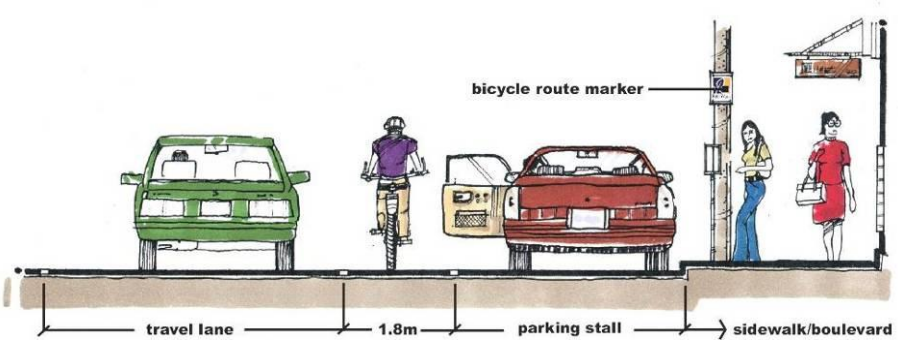


Figure 6.2 – Typical Bike Lane with On-Street Parking

Where it is not feasible to install dedicated bike lanes, the applicability of a signed bicycle route (with or without edge lines) or an in-boulevard multi-use trail should be evaluated. Other route alignments may also need to be considered.

Where the road right-of-way or other factors limit the opportunity to provide parking bays, standard on-street curb parking should be assumed. For both applications, the desired width of the parking lane should be a minimum of 2.2 m, with the adjacent bike lane 1.8 m.

Guidelines:

6.7 *On proposed bikeway routes where on-street curb parking exists, an assessment should be undertaken to determine whether the parking can be removed or relocated. In the event that on-street parking is seen as a priority, parking bays should first be considered as a preferred design.*

6.8 *The desired width of the parking lane and bike lane taken together should be a minimum of 4.0 m (e.g. 2.2 m, with the adjacent bike lane 1.8 m). Where the road right-of-way or other factors limit the opportunity to provide parking bays, standard on-street curb parking widths should be assumed.*

6.4.1.2 Paved Shoulder Bikeways

A paved shoulder cycling route can be located on roads with rural cross sections and no curbs. Adding or improving existing paved shoulders can be the best way to accommodate cyclists in rural areas and benefit motor vehicle traffic. Paved shoulders can extend the service life of the road surface since edge deterioration will be significantly reduced. Where funding is limited, adding or improving shoulders on uphill sections will give slow moving

A paved shoulder cycling route can be located on roads with rural cross sections and no curbs. Adding or improving existing paved shoulders can be the best way to accommodate cyclists in rural areas and benefit motor vehicle traffic. Paved shoulders can extend the service life of the road surface since edge deterioration will be significantly reduced.

cyclists needed manoeuvring space and will decrease conflicts with faster moving motor vehicle traffic[11].

Paved shoulders offer other advantages: they reduce maintenance costs associated with the grading of gravel shoulders, serve as a refuge for disabled vehicles, accommodate emergency vehicles, extend the life of the vehicle lanes through improving the lateral support for the roadway structure, and can reduce run-off-the-road collisions.

There are some instances in the County of Essex where existing gravel shoulders have already been partially paved. Where gravel shoulders have not been paved, but the shoulders have the required width and base to support shoulder lanes, a shoulder-paving program could be implemented in order to facilitate shoulder bike lanes on rural roads.

If shoulders are to be provided as part of a new road construction project, the shoulders pavement structure design should be the same as that of the roadway if the shoulder width would one day become part of the pavement structure in an urban cross-section. During shoulder widening projects, some opportunities to reduce costs can be made available by building a thinner pavement thickness. A reduced pavement thickness could be considered provided:

- No future widening is planned within the 10 year road program;
- Existing shoulder area and road structure is structurally stable and drainable;
- Existing travel lanes have suitable width and are in safe and desirable condition;
- Horizontal control (curvature) is not excessive; and
- Existing and projected AADT and heavy truck traffic is not considered excessive.

The following construction details should be used to add paved shoulders to roadways where no overlay project is scheduled:

- Saw Cutting: A saw-cut 0.3 m inside the existing edge of pavement provides for a tight joint. This eliminates a ragged joint at the edge of the existing pavement;

[11] Bikeway Traffic Control Guidelines for Canada, Transportation Association of Canada (TAC), (1999)

- Feathering: Feathering the new asphalt onto the existing pavement can work if a fine mix is used and the feathering technique does not extend across the area of the travelled bicycle facility; and
- Grinding: Where there is already some shoulder width and thickness available, a pavement grinder can be used to make a clean cut at the edge of travel lane, grade the existing asphalt to the right depth and cast aside the grindings in one operation. Grinding offers these advantages:
  - Less of the existing pavement is wasted;
  - The existing asphalt provides additional pavement base;
  - There will not be a full-depth joint between the travel lane and the shoulder;
  - The grindings can be recycled as based for the widened portion; and
  - New asphalt can then be laid across the entire width of the shoulder lane with no seams.

Paved shoulder bikeways (a paved shoulder on a road signed for cycling) may form part of the spine and local community systems in rural areas. On rural roads, a marked edge line is typically used to designate a paved shoulder. Signs are used to designate the route and indicate the presence of cyclists. Figure 6.3 illustrates a typical paved shoulder bicycle route facility.

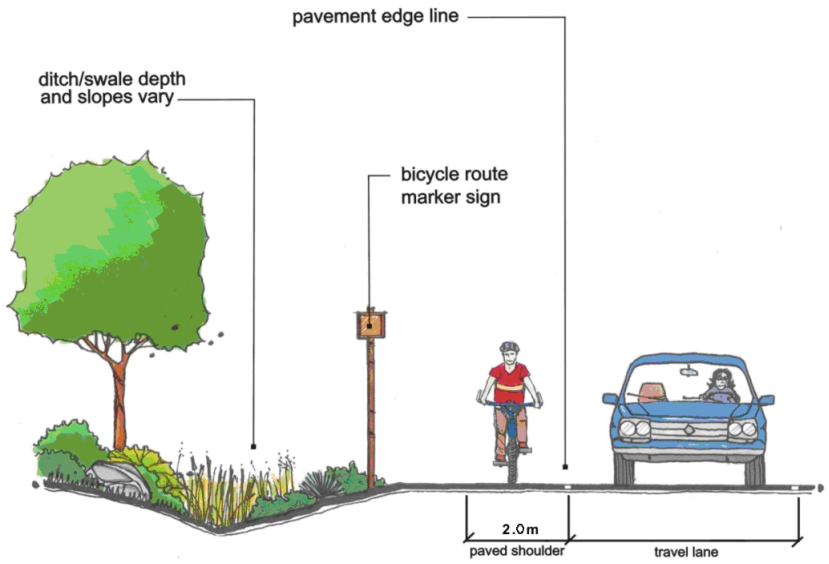


Figure 6.3 – Typical Paved Shoulder Bikeway

Both MTO (Geometric Design Standards for Ontario Highways, GDSOH) and TAC (Geometric Design Guide for Canadian Roads, GDGCR) provide standards for shoulder widths for undivided rural highways that are based on design speed and AADT volumes. The widths recommended by both are in some cases sufficient to accommodate a 1.5 m to 2.5 m paved shoulder cycling route and 0.5 m to 1.0 m for additional granular shoulder width. Figure 6.4 illustrates the shoulder of a typical roadway platform.

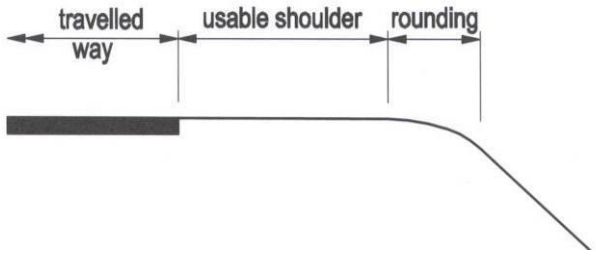


Figure 6.4 - Typical Roadway Shoulder

It is recommended that paved shoulder cycling routes on roads having a posted speed limit up to and equal to 60 km/h should have a preferred design width of 1.5 m. On roads with a high percentage of commercial traffic above 60 km/h and less than 80 km/h, a design width of 2.0 m is preferred. However, in constrained areas, shoulder cycling routes with a design width of 1.5 m may be used if adjacent to a granular shoulder. That said, it should be recognized that a bicycle is defined as a vehicle under the Highway Traffic Act and therefore cyclists will continue to use rural roads regardless of the posted limit, traffic volume or availability of a paved shoulder. If the preferred design width of 2.0 m for a paved shoulder cannot be achieved, any additional paved shoulder width is better than none at all.

It should be recognized that a bicycle is defined as a vehicle under the Highway Traffic Act and therefore cyclists will continue to use rural roads regardless of the posted limit, traffic volume or availability of a paved shoulder. If the preferred design width of 2.0 m for a paved shoulder cannot be achieved, any additional paved shoulder width is better than none at all.

The decision on whether to sign a road with paved shoulders that are less than the desired width (refer to Table 6-2 & 6-3) as a signed only bicycle route should be based on good engineering judgement. In addition, roadway characteristics such as the AADT volume and percentage of commercial vehicle traffic, as well as a number of other factors such as roadway geometry, gradients, horizontal/vertical curves and sight lines should also be considered. The County may elect to designate some roads as signed only bicycle routes that do not currently meet the suggested minimum shoulder width criteria, as an interim condition. When these roads are scheduled for an overlay or widening, the preferred width would be provided. If the paved shoulder width is less than the desired 2.0 m, and a cyclist chooses to ride to

the right of the edge line, an adjacent gravel shoulder would still provide a "recovery" area. Thresholds to assist the County in making these decisions regarding retrofitting roads for paved shoulders or signed only bicycle routes are provided in Section 6.4.1.3.

There may be segments of proposed cycling routes on roads with rural cross-sections (no curb) where it is difficult to accommodate even a minimum 1.2 m paved shoulder. In these cases, edge lines (pavement markings) may be provided to mark the vehicle lane width and to delineate as much additional shoulder width as possible for cyclists to use. This approach, however, is not recommended for urban roads with curbs; due to the risk of cyclists striking the curb and "bouncing" back into the motor vehicle travel lane, potentially colliding with a motor vehicle. Should edge lines be applied to a roadway primarily to support cycling, they should only be applied on roads with rural cross-sections.

There may be segments of proposed cycling routes on roads with rural cross-sections (no curb) where it is difficult to accommodate even a minimum 1.2 m paved shoulder. In these cases, edge lines (pavement markings) may be provided to mark the vehicle lane width and to delineate as much additional shoulder width as possible for cyclists to use.

Paved shoulders are recommended on all roads with rural cross sections designated for cycling facilities. In addition, paved shoulders on rural roads should not be denoted as reserved bicycle lanes since they must still be used as a refuge for disabled vehicles. Paved shoulder cycling routes should only be denoted as signed only bicycle routes.

If a rural road is upgraded to an urban section (with curbs) the paved shoulders should be converted into bike lanes.

Guidelines:

6.9 Paved shoulder bikeways are the preferred facility type for creating connections between rural communities on rural cross section roads.

6.10 Paved shoulder bicycle routes on most roads with a posted speed limit of greater than 60km/h should have a preferred design width of 2.0 m. In locations where this width cannot be achieved, especially in constrained rights-of-way, a minimum paved shoulder width of 1.2 m with an adjacent granular shoulder of at least 0.5 m may be a reasonable compromise, depending on the characteristics of the subject road.

6.11 Paved shoulder cycling facilities should be separated from the motor vehicle travel portion of the road by an edge line (pavement marking), and should be clearly identified through bicycle route signing. Edge lines should typically only be used on rural roads where there are no curbs, and should be a single line placed on the right side of the travel lane to delineate the paved shoulder.

6.12 The addition of edge lines to denote a bike route are only recommended for paved shoulders in rural areas since these roads typically have an adjacent gravel shoulder for a cyclist to recover should they be forced off of the paved section of the roadway.

6.13 Paved shoulders on rural roads should not be denoted as reserved bicycle lanes since they should still be used as a refuge for disabled motor vehicles. Paved shoulder cycling routes should only be signed as bicycle routes and not as bike lanes.

6.4.1.3 Signed Bicycle Routes and Shared Use Lane Markings

This section focuses on all cycling facilities where a separate right-of-way (e.g. bike lane or paved shoulder) cannot be provided or is not necessary.

Signed Bicycle Routes

Signed bicycle routes are cycling routes designated by bicycle route signing along a street. Signed routes are typically installed on quiet, residential local/collector streets. Apart from "bicycle route" signs, there are generally no changes made to the roadway except when edge lines are included.

Signed bicycle routes are cycling routes designated by bicycle route signing along a street. Signed only routes are typically installed on quiet, residential local/collector streets. Apart from "bicycle route" signs, there are generally no changes made to the roadway except when edge lines are included.

It is recommended that paved shoulders or bike lanes should be provided on all collector and arterial roads designated for cycling facilities which have an adequate right-of-way. However, signed routes can be used on lower volume roads, or on collector or arterial roads as an interim solution, where a road segment has an insufficient right-of-way, or where the removal of on-street parking to implement a formal bike lane is not supported.

Streets with signed bicycle routes should typically only be signed as on-road bike routes if there is adequate pavement width to safely accommodate both motor vehicles and cyclists, and when adequate sight lines and acceptable AADT volumes exist. Otherwise, alternative routes should be investigated or paved shoulders/bike lanes implemented when the opportunity presents itself at a future date.

Experience in other municipalities suggests that by adding edge lines (where feasible) 1.5 m from the curb face along with implementation of parking restrictions during weekday commuting and school travel hours there may be a positive traffic calming effect through a reduction in vehicle speed an increased level of comfort for cyclists may be realized.

Existing roads that are recommended as part of the cycling network should not be prematurely signed or identified as part of the network if the right-of-

way available to cyclists is too narrow, AADT's are high, or if the roadway is in poor condition. Roads that are presently not suitable for on-road cycling facilities but are recommended for implementation in the future should be upgraded to at least minimum standards before being signed as part of the cycling network.

Signed only bicycle routes are especially appropriate for the neighbourhood system that consists of cycling routes that are "local" in nature.

Guidelines:

6.14 Signed only bicycle routes are appropriate for the neighbourhood system, which consists of cycling routes that are "local" in nature.

6.15 Streets with signed only bicycle routes should typically only be signed as on-road bike routes if there is adequate pavement width to safely accommodate both motor vehicles and cyclists, and when adequate sight lines and acceptable AADT volumes exist.

6.16 On very low volume rural roads with limited truck traffic, good sight lines and sometimes physically constrained rights-of-way, the existing travel lane may be designated as a cycling route, with cyclists and motorists expected to share the same lane. In these cases, "Share the Road" signs should be erected at strategic locations to communicate this message to all road users.

Shared use lane markings, also called "sharrows", are symbols placed on the pavement surface in the intended area of bicycle travel and may be appropriate for application along some signed only bicycle routes with wide curb lanes.

Signed Bicycle Routes on Wide Curb Lanes

Signed bicycle routes within wide curb lanes are similar to signed only bicycle routes, with the exception that the travel lane shared by motorists and cyclists is wider than a standard motor vehicle travel lane (e.g. greater than 3.75 metres).

Wide curb lanes should have sufficient width to allow motorists to pass cyclists without encroaching on an adjacent travel lane (if one exists). Wider curb lanes should be encouraged for all road classifications when feasible (or edge lines $\geq$ 1.0 m from the curb + a standard width motor vehicle travel lane) to provide cycling friendly streets, whether they are designated as part of the cycling network or not.

Research indicates that as lane widths begin to exceed 4.0 m this tends to increase confusion and improper lane use by motor vehicles in congested urban environments, and may encourage unsafe passing manoeuvres in rural environments. Therefore the recommended wide curb lane width for roads

that are proposed for designation as on-road cycling routes is 3.75 m to 4.0 m.

Shared Use Lane Markings

Shared use lane markings, also called "sharrows", are symbols placed on the pavement surface in the intended area of bicycle travel and may be appropriate for application along some signed only bicycle routes with wide curb lanes. The symbols raise awareness to both cyclists and motorists of the correct cyclist positioning in the lane and help to deter unsafe passing manoeuvres by motorists and increase driver awareness of cyclists on the road.

TAC's Guidelines for the Design and Application of Bikeway Pavement Markings provides guidance on the application of shared use lane markings, including the following recommendations (refer to the TAC Guidelines for detailed recommendations):

- Place immediately after an intersection and 10 m before the end of a block.
- Space longitudinally at intervals of 75 m (this spacing may be increased or decreased as needed to have evenly spaced markings within a block).
- This marking may be used on roadways with lanes that are wide enough for side-by-side bicycle and vehicle operation but not wide enough for a standard bicycle lane. These markings should be used on roadways with posted vehicle speeds of 60 km/h or less.
- On roadways without on-street parking, place so that the centre of the marking is 1.0 m but a minimum of 0.75 m from the edge of pavement or edge of curb.

Figure 6.5 shows the typical shared use lane marking. The use of this marking should be considered primarily on routes with high cyclist volumes and/or with less than average sight lines because of road grades. Bicycle route signing should also be applied along the cycling route.

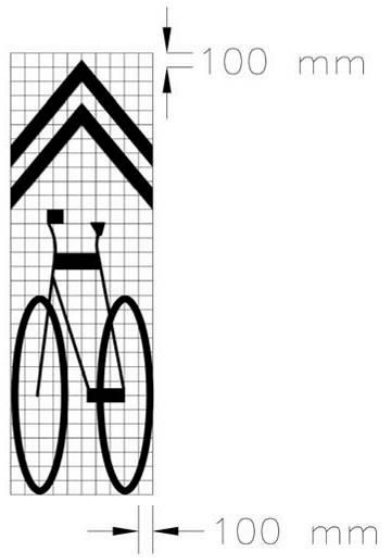


Figure 6.5 – Shared Use Lane Marking (Bicycle with Chevrons)

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.1 (2007)

Figure 6.6 shows an earlier application of pavement markings and signage for a wide curb lane.

Figure 6.6 – Wide Curb Lane with Bicycle Pavement Markings and Signing (City of Ottawa)

A schematic illustration of a typical signed-only cycling route in an urban area with a wide curb lane is provided in Figure 6.7.

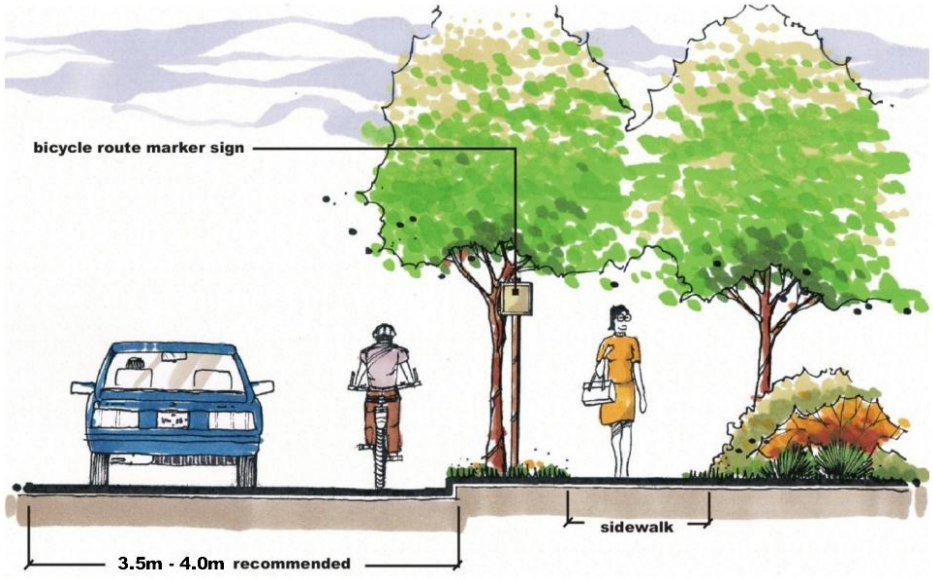


Figure 6.7 – Signed-Only Cycling Route Along a Wide Curb Lane

Guidelines:

6.17 The preferred width for a wide curb lane is between 3.5 m and 4.0 m.

6.18 In urban areas, proposed signed only bicycle routes should be implemented along roads with wide curb lanes and bicycle route signs where possible.

6.19 Where the width of a wide curb lane extends beyond 4.0 m along a designated cycling route, the application of shared use lane pavement markings should be considered to indicate the presence of cyclists on the roadway to motorists.

6.4.1.4 Bicycle Priority Streets or Bikeway Boulevards

In some areas, particularly urban residential neighbourhoods, traffic calming techniques such as through travel restrictions for cars, traffic circles and reduction in the number of stop signs can be used to create "bicycle priority streets" which allow the cyclist to travel more efficiently by not having to break momentum and stop at frequently placed four way stops. Figure 6.8

shows an example of a neighbourhood traffic circle that has been installed along a bikeway boulevard.

Figure 6.8 – Example of a Bikeway Boulevard with Neighbourhood Traffic Circle

(Photo credit: Bicycle Transportation Alliance, Portland, 2008)

6.4.1.5 Cycle Tracks or Separated Bikeways

One alternative to standard on-road bike lanes now being considered by a number of municipalities in North America, most notably New York City, is separated bike lanes. The concept is based on on-street bikeways and bikeway boulevards popular in some European countries, especially the Netherlands. The facility is located on the road surface and not above the curb in the boulevard, and is typically unidirectional (although they can be bidirectional). Figure 6.9 illustrates a typical unidirectional cycle track, in one case with on-street parking and in the other case without on-street parking.

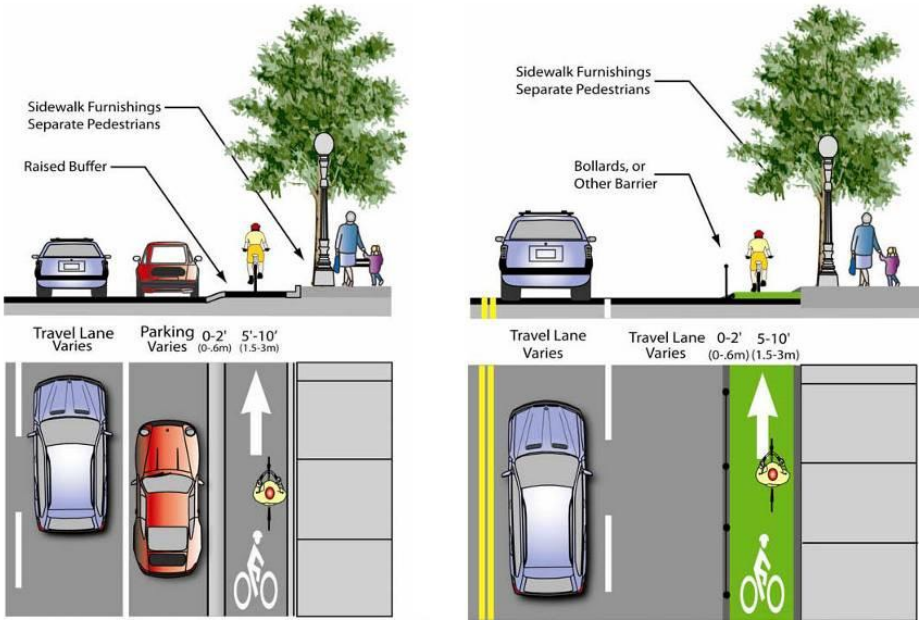


Figure 6.9 – Typical Cycle Track With or Without On-Street Parking

(Source: "Cycle Tracks: Lessons Learned", Alta Planning + Design, 2008)

One of the challenges with standard bike lanes in urban areas, especially where on-street parking is provided is that cyclists often find themselves "sandwiched" between parked cars and moving motor vehicles, including trucks and buses in the adjacent travel lane. The opportunity for conflict is higher in this condition as motor vehicles cross the bike lane to park or exit parking. Cyclists are also at increased risk from motorists in parked or stopped vehicles who open the vehicle door into the bike lane at the same time a cyclist is approaching (known as "dooring"). Delivery trucks, buses and taxis can also be found blocking the bike lane from time to time forcing the cyclist to divert into the adjacent general purpose travel lane or wait for the vehicle to move on.

In an effort to reduce these types of conditions, reduce the risk to cyclists and encourage more people to cycle, the bike lanes are combined into a bikeway separated by a buffer that may consist of a 0.5 to 1.0 m hatched pavement marking and / or ideally a physical barrier. On streets where full time parking is permitted, the parking lane may be shifted away from the curb and the bikeway inserted between the curb and the parking lane, with the latter separated from the bikeway by a raised planted median.

In 2006, New York City announced its plans to install 200 miles of bicycle facilities, including five miles of what they call Class 1 Separated Paths (on-

Figure 6.10 – Two-way Cycle Track on Percy Street in Ottawa, Ontario

road separated bike lanes) as well as 150 miles of standard bike lanes and 45 miles of Class III signed-only routes. In Canada, on-street two-way bikeways have been implemented in a number of locations in the City of Montreal and one location in Ottawa. Figure 6.10 illustrates the Ottawa example on Percy Street, which has no buffer or physical barrier but does have the bikeway elevated slightly through an additional lift of asphalt compared to the motor vehicle travel way. This type of facility is not recommended without the provision of a minimum buffer or physical barrier.

A unidirectional raised bicycle lane implemented in Eugene, Oregon, separates the raised bike lane from the vehicle travel lane with a mountable curb, as shown in Figure 6.11. Figure 6.12 shows an example from Montreal, Quebec of a bi-direction cycle track, where two-way bicycle traffic shares a physically separated portion of the roadway. These are just some of the examples of variations on the cycle track concept that have been implemented in North America.

Figure 6.11 – Example of a Raised Bicycle Lane on Ayres Road in Eugene, Oregon

(Source: "Cycle Tracks: Lessons Learned", Alta Planning + Design, 2008)

Although separated bike lanes (on-street bikeways) can provide a higher degree of separation between bikes and vehicles, they can reduce the risk of conflicts with parked vehicles and may be more appropriate for novice cyclists, and in particular young children and the elderly who may not feel comfortable riding in a standard bike lane on a major high volume road, there are disadvantages. Intersection crossings may require special treatments, such as traffic control and/or traffic calming facilities at intersections. Pedestrians may use the bikeway as an extension of the sidewalk in busy commercial areas and when on-street parking is present, a motorist's ability to see cyclists may be compromised. In addition, motor vehicles will need to yield to bicycle traffic, particularly right-turning vehicles at intersections. The cost to implement the facility, educate users and maintain it, including snow clearing in winter months, are also areas that need further investigation.

It is recommended that the County of Essex, perhaps in partnership with its local area municipalities, consider implementing sometime in the future an on-street cycle track segment with the facility separated from adjacent travel lanes by a physical barrier (as illustrated in Figure 6.9) as a pilot project. One way of achieving an on-road bikeway boulevard is through the conversion of an existing vehicle lane by adjusting pavement markings, similar to the approach adopted by New York City.

County staff may want to follow up with other jurisdictions that have implemented and monitored the use of these types of facilities to determine whether such facilities may be appropriate in the County of Essex.

Guidelines:

6.20 Separated bike lanes or on-street bikeways should be separated from regular motor vehicle travel lanes through the use of buffer zones and/or physical barriers.

6.21 Appropriate signing at intersections where bikeways are present is very important (especially for bi-directional facilities) to warn and provide clear direction to both motorists and cyclists as to where they should proceed when travelling through an intersection.

Although separated bike lanes (on-street two-way bikeways) can provide a higher degree of separation between bikes and vehicles, they can reduce the risk of conflicts with parked vehicles and may be more appropriate for novice cyclists, and in particular young children and the elderly who may not feel comfortable riding in a standard bike lane on a major high volume road, there are disadvantages. Intersection crossings may require special treatments, such as traffic control and/or traffic calming facilities at intersections. Pedestrians may use the bikeway as an extension of the sidewalk in busy commercial areas and when on-street parking is present, a motorist's ability to see cyclists may be compromised. In addition, motor vehicles will need to yield to bicycle traffic, particularly right-turning vehicles at intersections. [12] The cost to implement the facility, educate users and maintain it, including snow clearing in winter months, are also areas that need further investigation.

It is recommended that the County of Essex, consider implementing an on-street two-way bikeway segment with the facility separated from adjacent travel lanes by a physical barrier as a pilot project. A minimum operating space of 3.0 m is recommended for design. One way of achieving an on-road bikeway boulevard is through the conversion of an existing vehicle lane by adjusting pavement markings, similar to the approach adopted by New York City.

Figure 6.12 – Example of a Two-way Cycle Track in Montreal, Quebec

(Source: Flickr)

[12] Innovative Bicycle Treatments, An Informational Report, Jumana Nabti, Mathew Ridgway and the ITE Pedestrian and Bicycle Council, Institute of Transportation Engineers, May, 2002.

Many cyclists who are uncomfortable operating in traffic believe that boulevard trails provide increased safety as cyclists are removed from the traffic stream on a roadway. However, safety professionals and experienced cyclists tend to disagree because collision statistics suggest that cyclists using boulevard trails are more frequently involved in bicycle/motor-vehicle collisions at intersections compared to cyclists riding in a curb lane.

County staff may want to follow up with other jurisdictions that have implemented and monitored the use of these types of facilities to determine whether such facilities may be appropriate in the County of Essex.

Guidelines:

6.22 Separated bike lanes or on-street two-way bikeways should be separated from regular motor vehicle travel lanes through the use of buffer zones and/or physical barriers.

6.23 Appropriate signing at intersections where bi-directional bikeways are present is very important to warn and provide clear direction to both motorists and cyclists as to where they should proceed when travelling through an intersection.

6.4.2 Multi-Use Boulevard Trails

6.4.2.1 Multi-use Boulevard Trails

Multi-use boulevard trails (also sometimes called in-boulevard trails) are bi-directional off-road trails that are located within the boulevard of a road right-of-way and parallel to motor vehicle travel lanes. They are typically designed for a wide range of users including pedestrians, cyclists, and in-line skaters. A schematic illustration of a street cross-section with a multi-use boulevard trail is provided in Figure 6.13.

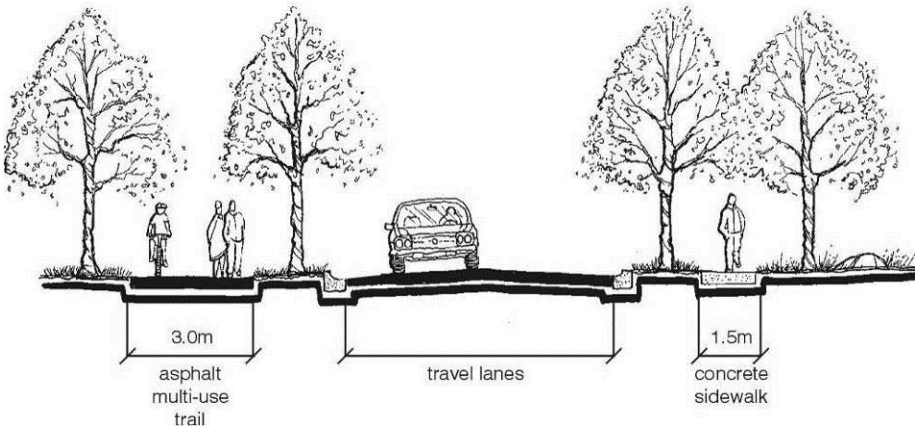


Figure 6.13 – Multi-Use Boulevard Trail

Although constructed within the road right-of-way, boulevard trails are separated from regular motor vehicle travel lanes through either a change in roadway elevation (a boulevard trail is usually placed at the same height as a sidewalk) and / or by barriers or medians.

Some motorists are thought to prefer boulevard trails because they get cyclists off of the roadway, but pedestrians tend not to like them because they place faster moving bicycle traffic into a space that is traditionally reserved for walking.

There are also cyclists who are uncomfortable operating in traffic that believe boulevard trails provide increased safety as cyclists are removed from the motor vehicle traffic stream on a roadway. However, safety professionals and experienced cyclists tend to disagree because collision statistics suggest that cyclists using boulevard trails are more frequently involved in bicycle/motor-vehicle collisions at intersections compared to cyclists riding on road.

It is suggested that only when it has been determined that on-road improvements are not feasible along arterial streets, or when a primarily multi-use trail facility is preferred by a municipality over a sidewalk and on-street bicycle lanes to achieve a recreational facility objective, should a multi-use boulevard trail be considered as a primary cycling route. When this is the case, additional criteria should be considered to promote user safety. These criteria include:

Available Rights-of-Way

To accommodate the minimum standard for a multi-use boulevard trail, there should be 6 m of available right-of-way. This is necessary to provide for a 1.0 m clear zone from obstructions, a 3.0 to 3.5 m wide trail, and a 1.5 m buffer/open space that separates the trail from the road. (AASHTO standards suggest if there is less than a 1.5 m buffer width, a 1.4 m high physical barrier is required).

Number of Street and Driveway Intersections

Studies show that cyclists who ride on multi-use trails incur 1.8 times greater risk of being involved in a collision with a motor vehicle than those who ride on a roadway. The risk increases for path users who are traveling against traffic – they have been found to be at 4.5 times the risk as right-way trail

travelers because motor vehicle operators are not looking for cyclists or other traffic off of the roadway and / or coming from the opposite direction. [13]

For this reason, multi-use boulevard trails should not be considered when there are frequent intersections. The following thresholds are suggested - more than 12 residential driveways, 6 commercial drives/minor streets, or 3 major street intersections per kilometre. Beyond this, a cyclist would face more than 1 driveway every 30 seconds, or 1 street every minute, whereby the safety and utility of the path deteriorates dramatically. Commercial strips and other areas with heavy vehicular turning movements can also be a risk management concern.

Final Design Considerations

The above two criteria are most important to assess feasibility during the planning stages of a project. However, when a trail moves into the design and construction phase, additional problems will need to be resolved, including providing access to destinations located on the opposite side of the street from the trail, modifying signal timing to permit non-motorized users to move through an intersection, removing obstructions from sight triangles, locating crosswalks at a proper distance from the parallel roadway, and providing curb cuts and transition areas so that cyclists may access the path from both the parallel and intersecting streets.

However, in no instance should development of a multi-use boulevard trail preclude cyclists from using an adjacent roadway.

Additional Cautions Regarding Multi-Use Boulevard Trails

AASHTO notes the following problems associated with multi-use trail boulevard trails:

- Unless separated and set back from the road, they require one direction of cycling traffic to ride against motor vehicle traffic, contrary to normal rules of the road;
- When the path ends, cyclists going against traffic will tend to continue to travel on the wrong side of the street. Likewise, cyclists approaching a shared-use path often travel on the wrong side of the street in getting to the path. Wrong-way travel by cyclists is a major

[13] Kane County Bicycle and Pedestrian Plan; Kane County/Council; December 2002

cause of cyclist / automobile collisions and should be discouraged at every opportunity;

- At intersections, motorists entering or crossing the roadway often will not notice cyclists approaching from their right, as they are not expecting contra-flow vehicles. Even cyclists coming from the left often go unnoticed, especially when sight distances are limited;
- Signs posted for roadway users are backwards for contra-flow cycling traffic; therefore these cyclists are unable to read the information without stopping and turning around;
- When the available right-of-way is too narrow to accommodate all roadway and shared-use path features, it may be prudent to consider a reduction of the existing or proposed widths of the various road (and trail) cross-sectional elements such as travel lane and shoulder widths, for example. However, any reduction to less than MTO, TAC, AASHTO or municipal approved design criteria should be supported by a documented engineering analysis;
- Many cyclists will use the roadway instead of the boulevard trail because they have found the roadway to be more convenient, better maintained, or perceive it to be safer. Some motorists who feel that in all cases cyclists should be on the trail may harass cyclists using the roadway;
- Although shared-use boulevard trails should be given the same priority through intersections as the parallel roadway, motorists falsely expect cyclists to stop or yield at all cross-streets and driveways. Efforts to require or encourage cyclists to stop or yield at each cross street and driveway, as required under the Highway Traffic Act, are frequently ignored by cyclists; and
- Stopped cross-street motor vehicle traffic exiting side streets or driveways may block the path crossing.

The application of boulevard trails as cycling facilities directly adjacent to a roadway is not recommended unless separated by a curb and clear zone.

Guideline:

6.24 Multi-use trails should be constructed to a minimum width of 3.0 m to accommodate bi-directional flow. On popular, heavily traveled multi-use trails, widths of 3.5 m to 4.5 m are suggested to allow for a wider variety and greater number of users.

6.25 Trail surface type is dependent on requirements of planned trail users (e.g. accommodating in-line skaters) and can vary from asphalt to granular surfaces (limestone screenings).

6.26 The application of multi-use boulevard trails immediately adjacent to a roadway, especially as a cycling facility, should only be considered for cycling when an on-road facility is not feasible or when a municipality seeks to provide a primarily recreational multi-use boulevard trail and cannot or chooses not to provide a parallel on-road facility for cycling.

6.4.2.2 Off-road Multi-use Trails (in greenways, parks, etc.)

Off-road multi-use trails are bi-directional off-road trails located outside of road rights-of-way, typically in parklands and valley lands. Although cyclists may choose to remain on parallel on-road routes, off-road multi-use trails should be designed to accommodate a variety of user groups. A review of various cycling and trail design guidelines from throughout North America indicates that standards vary depending upon the trail's location, the anticipated number of users and the permitted uses. The preferred width is typically 3.0 m, which allows for bi-directional flow. On popular, heavily traveled multi-use trails, a width of 3.0 m to 4.0 m is recommended to allow for a wider variety and greater number of users. Signage and/or painted centrelines can be utilized to identify separate lanes for opposing directions of travel and encourage the practice of keeping to the right side of the trail unless needing to pass. A schematic illustration of a typical off-road multi-use trail is provided in Figure 6.14.

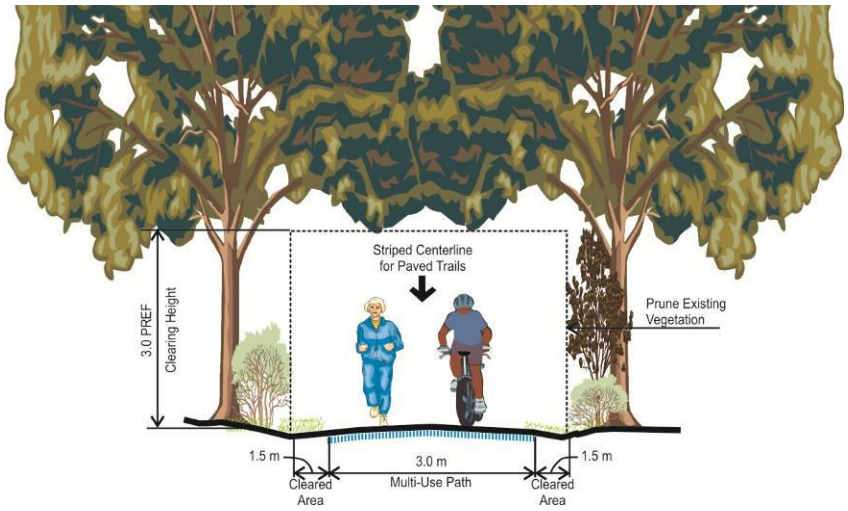


Figure 6.14 – Multi-Use Trail

6.4.2.3 Context Sensitive / Interim Design Solution

County Road 20 between Leamington and Kingsville, and between Amherstburg and LaSalle are both recognized as unique routes that require a Context Sensitive solution. Both of these routes are highly desirable active transportation routes, yet have significant challenges for use as an active transportation route at the current time. They are important routes for the movement of goods, general vehicular transportation and tourist traffic. For the most part both of these sections of County Road 20 have an urban cross section with a roll curb between Leamington and Kingsville and barrier curb between Amherstburg and Lasalle. Both of these sections are generally in good condition and reconstruction is not anticipated until the long term. County Road 20 between Leamington and Kingsville is 2 lanes wide with left turn lanes at key intersections and minimal additional space in the travel lanes to accommodate bicycle facilities. Between Amerstburg and Lasalle the road is generally 4 lanes wide with left turn lanes at key intersections and minimal additional lane width to accommodate bicycle facilities. The County of Essex is not prepared to undertake a "road diet" on County Road 20 between Amherstburg and Leamington at this time.

Therefore an interim, context sensitive solution is being recommended for these key network routes. A 1.8-2.0m wide multi-use path/cycle track behind the curb on each side of the road will provide space for pedestrians and less confident cyclists. Actual width of the proposed facility will be determined upon a more detailed analysis of each section of the route. This facility will be combined with "share the road" signing to accommodate more confident/more experience cyclists who prefer to use the road. The proposed design solution is illustrated in Figure 6.15.

Figure 6.15 – Context Sensitive / Interim Design Solution

Between Amherstburg and Lasalle a similar facility is recommended. Over the long term when County Rd 20 requires reconstruction (i.e. new road bed and new curbs) the facility type would be evaluated with a view towards providing more space on the road for cyclists as well as a facility for pedestrians. For instance it may be determined that bike lanes with a barrier curb is the most appropriate design solution, along with a sidewalk for pedestrians in areas where demand for pedestrian facilities is high.

Section 6.3 has identified some of the typical design guidelines for the various cycling facility types that are likely to be considered in the County of Essex, as well as some new are emerging design solutions. Section 6.4 focuses on the design considerations when planning and designing a cycling network.

6.5 NETWORK DESIGN FEATURES

6.5.1 Streets

6.5.1.1 Pavement Markings for Cyclists

The application of comprehensible pavement markings helps to direct both motorists and cyclists to safely manoeuvre through intersections as well as directing them along roads. The application becomes even more important at complex intersections or at locations where there is a significant volume of cycling traffic.

In Ontario the primary references for cycling facility pavement markings are: the Ontario Traffic Manual - Book 11 (MTO, 2000); Transportation Association of Canada's (TAC) Guidelines for the Design and Application of Bikeway Pavement Markings (2007); TAC's Geometric Design Guide for Canadian Roads, 1999; and TAC's 1998 Bikeway Traffic Control Guidelines for Canada. TAC is currently updating its Bikeway Traffic Control Guidelines for Canada, with the revised version expected to be issued in 2010. Although there are some minor differences, the pavement marking guidelines from each of these references are similar with one exception. The Ministry of Transportation's OTM – Book 11, does not include the diamond reserve symbol in its recommended bikeway pavement markings. In place of the symbol, the OTM recommends the use of the word "ONLY". However, OTM Book 5, Regulatory signs (2000) continue to require on-road lanes reserved for bicycles to be signed with Reserved Bike Lane signs (Rb-84). These signs include the diamond symbol in the top left corner of the sign. Figure 6.16 illustrates the OTM guidelines for bicycle lane pavement markings.

In the United States, the Manual of Uniform Traffic Control Devices (MUTCD), 2000 Edition, has removed the diamond symbol from the recommended pavement markings for bike lanes. This has been done to eliminate any potential for confusion for motorists regarding the difference between a High Occupancy Vehicle (HOV) lane and a bike lane. Moreover, the MUTCD requires that all jurisdictions in the United States comply with this new standard by 2006.

It is recommended that the County of Essex adopt the OTM pavement marking guideline with the directional arrow illustrated in Figure 6.16

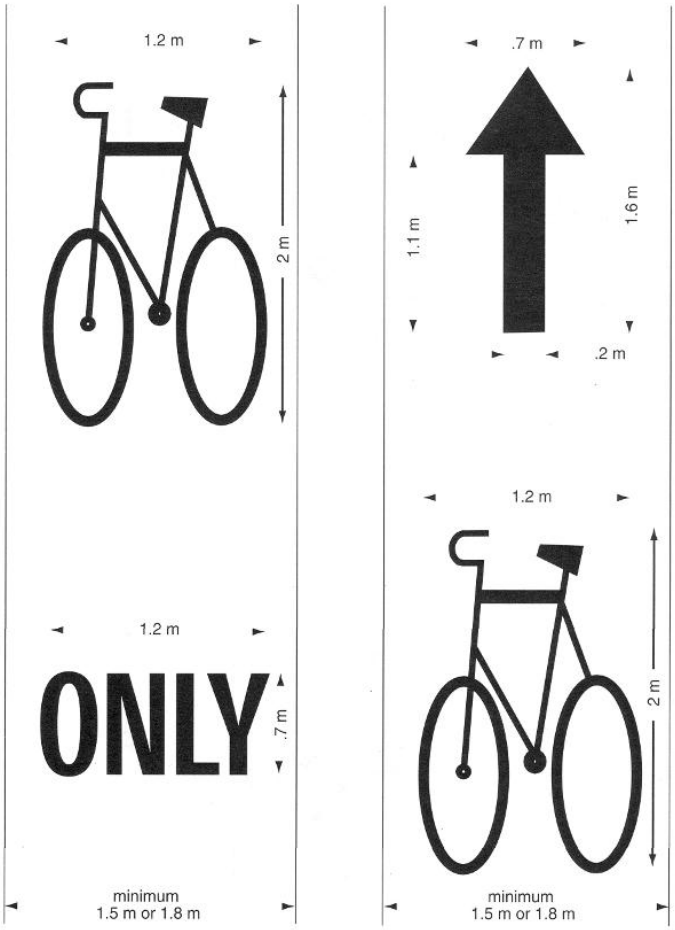


Figure 6.16 – Bicycle Lane Pavement Markings

Source: Ontario Traffic Manual, Book 11, 2000 (OTM Book 11 – Figure 39)

The addition of a directional arrow above the bicycle stencil is recommended to communicate to cyclists that bicycle lanes are one-way and users are not to cycle in the opposite direction facing motor vehicle traffic. The County's future by-law for bicycle lanes should state that any cyclists may be ticketed if travelling in the wrong direction. The application of the "ONLY" text in the pavement markings is optional.

In Ontario, signed bicycle routes with paved shoulder bikeways typically do not include pavement markings, though edge lines located 1.5m from the

curb may be added as an additional measure. These types of cycling facilities are usually designated by way of bicycle route signs, supplemented in some areas by "Share the Road" signs.

Paved shoulder bikeways proposed in the CMP resemble reserved bike lanes, but they are not. Paved shoulders are not reserved lanes, rather they are intended for all types of vehicles to use in the event they need to pull over to the side of the road. The diamond reserved lane symbol is not recommended for use on paved shoulder bikeways in the County of Essex.

Guideline:

6.27 The County of Essex should consider adopting the OTM pavement marking guideline with directional arrow (OTM Book 11 – Figure 30). The application of the "ONLY" text in the pavement markings is optional.

6.28 The County's future by-law for bicycle lanes should state that a cyclist must travel one way in a bike lane (same direction as motor vehicle traffic flow) and that a cyclist may be ticketed if travelling in the wrong direction.

Lane Lines

Bicycle lane lines delineate the edge of a travelled lane dedicated for bicycle use, where travel is permitted in the same direction on both sides of the line. Bicycle lane lines direct motor vehicles and bicycles into appropriate lanes, and provide for efficient and safe use of the road.

TAC's Bikeway Traffic Control Guidelines for Canadian Roads (1998) suggests bicycle lane lines should be solid, white in colour, with a width of 100 mm. This guideline is confirmed in TAC's Guidelines for the Design and Application of Bikeway Pavement Markings (2007). Edge lines used to delineate a curb lane from a paved shoulder bikeway should conform to the requirements of the OTM.

For paved shoulder bikeways, it is recommended that these bikeways be marked using a standard edge line to separate the travel lane from the paved shoulder, complemented by bikeway route signing. In urban areas on multi-lane roads, or where traffic volumes exceed the suggested thresholds for a signed-only route and where a bike lane is not feasible, edge lines may be added to the road as a traffic calming measure. The practice of adding edge lines along both sides of an urban residential street generally has several

effects. It acts a traffic calming measure, by narrowing the motor vehicle travel lane to help reduce vehicle speeds, and by directing vehicles away from the boulevard and sidewalk. It also reduces wear-and-tear on curb-side catch basins by reducing the incidence of vehicles "hugging the curb" and travelling directly over catch basins. In addition, whether intentional or not, it provides an informal but delineated space on the street that many on-road cyclists are comfortable using.

In situations where roadway width is limited and bike lanes are not appropriate because of a demand for on-street parking, a signed-only bike route combined with edge lines is an alternative approach that some cyclists believe is better than a signed-only route with no edge lines. This treatment should also be considering in conjunction with the posting of seasonal peak hour on-street parking restrictions. Consistent with TAC's Guidelines for the Design and Application of Bikeway Pavement Markings, edge lines located less than 1.2 m from the edge of pavement are not recommended on urban roads with curbs due to the risk of cyclists striking the curb and "bouncing" back into the motor vehicle travel lane and potentially colliding with a motorist. Existing urban cross-section roads with edge lines less than 1.5 m from the face of curb should not be signed as bike lanes. Should a cycling route be preferred on this type of road, consideration should be given to providing a signed-only route.

Bike lane lines and edge lines should be solid, except where motor vehicles are permitted to move into or cross the lane to perform a turning movement (for example at intersections). In such situations, a 15 m minimum broken line is used, with 1.0 m line segments and 1.0 m gaps.

Guideline:

6.29 Pavement markings and associated signing for on-road cycling facilities in the County of Essex should be consistent with the Ontario Traffic Manual and/or TAC's Bikeway Traffic Control Guidelines for Canada (1998) and Guidelines for the Design and Application of Bikeway Pavement Markings (2007).

6.30 Paved shoulders in the County of Essex should be delineated by way of standard edge lines and complemented by bikeway route signing.

6.31 Signed only routes on urban streets may be complemented by the addition of roadway edge lines, located a minimum 1.5 m from the face of curb.

6.5.1.2 Lane Widths and Road Diets

Road narrowing or lane reduction can be used to reduce vehicle speeds and enhance the movement and safety of pedestrians. It is also an effective method of utilizing excess space. A reduction in the travelled portion of a roadway can allow for sidewalks to be widened and pedestrian areas to be increased. This would also reduce pedestrian crossing times and help to optimize traffic signal timings. Traffic lanes can also be re-striped for fewer lanes; for example, a four-lane street may be re-marked to accommodate one lane in each direction, a centre turn lane, bicycle lanes and extended sidewalks.

Road narrowing must also consider school bus, emergency vehicle access and truck volumes. A reduction in travel lanes can affect the carrying capacity of a roadway which may cause traffic to divert onto adjacent residential streets[14] [15]. Figure 6.17 illustrates a schematic example of road narrowing.

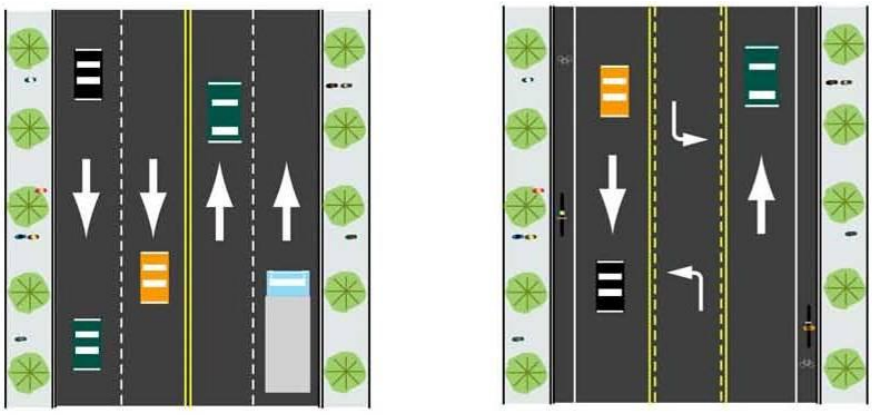


Figure 6.17 – Narrowed Lanes

14 Pedestrian Facilities User Guide – Providing Safety and Mobility. U.S. Department of Transportation Federal Highway Administration (March 2002).

15 Alternative Treatments for At-Grade Pedestrian Crossings. Nazir Lalani & The ITE Pedestrian and Bicycle Task Force, ITE (2001).

Guideline:

6.32 Road narrowing ("road diets") can be used to slow vehicle speeds and enhance pedestrian areas. Roadway carrying capacity, bicycle lane, and emergency vehicle access must be considered before implementing this procedure.

Road diets have been successful in several communities for roadways with an average daily traffic (ADT) of 18,000. It is important to remember that intersections generally determine roadway capacity, not the number of lanes mid-block. Road diets provide turning lanes to handle capacity.

A road diet changes the "feel" of the roadway. It offers traffic calming benefits by modifying perception of appropriate travel speeds. Lane manoeuvring is simplified while maintaining capacity. Left-turning motorists are removed from the travel way. This results in through cars maintaining continuous movement throughout the corridor without speeding and passing. Entering motorists only need to cross one lane of traffic; if needed, they have a median refuge area in which to wait for a second gap in traffic. Non-motorized users benefit when space is provided for on-street bike lanes, turning movements are simplified, and crossings in non-signalized locations are made easier.

A road diet changes the "feel" of the roadway. It offers traffic calming benefits by modifying perception of appropriate travel speeds.

Reduced lane widths of 3.3 m are used on roadways in many jurisdictions with limited rights-of-way to accommodate different elements of the cross-section. Narrower lanes can reduce the pedestrian crossing distance and vehicular traffic speed. Motorists drive more cautiously given the reduced space between vehicles in the adjacent lane. This could also be viewed as a traffic calming measure.

On the other hand, lane widths greater than 3.7 m can be detrimental to safety. Drivers tend to drive at higher speeds and less cautiously with wider lanes. Speeding is more prevalent along wider lanes. This can lead to more accidents and a less safe environment, especially for pedestrians. In addition, wide curb lanes may encourage drivers to park or stop momentarily on-street where they are not permitted to do so.

A literature review indicates that safety is maximized for lane widths somewhere between 3.3 m and 3.7 m. Thus, there is little safety benefit to widen the lanes beyond 3.3 m and that widening beyond 3.7 m can be detrimental to safety. Thus, lane widths greater than 3.7 m are not recommended. Rather, a 3.5 m wide curb lane is recommended to

accommodate buses and heavy vehicles. This slightly wider curb lane width is desirable to accommodate cyclists where delineated bike lanes are not provided. This can also provide additional space between vehicles and pedestrians, further enhancing the walking environment along sidewalks.

In general, on roads with a posted speed limited of 70 km/h or less, reduced lane widths (3.3 metres) should be considered for inner lanes (middle and median lanes), whereas curb lanes should be kept at 3.5 metres wide. However, in industrial areas or other roadways which carry relatively high truck traffic volumes, wider inner lanes (3.5 metres) should be considered. It is recognized that a change in design standards may be required in the County of Essex in order to implement this.

6.5.1.3 Retrofitting Roads

Many of the new cycling routes that are implemented through the CMP will involve retrofitting of existing roadways. This section discusses the issue of retrofitting.

Cycling Facilities

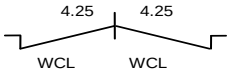
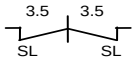
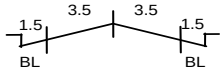
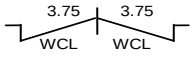
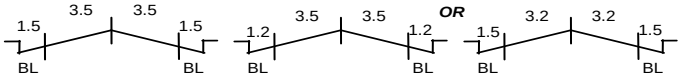
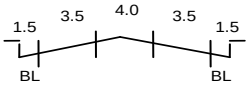
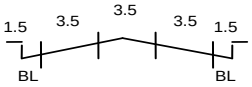
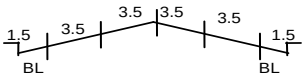
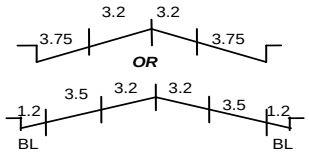
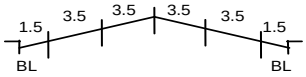
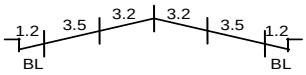
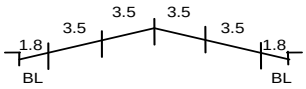
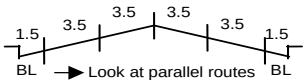
The majority of new cycling routes recommended in the CMP will involve retrofitting existing arterial and local roads. Narrow rights-of-way, roadway platform and pavement widths as well as other geometric issues related to roadway design and drainage will impact both the feasibility and cost of implementing the recommended facility type and respective preferred design. It is important to establish minimum thresholds for applying appropriate design guidelines.

Tables 6-2 and 6-3 outline a set of suggested guidelines for retrofitting roads in the County of Essex to accommodate cycling facilities in both ideal and constrained conditions.

Guideline:

6.33 The County of Essex should refer to the retrofitting guidelines recommended in Tables 6.1 and 6.2 of these Guidelines when planning and designing cycling infrastructure, but the final decision on implementation should be based on good engineering judgement and specific roadway features and characteristics.

Table 6-2: Retrofitting Urban Roads for Cycling Facilities

	Road Configuration and Characteristics	Preferred Solution	Minimum or Interim Solution (Constrained Projects)
a)	2 Lane Urban ≤ 3,000 AADT / Lane ≤ 60 km/h ≤ 6% Trucks		
b)	2 Lane Urban > 3,000 AADT / Lane ≤ 60 km/h 6% ≤ 12% Trucks		
c)	2 Lane Urban > 3,000 AADT / Lane > 60 km/h > 12% Trucks		
d)	3 Lane Urban > 6,000 AADT / Lane > 60 km/h > 12% Trucks		
e)	4+ Lane Urban ≤ 10,000 AADT / Lane ≤ 60 km ≤ 12% Trucks		
f)	4+ Lane Urban > 10,000 AADT / Lane ≤ 60 km/h > 12% Trucks		
g)	4+ Lane Urban > 10,000 AADT / Lane > 60 km/h > 12% Trucks		

BL = Bike Lane WCL = Wide Curb Lane

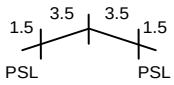
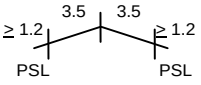
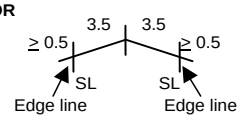
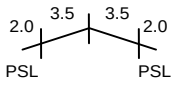
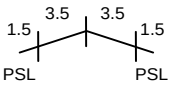
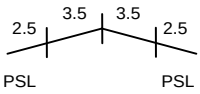
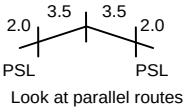
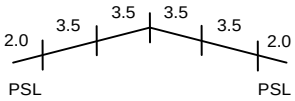
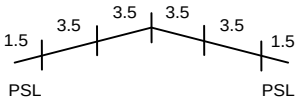
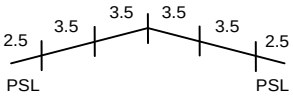
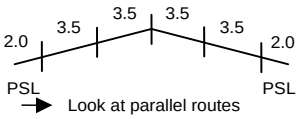
NOTES:

1. Motor vehicle travel lane widths can vary (e.g. 3.25 m to 4.25 m). If a travel lane is less than 3.25 m the adjacent bike lane should typically be a minimum of 1.5 m unless it is an interim condition. That said, good engineering judgement must be applied at all times.
2. **The values indicated in these tables are suggested thresholds and are not meant to be prescriptive. Rather, these thresholds are meant to serve as a guide to assist bikeway planners and designers in the decision-making process when attempting to retrofit existing roads for cycling facilities.** A decision to select one cycling facility type over another will also be influenced by other factors. These may include the type and density of adjacent land uses, driveway frequency, collision information, municipal streetscape and / or urban design planning objectives for a particular road or road segment, and local community preferences.

Sources:

- Ministry of Transportation of Ontario (MTO), Ontario Bikeways Planning and Design Guidelines (1996);
- Transportation Association of Canada (TAC), Geometric Design Guide for Canadian Roads (1999);
- United States Department of Transportation - Federal Highway Administration, Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA-RD-92-073);
- University of North Carolina, Highway Safety Research Center and Pedestrian and Bicycle Information Centre, Bicycle Facility Selection: A Comparison of Approaches;
- American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities, (1999);

Table 6-3: Retrofitting Urban Roads for Cycling Facilities Cont'd.

	Road Configuration and Characteristics	Preferred Solution	Minimum or Interim Solution (Constrained Projects)
a)	2 Lane Rural ≤ 3,000 AADT / Lane ≤ 80 km/h ≤ 6% Trucks Good Sight Lines	 	OR 
b)	2 Lane Rural > 3,000 AADT / Lane ≤ 80 km/h 6% ≤ 12% Trucks Good Sight Lines		
c)	2 Lane Rural > 10,000 AADT / Lane ≤ 80 km/h > 12% Trucks Good Sight Lines		
d)	4 Lane Rural ≤ 10,000 AADT / Lane ≤ 80 km/h ≤ 12% Trucks Good Sight Lines		
e)	4 Lane Rural > 10,000 AADT / Lane ≤ 80 km/h ≥ 12% Trucks Good Sight Lines		

PSL = Paved Shoulder Lane SL = Shared Lane 3.5 = Vehicle Travel Lane Width (metres)

NOTES:

1. On roads with poor sight lines, preferred guidelines should always apply. Consideration should also be given to an additional clearance width of 0.5 m in the paved shoulder.
2. Assumes paved shoulders have an adjacent granular shoulder, which is typically 0.5 m or more in width.
3. **The values indicated in these tables are suggested thresholds and are not meant to be prescriptive. Rather, these thresholds are meant to serve as a guide to assist bikeway planners and designers in the decision-making process when attempting to retrofit existing roads for cycling facilities.** A decision to select one cycling facility type over another will also be influenced by other factors. These may include the type and density of adjacent land uses, driveway frequency, collision information, municipal streetscape and/or urban design planning objectives for a particular road or road segment, and local community preferences.

Sources:

- Ministry of Transportation of Ontario (MTO), Ontario Bikeways Planning and Design Guidelines (1996);
- Transportation Association of Canada (TAC), Geometric Design Guide for Canadian Roads (1999);
- United States Department of Transportation - Federal Highway Administration, Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA-RD-92-073);
- University of North Carolina, Highway Safety Research Center and Pedestrian and Bicycle Information Centre, Bicycle Facility Selection: A Comparison of Approaches;

6.5.1.4 Rumble Strips

A rumble strip is a raised or grooved pattern along the outer most edges of a roadway separating the travelled portion of the roadway from the paved shoulder. Rumble strips can be an effective safety measure used to prevent run-off-the-road collisions as they are designed to alert drivers through sound and vibrations as they are drifting out of the travel lane into a shoulder. It should be noted that rumble strips are not typically implemented on rural cross-sections in urban areas because the noise may affect local residents.

When rumble strips are selected to be implemented along a particular roadway signed or to be signed as a bike route in the future, the following design parameters should be considered. Typical terms associated with rumble strips are defined in Table 6-4 and illustrated in Figure 6.18.

Table 6-4 – Rumble Strip Design Parameter Definitions

Letter	Design Parameter	Description
A	Offset	Lateral distance from the edge of the vehicular travel lane to the inside edge of the rumble strip.
B	Length (of Rumble Strip Groove) or Transverse Width	Dimension of the rumble strip measured lateral to the direction of travel.
C	Width (of Rumble Strip Groove)	Dimension of the rumble strip measured parallel to the direction of travel.
D	Depth (of Rumble Strip Groove)	The vertical distance measured from the top of the pavement surface to the bottom of a rumble strip groove.
E	Centre-to-Centre Spacing (or Spacing)	The distance measured between the centres of two adjacent rumble strip grooves.
F	Recovery Area	The distance from the inside edge of the rumble strip to the outside edge of the shoulder.

G	Gap	The distance measured between the centre of the last rumble strip groove in a rumble strip group and the centre of the first rumble strip groove in the succeeding rumble strip group.
H	Length of Rumble Strip Group	The distance between the outside edges of a rumble strip group.
I	Lateral Clearance	The distance from the outside edge of the rumble strip to the outside edge of the paved shoulder available for travel by cyclists.

Source: NCRP Report 641, 2009

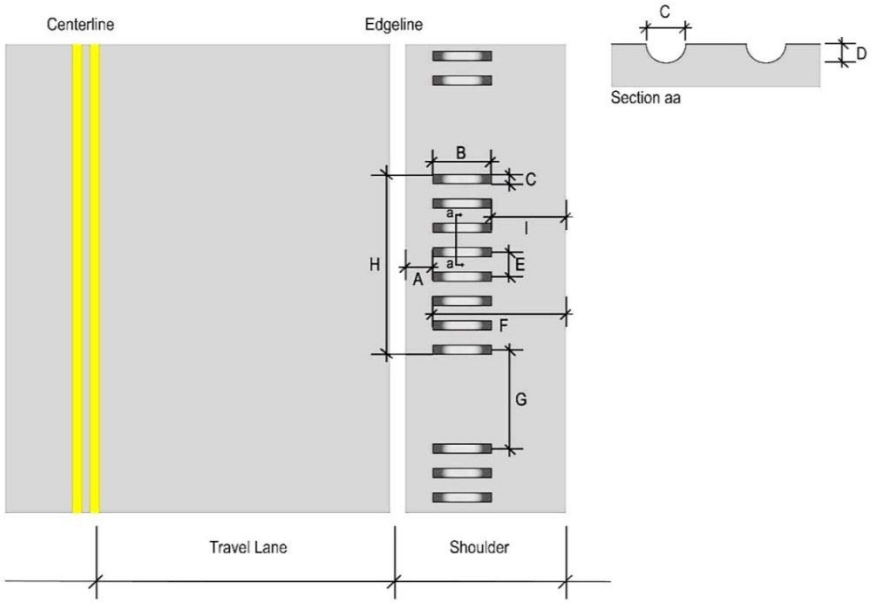


Figure 6.18 – Rumble Strip Design Parameters

Source: NCRP Report 641, 2009

Milled shoulder rumble strips are the most appropriate for signed bike routes with paved shoulders and should only be implemented if there is a minimum lateral clearance of 1.2 metres from the outside of the rumble strip to the outside edge of the paved shoulder or 1.5 metres to the adjacent curb or obstacle to allow for adequate riding space.

The rumble strip should contain a skip pattern in order to allow cyclists to manoeuvre in and out of the paved shoulder to pass stopped cars and other cyclists, avoid debris in the shoulder and make left-hand turns. Periodic gap lengths of at least 4 metres spaced at intervals of at least 4 metres provide most cyclists with enough room to exit or enter the paved shoulder without

riding over the rumble strip. A rumble strip with a skip pattern need not be installed on roadways where bicycles are prohibited, such as 400 series highways.

In addition to implementing a skip pattern, the design dimensions of a typical milled rumble strip should be adjusted to accommodate bicycles more appropriately without compromising the effectiveness of the rumble strip for motorists. These adjustments include:

- Decreasing the length of the rumble strip groove;
- Decreasing the width of the rumble strip groove;
- Decreasing the depth of the rumble strip groove; and
- Increasing the centre-to-centre spacing.

Figure 6.19 and Figure 6.20 illustrate the typical dimensions for a milled shoulder rumble strip on signed bike routes with paved shoulders.

It is recommended that a white line be painted on either side of the rumble strip. If a skip pattern is used, then it is recommended that the outside line closest to the paved shoulder follow the skip pattern to provide cyclists with more guidance as to when there is a break in the rumble strip.

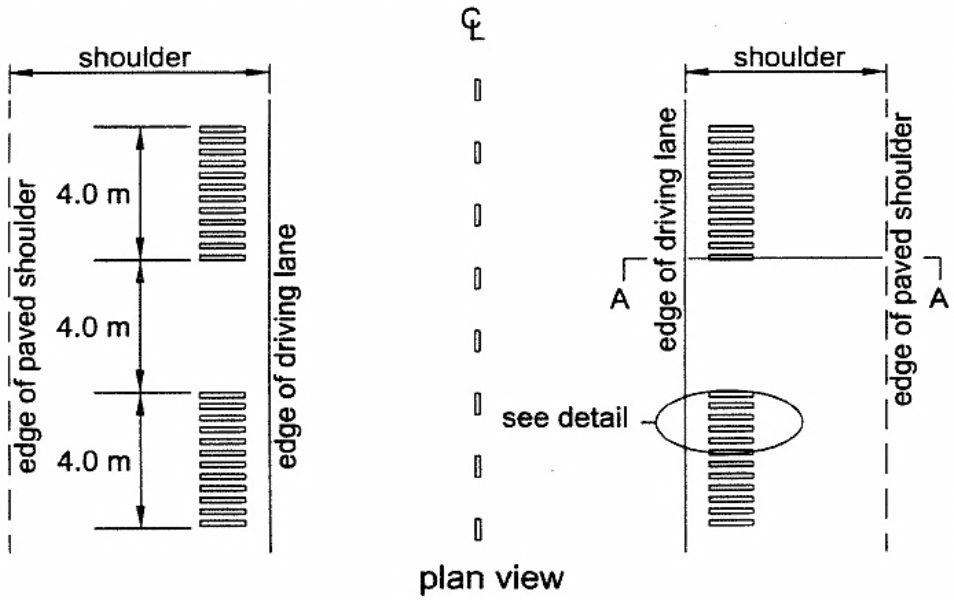


Figure 6.19 – Rumble Strip Dimensions for Signed Bike Route with Paved Shoulders – Plan View

Source: TAC Geometric Design Guide for Canadian Roads, 1999

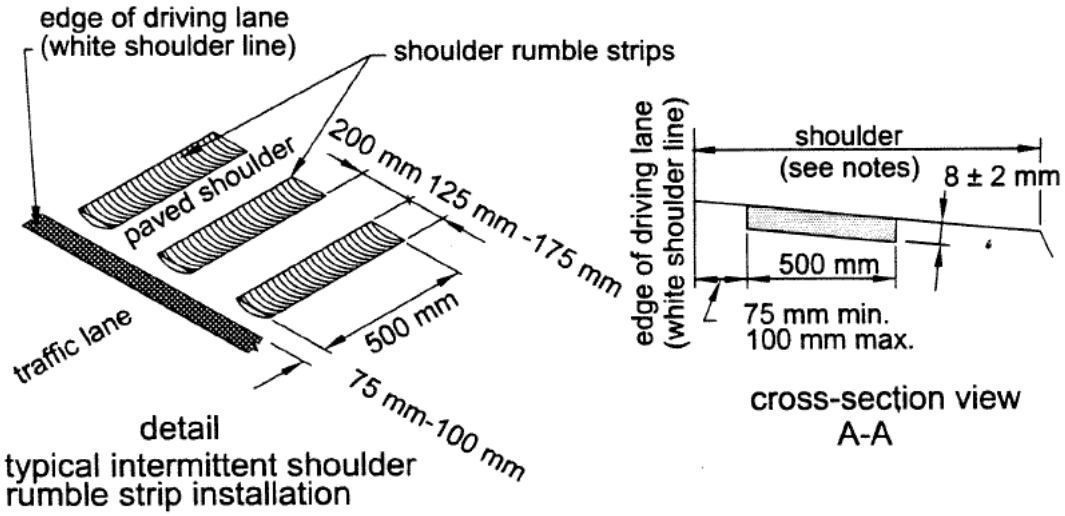


Figure 6.20 – Rumble Strip Dimensions for Signed Bike Route with Paved Shoulders – Detailed Drawing and Cross-Section View

Source: TAC Geometric Design Guide for Canadian Roads, 1999

6.5.2 Intersections

6.5.2.1 Intersection Treatments for Cyclists

Cycling facilities at intersections should be carefully designed to encourage the safe and predictable movement of pedestrians, motorists and cyclists. Since intersections are the most likely area for conflict between various users of the roadway, care should be taken to design and mark the intersection approach such that all users understand and can anticipate the potential movements of other road users.

One of the most common conflicts at intersections occurs between right turning motor vehicles and cyclists proceeding straight through, since it is necessary for these two road users to cross paths. Pavement markings and appropriate signing should be installed at intersections to encourage such crossings in advance of the intersection, rather than within it (e.g. through the provision of an exclusive right-turn lane or an advanced stop bar for cyclists).

Left turning cyclists must also undertake a similar weaving manoeuvre through vehicular traffic. Cyclists may elect to undertake a "vehicular style" left turn by using the motor vehicle left turn lane, or they may choose to complete a "pedestrian style" turn by proceeding straight through the intersection, then turning left to cross again on the intersecting road.

Where a lane line or edge line is provided for a cycling facility, pavement markings should change from a solid to a broken line on the approach to the intersection. Alternatively, though not preferred, the bike lane/edge line can be discontinued if there is insufficient pavement width. The bike lane/edge line markings should be discontinued at the start of the taper when right turn lanes or channelizations are provided, or otherwise a broken line should be used, a minimum of 30 m from a signalized intersection and 15 m from an unsignalized one. This allows cyclists to merge with other traffic and prevents right turning motorists from having to cross through a bike lane to make their turn, thereby cutting off cyclists at the intersection. By discontinuing the solid bike lane/edge line pavement marking, both the cyclists and motorists are made aware of the fact that they are sharing a common lane and should react accordingly.

Figures 6.21 to 6.24 illustrate a series of recommended intersection configurations with on-road bike lanes or paved shoulder cycling facilities. These figures are from the TAC's Bikeway Traffic Control Guidelines for

Canada (1998), which include a series of 31 figures that illustrate typical bikeway applications at intersections.

The County of Essex should use its discretion in using either the direction arrow that will be recommended in the OTM Book 18, which is set to be released in 2012, or the most recent TAC guideline that recommends the diamond symbol shown in Figure 6.22.

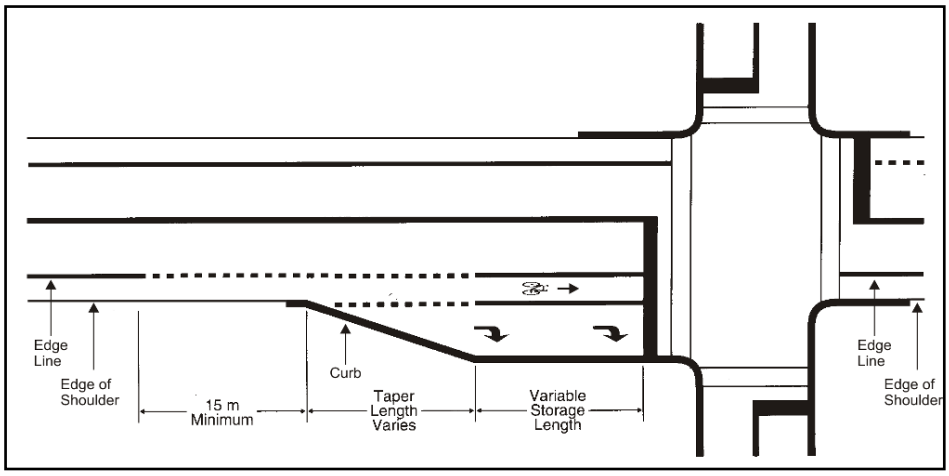


Figure 6.21 – Bicycle Lane Adjacent to an Exclusive Right Turn Lane

TAC Bikeway Traffic Control Guidelines, 1998 (TAC Table 8.1-2)

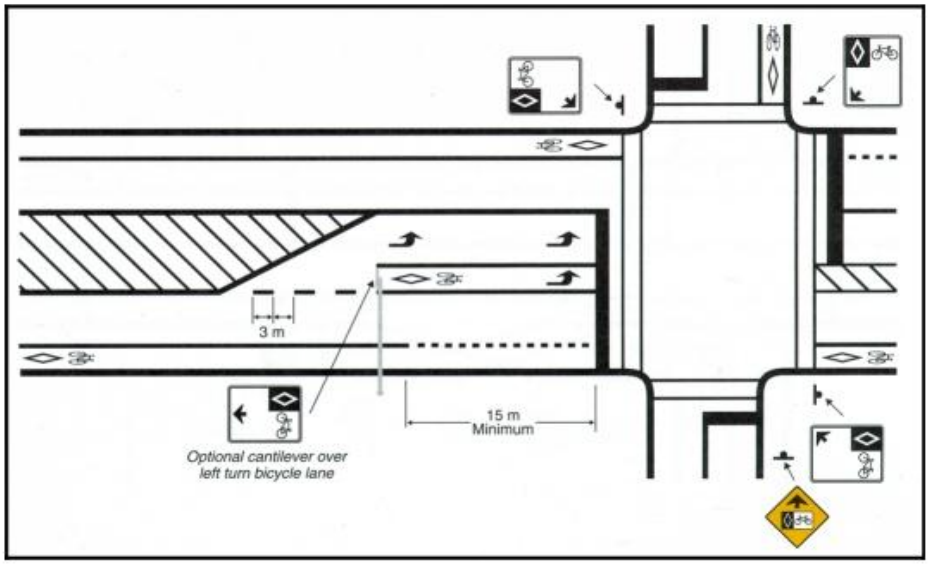


Figure 6.22 – Left Turn Bicycle Lane

TAC Bikeway Traffic Control Guidelines, 1998 (TAC Table 8.1- 4)

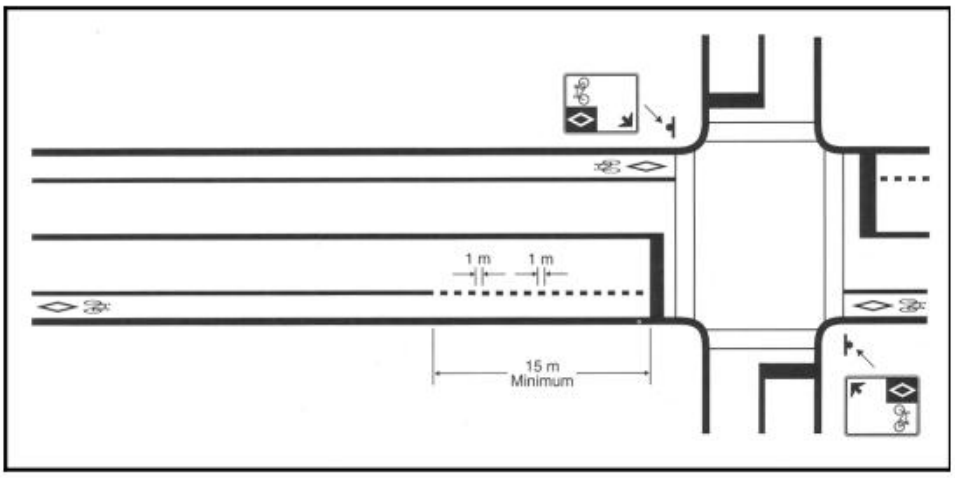


Figure 6.23

Figure 6.24 illustrates a bike facility through a rural road intersection, which is very similar to a facility design for an urban road intersection. The approach uses a stencil and signed route with a bike pocket implemented adjacent to an exclusive right turn lane. On the other side, the same configuration continues but with the stencil eliminated. More specifically, in this scenario, there may or may not be curbs used throughout the intersection.

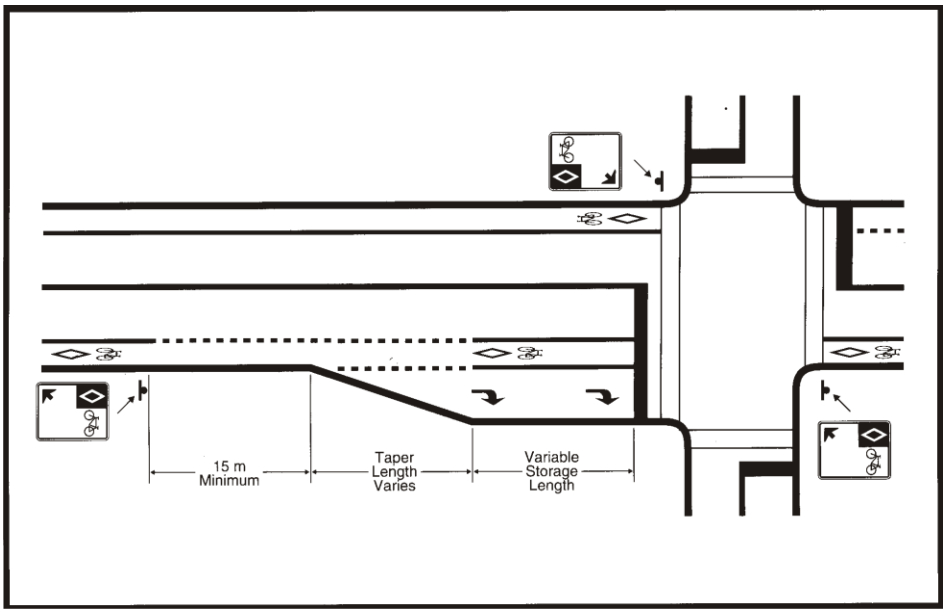


Figure 6.24 Bike Facility through a Rural Road Intersection

MMM Group Limited

Guideline:

6.34 Cycling facilities at intersections should be carefully designed to encourage safe and predictable movement of pedestrians, motorists and cyclists.

There is also the potential for standard bike lanes along roadways to become substandard in widths at intersections due to spatial constraints. At these locations, the bike lane should not be signed as such or delineated with any bicycle-stencil pavement markings; however, bicycle-route signs may be erected at these locations. It is recommended that when these intersections are improved, that they be upgraded to accommodate standard bike lanes. A detailed evaluation of the intersection should be undertaken at times when such intersections are improved to determine if there is enough public land available or to ensure that there are no competing interests for space, such as pedestrian or utility space. Therefore, a detailed review should be undertaken to address these issues.

Guideline:

6.35 A detailed review of intersections with sub-standard bike lanes should be undertaken when intersections are improved to determine if sufficient right-of-way can be obtained to provide standard bike lanes at these locations.

Coloured Pavement Surfaces

The application of coloured surfaces and asphalt to indicate the presence of bike lanes on merge zones has been used in numerous cities around the world, especially in Europe. Red surfacing is used in the Netherlands and blue pavement colouring has been tested in Montreal and in Portland, Oregon. Figure 6.25 illustrates an example of coloured pavement surfaces from Sunnyvale, California.

Figure 6.25 – Coloured Pavement – Sunnyvale, California

Source: Innovative Bicycle Treatments, ITE Web Seminar Presentation. Photo by John Brazil

In the City of Portland, cyclist and motorist behaviour was observed before and after the application of "blue" bicycle lanes to determine which users, cyclists or motorists, yielded to the other at intersections. It was observed that 28% of cyclists yielded to motorists and 72% of motorists yielded to cyclists. After the application of the coloured bicycle lanes, 8% of cyclists yielded to motorists and 92% of motorists yielded to cyclists.[16] The

[16] Portland's Blue Bike Lanes: Improved Safety through Enhanced Visibility; City of Portland, Office of Transportation; July 1,1999

application of the coloured pavement helped to identify priorities at intersections, as motorists were made more aware of the presence of cyclists. The blue bike lanes gave cyclists an increased feeling of safety when passing through intersections, resulting in fewer cyclists slowing, stopping or turning their heads when entering a "blue" area. Approximately 75% of the cyclists surveyed felt that the areas with the coloured pavement were safer than before, and 58% of cyclists stated that motorists were yielding more than they were before the blue bike lanes were installed[17].

Results from a similar survey conducted in Montreal indicated a small decrease in motor vehicle/cyclist conflicts, an increase in motorists yielding, and a decrease in cyclists slowing or turning their heads when crossing through intersections[18].

Although the application of coloured pavement has not been standardized in Canada, its application may be beneficial at complex intersections with high conflict areas where cyclist priority is not respected and standard pavement markings do not suffice. It should also be noted that special signing is typically used at locations where coloured pavement is applied, indicating the priority movements at an intersection. Figure 6.26 illustrates an example of the signing used in Portland at intersections with blue bike lanes.

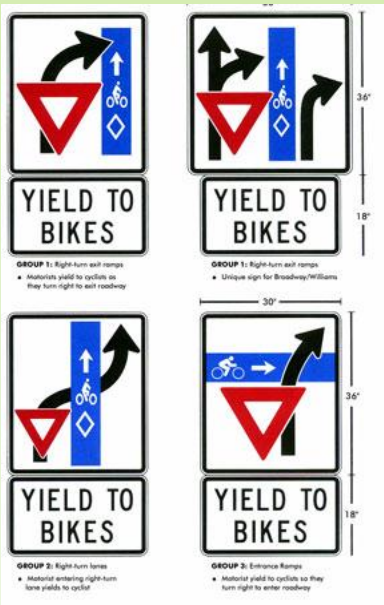


Figure 6.26 – Signing Used in Conjunction with Coloured Pavement

City of Portland, Oregon

The cost of coloured pavement varies depending on the colour being selected for use. Based on a review of paving companies, blue pavement colouring is typically more expensive than red. However, the selection of blue coloured pavement tends to be the most sensible solution when compared to other colours such as red, yellow and green, some of which are used for bike lanes elsewhere around the world.

The colours red and green have specific meaning in regards to traffic engineering, where "red" implies stop, green implies "go" and amber indicates an opposing traffic flow [19]. The colour blue is a "neutral" colour in

17 Portland's Blue Bike Lanes: Improved Safety through Enhanced Visibility; City of Portland, Office of Transportation; July 1,1999

18 Portland's Blue Bike Lanes: Improved Safety through Enhanced Visibility; City of Portland, Office of Transportation; July 1,1999

19 Bicycles, Blue Bike Lanes for Bicycle Safety, Bicycle Programs – Blue Bike Lanes – Portland Transportation; http://www.trans.ci.portland.or.us/bicycles/bluebike.htm, 2004

the context of traffic engineering. Furthermore, the colour blue will show up in limited visibility conditions such as during fog, light rain and other wet conditions. Also, persons who are colour blind have difficulty identifying earth tone colours such as red and green.

The Town of Richmond Hill is currently experimenting with a treatment known as microsurfacing, in which a colour pigment is mixed with asphalt when it is laid, resulting in a surface that is coloured, but has the same tactile features of bare asphalt. This method is significantly less expensive than traditional pavement colouring. It is currently being tested to determine its durability. An application of microsurfacing is shown below in Figure 6.27.

Figure 6.27 Microsurfacing – Town of Richmond Hill, ON

Should coloured bike lanes be considered for installation for segments of the cycling network, the colour blue or green is thought to be the best colour for application.

Guidelines:

6.36 Coloured pavement treatments may be considered for intersections with complex geometry or in areas with potential high conflict zones between cyclists and motorists.

6.37 Appropriate signing should be used in conjunction with the coloured pavement to identify to both motorists and cyclists the priority at an intersection.

6.38 Should the County decide to pursue coloured pavement, the emerging technology of coloured "microsurfacing" should be investigated as an alternative to full depth colour asphalt.

Cyclists Crossing at Intersections

Just like other motor vehicles, it is important for bicycles to be able to proceed through intersections safely and efficiently. One method to aid cyclists in crossing at traffic signals is the application of bicycle detection methods at signalized intersections. Bicycles should also be considered in the timing of traffic signals and in the selection, sensitivity and placement of vehicle detection devices. Since bicycles have much less ferrous metal than automobiles, the sensitivity of the detector loop will need to be adjusted accordingly for greater responsiveness to bicycles. The installation of detector loops with different configurations, such as a quadrupole loop, are capable of detecting more than just motor vehicles. Figure 6.28 illustrates the layout of quadruple and diagonal quadruple loop detectors.

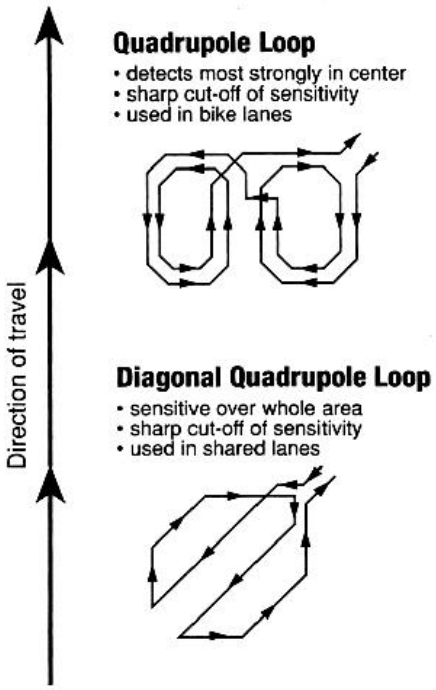


Figure 6.28 – Quadrupole and Diagonal Quadrupole Loop Detectors

Source: Traffic Signal Bicycle Detection Study, City of San Diego, 1985.

The detection of bicycles at signalized intersections is very important as it minimizes the potential for a cyclist to disobey the unchanged signal. It is recommended that the County initiate this practice at intersections where detector loops are installed and where feasible.

Even though the sensitivity of the detectors may be adjusted, the effectiveness of the detectors is limited if the cyclist is not properly located in the "actuation zone".

The application of three yellow or white dots on a road has been used in Ottawa and Toronto respectively, with the dots placed at the location where cyclists should position themselves at an intersection to be detected. This is illustrated in Figure 6.29. Reviews of this application indicate that in some circumstances, cyclists are not aware of the purpose of the three dots, or even that they must be present in the zone of detection to initiate a signal change. The success of a bicycle actuating a signal is dependent on the cyclist not only knowing that there is a detection system, but also knowing how to use it. Even though the sensitivity of the detectors may be adjusted, the effectiveness of the detectors is limited if the cyclist is not properly located in the actuation zone.

Figure 6.29 – "Three dots" Traffic Signal Actuation Indicator

More distinct pavement markings such as a small bicycle symbol with a directional arrow and additional signing may be investigated to improve the effectiveness of this form of bicycle detection advisory system. Figure 6.30 illustrates TAC's recommended design for a bicycle loop detector marking that may be applied at intersections to help direct cyclists to the appropriate actuation zone.

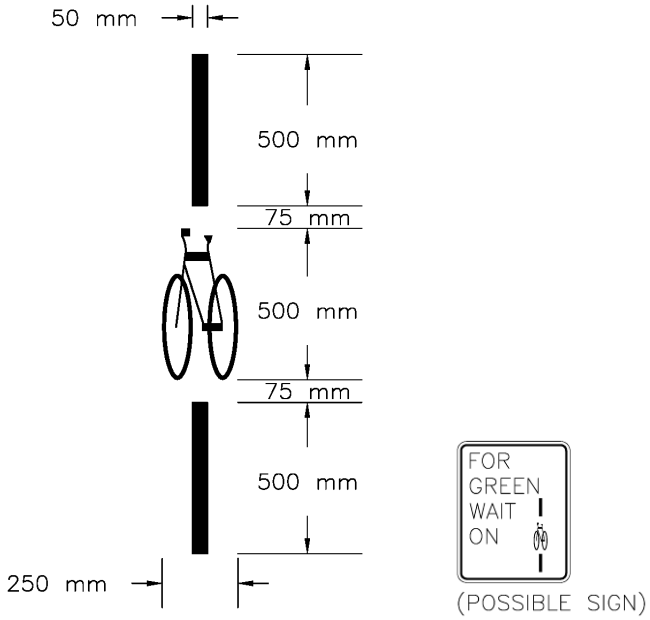


Figure 6.30 – Bicycle Loop Detector Marking

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.33 (2007)

Another alternative is to utilize a pedestrian style push-button to actuate traffic signals for cyclists. These should be located on the curbside, separate from the pedestrian push-button.

The Transportation Association of Canada (TAC) has developed traffic signal guidelines for bicycles. The purpose of this project was to develop a guideline for the safe accommodation of bicycles at signalized intersections. The outcome was the recommendation of an exclusive "Bike Signal", similar to that in use in Quebec, the United States and throughout Europe. Figure 6.31 illustrates the Bicycle Signal head recommended by TAC as a national standard. It should be noted, however, that the bicycle traffic signal is not meant to be rigorously applied, as standard traffic signals can be used to adequately accommodate cyclist movements through intersections. Therefore, the installation of bicycle traffic signals should only be considered in "extreme" situations, such as where a signalized intersection may not be standard in geometry, or where the right-of-way for a cyclist riding through an intersection may not be clear.

Figure 6.31

Bicycle Traffic Signal

TAC (2004)

A Vulnerable Road User (VRU) is a term used to encompass many different groups who utilize a transportation network. Vulnerable users include those

who are not the occupants of a personal, commercial, transit, emergency or other common motorized vehicle. 20 Vulnerable road users include:

- Pedestrians;
- Cyclists; and
- In-line skaters/scooter riders/skateboard riders.

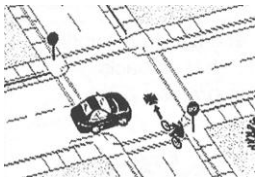
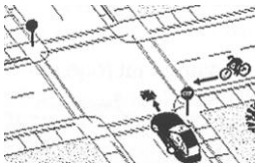
Since cyclists are classified as vulnerable road users, consideration and care must be given when designing facilities for their use. VRU conflicts can take many forms, have multiple contributing factors, and occur in different places within our transportation systems. Common cycling related conflicts with other road users include:

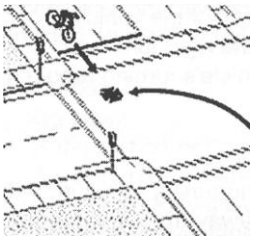
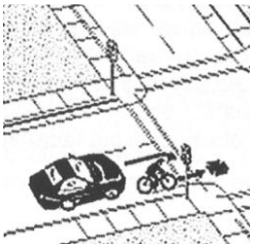
- Cyclist proceeding through an intersection past a stop sign conflicting with an approaching motor vehicle;
- Motorist proceeding through an intersection past a stop sign conflicting with an approaching cyclist;
- Motorist making a left-turn through an intersection conflicting with a cyclist proceeding straight across the intersection; and
- Motorists making a right turn conflicting with a cyclist proceeding straight across the intersection.

Table 6-5 identifies and illustrates these common cycling related collisions and provides preventative measures for minimizing their potential to occur.

[20] Safety Conscious Design for Vulnerable Road Users, McCormick Rankin Corporation for Transportation Association of Canada (TAC), 2004.

Table 6-5: Common Cyclists/Motor Vehicle Collisions at Intersections

Conflict	Possible Causes	General Countermeasures
Cyclist riding through intersection past a Stop Sign. 	Cyclist ignores the traffic controls Cyclist incorrectly assumes there aren't any vehicles on the road. There are visual obstructions. Cyclist is unable to stop. Vehicles approach the intersection at high speeds. The motorist has incorrect expectations. The cyclist is unfamiliar with correct traffic control procedures.	Cyclist obey traffic controls Improve sightlines for cyclists and motorists. Educate cyclists on traffic control, bike maintenance and performance. Educate motorists on common cyclist behaviours. Provide STOP or YIELD pavement markings, advanced warning signs or pavement texturing.
Motorist driving into an intersection past a stop sign. 	The intersection has a high incidence of driver stop violations. The motorist stops beyond the stop bar, impacting cyclists on the sidewalk or in the nearest lane. There are visual obstructions. The cyclist is travelling facing traffic but beyond the motorist's primary viewing area.	Reconfigure the intersection as a general roundabout. Improve sightlines for cyclists and motorists. Install "Stop Here" signs. Install "Watch for Cyclists" signs. Paint "Use Caution" on the sidewalk at hazardous locations. Add a crosswalk and an adequate stop bar setback. Provide cyclist and driver education programs.

Conflict	Possible Causes	General Countermeasures
Motorist making a left-turn – facing a cyclist. 	Intersection has wide turning radius that encourages high speeds. The motorist, coming to a stop, travels into the intersection. The cyclist's travel path is outside the motorist's primary viewing area. The cyclist incorrectly anticipates the motorist's left turning behaviour.	Tighten the left turn radii. Channelize the intersection. Reconfigure the intersection as a modern roundabout. Improve sightlines for cyclists and motorists. Prohibit permissive left turns. Provide protected left turns. Reroute pathways a minimum of 30 metres from the intersection. Alert motorists with a "Yield to Approaching Cyclists" sign. Alert cyclists with a "Watch for Turning Vehicles" sign and/or pavement markings in bike lanes or multi-use pathways.
Motorist making a right-turn at intersection beside a cyclist. 	The vehicle approaches the turn at high speed. The cyclist overtakes a slow moving vehicle. The bicycle sign stops immediately to the right of the vehicle. Weaving conflicts occur at the start of the right turn lane. The motorist or cyclist misjudges the vehicle's turning requirements.	Reduce vehicle approach speeds by shortening right turn radii. Provide a separate crossing location, away from the intersection, for bike lanes. Place the vehicle stop line in advance of the bike lane stop line. Educate cyclists and motorists. Install a "Begin Right Turn, Lane, Yield to Bikes" sign. Improve signing in general for cyclists and motorists.

Source: Safety Conscious Design for Vulnerable Road Users, McCormick Rankin Corporation – Licensed to Transportation Association of Canada (TAC), 2004.

The design of cycling facilities must account for a number of facility types such as shared roadways, bicycle lanes and off-road cycling trails. The main points to consider regarding safety conscious design for cyclists at intersections include:

- Heavy right turn cycling movements: If the majority of cyclists are turning right, a bike lane can be placed to the right of the vehicle turn lane and wrapped around the corner;
- Tee Intersections: If bike lanes are present on a T-intersection approach, the bike lane should be dropped early enough for cyclists to slide across into the proper turning lane;
- Dedicated bike lanes in high volume intersections: Where there is a very high traffic volume, consideration should be given to providing dedicated left and right-turning bicycle lanes;
- Offset through lanes and pavement markings: Where intersection through-lanes are offset, pavement markings should be clear enough to guide the driver and cyclist through safely;
- Provide cyclists options to walk or ride through: For through-moving cyclists, the option should be available for cyclists to either navigate the intersection like a vehicle, or dismount at the curb and walk their bike over the crosswalk; and
- Provide left-turning cyclists options to walk or ride: Cyclists making a vehicular-style left turn on a multi-lane roadway have to cross over one or more through travel lanes, which may intimidate inexperienced riders. Therefore, the option should be available for them to dismount and walk their bikes across two legs of the intersection to proceed.

Guidelines:

6.39 The County should initiate a practice of considering bicycles in the timing of traffic signals at intersections and in the selection, sensitivity and placement of vehicle detection devices wherever there is bicycle traffic.

6.40 The application of pavement markings is recommended to increase the efficiency of bicycle detection at intersections to actuate either a mixed traffic or bicycle signal phase. These pavement markings could also help to direct cyclists to the actuation zone and to position themselves properly in the lane.

6.41 Since cyclists are considered vulnerable road users, consideration and care must be given to them when designing facilities for their use.

6.42 The general countermeasures indicated in Table 6.4 should be considered for minimizing common motor vehicle and cyclist collisions.

Bike Boxes

Bike boxes are used at locations where cyclist volumes may be very high approaching an intersection, particularly where left turn cyclist volumes are high. In this situation, the motor vehicle stop bar is set back approximately 4 m, helping cyclists move from the curb lane and turn left by positioning themselves in front of the motor vehicles. Figure 6.32 shows the TAC guideline for a bike box at an intersection. It should be noted that the application of bike boxes restricts right turns on red displays for motor vehicles. Advanced stop bars and bike boxes may be considered at locations where cyclist volumes are high and measures are being considered to give cyclists more priority at intersections, for example by adjusting signal timings or phasing sequences.

Photo Credit: Richard Dhrul

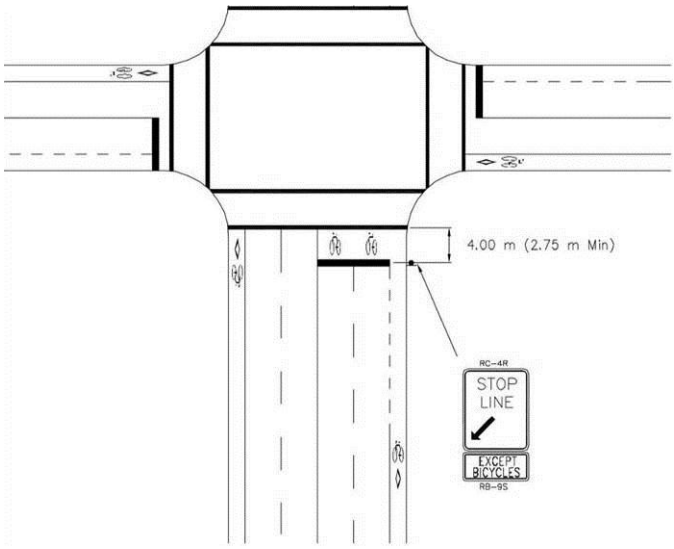


Figure 6.32 – Bike Box Markings

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.34 (2007)

Guideline:

6.43 Bike boxes may be considered at locations where cyclist volumes are high and measures are being considered to give cyclists more priority at intersections (e.g. adjusting signal timings or phasing sequences).

Bike Pockets

"Bike pockets" can be defined as a discontinuous dedicated space on the travelled portion of the roadway intended for use by cyclists that are delineated by pavement markings. An example of a bike pocket used in conjunction with a bicycle lane is illustrated in Figure 6.33.

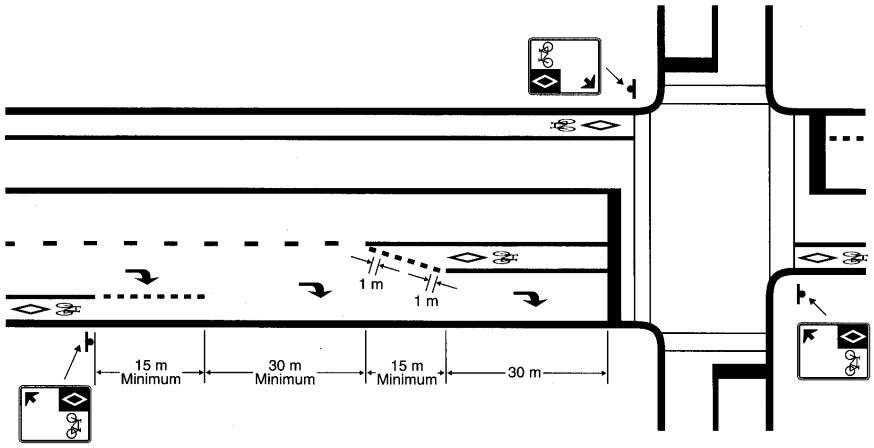


Figure 6.33 – "Bicycle Pocket"

(Bicycle Lane Adjacent to Curb Lane Transition)

Source: Bikeway Traffic Control Guidelines for Canada TAC, 1998, Figure 3.

It should be noted that bike pockets have been effectively used in a variety of locations where no bike lanes are present or where a bicycle lane ends. The most common use for a bicycle pocket is to show where cyclists should position themselves when adjacent to a right turn lane or a right turn channel.

The critical dimension, as illustrated in Figure 6.33, is the 60 m segment between end of the curbside bike lane and the beginning of the bike lane on the left side of the right turn lane. This minimum 60 m transition zone should be maintained between the curbside cycling facility and the bike pocket, left of the right turn lane/channel, whether the curbside facility is a bike lane, paved shoulder or signed-only route.

Guideline:

6.44 The minimum 60 m transition zone between the curbside cycling facility, and the bike pocket, left of the right turn lane/channel, should be maintained, whether the curbside facility is a bike lane, paved shoulder or signed-only route.

6.5.2.2 Multi-use Trail Crossings at Intersections

TAC's Guidelines for the Design and Application of Bikeway Pavement Markings provide recommended treatments for locations where multi-use trails cross roadway intersections. There are two different applications to consider: where pedestrians and cyclists will mix and where only a cyclist will cross. The recommended treatments for these two applications are presented in Figures 6.34 and 6.35. It should be noted that this TAC recommendation was recently approved for application in the City of Mississauga in a letter from the Ontario Minister of Transportation.

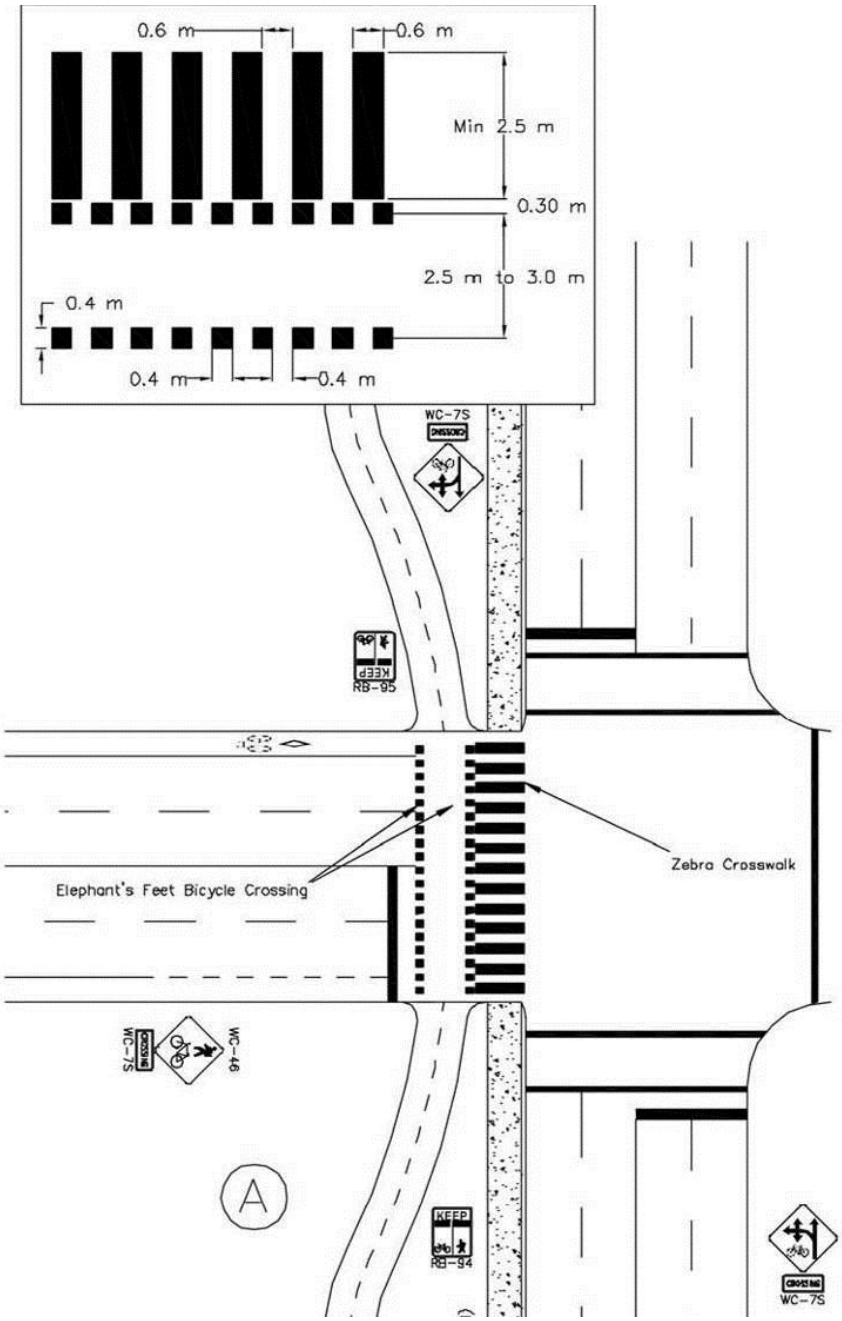


Figure 6.34 – Multi-use Trail Crossing of Intersection – Pedestrians and Cyclists

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Page 40 (2007)

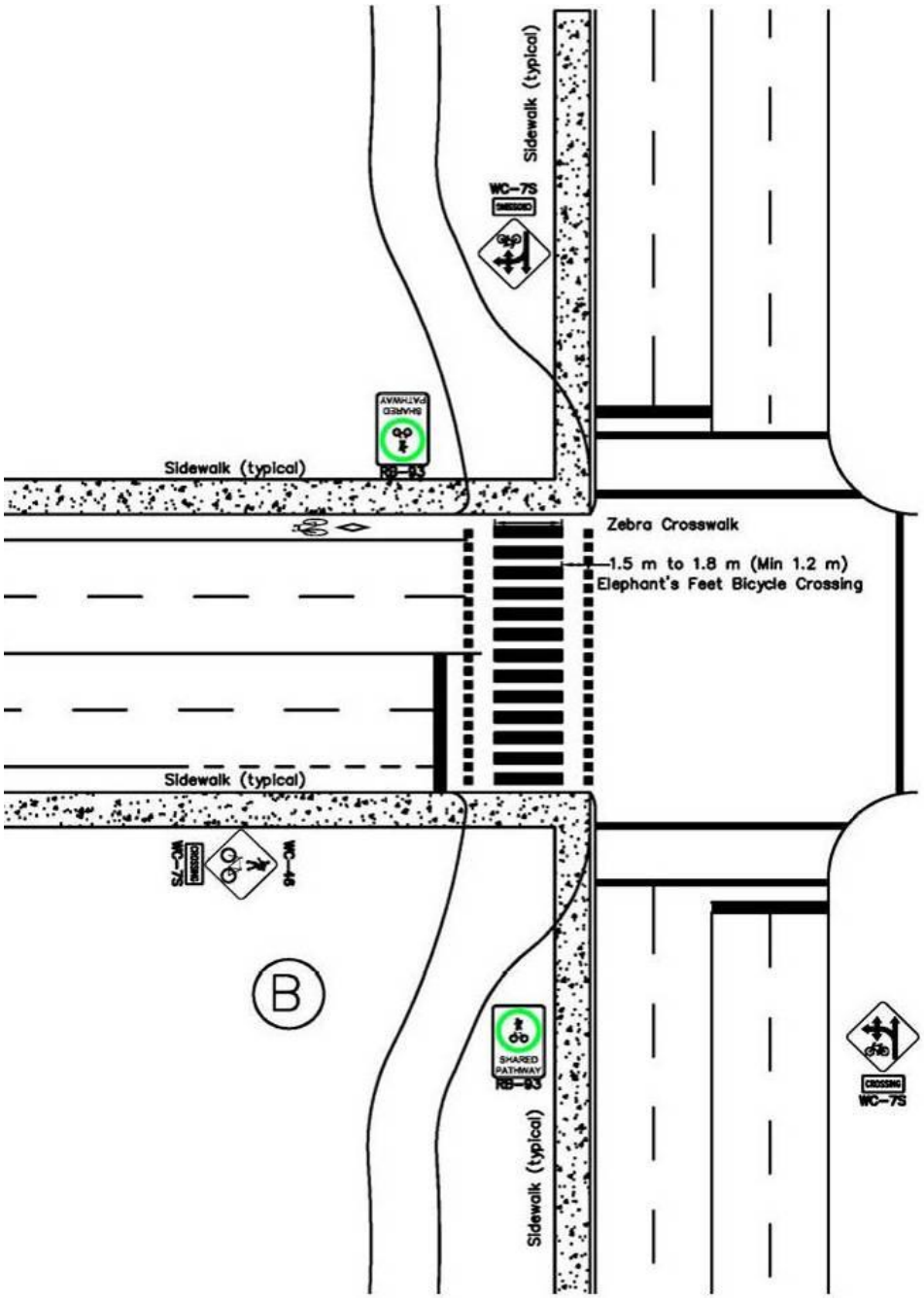


Figure 6.35 – Multi-use Trail Crossing of Intersection – Cyclists Only

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.19 (2007)

6.5.3 Roundabouts

Roundabouts are gaining increased acceptance as an acceptable means of intersection control in North America. Within the County of Essex, a number of roundabouts have been implemented which have been designed with "sharrows" and cycling facilities. As a result, it is important to ensure that cyclists can be accommodated in roundabouts.

With respect to cyclists, there are three options for bicycle access to a roundabout, depending on the configuration of the roundabout. For single lane roundabouts, no bicycle facilities are recommended for inclusion in the roundabout. If a bicycle lane is present on approach to the roundabout, it should be dashed for a minimum of 15 m (30 m to 45 m is preferable) and should end 30 m before the circulatory roadway. This line should then be tapered for 15 m to a point 15 m before the circulatory roadway, in order to provide cyclists the opportunity to merge into the motor vehicle lane.

To alert motorists to the presence of cyclists in the travel lane, and to inform cyclists where they should be on the road, a shared use lane marking should be applied at both entry and exit points for the roundabout. It should be located in the centre of the roadway.

In multi-lane roundabouts, cyclists may be directed onto a multi-use trail located along the outside of the circulatory roadway of the roundabout. This treatment is shown in Figure 6.36.

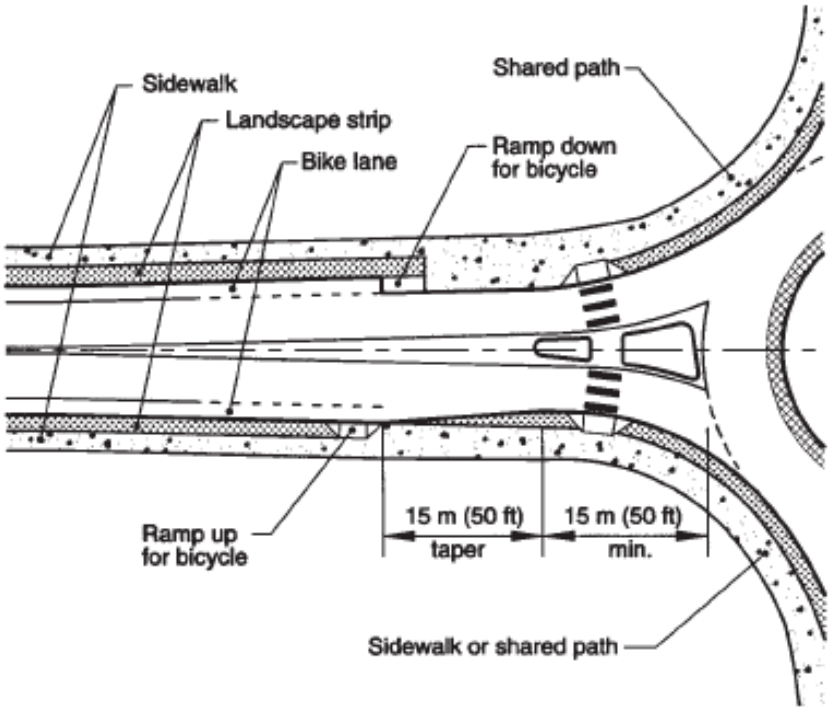


Figure 6.36 – Bicycle Lane Terminating at a Roundabout

Source: U.S. Department of Transportation

The key consideration in designing bicycle facilities across bridges and through interchanges is the safety of cyclists.

If there is insufficient space available for a multi-use path, and only a sidewalk exists, cyclists will be required to use the roadway through the roundabout. In this case, shared use pavement markings should be applied to both travel lanes at the roundabout approach.

Guideline:

6.45 The needs of pedestrians and cyclists should be fully incorporated into any roundabout designs in the County of Essex.

6.5.4 Bridges and Highway Interchanges

The key consideration in designing bicycle facilities across bridges and through interchanges is the safety of cyclists. The separation of non-motor vehicle traffic from motor vehicle traffic, either through pavement markings or fully separated facilities, is often recommended to reduce the potential for conflict between these two types of road users, especially on arterial and collector roads.

The width of bridge structures tends to be significantly less than the right-of-way width of the abutting roadway, typically only providing sufficient width for the travelled lanes plus a raised sidewalk. Hence, these types of structures tend to constrict the flow of bicycle traffic. This section serves to review the needs of cyclists, and the design considerations associated with bridge structures.

6.5.4.1 Bridges

The design of new structures or the modification of existing bridges must now comply with the standards of the Canadian Highway Bridge Design Code (2002). The following is an excerpt relating to the structure geometry:

"Roadway and sidewalk widths, curb widths and heights, together with all other geometrical requirements not specified in the Code, shall comply with the standards of the Regulatory Authority, or in their absence, with the TAC Geometric Design Guide for Canadian Roads."

"Sidewalks and cycle paths shall be separated from traffic lanes by a barrier or guide rail, or by a curb having a face height of at least 150 mm and a face slope not flatter than one horizontal to three vertical. Sidewalks and cycle paths not so separated shall be designed as part of the roadway." [21]

In Ontario, the current Geometric Design Standards for Ontario Highways (GDSOH) 1994, does not provide guidelines on offsets (horizontal clearances) at bridges. In the past, the Ontario Highway Bridge Design code was the guiding document, but this code is no longer in force since it has been replaced by the Canadian Highway Bridge Design Code effective June 1st, 2002. The TAC Geometric Design Guide for Canadian Roads and the Canadian Highway Bridge Design Code also do not provide details on the side clearances required on bridge decks. Side clearances are the distance between the edge of the travelled way and adjacent curb or barrier. Where side clearances on a bridge are wider than the approach roadway shoulder width/side clearance, the bridge side clearance should match that of the approach roadway. [22]

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[21] CAN/CSA-S6-00 Canadian Highway Bridge Design Code, Section 1.6.2.1

[22] Revision Information Sheet for Geometric Design Standards for Ontario Highways, Section D.7.2.2.

Given that neither the Canadian Highway Bridge Design Code, nor Geometric Design Standards for Ontario Highways prescribe current structure clearances and cross section dimensions, the Ontario Ministry of Transportation's (MTO) in August of 2002 issued a "Revision Information Sheet for Geometric Design Standards for Ontario Highways".

Section D.7.2.3 of this document, which now forms part of the Geometric Design Standards for Ontario Highways, provides the following direction with regard to sidewalks, curbs and bicycle routes on bridges, where required, the widths of sidewalks and bicycle routes on bridge decks should meet the following requirements:

- The edge of a sidewalk adjacent to the roadway on a bridge should match that of the approach sidewalk;
- Where the approach roadway is not provided with a curb, the sidewalk width should be at least 1.5 m;
- Paved bike lane and bicycle route widths should be in accordance with the Ministry's Ontario Bicycle Routes Planning and Design Guidelines. Bicycle routes should be at least 1.5 m wide for one-way traffic;
- The height of curbs should not be less than 150 mm above the adjacent roadway except to match the height of curbs on the approach roadway and
- Curbs should not be used in conjunction with barrier walls except where the curb and the barrier wall are separated by a sidewalk. [23]

Section D.7.2.5 of the same source also states that:

- Where practicable, underpassing roadway cross-sections should match that of the approach roadway; and
- Horizontal clearances from the edge of the through travelled way to the face of an abutment or pier should meet or exceed minimum clear zone widths in the Ministry's Roadside Safety Manual.

[23] Revision Information Sheet for Geometric Design Standards for Ontario Highways, Section D.7.2.2.

Table 6-6 sets out the minimum side clearances at bridges prescribed by MTO. Additional guidance is provided by the Ministry's Ontario Bicycle Routes Planning and Design Guidelines (1996). The following is an excerpt from this provincial guideline reference related to accommodating cyclists on existing bridges:

To allow cyclists to cross an existing bridge safely, the structure may require alterations to provide adequate width for all bridge users. A bicycle route can be routed across the bridge in one of three ways:

- Creating a bike lane or shoulder bikeway on the travelled way;
- Reserving a sidewalk for cyclists only, or for shared use with pedestrians if there is adequate width; or
- Widening the roadway to permit shared use of the right lane by motor vehicles and bicycles.

The creation of a bike lane on a bridge is an option if the bridge has shoulders, or if traffic lanes are wide enough to permit the creation of a wide curb lane to accommodate bicycles on the travelled way.

Guidelines:

6.46 Given the absence of applicable local guidelines, the values indicated in Table 6.5 should be referenced for determining the minimum side clearances on bridges when the installation of cycling facilities on bridges is being considered.

6.47 The creation of a bike lane on a bridge may be considered if the bridge has shoulders, or if the traffic lanes are wide enough to permit the creation of a wide curb lane to accommodate bicycles on the travelled way.

		Urban Roads			Rural Roads		
	Design Speed (km/h)	Left	Right		Left	Right	
			No Sidewalk	Sidewalk		No Sidewalk	Sidewalk
FREEWAY 4-LANE DIVIDED	100 to 120	2.5a	3.0 a		2.5a	3.0 a	
FREEWAY MULTI-LANE DIVIDED	100 to 120	2.5 a	3.0 a		2.5 a	3.0 a	
ARTERIAL DIVIDED	90 to 110	2.0 a	2.5 a	1.5	2.0	3.0 a	
	80	2.0 a	2.5 a	1.5	1.5	2.5 a	
ARTERIAL UNDIVIDED	90 to 110	-	2.0	1.5	-	3.0 a	2.5 a
	80	-	2.0	1.5	-	2.5 a	2.0 b
COLLECTOR UNDIVIDED	90 to 100	-	1.25 c	1.0	-	2.5 a	1.5 c
	70 to 80	-	1.25 c	1.0	-	1.5 d	1.25
	60	-	1.0	1.0	-	1.5 d	1.25
LOCAL UNDIVIDED	60 to 80	-	1.0	0.5	-	1.25	0.5 d

Notes:
1. If a barrier is to be placed between the sidewalk and roadway, then clearance should be the same as when there are no sidewalks.
2. All clearance should meet requirements for sight distance.
3. The width of a median on a bridge should match that of the approach roadway.
4. L = Length of bridge between centreline of abutment bearings.

a - For bridges with L>50 m, consideration can be given to decreasing the clearances to 1.5 m.

b - For bridges with L>50 m, consideration can be given to decreasing the clearance by up to 0.5 m.

c - For bridges with L>50 m, consideration can be given to decreasing the clearance by 0.25 m.

d - For bridges with L>50 m, consideration can be given to increasing the clearance by up to 0.75 m.

e – The values of the clearances given above are the minimum values. Consideration may be given to providing more than the minimum if justification is provided.

Table 6-6: Minimum Side Clearances at Bridges

Source: Ontario Ministry of Transportation, Geometric Design Standards for Ontario Highways,
Revision Information Sheet, February 8, 2002, Table D7-1, pg. D7-2.

6.5.4.2 Highway Interchanges

Crossing expressways such as 400-series highways pose difficult problems for designers of bicycle routes. Mixing relatively high speed, high volume motor vehicle traffic making frequent turning movements with bicycle traffic is a challenge. It is recommended that the best practices for a designer should be to provide clearly delineated space for cyclists and to provide them ample time to choose when to cross merging and diverging traffic.

Recognizing that there is a growing demand from pedestrians and cyclists to cross highway interchanges, the Ontario Ministry of Transportation (MTO) is embarking on a study in 2009 to review interchange design and possible improvements for each interchange type to better accommodate pedestrians and cyclists, while considering the needs and impacts on all road users. It is

Recognizing that there is a growing demand from pedestrians and cyclists to cross highway interchanges, the Ontario Ministry of Transportation (MTO) is embarking on a study in 2009 to review interchange design and possible improvements for each interchange type to better accommodate pedestrians and cyclists, while considering the needs and impacts on all road users.

expected that the study will result in new recommendations, and as a result this section of the Planning, Design and Operation Guidelines will have to be subsequently reviewed and revised accordingly.

Currently, MTO and TAC provide recommended designs for accommodating cyclists at highway interchanges. The configurations illustrated in Figures 6.37 through 6.39 are recommended for on-road cycling routes crossing over uncontrolled ramps along high-speed roadways (>70 km/h). For lower-speed roadways (≤70 km/h), the configurations illustrated in Figures 6.40 through 6.43 are recommended.

One of the current design solutions (see Figure 6.38), the "jug handle" crossing of an off-ramp is under review by the MTO along with other approaches to crossing interchanges. One of the issues with the "jug handle" design is that motor vehicles typically begin to accelerate as they approach and enter the off-ramp, especially if it serves as a highway on-ramp and therefore are travelling at increased speed when they approach the "jug handle" crossing location down the ramp. Moreover, motorists are typically focused on the need to accelerate to highway speed to merge into the highway lanes and may not be anticipating the need to slow down on the ramp if a pedestrian or cyclist is attempting to cross the ramp at the "jug handle" crossing location. The MTO is expected to release an internal report on these types of crossings in late 2011 or 2012.

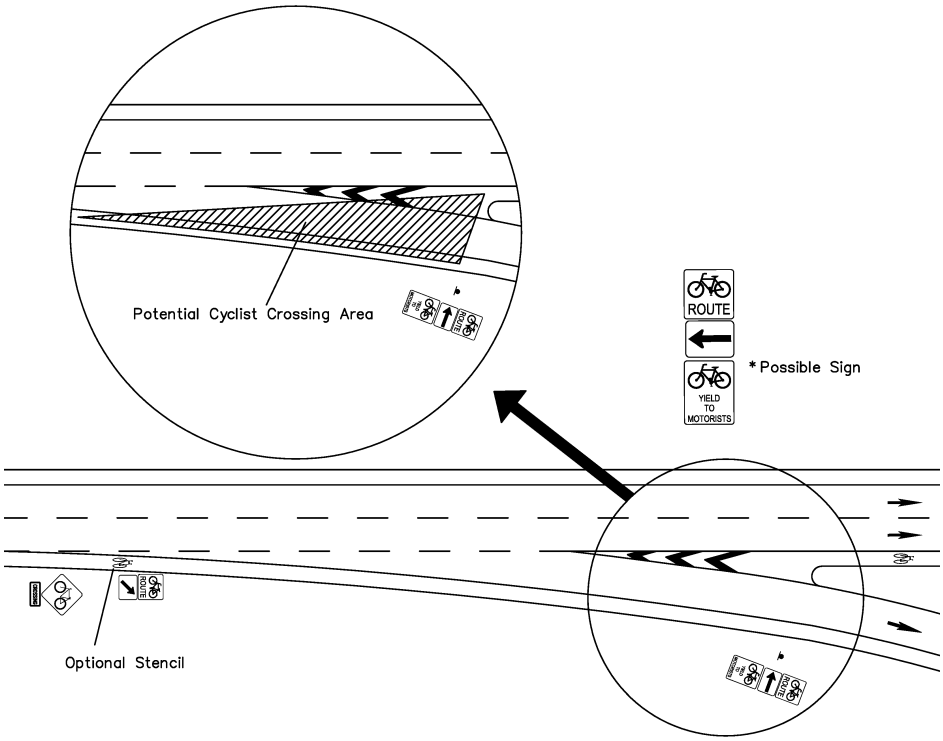


Figure 6.37 – Cyclist Crossing at High-Speed (>70 km/h) Interchange Off-Ramp Along the Ramp – No Crossing Area Cyclist Markings

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.10 (2007)

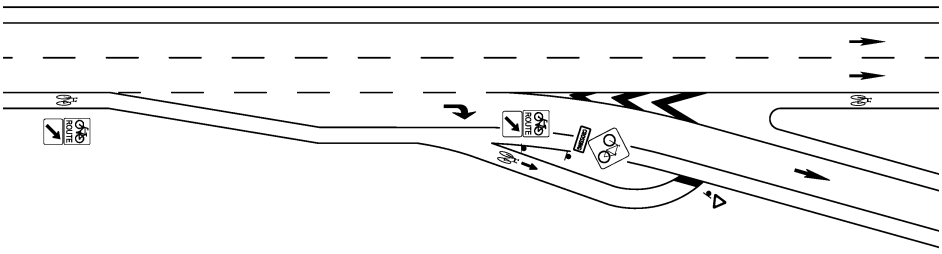


Figure 6.38 – Cyclist Crossing Off-Ramp with Jughandle

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.11 (2007)

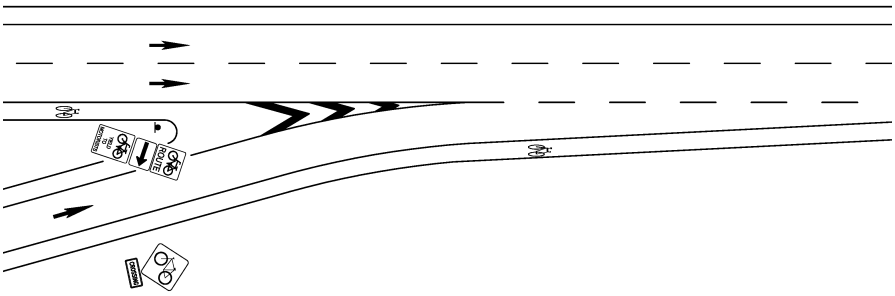


Figure 6.39 – Cyclist Crossing at High-Speed (>70 km/h) Interchange On-Ramp

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.12 (2007)

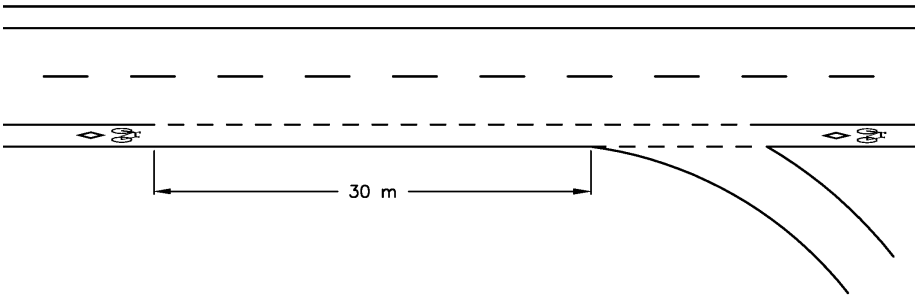


Figure 6.40 Bicycle Lane Across Lower-Speed (≤70 km/h) Roadway Off-Ramp

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.13 (2007)

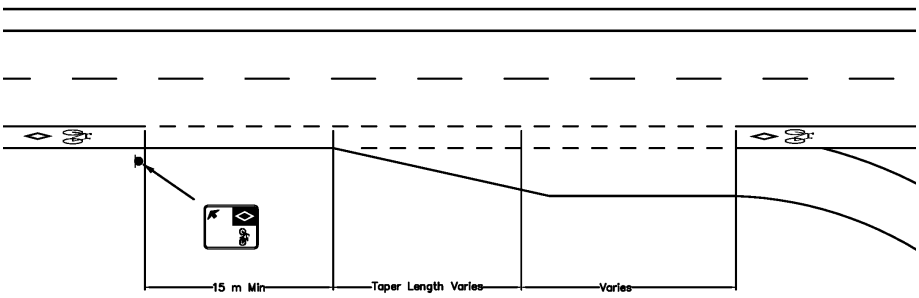


Figure 6.41 – Bicycle Lane Across Lower-Speed (≤70 km/h) Roadway Off-Ramp with Parallel Lane

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.14 (2007)

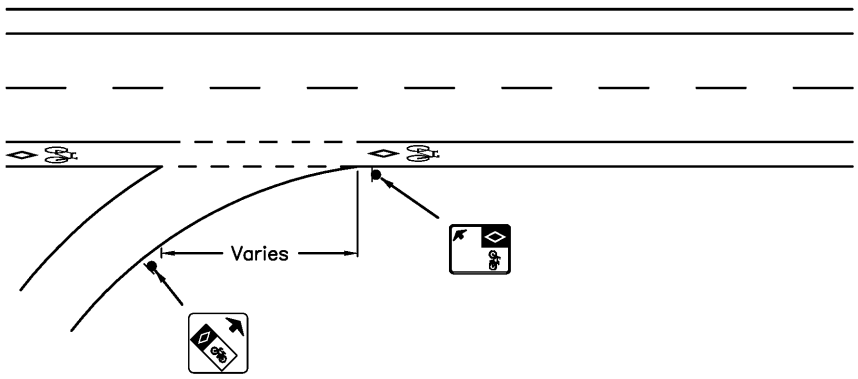


Figure 6.42 – Bicycle Lane Across Lower-Speed (≤70 km/h) Roadway On-Ramp With No Acceleration Lane

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.15 (2007)

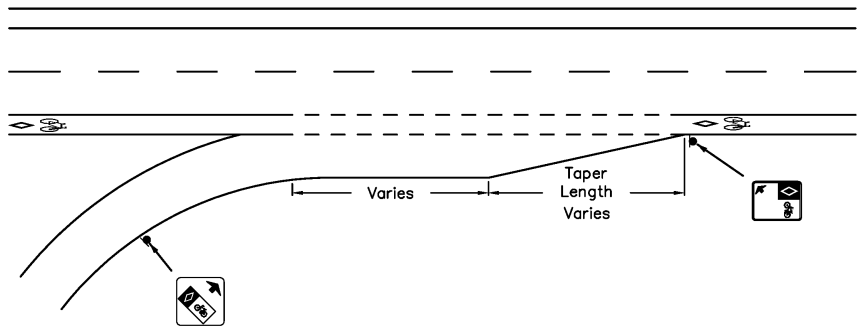


Figure 6.43 – Bicycle Lane Across Lower-Speed (≤70 km/h) Roadway On-Ramp With Acceleration Lane

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.16 (2007)

The TAC design standards for bicycle routes crossing expressway entrance ramps are presented in Table 6-7. Coloured pavement may also be considered for the portion of the bicycle route crossing the motor vehicle travel lane.

Table 6-7: Design Standards for Bikeways Crossing Expressway Entrance Ramps

Design Standard	Taper (T) Length (m)[a]	Parallel (P) Length (m)[a]	Width (W) Length (m)[b]	Bike Path Radius (°)	Path Inter. Angle (°)	Terminal Radius (m)
Minimum	11	11	4	20	65	6
Desirable	13	13	5	20	70	8
Preferred	14	14	6	20	75	10

Notes: a) Measured parallel to edge of ramp pavement.
b) Measured perpendicular to edge of ramp pavement.

Source: Geometric Design Standards for Canadian Roads, TAC, 1999 (TAC Table 3.4.7.2)

Guidelines:

6.48 The TAC standards for accommodating on-road bikeways over expressway interchanges should be adopted by the County for future cycling facilities. These guidelines should be reviewed following completion of MTO's yet to be completed internal study of interchange design for accommodating pedestrians and cyclists.

6.49 In situations where it may be more desirable to allow a cyclist to choose their own merge, weave or crossing manoeuvres, it is recommended that the pavement markings for the bicycle lane be discontinued through the crossing area.

6.50 Coloured pavement may also be considered for the portion of the bicycle route crossing the motor vehicle travel lane.

Railway crossings can be challenging for all users. Therefore, extra caution should be applied to assure their safe operation. It is recommended that appropriate traffic control devices be installed at the intersections of railway tracks and network routes.

6.5.5 Railway Crossings

Railway crossings can be challenging for all users. Therefore, extra caution should be applied to assure their safe operation. It is recommended that appropriate traffic control devices be installed at the intersections of railway tracks and network routes. These include:

- Pavement markings;
- Signage; and
- Lift gates where specified by Transport Canada guidelines.

The aforementioned traffic control devices should be designed and installed in accordance with the Bikeway Traffic Control Guidelines (TAC 1997), Manual of Uniform Traffic Control Devices for Canada (TAC 1998), and RTD-10, Road/Railway Grade Separations (Transport Canada, October 24, 2002).

Careful consideration should be given to the design of at-grade crossings of railways. Furthermore, it is recommended that crossings be designed as close to right angles as possible. In many situations this may require widening of a network segment in advance of the crossing, thereby allowing cyclists, to reduce their speed and position themselves for crossing at right angles.

Rubber track guards are also recommended to improve friction between bike tires and the pavement, and also to narrow the rail gaps. Clearly visible signage should also be displayed to forewarn of an approaching railway crossing, and possible tripping hazards when walking or running over them. Pavement crossing surfaces should also be paved, and inspected regularly during road inspections for signs of deterioration around the tracks. Pavement deterioration adjacent to railway tracks can be a potential hazard, especially to those in wheelchairs since tires could get caught in the rails.

Figures 6.44 to 6.47 illustrate recommended options for skewed railroad crossings. While these examples illustrate bicycle lanes, similar applications could be made using sidewalks or multi-use trails.

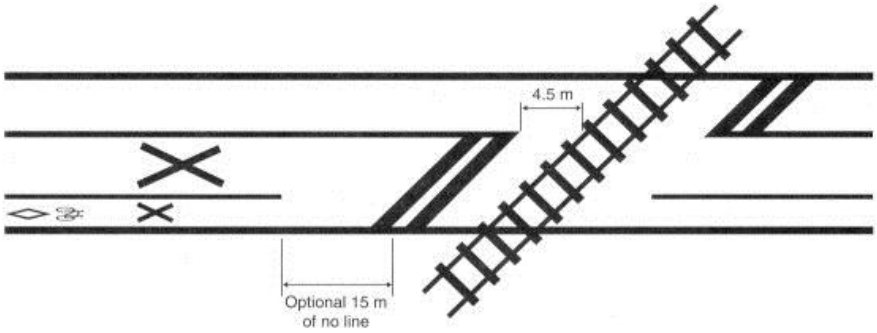


Figure 6.44 – Skewed Railroad Crossing with Restricted Right-of-Way Width

Pedestrian/Trail Crossing of a GO Transit rail corridor, Newmarket, Ontario.
Photo Credit MMM Group

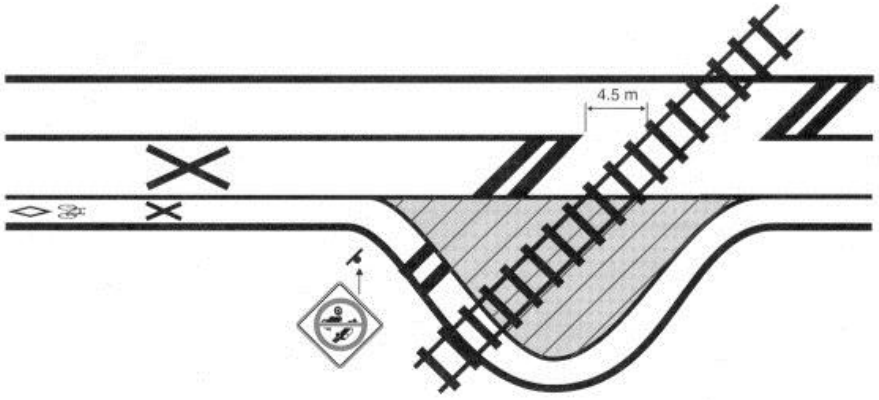


Figure 6.45 – Skewed Railroad Crossing with Unrestricted Right-of-Way Width

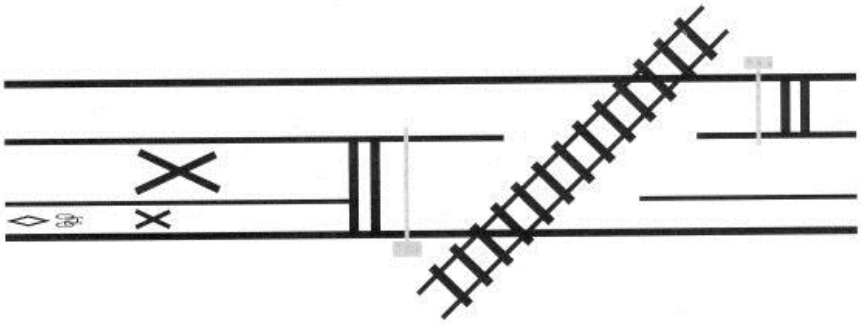


Figure 6.46 – Skewed Railroad Crossing with Restricted Right-of-Way Width and Gate Control

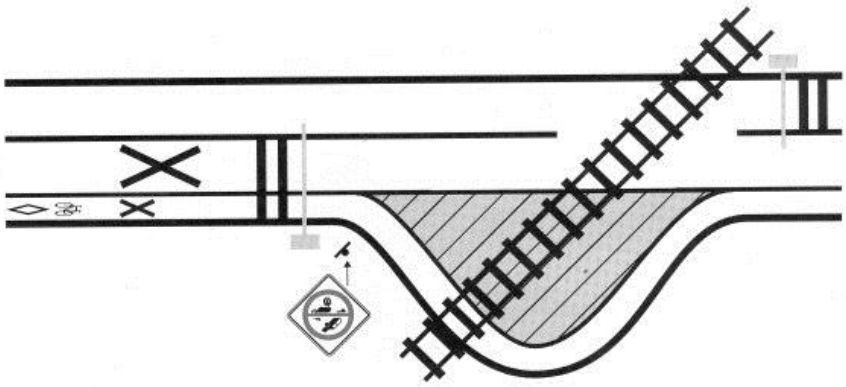


Figure 6.47 – Skewed Railroad Crossing with Unrestricted Right-of-Way Width and Gate Control

6.5.6 Mid-Block Crossings

One of the key challenges for implementing a connected multi-use recreational and boulevard trail network is how to accommodate a trail crossing of a roadway that is not located at a signalized intersection. Ideally, a trail crossing should occur at an existing signalized or stop controlled intersection, or if at a mid-block location, by way of a grade separated crossing such as an underpass or bridge. Unfortunately, these ideal crossing solutions cannot always be achieved.

The location of the trail and its existing or preferred alignment and desire line for trail users may mean that crossing at an existing or future protected crossing is impractical. In addition, when retrofitting a roadway to accommodate a trail crossing, constructing an underpass or bridge for the trail is not always a feasible solution from both a design and cost perspective.

When a mid-block crossing is necessary, it should be designed to provide advance warning of the impending crossing to motorists, pedestrians and cyclists. The trail should be designed and signed to encourage the user to reduce speed and stop. Grade changes on the trail in advance of the crossing combined with adequate sight distances, signing, textural surface contrast and bollards should be considered. Mid-block crossings of arterial or collector roads may warrant consideration of a separate traffic signal or a pedestrian crossover. Figures 6.48 and 6.49 show the recommended designs for mid-block crossings from TAC's Guidelines for the Design and Application of Bikeway Pavement Markings in signalized and unsignalized situations respectively.

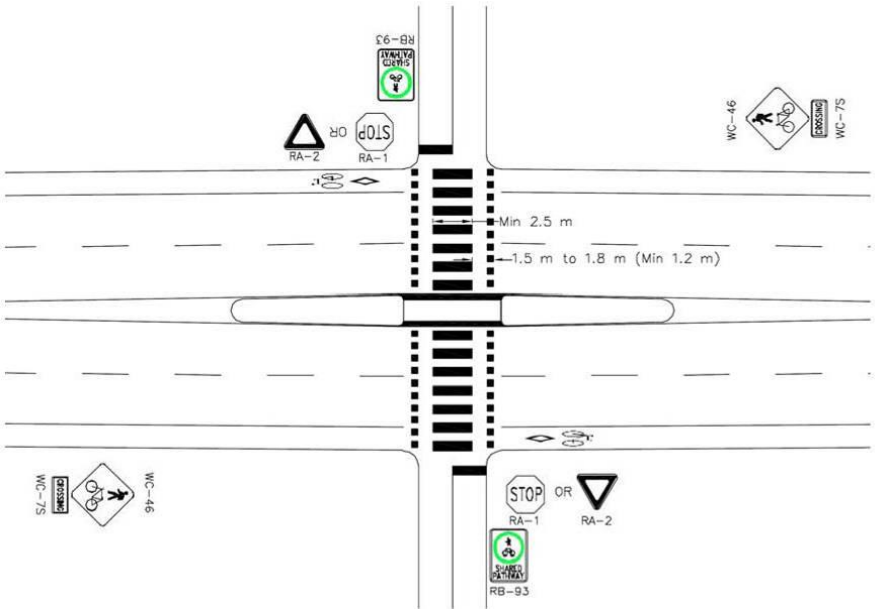


Figure 6.48 – Mid-block Trail Crossing – Unsignalized (Combined Multi-Use Trail)

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.20 (2007)

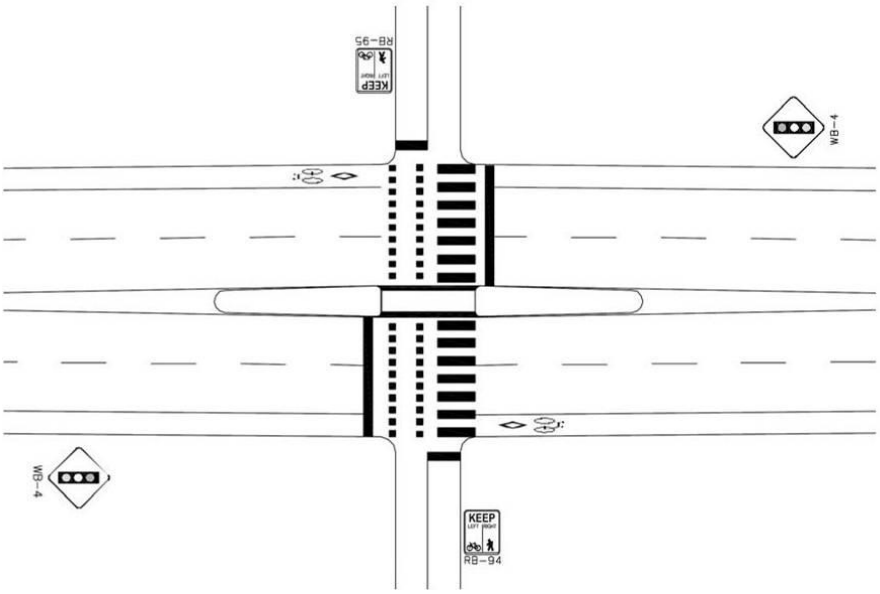


Figure 6.49 – Mid-block Trail Crossing – Signalized (Separate Bike Crossing)

Source: TAC Guidelines for the Design and Application of Bikeway Pavement Markings – Figure 3.21 (2007)

It should be noted that the TAC designs presented above do not incorporate a perpendicular sidewalk along the cross-street. An alternative treatment presented in Figure 6.50 illustrates one example of how this situation can be addressed at a mid-block trail crossing.

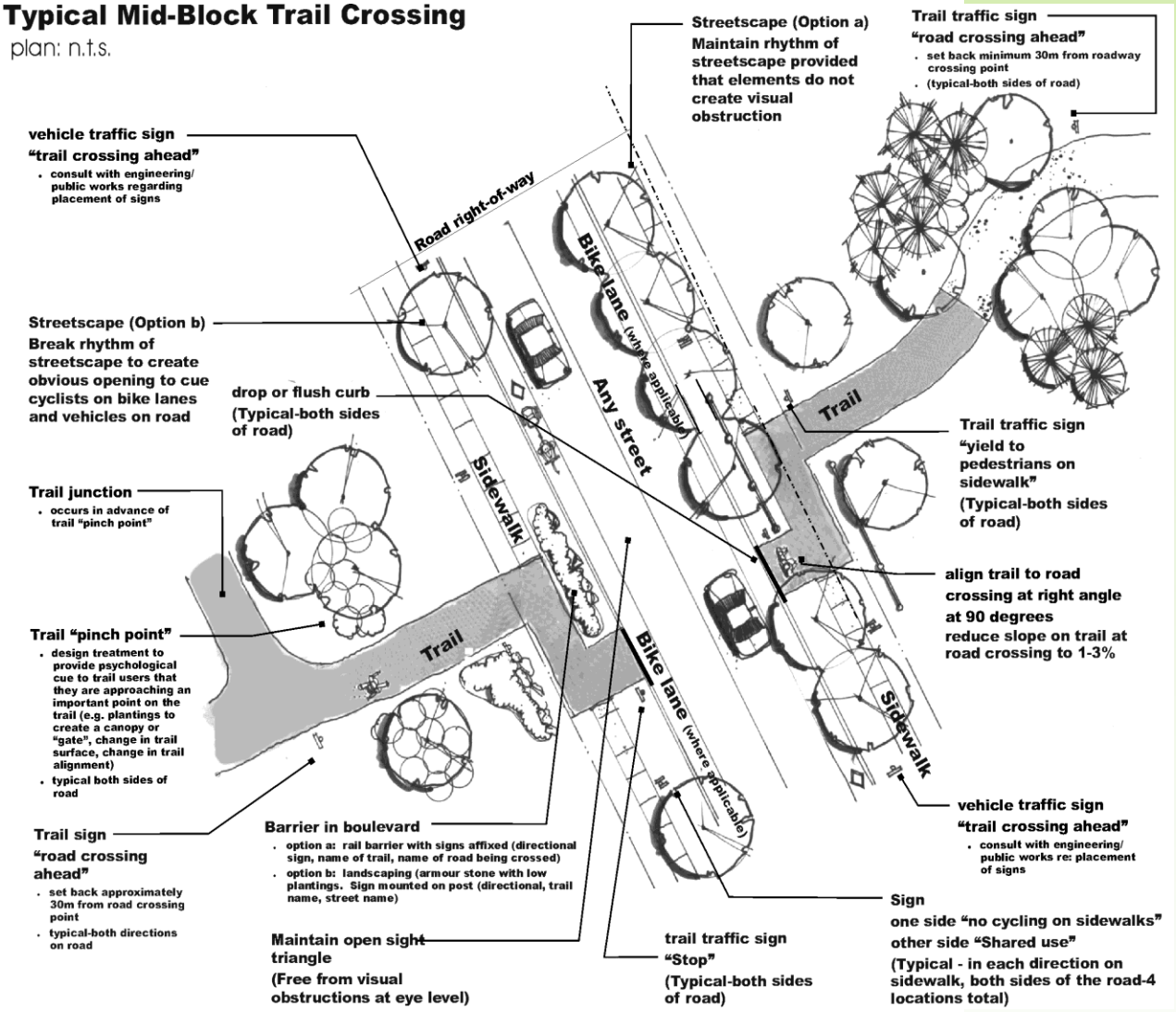


Figure 6.50 – Elements of Trail Crossings of Roadways

Consideration should also be given to changing the texture / colour / elevation of the roadway itself (in addition to the detail that is paid to the treatment of the approach) to provide drivers with a visual cue to exercise caution.

Highly visible street markings should be present at uncontrolled pedestrian crossings, and it is recommended that double-posted pedestrian crossing signs be installed on both sides of the roadway. This would help make drivers more aware of the pedestrian crossing upon their approach.

6.5.6.1 Mid-Block Crossing Warrant

If the trail crossing is within the given distance of a signalized or stop-controlled intersection, or a formal pedestrian crossing, trail users should be directed to cross at this location. The following are considered acceptable threshold distances for mid-block crossings:

- 2 Lane Roadway: 60 metres from nearest protected crossing; and
- 4 to 6 Lane Roadway: 120 metres from nearest protected crossing.

In addition, adequate site distance along the roadway is required for a cyclist who has dismounted at the "stop" sign at a mid-block crossing, to be able to completely cross the entire roadway without impeding the progress of a vehicle approaching from the cyclist's right side. Figure 6.51 illustrates how sight distance is determined, while Table 6-8 provides values for a range of widths and design speeds.

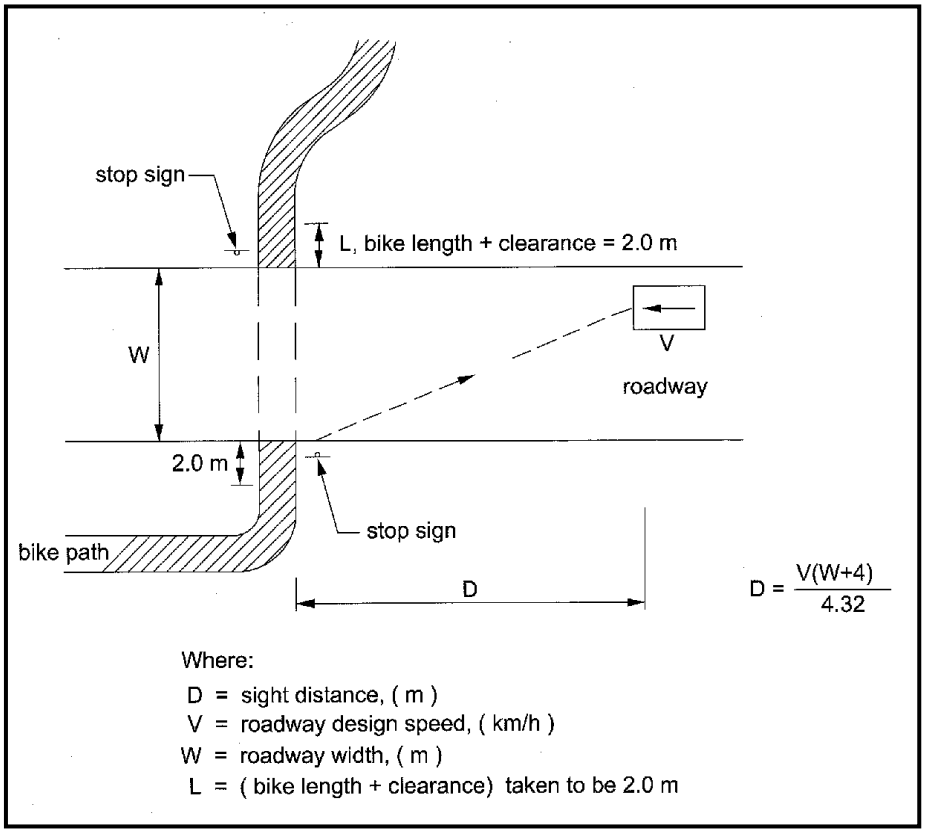


Figure 6.51 – Minimum Sight Distance for Bike Path Crossing

(TAC GDGCR, 1999, Figure 3.4.7.2)

Width of Roadway - W (m)	Minimum Sight Distance (D) to Approaching Vehicle (m) Roadway Design Speed (km/h)			
	50	60	70	80
7.0	130	150	180	200
10.5	170	200	230	270
14.0	210	250	290	330
17.5	250	300	350	400
21.0	290	350	410	460

Note: Values for other roadway widths and/or design speeds may be derived from the formula in Figure 3.4.7.2.

Table 6-8: Minimum sight Distance for Mid-Block Crossing

(Bike Path Crossing)

(TAC, GDGCR, 1999. Table 3.4.7.1)

6.5.7 Off-road Corridors

6.5.7.1 Parks and Open Space Trails Design and Construction Guidelines

The County of Essex currently does not have a set of standards for off-road trail construction. Each trail in the County is designed on a 'case-by-case' basis due to the different merits to each situation. Current practices include the provision of paved pathways within parks, granular pathways surrounding stormwater management facilities and natural areas, and mulch pathways for ecologically sensitive or limited access areas. These pathways are generally 1.5 to 2.5 metres in width. For cycling purposes, multi-use trails must have a minimum 3.0 metre width and if it is intended for year-round use, the pathway should be paved.

Photo Credit: Richard Dhrul

6.5.7.2 Rails with Trails

Active rail lines can also serve an active transportation function. These rail lines typically have a wide enough right-of-way to safely accommodate a multi-use trail in addition to existing rail operations. This can also work in reverse: should abandoned rail lines that currently host multi-use trails be needed in the future for rail operations, it is possible to reinstall the rail infrastructure without losing the use of the multi-use trail. Examples of trail facilities adjacent to a rail corridor are illustrated in Figures 6.52 and 6.53.

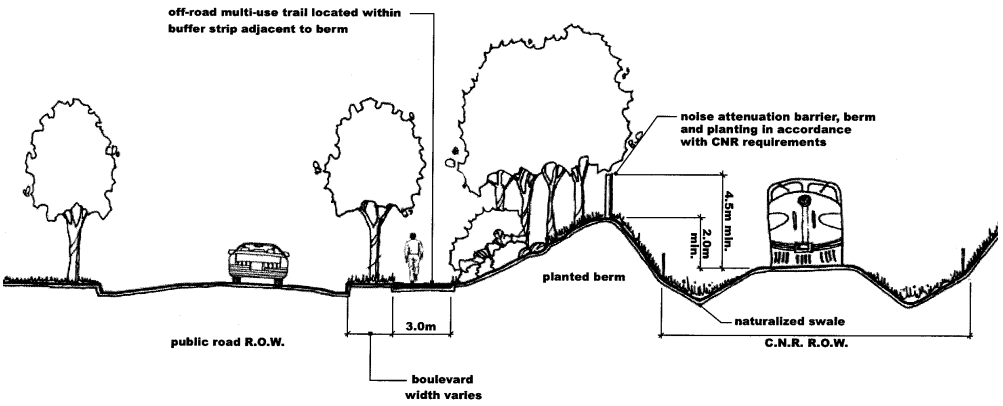


Figure 6.52 – Typical cross-section of a trail facility adjacent to a rail corridor separated by a planted berm

Source: Stantec Consulting Ltd. (formerly ESG International) Public Open Space Plan, Town of Whitchurch, Stouffville, Functional Servicing Study, Southeast Quadrant OPA 101 Secondary Plan, May 2002

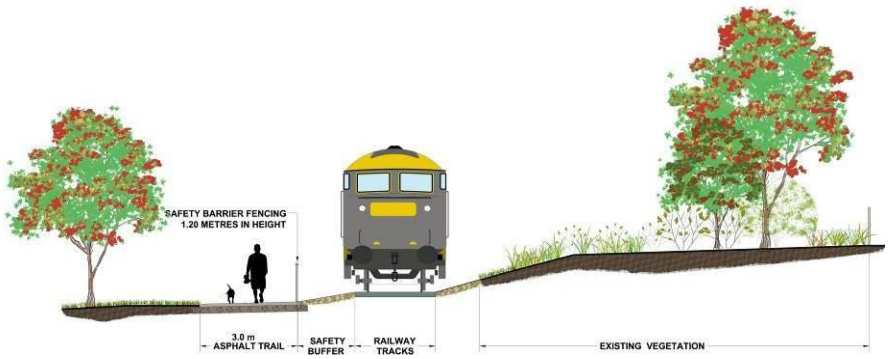


Figure 6.53 – Typical cross-section of a multi-use trail facility adjacent to a rail corridor separated by a fence

Source: Guelph, ON

Guidelines:

6.51 Railroads with wide enough rights-of-way can typically accommodate a multi-use trail.

6.52 Trails adjacent to active and/or under-utilized rail corridors should be separated from the rail line through the provision of a planted berm and fence.

6.5.7.3 Off-Road Barriers

Barrier protection may be required along a multi-use trail for a number of reasons: to protect the trail, the user or the natural environment. Most commonly, fence or railing type barriers are provided to protect users from dangerous situations or to discourage access to sensitive areas.

To prevent access by unauthorized users such as motor vehicles, barriers should be installed at trail entrances. Barriers should be clearly marked and visible, otherwise they can become a hazard to trail users. Trailside signage alerting users of the upcoming barriers should be appropriately located to provide adequate time to slow down and/or stop as required.

Care should be taken to ensure that barriers do not make access difficult for those with disabilities or for inexperienced users wherever possible. Suitable barriers associated with trails are bollards, gates, fences, and natural barriers.

Bollards should be located at trail access points where vehicle access must be restricted. Where it is required that maintenance or emergency vehicles have access to trails, a collapsible or knockdown bollard is a suitable alternative. In a natural situation, timber bollards are preferred; metal is suited to urban environments. Bollards should also have reflective surfaces facing a cyclist's direction for night time visibility.

Swinging gates can be used to prevent motorized vehicles (including ATV's) from accessing trails, but do not prevent many other activities unless locked. Gates should be easy to open and should be well marked, particularly for night time visibility.

Railings and fences are required to protect the user from a hazardous situation, and should be constructed to conform to local building codes. Timber or stone construction is best suited to natural situations while metal or a combination of wood, metal and in some situations stone may be more appropriate for urban and heavy use areas.

Landscaping treatments, such as the strategic placement of stones, can provide a natural barrier that can successfully deter undesired access.

Guideline:

6.53 Barriers should be considered at off-road trail entrances to prevent access by unauthorized users such as motor vehicles, and to caution trail users that they are entering or exiting a trail environment.

6.54 Other barriers should be installed where appropriate and should not restrict access to those with disabilities.

6.5.7.4 Trail Junctions

Trail junctions are an intersection of two or more trails and may include a multi-use trail in a road right-of-way. Junctions are ideal locations for rest stops and wayfinding signage. It is important that adequate sight lines be provided at trail junctions to avoid collisions between users. Figure 6.54 illustrates an example of a trail junction.

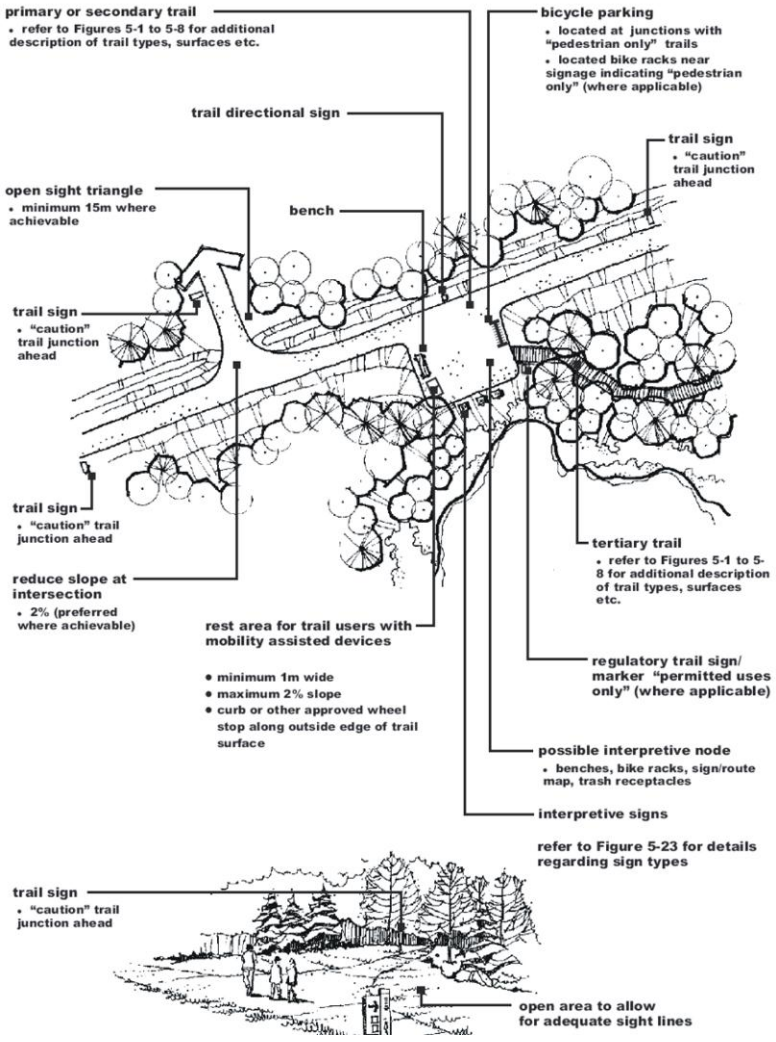


Figure 6.54 – Example of a Trail Junction

Source: Guelph Trail Master Plan (Stantec Consulting and MMM Group Limited)

6.5.7.5 Trail Bridges

There are typically two basic types of trail bridges: linear or ramped-type bridges. The approach paths of a flat or linear-type bridge do not ramp significantly. This type of bridge crosses over travel barriers such as waterways that are lower in elevation than the trail. The approach paths of a ramped-type bridge are sloped to gain elevation and cross barriers such as a railway that are at the same elevation or higher than the trail. These two bridge types are illustrated in Figure 6.55.

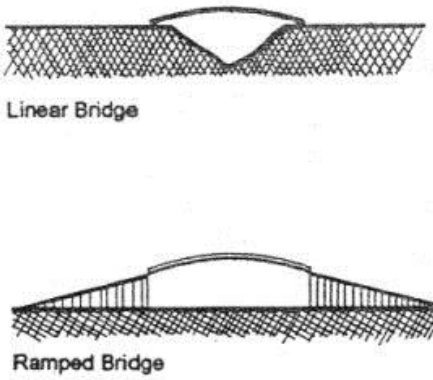


Figure 6.55 – Linear and Ramped Bridges

Photo Credits: MMM Group

In general, a linear-type bridge is preferable because it is the simplest to build and has a flat runout, ensuring access for all trail users. Space limitations and increased bridge heights on ramped bridges may require ramp grades as steep as a maximum of 8 percent, which can cause excessive exit speeds. This is especially hazardous if the end of the bridge is located at an intersection.

In these situations, curved ramps should be used. Wherever possible, ramps should be elliptical or circular rather than being interrupted by 180 degree turns at landings. In addition, bridge approaches should not be located near intersections, both road-trail and trail-trial, or where visibility is limited.

Bridges should be 0.6 m wider (0.3 m wider on each side) than the trails they are serving, to provide adequate side clearance for the railings. They should also be wide enough and strong enough to support maintenance vehicles where required. An immovable bollard located at the centre of each approach can be used to prevent heavy vehicles from crossing a light duty bridge.

The bridge travel surface should be a non-slip material. Untreated wood or flat metal surfaces become slippery when wet or icy. Bridge slats made of self-weathering steel with raised dimples for traction have been used successfully. Open metal grating, on the other hand, is noisy and provides a less desirable riding surface for cyclists.

Bridges less than 3.6 metres wide should not be configured in a way that encourages two-way cycling traffic or encourages cyclists to ride on them or

as part of a high use multi-use path. Warning signage and centre line bollards can be used to slow cyclists down and alert them to a constricted bridge crossing ahead. In some cases, it may be necessary to sign the bridge as a pedestrian only bridge and request that cyclists walk their bicycles.

Typically pre-fabricated bridges are recommended as a cost-effective solution, except when crossing very wide spans or 400 series highways. Key design considerations include:

Surface type:

- Applying stain grit to paint and using this to cover the wooden surface, adding a "rough" texture. This however wears down over time and must be re-applied.
- Apply asphalt shingles or tar and stone to the wooden surface of the bridge to increase the traction and "grip" on the bridge.
- Place an open webbed rubber track on top of the wooden surface to provide more traction.
- Metal grate surfaces are effective also, but they tend to be more expensive and are not as desirable for in-line skaters and cyclists. Concrete surfaces are often used for major and more expensive crossing structures.
- Vertical railings should be located on the outside of the bridge structure to avoid damage by service and snow removal vehicles.
- Cover plates should be used to cover expansion joints.

Guidelines:

6.55 Multi-use trail bridges should be designed with non-slip surfaces, have vertical railings attached to the outside of the structure and include cover plates over expansion joints.

6.5.7.6 Safety "Rub Rails" and Railing Height

Along off-road multi-use trails with railings, a "rub-rail" should be provided to prevent cyclist's handlebars from catching the vertical supports of the railing. Figure 6.56 illustrates a "rub-rail". A rub-rail should be a minimum 20 cm strip of smooth surfacing along its length, placed at a height ranging between 0.90 m and 1.1 m.

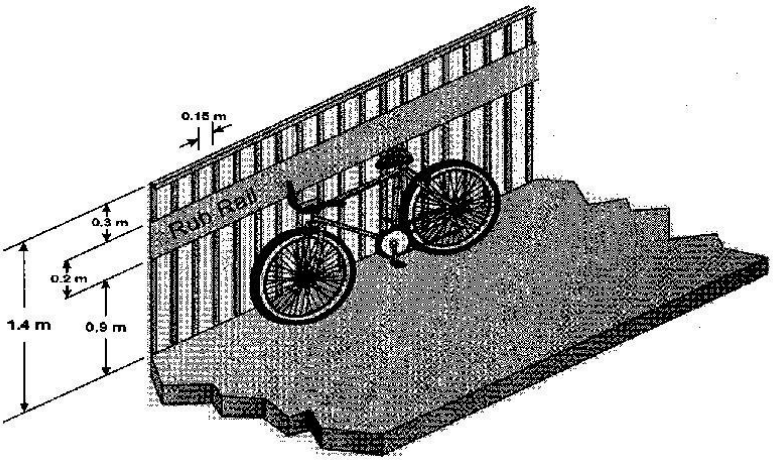


Figure 6.56 – Safety Rub-Rail

Source: Figure 2.18, Bicycle Facility Design Guidelines, Appendix 1, City of Nanaimo, 2003

Example of a Rub Rail
Photo Credit: Richard Dhrul

Guideline:

6.56 Safety "rub-rails" may be considered along bicycle trails with railings to prevent a cyclist's handlebar from catching the vertical supports of the railing.

This section outlines a number of key cycling network design features and guidelines that should be considered by County staff when implementing the Essex County Wide Active Transportation Study. The next section (section 6.6) identifies a number of network amenities and support elements like bicycle parking.

6.6 NETWORK AMENITIES

The provision of network amenities is a key and sometimes overlooked element of cycling network design. Developing and maintaining a comprehensive network of on-road and off-road active transportation facilities does not automatically mean people will use the network. The network has to be promoted, users need to feel comfortable and safe in using it, and they should have access to adequate trip-end facilities at strategic locations.

This section outlines many of the amenities that should be considered during the design and implementation of the cycling network.

6.6.1 Trip End Facilities for Commuters

Installation of showers and lockers at workplaces and educational institutions help to promote the use of the network for utilitarian purposes. Lockers can be used to store personal belongings such as cycling accessories and a change of clothing. Businesses or institutions with employees who commute by bicycle, or other modes should be encouraged to offer these facilities.

Consideration should be given to promoting and / or implementing trip-end facilities as part of efforts to apply a County-wide transportation demand management (TDM) strategy.

Installation of showers and lockers at workplaces and educational institutions help to promote the use of the network for utilitarian purposes.

Guidelines:

6.57 The County of Essex and its partners should provide trip-end facilities for employees and visitors at all public buildings where feasible, and the private sector should be encouraged to do the same in both residential and commercial buildings.

6.58 Consideration should be given to promoting and / or implementing trip-end facilities as part of efforts to apply a County-wide transportation demand management (TDM) strategy.

6.6.2 Bicycle Parking

The provision of bicycle parking facilities is essential for encouraging more bicycle use in the County of Essex. The lack of adequate bicycle parking supply or type can deter many from considering using their bicycle as a basic mode of transportation.

This section lists guidelines on the basic elements of a bicycle parking rack, site and location that the County should refer to when installing new bicycle parking facilities.

Higher order bicycle parking facilities should be considered for major destinations and transit nodes. For example, GO Transit has developed and is currently implementing a higher-volume covered bike parking facility at several of its GO Train stations. There is a movement to develop "mobility hubs" across the Greater Toronto and Hamilton Area (as described in Metrolinx's Regional Transportation Plan) usually characterized by a number of services that may include secure covered bicycle parking and in some cases bicycle repair service. Consideration should be given to providing higher-volume secure bike parking facilities at mobility hubs within the

County of Essex. One example of a mobility hub is a GO rail station, where GO Transit bus and rail, local transit, and active modes come together, and where automobile parking is provided. There are other forms of mobility hubs that differ from this example.

6.6.2.1 Bicycle Racks

Bicycle racks are made up of the following four main components:

- The rack element;
- The rack;
- The rack area; and
- The rack area site.

Bicycle rack elements can be joined on any common base or arranged in a regular array and fastened to a common mounting surface.

These four components are described in greater detail in the following sections.

Bicycle Rack Element

The bicycle rack element is the portion of a bike rack that supports the bicycle. Bicycle rack elements can be joined on any common base or arranged in a regular array and fastened to a common mounting surface. The racks may be used to accommodate a varying number of bicycles securely in a particular location. Various types of available bicycle rack designs include the "Ribbon" rack, the "Ring" rack, the "Ring and Post" rack and the "Swerve" rack. Figures 6.57 and 6.58 illustrate these rack designs.

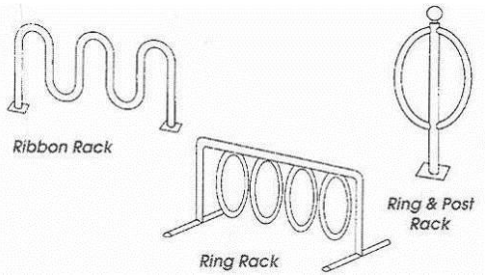


Figure 6.57 – Various Bicycle Rack Designs

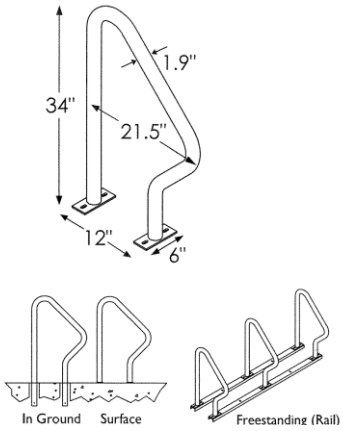


Figure 6.58 – Swerve Rack Design

The rack element should:

- Support the bicycle upright by its frame in two places;
- Prevent the wheel of the bicycle from tipping over;
- Enable the frame and one or both wheels to be secured;
- Support bicycles without a diamond-shaped frame with a horizontal top tube;
- Allow front-in parking: a U-lock should be able to lock the front wheel and the down tube of an upright bicycle; and
- Allow back-in parking: a U-lock should be able to lock the rear wheel and seat tube of the bicycle.

Bicycle racks should not only allow for a secure lock between the bicycle and the rack, but should also provide support for the bicycle frame itself.

The rack element should also be designed to resist being cut or detached by common hand tools such as bolt and pipe cutters, wrenches and pry bars which can easily be concealed in backpacks.

Bicycle Rack

Bicycle racks should consist of a grouping of the rack elements either by attaching them to a single frame or allowing them to remain as single elements mounted in close proximity to one another. Racks, whether as single units or grouped together, should be securely fastened to a mounting surface to prevent the theft of a bicycle attached to a rack. Another alternative is to create a bicycle rack that is so large that it

cannot be easily lifted or moved from its position with bicycles attached.

Figure 6.59 illustrates a bicycle rack made up of three rack elements.

Bicycle racks should consist of a grouping of the rack elements either by attaching them to a single frame or allowing them to remain as single elements mounted in close proximity to one another.

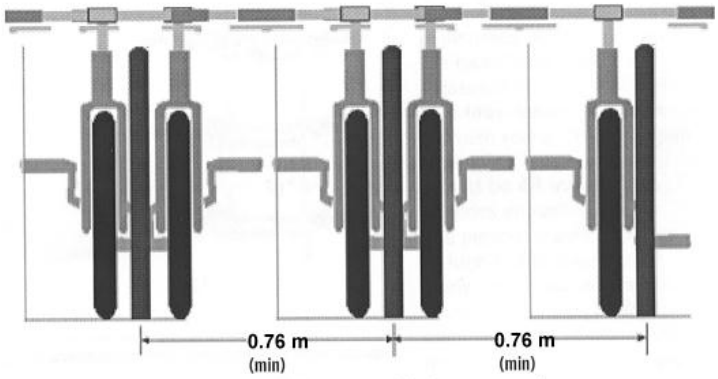


Figure 6.59 – Bicycle Rack

Revised Figure from Bicycle Parking Guidelines:
The Association of Pedestrian and Bicycle Professionals (APBP), www.apbp.org

Easy and independent bike access should be provided to the bicycle rack. Inverted "U" rack elements should be mounted in a row and placed on 750 mm (approximately 30") centres to allow enough room for two bicycles to be secured to each rack element. Bicycle racks should be arranged in a way so that is quick, easy and convenient for a cyclist to lock and unlock their bicycle to or from a rack.

Bicycle Rack Area

The rack area is essentially the "bicycle parking lot" and refers to the area where more than one bicycle rack is installed. Bicycle racks are separated by aisles, much like a typical motor vehicle parking lot. The recommended minimum width between aisles should be 1.2 m to provide enough space for one person to walk with one bicycle. Aisle widths of 1.8 m are recommended in high traffic areas where many users may retrieve their bicycle at the same time, such as after a school class. A 1.8 m depth should be provided for each row of parked bicycles since conventional bicycles are just less than 1.8 m long and can be accommodated in that space.

Large bicycle rack areas with a high turnover rate of arriving and departing cyclists should have more than one entrance to help facilitate user flow. If possible, the rack area should be sheltered to protect the bicycles from the elements by placing awnings and overhangs above the rack area.

Bicycle Rack Area Site

Bicycle racks should be placed as close as possible to the entrance that it serves, but not in a location where they would inhibit pedestrian flow in and out of the building. Rack areas should be no more than 15 m from an entrance, and should be clearly visible along a major building approach line. Bicycle rack areas that are hard to find or that are located far from a building entrance are generally perceived as vulnerable to vandalism and will generally not be used by cyclists. To encourage use of a bicycle rack by cyclists, the rack site should be clearly visible and well lit.

Multiple buildings in an area should not be served by one distant bike rack. Rather, smaller bike racks should be placed in a convenient location at each building, but not in a manner that would obstruct utility access openings, garbage disposal bins, doorways or other building access points.

Bicycle racks can be placed on concrete, asphalt or brick surfaces. Bicycle racks should be securely fastened to the surface to prevent shifting or removal. If they cannot be fastened to the surface, then they should be large and heavy enough so that they cannot be easily moved.

Bicycle racks placed on grass surfaces cannot be secured to the ground, therefore they should also be heavy enough so that they cannot be moved. To avoid excessive bicycle riding on the grass, bicycle racks should only be placed on grass surfaces located within close proximity to a paved cycling route, such as on off-road multi-use trail, or an on-road route. Bicycle racks on grass surfaces should be considered temporary, and every effort should be made to relocate them to a permanent, hard surface area or a concrete pad can be paved in an approved area to accommodate bicycle parking.

Bicycle racks should not be placed within the following areas:

- Bus loading areas;
- Goods delivery zones;
- Taxi zones;
- Emergency vehicle zones;
- Hotel loading zones;
- Within 4.0 m of a fire hydrant;

- Within 2.5 m of a driveway or access lane; and
- Within 10.0 m of an intersection.

Guidelines:

6.59 Bicycle racks should be designed to provide lateral support to the parked bicycle and should be made from materials that can resist being cut by common hand tools such as bolt and pipe cutters, wrenches and pry bars.

6.60 Racks, whether as single units or grouped together, should be securely fastened to a mounting surface to prevent the theft of a bicycle attached to a rack.

6.61 Bicycle racks should be placed adjacent to the entrance that it serves without inhibiting pedestrian flow in and out of the building. Rack areas should be no more than 15 m from an entrance and should be clearly visible along a major building approach line.

Bicycle Storage (Lockers)

Bicycle lockers are individual storage units. They are weather-protected, enclosed and operated by a controlled access system that may use keys, swipe card (key fob) or an electronic key pad located on a locker door. Some locker systems are set up for multiple users (i.e. coin operated or secured with personal locks). On average, two standard car parking spaces (of 5.6 m x 2.6 m each) can accommodate 10 individual bicycle locker spaces but this may differ depending on the locker model.

Security and durability are important criteria to consider when selecting a bicycle locker. Transparent panels are available on some models to allow surveillance of locker contents. Stackable models can double bicycle parking capacity on site. Options for customer access can vary from a simple, single-use key system to a multi-user system that allows secure access through smart card technology or electronic key pads.

Bike Lockers require a level surface, clearance for locker doors and should be located close to building entrances or on the first level of a parking garage and within range of security surveillance. Bicycle Lockers are best placed away from sidewalks and areas with high pedestrian traffic. High quality, durable models should be able to withstand regular use, intense weather conditions and potential vandalism.

The installation of lockers and showers at workplaces and educational institutions helps to promote the use of the cycling network for utilitarian purposes. Businesses or institutions with more than 20 employees commuting by bicycle should be encouraged to offer these facilities. It is recommended that consideration be given to promoting and implementing cycling supportive facilities. The development of end-of-trip facilities can strengthen the outreach of the County Wide Active Transportation Study by encouraging more residents to use cycling as a preferred mode of travel.

6.6.3 Bicycle Friendly Catch Basin Covers

Catch basin grates and utility covers are potential obstructions to cyclists, as well as in-line skaters. Therefore, bicycle-safe grates should be used, and grates and covers should be located in a manner which will minimize severe and/or frequent manoeuvring by the cyclist. When new curbed roadways are constructed or rehabilitated, curb face inlets should be considered to minimize the number of potential obstructions. Catch basin grates and utility covers should be placed or adjusted to be flush with the adjacent pavement surface.

Catch basin grates with slots parallel to the roadway, or a gap between the frame and the grate, can trap the front wheel of a bicycle, causing loss of steering control. If the slot spacing is wide enough, narrow bicycle wheels can drop into the grates. Conflicts with grates may result in serious damage to the bicycle wheel and frame as well as injury to the cyclist.

These grates should be replaced with bicycle-safe, hydraulically efficient versions. All on-road cycling facilities in urban areas with curb, gutter and storm drains should be made bicycle friendly through the provision of bicycle friendly catch basin covers.

The Region of Niagara has recently adopted a new standard for catch basin covers that is bicycle friendly. The County of Essex may want to consider a standard similar to the one used in the Region of Niagara and develop a standard bicycle friendly catch basin cover.

Rest areas should be provided along routes at areas where users tend to stop, such as interpretative stations, lookouts, restaurants, museums and other attractions / services, which are logical locations for rest areas.

Guideline:

6.62 The County of Essex should ensure that all catch basin covers are bicycling friendly. Catch basin covers on proposed bicycle routes should receive priority for adjustment.

6.6.4 Rest and Staging Areas

Rest areas should be provided along routes at areas where users tend to stop, such as interpretative stations, lookouts, restaurants, museums and other attractions / services, which are logical locations for rest areas. Ideally, there should be a rest area every five kilometres on a recreational trail or at major intersections and gathering places near on-road facilities or along sidewalks and boulevard trails. Typical furnishings to be considered include benches or tables, washrooms, drinking fountains, trash cans, information signing complete with mapping, plus bicycle parking facilities. Additional services may include an air pump, shelter and telephones.

Staging areas should be incorporated into key gateways and park areas. This will provide for access to the trail system. Potential amenities at staging areas may also include picnic facilities and automobile parking for recreational users and "Park and Bike" commuters. Should parking at a rest or staging area be necessary, the number of parking spaces required should be determined on a site-specific basis, and should account for factors such as supply and demand of automobile parking elsewhere throughout the network.

Guideline:

6.63 Rest and staging areas should be provided at strategic locations such as gathering points, attractions and destinations, as well as other locations where cyclists and pedestrians are expected to stop. The County of Essex and its partners, including the private sector, should work together to identify and implement rest and staging areas, where possible.

Section 6.5 describes a number of key network amenities, including bike parking and the need to integrate cycling with public transit that are all key features of a successful cycling system. Section 6.6 focuses on cycling network signage and wayfinding.

6.7 ROUTE NETWORK SIGNAGE

Signs along the cycling network should communicate various kinds of information to users. Recommended signage has been organized according to the following six functions:

- Bicycle Route Network Designation Signs
- Regulatory Signs
- Warning Signs
- Information Signs
- Way-finding Signs
- Interpretive Signs

All elements of the on-road network and most elements of the off-road trail network should be signed. The primary (spine) system and key elements of the secondary (neighbourhood) system should be signed. To offset the cost for signage, the County may want to consider partnerships with local corporations, municipalities or community groups for signage sponsorship.

6.7.1 Bicycle Route Network Designation Signs

Bicycle route network designation signs can be used to "brand" or identify routes that constitute the network. This type of sign may be designed in various sizes depending on its intended application. Designation signs may be mounted alone or with other signs at logical, highly visible locations on both on-road and off-road network route segments. The bicycle route sign, shown in Figure 6.60, is commonly used for this purpose. The National Capital Commission (NCC) has been very successful at "branding" the Ottawa Area's Capital Pathway network through its signing system. An example of an NCC pathway sign is shown in Figure 6.61.

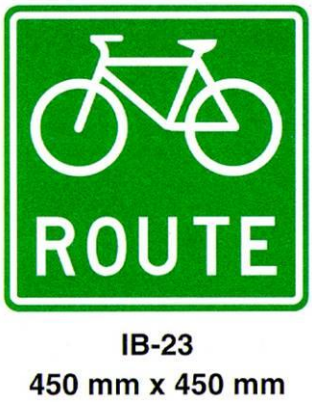


Figure 6.60 – Bicycle Route Marker Sign

Source: TAC Bikeway Traffic Control Guidelines, 1998

Figure 6.61 – Example of Proposed CWATS Sign

6.7.2 Regulatory Signs

Regulatory signs are intended to control particular aspects of travel and use along the road or off-road network. Signs restricting or requiring specific behaviour is not legally enforceable unless it is associated with a provincial law or municipal by-law. Where applicable, it is recommended that authorities discreetly include the by-law number on signs to reinforce their regulatory function. Figure 6.62 illustrates a reserved bicycle lane sign and a bicycle lane ends sign, which are currently used regulatory signs.

Figure 6.62 – Reserved Bicycle Lane and Reserved Bicycle Lane Ends Signs

Source: TAC Bikeway Traffic Control Guidelines, 1998

6.7.3 Warning Signs

Warning signs are used to highlight bicycle route conditions that may pose a potential safety or convenience concern to network users. Examples are steep slopes, share the road, railway crossings and pavement changes. These signs are diamond in shape, with a black legend on a yellow background. These signs are more applicable to cycling routes and multi-use trails than pedestrian systems. Figure 6.63 illustrates examples of warning signs.

Figure 6.63 – Examples of Warning Signs

Source: TAC Bikeway Traffic Control Guidelines, 1998

6.7.4 Information Signs

Information signs provide general information about the use and identity of the network, as well as adjacent features. Signs can communicate a single point of information on a standard sign, or a number of points on a large format signboard. Signs at trailheads, access points and gateways may

Way-finding signs may include the network logo or "brand" and communicate other information to users such as directional arrows and distances in kilometres to major attractions and settlement areas.

communicate a range of information, including maps. The preferred (as opposed to the regulated) use of the system is communicated through "use symbols" where the separation of trail users has been accommodated.

Interpretative signs provide specific information about points of ecological, historical, cultural and general interest, as well as current land uses along the network.

6.7.5 Way-finding Signs

Way-finding signs may include the network logo or "brand" and communicate other information to users such as directional arrows and distances in kilometres to major attractions and settlement areas. Way-finding signs should be mounted on standard sign poles and be located on all legs of an intersection or off-road trail junction, as well as at gateways. As an example, the City of Toronto provides way-finding signage throughout their multi-use pathway network. Signs are spaced along regular intervals along the pathway, providing route and nearby destination information to users who will confirm or make a decision about their intended route. Route confirmation signage is placed at every kilometre along the route, while route decision signage is placed prior to any pathway intersection. The County of Essex should consider a similar way-finding signage strategy throughout the cycling network, including both on and off-road facilities.

6.7.6 Interpretive Signs

Interpretative signs provide specific information about points of ecological, historical, cultural and general interest, as well as current land uses along the network. They represent a broad range of possible sign formats and applications, depending on the interpretative program and complexity of information to be communicated. In order to maximize the ease of understanding, signage for the cycling network should be consistent.

Guidelines:

6.63 The County should develop a formal logo for the cycling network, similar to that already developed for the off-road trail system.

6.64 The County should develop and implement a formal on-road and off-road signing plan to support the existing and proposed pedestrian and cycling network.

6.65 The County should ensure that all designated bicycle routes are properly signed.

6.66 All signage should be consistent throughout the County of Essex.

Recommendations:

6-1: Apply prevailing, recognized and best available guidelines and standards in the planning, design, construction, maintenance and operations of active transportation facilities (pedestrian & cycling) (short term); and

6-2: Refer to the suggest guidelines set out in the Active Transportation Planning and Design Guidelines, TAC and the MTO when implementing the CWAT Master Plan (short term).

7.0 IMPLEMENTING THE PLAN

The County of Essex County Wide Active Transportation Master Plan is a blueprint intended to guide the decisions made and provide the tools and policies necessary to implement a county-wide active transportation strategy. This Master Plan is also intended to complement and support local municipal AT plans and initiatives. The proposed infrastructure improvements and additions require a clear implementation strategy that prioritizes routes for both new construction and rehabilitation. However, it is important to keep in mind that the Active Transportation plan will not only be an infrastructure plan. It is a plan that includes a set of recommendations and policies to be considered for adoption by the County in partnership with local municipalities, ERCA, Go for Health Windsor-Essex and the Windsor Essex County Health Unit and other stakeholders. These recommendations and policies are to be used to promote safe active transportation in the County of Essex and to recognize and promote the economic, health and quality of life benefits that this form of transportation and recreation can offer. The proposed network is supported and complemented by a number of outreach initiatives (proposed in further detail in this chapter) and suggested policies and recommendations that can be used to encourage active transportation throughout the County. It is important to note that the timing (i.e. Phase 1, 2 or 3) for each recommendation has been proposed in this master plan.

The County of Essex County Wide Active Transportation Master Plan is a blueprint intended to guide the decisions made and provide the tools and policies necessary to implement a county-wide active transportation strategy.

However, many of the recommendations and initiatives are expected to take a number of years to implement (or will be ongoing), and the schedule for implementation will be adjusted over time as necessary.

This chapter outlines a suggested strategy for implementing the recommendations of the County of Essex's CWAT Master Plan. The recommended implementation strategy includes a Twenty (20 +) Year Implementation Strategy consisting of three phases (short-term – years 0 to 5, and medium term – years 6 to 10) and a longer-term strategy (year 11 – 20+). In the following sections of the chapter, a recommended process, management structure and a set of steps considered necessary to support implementation is presented. The implementation plan documented in this chapter provides details on the estimated costs to invest in AT at the County and Local Municipal levels consistent with the program and network recommendations in the CWAT Master Plan. This includes the various infrastructure and programming recommendations that fall within the Twenty-Year horizon of the county-wide active transportation master plan.

The implementation plan documented in this chapter provides details on the estimated costs to invest in AT at the County and Local Municipal levels consistent with the program and network recommendations in the CWAT Master Plan.

The success of the CWAT Master Plan should be evaluated on an annual basis by applying and assessing a series of performance measures as well as assessing the ease with which it is being integrated with other municipal capital and operational initiatives. Suggested performance measures are outlined and described in further detail in Chapter 9 of the master plan. Ease of implementation can be measured by a broad range of criteria, such as:

- The quality and clarity of the CWAT Master Plan in terms of its vision, the principles and goals that guide it, and the set of proposed actions and policies that comprise the Plan;
- A practical strategy that identifies a proposed approach, including guidelines to implement the Plan, and addresses priorities and phasing;
- An effective and efficient administrative structure responsible for implementing all components of the Plan, as well as for coordinating multi-departmental and jurisdictional resources, including funding commitments;
- Funding by County and Local Municipalities and their partners; and
- Monitoring the Plan to assess implementation results and to serve as feedback to refine on-going implementation and support refinements to the plan as it evolves over time.

The preceding sections of the Plan together form a comprehensive strategy to improve conditions for active transportation in the County of Essex that is based on a vision, goals and a set of supporting guidelines and proposed actions. The focus of this implementation chapter is to estimate the cost of the various components of the plan, present a phased implementation strategy that can be integrated with other municipal capital and operational initiatives, provide the County with a recommended outreach strategy, outline a suggested administrative process to facilitate implementation and maintain the network and provide the County, ERCA, local municipalities and other partners with the tools necessary to implement the CWAT Master Plan.

7.1 THE IMPLEMENTATION STRATEGY

The implementation of the County of Essex's CWAT Master Plan will be accomplished through both short and long-term actions and partnerships. Short-term actions include County Council adopting the Active Transportation Study. It is hoped that each of the Local Municipalities and ERCA will adopt the CWAT Master Plan in principle as well. The key polices, recommendations and network strategy in the CWAT Master Plan should then form a schedule in the next update to the County's Official Plan and be integrated into the update of local municipal official plan updates.

The County should also establish and chair an Inter-Municipal Active Transportation (AT) Advisory Committee led by an Active Transportation coordinator. It is proposed that this AT Committee include local municipal staff representatives, as well as representation from the Essex Region Conservation Authority (ERCA), Go for Health Windsor-Essex and the Windsor Essex County District Health Unit, City of Windsor, Municipality of Chatham-Kent and other stakeholders as determined by the County. The proposed role of this AT Committee is to share information and provide input and guidance to the County, ERCA and Local Municipalities on the implementation of the CWAT Plan as well as other initiatives related to active transportation and regional trail use in the County of Essex.

The implementation of the County of Essex's CWAT Master Plan will be accomplished through both short and long-term actions and partnerships.

The County of Essex's CWAT Master Plan is more than a proposed network of on and off-road pedestrian and cycling facilities. It is a Plan that includes a set of proposed actions to promote safe cycling and walking in the County of Essex and to recognize and share in the economic, health and quality of life benefits that these forms of transportation can offer.

As noted above, the Active Transportation Master Plan is a long-term strategy that consists of three phases implemented over a twenty year plus time period. The phased implementation strategy outlined in this chapter includes both infrastructure and program initiatives, as well as associated costs. The twenty year implementation plan is intended to be integrated with the County and Local Municipal current outreach initiatives as well as the capital roads programs and complement infrastructure works when they are scheduled or planned. It is also intended that local municipalities and ERCA give consideration to the CWAT phasing strategy as they proceed with their individual AT related infrastructure and program initiatives.

Recommendations:

7-1: Adopt the 20+ year active transportation network implementation plan as identified in the CWAT Master Plan and include it as a schedule in the County and Local Municipal Official Plans (when next updated) (short term);

7-2: The County should establish and chair an Inter-Municipal Active Transportation Advisory Committee. It is proposed that this AT Committee include local municipal staff representatives, as well as representation from the Essex Region Conservation Authority (ERCA), Go for Health Windsor-Essex/Windsor Essex County District Health Unit, and other stakeholders as determined by the County (short term);

7-3: The AT Committee should provide input and guidance to local municipalities as segments of the CWAT network are implemented that are under local municipal ownership (short term); and

7-4: The County should coordinate active transportation network implementation with the County's Transportation Services Department Five-Year Road Rehabilitation (short term).

7.2 HOW TO IMPLEMENT THE PLAN

A successful active transportation (pedestrian, cycling, trail) master plan requires champions, partnerships and leadership at both the County, ERCA and Local Municipal level in order for the plan to move from the planning and design stage to the funding and implementation stage. The relationships between levels of government, decision makers and organizations are

important factors in determining whether an active transportation initiative will proceed and be successful. Maximizing participation and removing obstacles to the flow of information between participants are two of the main objectives in managing implementation. The County of Essex's CWAT Master Plan is more than a proposed network of on and off-road pedestrian and cycling facilities. It is a Plan that includes a set of proposed actions to promote safe cycling and walking in the County of Essex and to recognize and share in the economic, health and quality of life benefits that these forms of transportation can offer.

While the proposed AT Committee, chaired by County staff is proposed to oversee the implementation of the CWAT plan, it will also require ongoing support and participation from local municipalities, ERCA as well as the Go for Health Windsor-Essex / Windsor Essex District Health Unit. The AT Committee and the County should consult with its local municipalities for input on implementation, and cooperative funding on joint projects as they arise. The successful implementation of the CWAT plan will require a strong working relationship between County and local municipalities, as well as ERCA and other public and private stakeholders as well as with members of the public.

The proposed active transportation network for the CWAT Master Plan was developed using the County's Geographic Information System (GIS) base as well as GIS information provided by the local municipalities and ERCA.

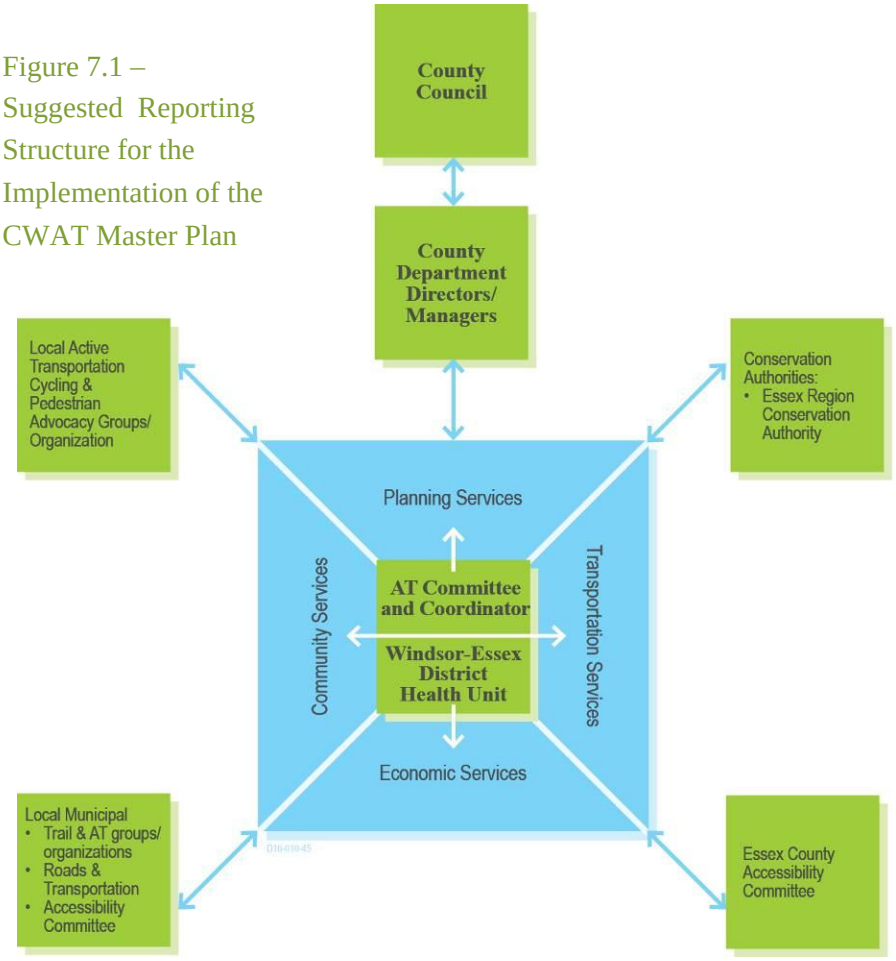
7.2.1 Who Does What?

An efficient reporting and implementation structure is vital to ensuring that the decision-making process associated with the implementation of the CWAT Master Plan is managed and all relevant County and local municipal departments are appropriately engaged. A suggested structure for managing the CWAT Master Plan at the County level is illustrated in Figure 7.1.

Led by the County's Transportation Department, a core team would be formed with representation from appropriate departments. Similar Core teams should also be formed at the local municipal level. The core groups of this proposed reporting structure would oversee and make recommendations regarding funding and priorities associated with the CWAT Master Plan, as well as other County pedestrian, cycling, Transportation Demand Management and sustainable transportation initiatives, as required. Members of the County core team would also support the AT Committee from time to time.

During the implementation process, County staff can use this tool to assist in confirming the feasibility of cycling and trail routes and facilities and the proposed schedule (Phases 1, 2 or 3) for implementation. The GIS tool can also be used to track and document new segments as they are implemented.

Figure 7.1 – Suggested Reporting Structure for the Implementation of the CWAT Master Plan



The proposed structure identified in Figure 7.1 is intended only as a suggestion. Once adopted, County staff should select an appropriate reporting model that is efficient and inclusive of affected departments for the implementation of CWAT Plan over the next 20 years.

Recommendations:

7-5: That the role of Active Transportation Coordinator, responsible for the "championing" of AT related issues, initiatives and programming throughout the County be assumed by the County's Manager of Transportation Planning (short term); and

7-6: The Active Transportation Coordinator should be responsible for the implementation and follow-up of the CWAT Master Plan at the County level and provide updates on the progress of the study when necessary (short term).

7.2.2 A Network Management Tool

The proposed active transportation network for the CWAT Master Plan was developed using the County's Geographic Information System (GIS) data as well as GIS information provided by the local municipalities and ERCA. This digital GIS based network map provided to the County as part of the CWAT Plan can also be used as an active transportation facility management tool. A database is associated with the map information and includes a number of different attributes. For example, the network has been divided into segments, each specifying a length of the segment and the facility type proposed, as well as the phase in which the route and facility is proposed to be implemented.

During the implementation process, the AT Committee and County/Local Municipal staff can use this tool to assist in confirming the feasibility of cycling and trail routes and facilities and the proposed schedule (Phases 1, 2 or 3) for implementation. The GIS tool can also be used to track and document new segments as they are implemented. Updating the facilities component of the CWAT Master Plan on a regular basis will significantly reduce the effort and cost to update the entire CWAT Plan, which is recommended to occur every five years. If the County chooses, this GIS information, with some supplementary programming, could also be posted on the County's website in an interactive map format. This accessible mapping would be useful to the public as well as visitors to the County.

Recognizing that not all County/Local Municipal staff will have access to GIS software, key components of the database and map have been provided in a KML format which will allow anyone with access to Google Earth digital aerial photography over the internet (this is currently a free service) to overlay the network route and facility information on a aerial photo of the County of Essex.

In order to support local municipalities in their efforts to implement their respective components of the CWAT plan, Appendix C includes a map and associated table for each local municipality. The table provides information on each network route segment, including jurisdiction, distance of segment, proposed facility type, estimated cost, and suggested implementation phase and funding partnership arrangement.

The timing and details related to implementation, particularly the location of recommended routes and active transportation facility types should and will evolve through community consultation and technical review during the implementation.

7.2.3 A Five-Step Network Implementation Process

The County of Essex CWAT Master Plan is not intended to be a static document. The timing and details related to implementation, particularly the location of recommended routes and active transportation facility types should and will evolve through community notification and technical review during the implementation. At the same time, however, the local municipal, public and stakeholder effort that established the overall direction for the CWAT Master Plan should be respected.

It should also be recognized that the active transportation network and priorities recommended in the CWAT Plan will evolve over time through the environmental assessment, planning and capital budget processes. This is to be expected and is an acceptable approach to implementing a master plan with a twenty year horizon, similar to the CWAT Master Plan.

Central to the proposed implementation process tool presented in this chapter is a proposed recommendation that the CWAT Plan be reviewed and given consideration when County Roads (or local municipal roads identified as part of the CWAT network) and other capital infrastructure projects are identified and scheduled. This should include the County and Local Municipal asset management programs for reconstructing or resurfacing roads, as well as any investigation of potential new road alignments or the reuse and/or selling of abandoned rail and utility corridors. The objective is to ensure that County/Local Municipal assets, particularly roads designated in the CWAT Plan for future cycling and trail / pedestrian routes are given due regard when planning, designing and budgeting for road / infrastructure projects. This step should also apply to County or local municipal planning studies, and those studies in which the County is a partner. Without this step, network opportunities could be lost and cost efficiencies not realized.

The objective is to ensure that County assets, particularly roads designated in the CWAT Plan for future cycling and trail / pedestrian routes are given due regard when planning, designing and budgeting for road / infrastructure projects.

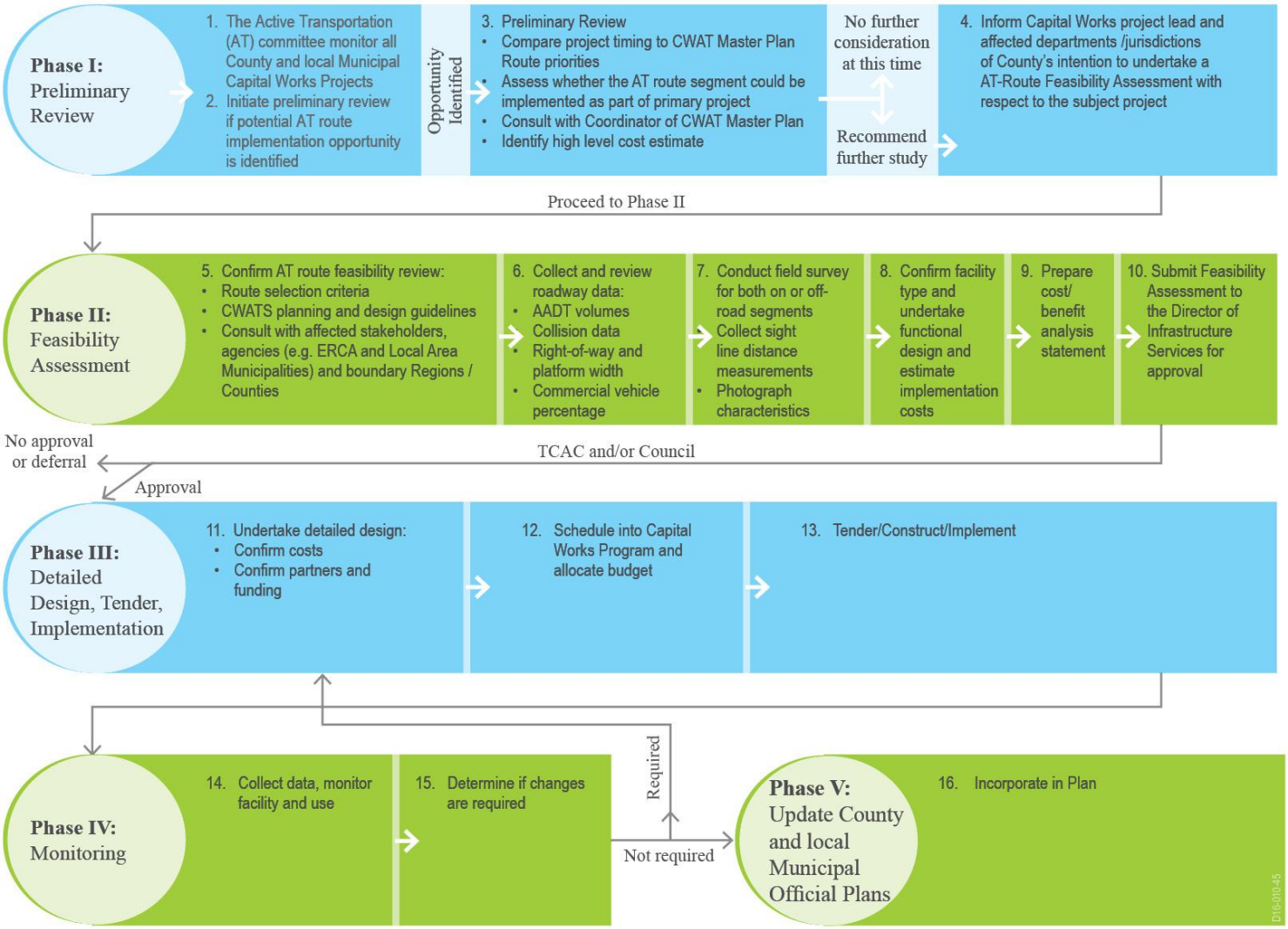
Building upon this central recommendation, Figure 7.2 outlines a proposed process tool for guiding the implementation of active transportation network facilities in the County of Essex. It is recommended that the AT Committee, once established, along with County and Local Municipal staff review this tool and adapt it as necessary to suit their needs.

The process comprises five parts and is a step-by-step mechanism to confirm the feasibility of each route recommended in this report at the time implementation is proposed. It is intended to assist County/Local Municipal staff from affected departments to work together, to share information and to

facilitate the implementation of the CWAT Master Plan. Changes to policies and the network should also be considered through the County and Local Municipal Official Plans, and future Essex Windsor Regional Transportation Master Plan reviews conducted every five years or as determined by County and Local Municipal Councils. For segments of the proposed County active transportation network that are under local municipal ownership, the County should work in conjunction with local municipalities to strive to apply a consistent and integrated implementation process.

Each part of the network implementation process is described in the following sections.

Figure 7.2 – Five-Step Implementation Process



The key aspect of this initial part is communication. Staff from various County departments and local municipalities / ERCA should report all upcoming projects that may involve or impact a pedestrian or cycling facility designated in the CWAT Master Plan.

Part I: Preliminary Review

The first step in implementing segments of the CWAT Master Plan is to identify and communicate opportunities. As part of the CWAT Master Plan, the AT Committee should monitor all County and local municipal road projects scheduled in the County of Essex, including the capital roads forecast. When a project involving a corridor or road proposed for a pedestrian or cycling route identified in the Plan is advanced to the planning stage, or an opportunity to establish a new route not identified in the CWAT Master Plan comes forward, the AT Committee supported by the Active Transportation Coordinator (County of Essex Manager of Transportation Planning or designate) should undertake a Part 1 Preliminary Review.

This review should:

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

The key aspect of this initial part is communication. Staff from various County departments and local municipalities / ERCA should report all upcoming projects that may involve or impact a pedestrian or cycling facility designated in the CWAT Master Plan. From this point forward, the AT Committee / Active Transportation Coordinator, with appropriate technical support when required, would be expected to work through the remaining three parts of the implementation process with various departments at the County and local level as appropriate.

Part II: Feasibility Assessment

If a pedestrian or cycling project is confirmed through the preliminary review process (Part I), the County's AT Coordinator should guide and support the AT Committee in undertaking a Feasibility Assessment. This is intended to be a brief assignment and confirm the feasibility of the route based on a

review of the CWAT Master Plan and supporting route selection and planning and design criteria, as well as other relevant information.

- Collect or confirm current roadway characteristic information including AADT volumes, collision data and the commercial vehicle percentage.
- Conduct a field check for both on and/or off-road route segments to identify any other issues that should be considered and to measure sight line distances (if applicable).
- Undertake a preliminary functional design for the on or off-road cycling facility segment and estimate implementation costs, including construction and signing.
- Prepare a cost/benefit analysis statement. This "statement" should comment on the following:
  - The timing for implementing the proposed pedestrian or cycling facility;
  - Costs and efficiencies achieved;
  - Identify any less costly alternatives and how they may fit within the overall pedestrian and cycling network plan;
  - Provide recommendation on how to proceed; and
  - Submit the Feasibility Assessment to the Coordinator, and then County Engineer.

This process may take place in conjunction with, or as input to, a roadway or public works Class EA or functional design process whereby design alternatives are prepared, or as an independent review. It is at this stage that consideration may be given to context sensitive solutions. The design for the pedestrian and cycling portion of the facility should be in accordance with County Planning, Design and Operation Guidelines, as well as other relevant provincial and national design guidelines / standards.

AT network phasing should be generally consistent with the strategy outlined in this CWAT plan. However, priorities can be adjusted in situations where there is a clear community demand for pedestrian / trail and cycling facilities and/or where local municipalities or another partners wish to advance a particular route segment. If site-specific circumstances prevent a facility from being constructed in association with a particular road improvement project being considered, other nearby parallel routes on both County and Local Municipal roads should be closely examined at this time for their

If site-specific circumstances prevent a facility from being constructed in association with a particular improvement project being considered, other nearby parallel routes on both County and Local Municipal roads should be closely examined at this time for their suitability, and consideration given to updating the CWAT Master Plan network.

suitability, and consideration given to updating the CWAT Master Plan network.

Another possible outcome of the feasibility assessment may be a decision by the County and/or Local Municipality to introduce an interim facility type in the short term (Phase 1) to get a desirable connection or link in place earlier that proposed in the CWAT plan. An example might be to implement a signed bike route with sharrow pavement markings in the short term and then upgrade to a formal bike lane/ buffered bike lane, paved shoulder or cycle track in the longer term i.e. Phase 3.

The network is intended to build upon the active transportation and trails networks recommended and proposed in the County as well as those adopted by local municipalities, agencies and organizations.

Part III: Detailed Design, Tender and Implementation

Once approval has been obtained to implement a pedestrian and/or cycling route segment, the necessary detailed design should be completed. This step is typically done as part of the detailed design for the primary capital roads project, such as a road widening and does not require additional resources. The third part of the process should also include confirming details with regard to partners (if any) and cost sharing. The project should then be scheduled into the County or Local Municipal Capital Roads Program and suitable budget allocated. The final step involves tendering the project and then construction / implementation.

It is also possible that following detailed design the decision is made not to proceed with the facility or preferred facility type because of the cost, other constraints that arise through the detailed design process or based on direction from Council. If this occurs, the network should be updated and an alternative route should be proposed.

Part IV: Monitoring Phase

Once pedestrian and cycling facilities have been constructed, their design and use should be monitored to ensure they function in the manner intended. When necessary, the facilities should also be upgraded and maintained to ensure continued safe use by cyclists. Monitoring should also ensure that the cycling design guidelines are current. This step will involve collecting data to assist in the monitoring task.

Part V: County and Local Municipal Official Plans

The fifth component of the implementation process includes updating the County and Local Municipal Official Plans (when the next update is scheduled) to account for changes in AT policy and network routes.

Recommendations:

7-7: The AT Committee, County and Local Municipal staff should review the proposed five-step process tool for guiding the implementation of active transportation network facilities in the County of Essex and adapt it as necessary (short term); and

7-8: The CWAT Plan should be reviewed and given consideration when County Roads (or local municipal roads identified as part of the CWAT network) and other capital infrastructure projects are identified and scheduled (short term).

7.3 BUILDING AND MAINTAINING THE NETWORK

The network is intended to build upon the active transportation and trails networks recommended and proposed in the County as well as those adopted by local municipalities, agencies and organizations. The network has been reviewed and refined based on information gathered by the study team through consultation with County and Local Municipal staff, the Steering Committee and the public. It is also based on the study team's expertise related to the most recent research and trends in the evolution of active transportation (bikeway and trail) design.

7.3.1 Network Implementation Schedule

Network implementation priorities were established based on information provided by the County, input from members of the CWAT Plan Steering Committee, local municipalities, ERCA and the public. In addition, the study team relied on insight gained through other active transportation master plans developed for other jurisdictions across the Country.

Network implementation priorities were established based on information provided by the County, input from members of the CWAT Plan Steering Committee, local municipalities, ERCA and the public.

The proposed Implementation Plan consists of three phases so that it can be coordinated where possible with the County's plans for capital projects. The phases are:

- Phase 1 Short Term (0-5years);
- Phase 2 Medium Term (6-10 years); and
- Phase 3 Long Term (11 – 20+ years).

The Implementation Plan is illustrated in Figures 7- 3A/B/C. Each of the phases is distinguished with a separate colour. The ultimate active transportation network (following build-out) would be represented by the combination of all the colours.

In addition to the strategy to implement network routes as part of planned capital road improvement projects, a number of other strategies were used to prioritize the implementation of routes in this plan. It is recommended that these strategies should continue to be used in the future when annual network priorities are being reviewed and / or updated. These include:

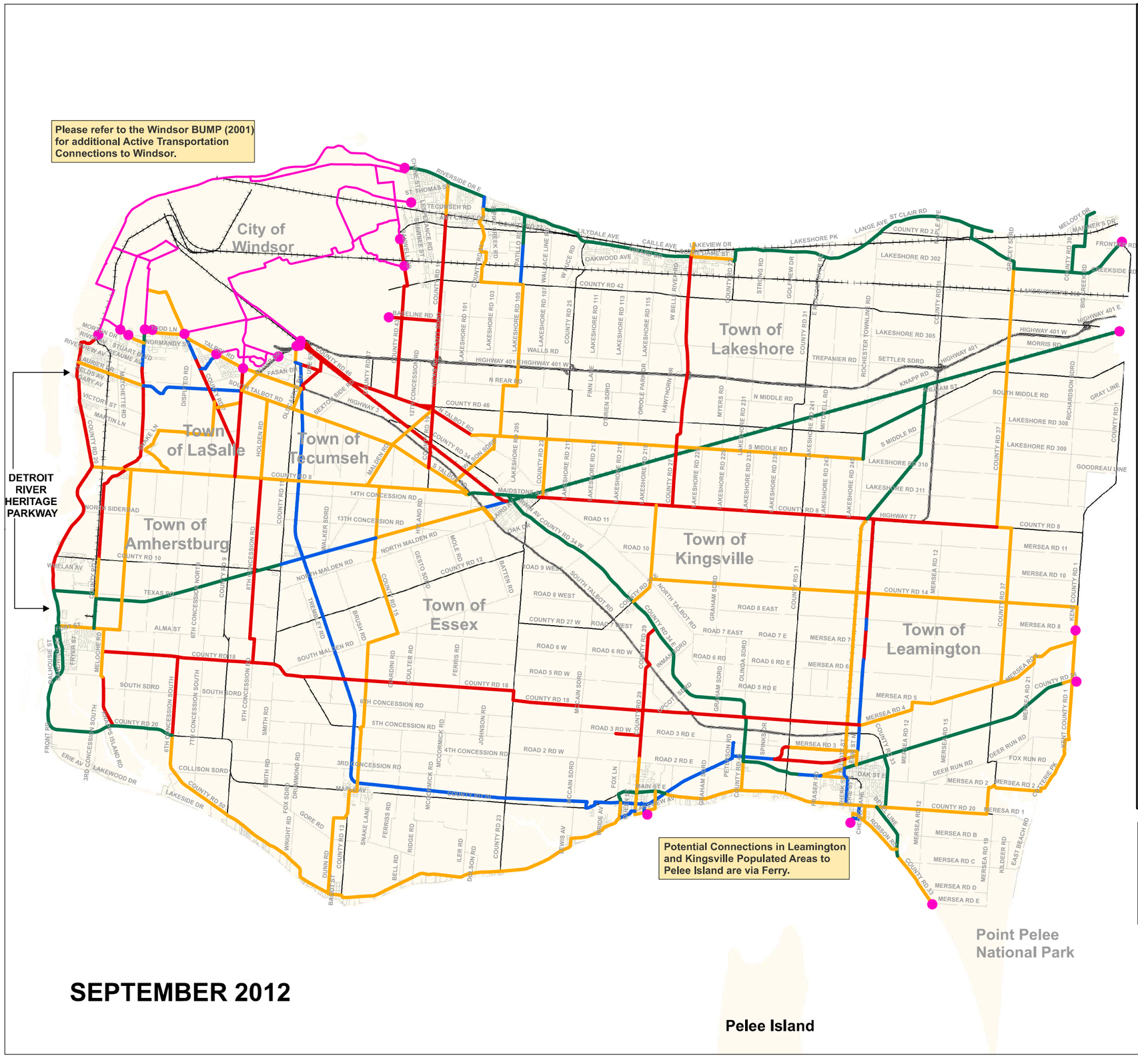
- Build demand by implementing and connecting as many of the signed bike route segments as possible in phase 1, while ensuring a balanced approach to implementation across all municipalities in the County.
- Close short gaps in the existing network with a focus on those gaps that when completed results in continuous routes and /or important links;
- Develop on road bike lanes where they can be implemented through lane reallocations and repainting pavement markings;
- Review the approved County, ERCA and local Municipal capital projects forecasts that have been provided with the intent to maximize cost savings by working in tandem with planned capital road and linear utility reconstruction projects;
- Focus on areas where current Active Transportation volumes are highest, and/or where the highest demand is anticipated. For example routes that facilitate access to key destinations, especially those that have the potential to attract large numbers of "would-be" walkers and cyclists including those who would be to schools, tourist destinations, community centres, and large employers;
- Consider prioritizing routes based on input from the proposed AT Advisory Committee and the public;
- Focus on creating spine connections between urban centres within the County, and creating east-west and north-south spines;
- Create connections to regional and national trails such as the Essex Canada Greenway/Trans Canada Trail; and

End-of-trip facilities are an important element of the active transportation system. The provision of these facilities can encourage the use of the active transportation network throughout the County.

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 7 - 3A

CWATS NETWORK PHASING



LEGEND

DRAFT CWATS PHASING

- Existing
- Phase 1 (0 - 5 Years)
- Phase 2 (6 - 10 Years)
- Phase 3 (11 - 20+ Years)

OTHER CWATS INFORMATION

- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities

OTHER

- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway

TransActive Solutions
Active Transportation • Climate Change • Sustainable Communities

MMM GROUP

GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority, 2010.

Please refer to the Chatham-Kent Trails Master Plan (2009) for additional information regarding potential Active Transportation connections to Chatham Kent.

N W E S

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SEPTEMBER 2012

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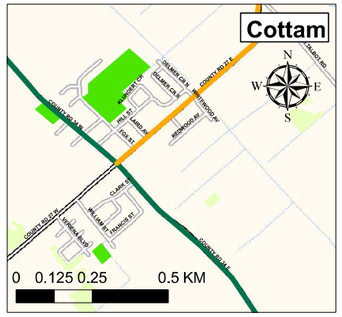

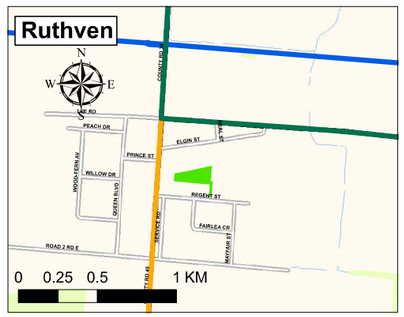

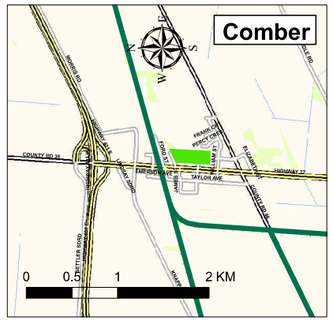

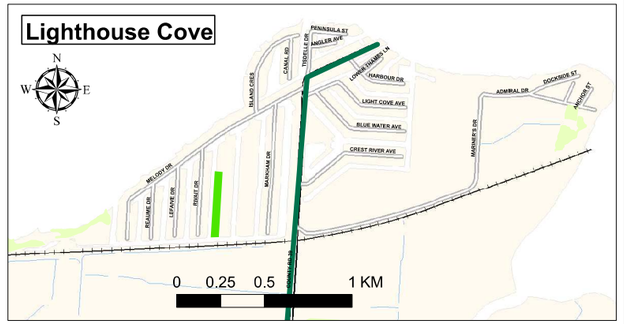

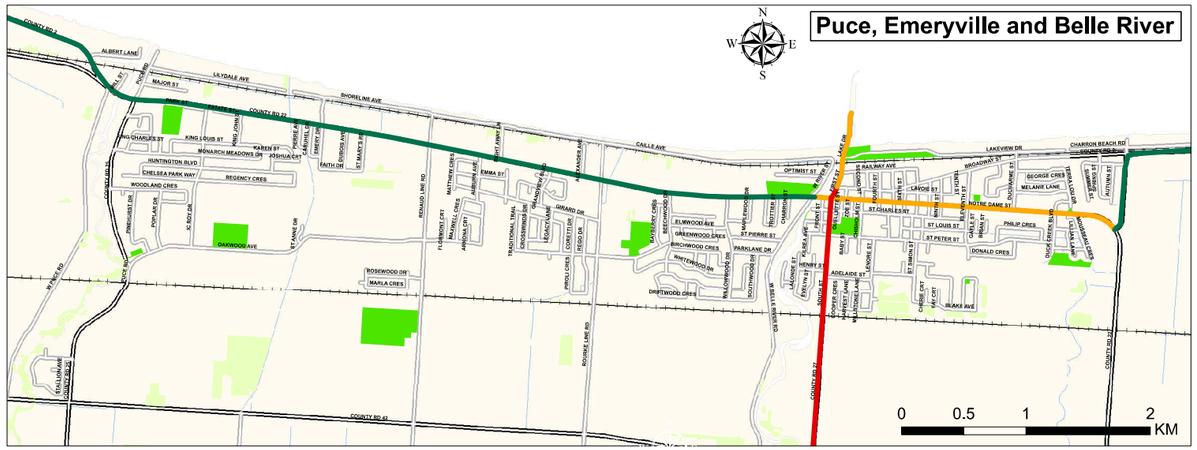

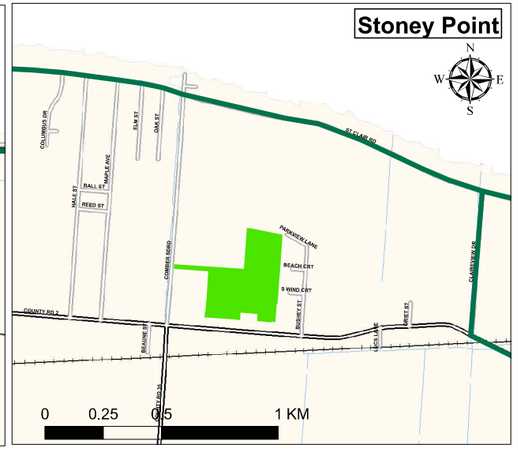

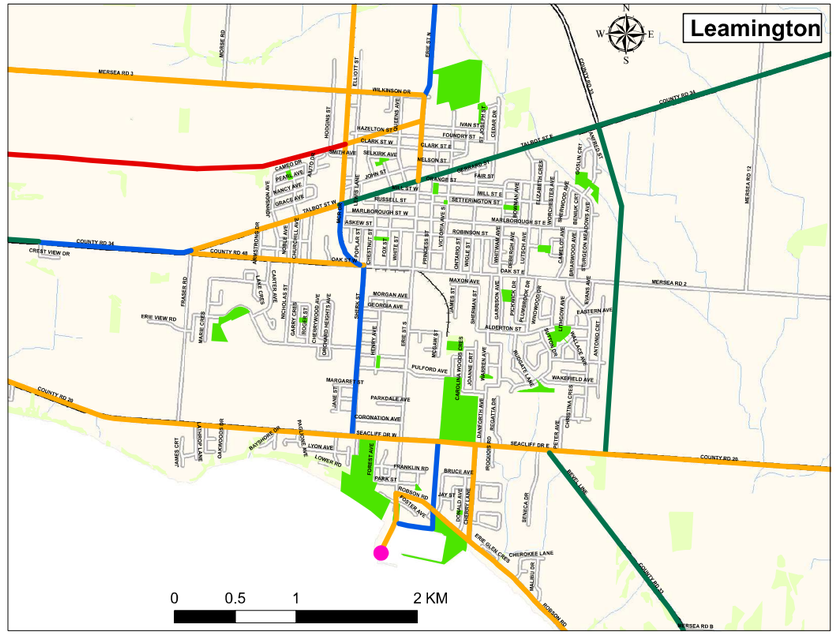

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 7-3B

CWATS NETWORK PHASING URBAN ENLARGEMENTS

LEGEND

DRAFT CWATS PHASING

- Existing
- Phase 1 (0 - 5 Years)
- Phase 2 (6 - 10 Years)
- Phase 3 (11 - 20+ Years)

OTHER CWATS INFORMATION

- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities

OTHER

- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway

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MMM GROUP

GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority, 2010.

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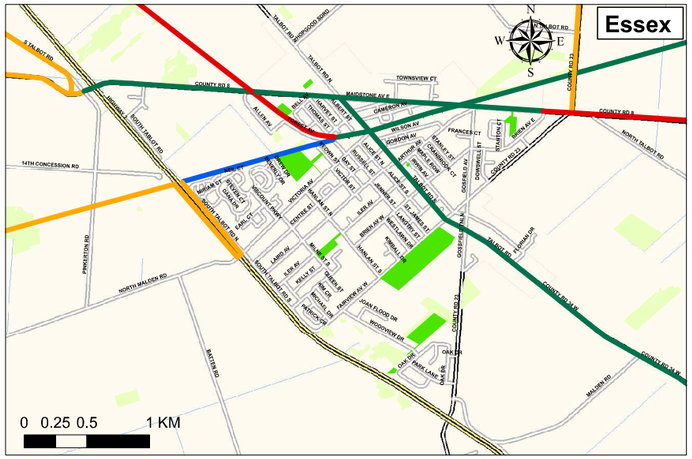

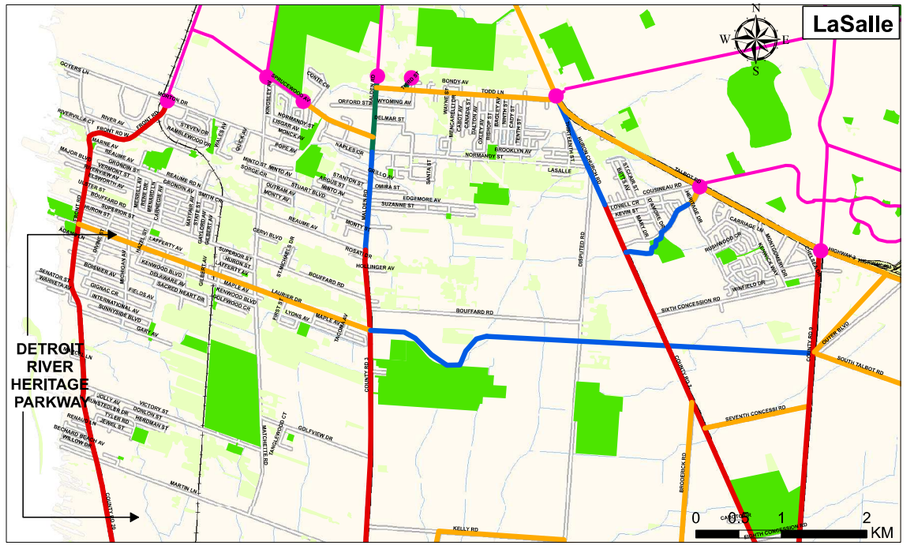

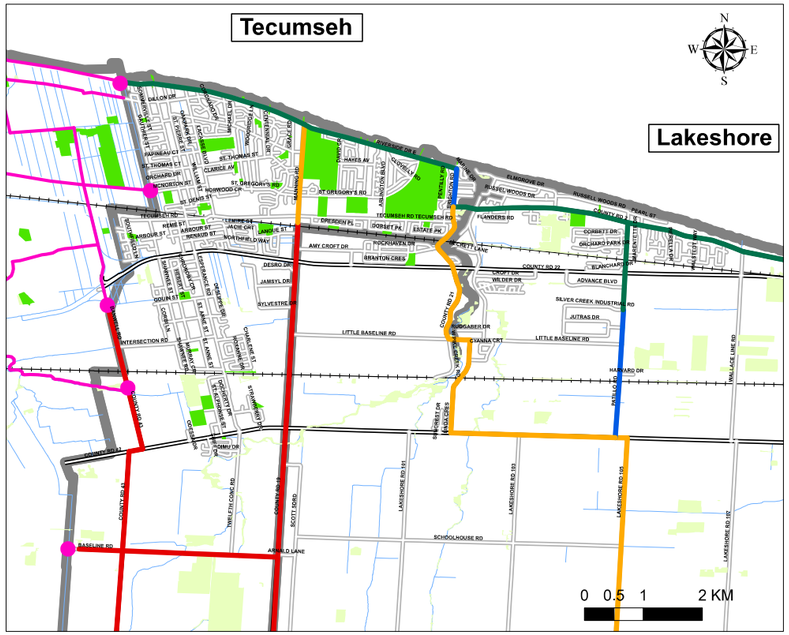

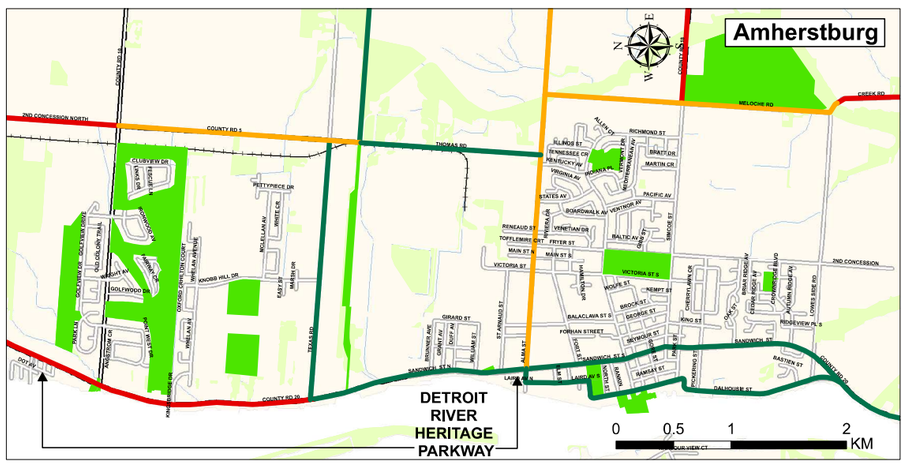

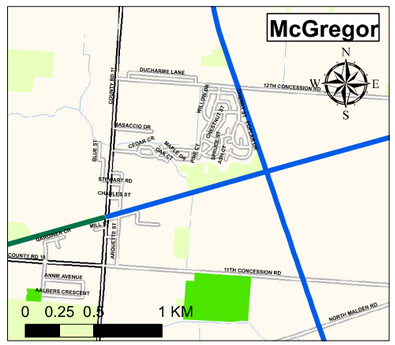

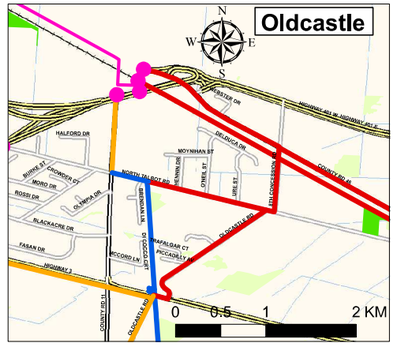

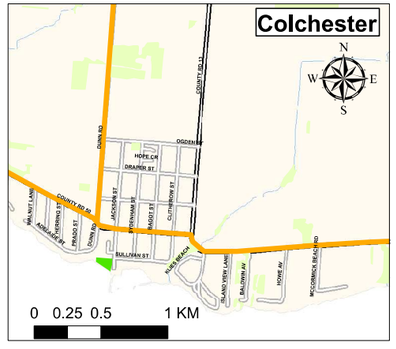

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

FIGURE 7-3C

CWATS NETWORK PHASING URBAN ENLARGEMENTS

LEGEND

DRAFT CWATS PHASING

- Existing
- Phase 1 (0 - 5 Years)
- Phase 2 (6 - 10 Years)
- Phase 3 (11 - 20+ Years)

OTHER CWATS INFORMATION

- Key Active Transportation Connections through the City of Windsor (as identified in the Windsor BUMP - 2001)
- Potential Connection to Adjacent Muncipialities

OTHER

- Highway / Freeway
- County Road
- Local Road
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TransActive Solutions

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GIS Source Data from: County of Essex, Town of Amherstburg, Town of Essex, Town of Kingsville, Town of Lakeshore, Town of LaSalle, Town of Tecumseh, Town of Leamington, Essex Region Conservation Authority, 2010.

- Work with local partners, encourage the implementation of new routes as part of new land development at the time of construction rather than retrofitting routes at a later date.

7.3.2 End of Trip Facilities

End of-trip facilities are an important element of the active transportation system. The provision of these facilities can encourage the use of the active transportation network throughout the County. For some users, good end-of-trip facilities can be the key factor in deciding whether or not to make a trip using an active mode (walking, cycling etc.) or their car. The development of end-of-trip facilities should be a priority for the AT Committee, County, Local Municipalities and respective partners in implementing the Active Transportation Study. These facilities encourage cycling and pedestrian activities by improving convenience and feasibility.

End-of-trip facilities that encourage active transportation activities include:

- Convenient and secure bicycle parking and storage, which are a necessity for most cyclists. Bike racks can be provided for short term use, while bike lockers or bike cage style parking facilities are more appropriate for long-term use.
- Showers and change facilities at workplaces, which help to promote cycling for utilitarian purposes. Institutions with more than 20 employees / students should be encouraged to offer these facilities.

In addition to end-of-trip facilities, furniture and facilities such as benches, garbage receptacles, washroom facilities, water fountains and strategic trail lighting can be implemented at key locations throughout the active transportation network such as trail heads.

The implementation of end-of-trip facilities should specifically include the installation of cycling racks at both schools and key locations throughout the County. These facilities should be highly visible and will increase residents' and visitors' awareness of active transportation modes as a viable option for transportation. It is expected that school boards, in partnership with local municipalities and perhaps with other public and/or private sector partners, would fund the provisions of bike parking racks at schools.

In addition to the on and off-road proposed routes of the County network, the plan also recognizes there will be context sensitive design solutions that may be implemented throughout the County and its local area municipalities.

End-of-trip facilities which are implemented throughout the County will send the message that the County of Essex and its local area municipalities are cycling and pedestrian friendly communities. In addition to meeting a critical need for cyclists and pedestrians, they can be seen as an excellent promotional tool as they present the opportunity to partner with local services organizations and business within and around the County along the proposed active transportation network.

The incremental cost to maintain (including winter maintenance) bike lanes, paved shoulders is relatively low compared to standard annual road snow clearing and maintenance budgets.

Recommendations:

7-9: The AT Committee, County, Local Municipalities, ERCA and respective partners should make the development of end-of-trip facilities a priority during the planning and implementation of active transportation facilities (medium term); and

7-10: Create partnerships with local public and private organizations and integrate end-of-trip facilities into active transportation promotional strategies and initiatives (medium term).

7.3.3 Maintenance

The County Wide Active Transportation Master Plan for the County of Essex is both an infrastructure and operations plan. Therefore, it requires infrastructure, program development, operations and maintenance funding to ensure its successful implementation and monitoring.

Operations costs include on-going funding related to implementing the CWAT Plan, preparing the annual progress report, working with the Health Unit and other partners who would lead in the development and delivery of safety, educational outreach and promotional programs, and performing network and infrastructure maintenance to achieve a state of good repair and to ensure all season use. This also includes staff resources, as well as management and administration.

The recommended County-wide network consists of 75.4 km of existing routes and 703.4 km of proposed routes. Of the proposed routes, 560.8 km are on-road facilities and approximately 113.1 km of off-road routes. In addition to the on and off-road proposed routes of the County network, the plan also recognizes there will be context sensitive design solutions that may

be implemented throughout the County and its local area municipalities. The plan currently estimates there are approximately 29.5 km of potential context sensitive design solution facilities that may be implemented throughout the County, and this may change as design feasibility reviews are undertaken.

The incremental cost to maintain (including winter maintenance) bike lanes, paved shoulders is relatively low compared to standard annual road snow clearing and maintenance budgets. Generally, most municipalities adjust maintenance budgets based on the number of kilometres of each facility and increase maintenance budgets relative to the length of new infrastructure added on an annual basis. For example, if five kilometres of pavement markings and bike stencils for bike lanes are added, then the annual maintenance budget is adjusted accordingly based on the owner's maintenance performance measures. The County and Local Municipal existing level of service standards regarding maintenance should be reviewed with consideration given to the Minimum Maintenance Standards for Municipal Highways.

An on-going maintenance challenge is the cost of loading snow from curb lanes of roads. This occurs because there is no snow storage space left on the street after both the road plow and the sidewalk plow have passed.

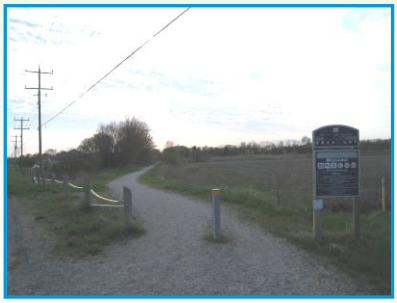
Maintenance costs for pedestrian and cycling facilities should be based on the following assumptions:

- An absolute dollar value for maintenance costs was not calculated for either the on or off-road cycling network as the budget for maintenance will need to grow in an incremental fashion along with the incremental growth of the cycling network. As each new network segment is added (either on or off-road), the impact to the operations budget should be calculated by County staff.
- Maintenance costs for on-road facilities are estimated to range from $5,000 to $9,000 /km/year depending on the facility type (paved shoulder with edge /signs, bike lane in urban area, painted lines vs. thermo plastic etc.) and economies of scale gained from incorporating cycling facility maintenance in the County's current road maintenance program. Annual maintenance can include but is not limited to line and stencil reapplication, replacement of bike lane and bike route signs, minor asphalt repairs (pothole patching and crack sealing), sweeping, snow plowing and replacement of older style catch basic grates with bicycle friendly grates.
- Maintenance of mature off-road multi-use trails, particularly in greenways and parks can range between $4,000 to $6,000 per linear kilometre of trail (3.0 m wide), depending on the level of service standard of a municipality. Annual maintenance can include

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 (benches, signs) and other general repairs.

An on-going maintenance challenge is the cost of loading snow from curb lanes of roads. This occurs because there is no snow storage space left on the street after both the road plow and the sidewalk plow have passed. Given the importance of snow clearing for both pedestrians and cyclists, the County and local municipalities should consider in their next review of their respective road rights-of-way and design guidelines/standards that additional snow storage space be designed into the road cross section.

It is recommended that the County and Local Municipalities review their annual maintenance budgets to accommodate the addition of AT infrastructure and further that it implement a program to update its existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines in Chapter 6 of the report) and adequately maintain those facilities.



Recommendations:

7-11: Review the CWAT Master Plan with County or Local Municipal road or other infrastructure projects that are identified or scheduled by the County and its local area municipalities (short term);

7-12: That the County, Local Municipalities and ERCA should recognize that adjustments to the proposed network plan in the CWAT Plan will occur from time to time and that this is consistent with a goal of ensuring the Master Plan is flexible and can respond to changes and new opportunities (short term);

7-13: The County/Local Municipalities should consider that additional snow storage space be designed into the road cross section in their next review of respective road rights-of-way and design guidelines/standards (medium term);

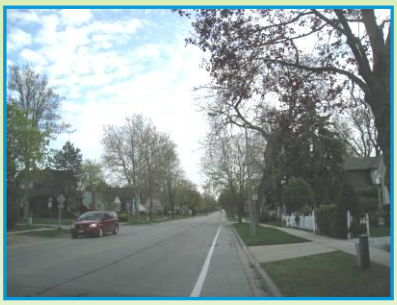
7-14: That the County, Local Municipalities and ERCA review their annual maintenance budgets to accommodate the addition of AT infrastructure (short term); and

7-15: That the County, Local Municipalities and ERCA consider updating existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines in Chapter 6 of the report) (medium or long term).

It is recommended that the County and Local Municipalities review their annual maintenance budgets to accommodate the addition of AT infrastructure and further that it implement a program to update its existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines in Chapter 6 of the report) and adequately maintain those facilities. Cost estimations for the County of Essex active transportation network are discussed further in Sub-Section 7.5.2.

7.3.4 Risk Management and Liability

Exposure to potential lawsuits, and concerns from private landowners who grant easements or who are located adjacent to off-road pedestrian and cycling facilities are sometimes perceived as liability concerns.



Bike lanes, paved shoulder bikeways and signed only routes generally fall into the same liability pattern as roadways and sidewalks, meaning that the County or local municipality becomes liable only if the facility is improperly designed, constructed, or maintained.

Even though multi-use trails are separated from the roadway, they still may legally fall under the definition of a "highway", since bicycles are legally defined as vehicles. This is an important point because if the courts make this interpretation, it means that cycling facilities are covered under many of the same basic immunities as other highways. It also illustrates the importance of adhering to provincial, national or other established design and construction guidelines, as this will provide the greatest legal protection. Aside from proper design and operation of pedestrian and cycling facilities, the County of Essex, ERCA and local municipalities should address potential hazards associated with these facilities including accidents, theft, vandalism, and other problems. This becomes much more acute when these facilities are located along waterways and residential backyard fences.

Aside from proper design and operation of pedestrian and cycling facilities, the County of Essex should address potential hazards associated with these facilities including accidents, theft, vandalism, and other problems.

The following methods of reducing risk are proposed for the County of Essex, Local Municipalities and its partners to help minimize the liability associated with providing designated active transportation (pedestrian and cycling) facilities:

- Improve the physical environment, increase public awareness of the rights and obligations of cyclists and pedestrians and improve access to educational programs in order to demonstrate that efforts are being

taken to reduce the likelihood of accidents occurring and lawsuits being initiated by injured parties;

- Select, design and designate facilities in compliance with the highest prevailing standards. Regulatory signs, as identified by the MTO Manual of Uniform Traffic Control Devices, should be used to indicate the applicability of legal requirements that might not otherwise be apparent;
- Design concept(s) should comply with all applicable laws and regulations (e.g. Ontario Highway Traffic Act and current Town and Regional by-laws);
- Maintenance operations should conform to acceptable standards. If a hazard cannot be removed, it must be isolated with barriers or notified by clear warning signage;
- Monitor on a regular basis the physical conditions and operations of roadways and pathway facilities. All reports of hazardous conditions received from cyclists, pedestrians, police or others should be promptly and thoroughly investigated;
- Keep written records of monitoring and maintenance activities;
- Avoid describing or promoting routes or pathways as "safe" or "safer" than alternatives. It appears preferable for facility users to assess their capabilities themselves and govern their choices accordingly, which is the prevailing situation; and
- Maintain proper insurance coverage as a safeguard against having to draw payment for damages from the public treasury.

The Design of a community can determine how and when people engage in active transportation and recreation alternatives.

7.4 COMMUNITY DESIGN STRATEGIES THAT SUPPORT AT

The design of a community can determine how and when people engage in active transportation and recreation alternatives. There is a great amount of research that links the layout and design of communities to an increase in health, social interaction, safety and economic development for the community as well as its residents. One of the key documents which identifies this is the "Shaping Active, Healthy Communities" report completed by the Heart and Stroke Foundation. This document provides governments at all levels with a "built environment toolkit" which can be used to guide a change in the design and development of communities to promote AT and AT related benefits.

More specifically, there are a number of design strategies which are identified which prove to facilitate the development of communities which are supportive of physical activity and active modes of transportation. These strategies are provided in some detail in the following sections.

7.4.1 Land Use Planning

The land use planning of a community deals with the layout and arrangement of housing, businesses and amenities within a community. More specifically land use planning can support active living when housing, businesses and amenities are arranged in a way that promotes vibrant communities. These communities are easily accessible by walking, cycling and other active transportation methods. This can be achieved through a number of initiatives including but not limited to the following:

- Mixing housing with other land uses decreases the distance between people's residences and their destinations of choice, thus making it more likely for them to walk or bike to their destination;
- Encouraging higher-density urban areas by developing higher-density areas, such as "urban villages". Situate amenities and destinations within walking distance from the residences. In addition, more people are able to support the local economy as they are located in one centralized area; and
- Conveniently locating schools and other amenities enable children to safely and securely walk or bicycle to their schools as well as key destinations. This will also provide a higher level of comfort for parents.

The development and integration of active living infrastructure in communities such as parks, sidewalks, street lighting and bike racks all support physical activity by making active transportation and recreation appealing and accessible to residents and visitors.

7.4.2 Active Living Infrastructure

The development and integration of active living infrastructure in communities such as parks, sidewalks, street lighting and bike racks all support physical activity by making active transportation and recreation appealing and accessible to residents and visitors. Infrastructure such as this can be achieved by exploring and implementing the following initiatives:

- Making streetscapes appealing to pedestrians and cyclists through effective design such as good lighting, well-maintained sidewalks, bike paths, signage, crosswalks and improved aesthetics can draw people to these areas and make them more likely to travel to the destination by bike or foot. More appealing streets also attract people

creating an "eyes on the street" result. In many cases this can prevent crime and makes these environments safer for children and adults;

- Designing streets that area healthy and safe for pedestrians and cyclists such as narrower streets, cycling lanes, sidewalks, landscaping, parallel parking and traffic calming measures are key to increasing cyclist and pedestrian activity throughout urban and rural communities; and
- Providing recreational facilities, parks, trails and safe places to play outside can result in a higher physical activity level for children and youth as well as all user groups. These can include community centres, walking trails, public greenways and events such a temporary street closures.

As an alternative means of promoting and educating people on alternative transportation options through transportation planning, the County should explore the adoption and implementation of a "Pedestrian Charter".

7.4.3 Transportation Planning

Transportation planning can promote walking, cycling and other active modes of travel by identifying them as important priorities when designing a community's transportation network. This "pedestrians and cyclists first" approach can include the design of streets, pedestrian and cycling routes as well as public transit systems. These can be achieved through the following initiatives:

- Increasing pedestrian and cycling connectivity means that walking and cycling routes are continuous and in many cases connect with key destinations. Features which emphasize this concept include continuous sidewalks, shorter blocks, grid-like street layouts, pedestrian connectors and accessible links to public transit;
- Creating safe routes to school includes safe crossings and / or crossing guards, safe bicycle parking, traffic-calming measures around schools and "walking school buses" which go to and from the school along a designated route. These types of initiatives can increase the safety of walking and biking routes to school and help children get the physical activity they need; and
- Improving public transit through encouragement includes locating stops close to places of residence, providing frequent services and ensuring ease of connection to key destinations throughout the community. In many cases users of public transit achieve their daily requirement of 30 minutes of physical activity by walking to and from the transit stops.

As an alternative means of promoting and educating people on alternative transportation options through transportation planning, the County and Local Municipalities should explore the development and adoption of a "Pedestrian Charter". A pedestrian charter is used to facilitate and promote the need for walkable communities throughout the County and is an important measure of the quality of the public realm, healthy and vitality. Pedestrian Charters are becoming increasingly more popular throughout North America with the first one being established in Toronto followed by those developed in Waterloo, Kitchener, Sudbury, Burlington and Montreal.

A draft "Pedestrian Charter" has been developed for the County of Essex based on elements that were identified for the Regional Municipality of Waterloo. The charter should be explored in further detail and refined by the proposed Inter-Municipal AT Advisory Committee. Ultimately, a Pedestrian Charter should be adopted by the County and the local area municipalities to help promote and facilitate the development of a more pedestrian friendly County. A draft "Pedestrian Charter" for the County of Essex can be found in Appendix D of the study.

Recommendations:

7-16: Work to encourage AT (pedestrian & cycling) friendly streetscaping, urban design and AT oriented land development in collaboration with local area municipalities and the conservation authority through planning and design studies and development reviews (short term);

7-17: Explore land use planning initiatives and policy development such as mixed land use, higher density urban areas and pedestrian and cyclist friendly streetscapes to promote / facilitate an increased quality of life and liveability within the communities of the County of Essex (medium term);

7-18: Continue to increase pedestrian and cycling connectivity to key destinations through the development of continuous links to local public transit and trails as well as shorter blocks (medium term);

Recommendation Cont'd:

7-19: Build upon the existing Safe Routes to School Program throughout the County in collaboration with the Safe Routes to School Organization as well as the Health Unit (medium term);

7-20: The AT Committee, County and Local area municipalities should adopt a Pedestrian Charter to help facilitate and promote the development of a walkable and pedestrian friendly environment throughout the County as well as the local municipalities (medium to long term);

7-21: Promote the development of high-density living, mixed land uses, development in close proximity to schools and integrated transportation planning to decrease time spent travelling and increase the likelihood of walking and cycling to key destinations throughout the community (medium term); and

7-22: Consider elements of AT transportation planning when addressing land use planning and design considerations throughout the County. These could include the design of streets, additional pedestrian and cycling routes and transit planning (short term).

7.5 OUTREACH

Go for Health Windsor-Essex and the Windsor-Essex Health Unit should expand upon their leadership role and work with the County and Local Municipalities and other levels of government to develop and implement an expanded outreach program.

By adopting the Active Transportation Master Plan (CWAT Master Plan) and its recommendations, the County of Essex has the opportunity to create a more cycling and pedestrian friendly environment for all of its residents as well as visitors. Infrastructure such as bike lanes, paved shoulders, trails, benches, pavement markings and sign treatments are all components of this Study, and will assist in creating this supportive environment. However, facilities and the implementation of the proposed network will not alone support a successful active transportation environment. Go for Health Windsor-Essex and the Windsor-Essex Health Unit should expand upon their leadership role and work with the County and Local Municipalities and other levels of government to develop and implement an expanded outreach program. The outreach program will be used to help educate residents about

the importance of improving air quality and reducing greenhouse gas emissions, pedestrian and cycling safety, and to encourage residents to walk and cycle more often for both utilitarian and recreational purposes. It is anticipated that the County will provide support but not lead the outreach initiatives proposed.

A successful active transportation network is one that is actively and properly used. To this end, a complete strategy to promote and facilitate walking and cycling needs to address the so-called "four E's", which include:

- Engineering – The way in which walking and cycling facilities and amenities are planned, designed, constructed and maintained. This topic is addressed in Chapter 6.0.
- Education – Informing and educating users of the active transportation system.
- Encouragement – Promoting walking, cycling and the use of the active transportation network.
- Enforcement – Ensuring that users of the active transportation network adhere to applicable rules and regulations, and penalizing those who do not.

The framework set out in this following section recommends the implementation of new programs and continuation of existing initiatives in the areas of educations, encouragement and promotion. These programs will support the many benefits of active transportation, and will help achieve the walking and cycling goals in the Official Plan, transportation master plan and other County and Municipal plans which support the development of active transportation facilities and policies. A key objective of the outreach strategy in this plan is to develop and enhance education programs that are targeted to existing and future active transportation facility users.

Education can have a positive influence on the behaviour and attitudes of pedestrians, cyclists, motorists and the general public to produce safer conditions for all, and provide incentives to encourage more active transportation.

7.5.1 Education

Education can have a positive influence on the behaviour and attitudes of pedestrians, cyclists, motorists and the general public to produce safer conditions for all, and provide incentives to encourage more active transportation. Formal pedestrian and cycling education and training

encourages people to use alternative modes, and can shift their transportation choices to walking and cycling[1].

People of all ages and abilities should be educated on the proper use of the County's cycling network and pedestrian/trail system for both recreational and commuting purposes. Implementing educational programs will teach proper pedestrian habits, improve cycling skills and raise public awareness of the benefits of walking and cycling.

The following sections outline methods of achieving the overall objectives of education for the County of Essex Active Transportation Master Plan.

Pedestrian and Cycling Education Information

Making active transportation information easily available is a core element of any educational strategy. Go for Health Windsor-Essex and the Windsor Essex County Health Unit along with the County and local municipal partners should consider the implementation of cycling and pedestrian/trail education programs and partner with other not-for-profit organizations, school boards, local municipalities, and agencies to educate residents on walking and cycling. The Go for Health Windsor-Essex / Windsor Essex County Health Unit, the County and local municipalities should follow the examples of other municipalities and organizations across North America in developing a variety of educational materials. Examples of such materials from other jurisdictions are numerous, and could be adapted for a nominal cost for use in the County of Essex. Many of these publications have a host of contributing partners, including Healthy Living, Ministry of Transportation of Ontario, Ministry of Health Promotion, Transport Canada, Health Canada and the Canadian Safety Council, as well as not-for-profit organizations like Green Communities and the Share the Road Coalition as well as private sector sponsors. This underscores the importance of cooperation and the need to share expertise and resources.

Newsletters or digital e-newsletters could focus on active transportation, with information about existing and planned facilities, statistics, recommended routes and destinations, safety and training information, and tips for pedestrians and cyclists.

Newsletters or digital e-newsletters could focus on active transportation, with information about existing and planned facilities, statistics, recommended routes and destinations, safety and training information, and tips for pedestrians and cyclists.

Newsletters or digital e-newsletters could also include information about

[1] Bike BIZ. "BikeAbility Training Converts Cyclists Says Research" (http://www.bikebiz.com/news/30845/BikeAbility-training-converts-cyclists-says-research), July 21, 2009.

initiatives by others, for example walking and cycling events (local trail organizations, charities, etc.), bicycle parking at local destinations (businesses and County / Regional facilities) and the benefits of walking and cycling (Windsor-Essex County Health Unit, Health Canada, etc.).

Go for Health Windsor-Essex / Windsor Essex County Health Unit, local municipalities could also adapt / develop guides to active transportation that address specific concerns, such as those related to:

- Implementation of the County Wide Active Transportation Study Plan;
- Pedestrian and cyclist safety;
- Walking or cycling to school or work;
- Winter / inclement weather conditions;
- Particular age groups, such as elderly persons or young children;
- The rules and regulations for pedestrians and cyclists, plus walking / cycling etiquette for on-road and off-road routes;
- The benefits of active transportation (health, financial, environmental, etc.); and
- Intermodal connections, for example between cycling and transit, or walking and carpooling.

Educational information should be developed in a language and style appropriate for the age group being targeted, such as children and seniors.

Distributing Active Transportation and Recreation Education Information

Information on active transportation education could be provided to residents, employees and visitors of the County of Essex through the following methods:

- The Windsor Essex County Health Unit and/or the County's website, ideally via a specific web page(s) dedicated exclusively to pedestrian and cycling issues, with posted information, downloadable files, and links to other relevant walking- and cycling-related websites;
- The production of hardcopy pamphlets and brochures to inform and educate residents on safe operating procedures for pedestrians, cyclists and other road and trail users, which could be made available at County facilities (e.g. County Hall, community centres, arenas, libraries, etc.), delivered as part of mailings (e.g. Councillor newsletters, resident information mailings, etc.), distributed at events

(e.g. County Public Works Week events, Canada Day celebrations, etc.) and circulated through community partners (e.g. local municipalities within the County of Essex, Essex County OPP, Windsor Essex County Health Unit, etc.); and

- The implementation of education programs through partnerships between the Windsor Essex County Health Unit local municipalities and the County of Essex, agencies, and other groups to educate residents on walking and cycling in general.

The same methods could generally be used for the distribution of promotional materials.

Cycling, Walking and Children

The mobility needs of children are often overlooked in transportation and land use planning. The Windsor Essex County Health Unit should continue educate children on the use of sustainable modes of transportation such as walking, cycling and public transit (where available), and reduce their auto-dependency (through their parents) so they may be more inclined to choose active modes of transportation when they are adults. The University of Winnipeg-based Centre for Sustainable Transportation has studied these issues and produced Child and Youth Friendly Land Use Transport Planning Guidelines for Ontario. This document provides reasons why land use and transportation planning should be made more child and youth friendly, sets out 27 guidelines for municipalities or other agencies and provides a discussion of implementation issues. Key excerpts from the Guidelines include:

This document provides reasons why land use and transportation planning should be made more child and youth friendly, sets out 27 guidelines for municipalities or other agencies and provides a discussion of implementation issues.

- Identify where children and youth want to go or need to go and, to the extent possible, provide ways of getting there by foot;
- Explore pedestrian routes used or to be used by children to ensure that they are as usable by them as possible;
- Explore pedestrian routes to be used by children to ensure that they are as safe for them as possible;
- For younger children, arrange walking school buses and other means of supervision;
- Ensure that sidewalks are kept clear of snow;
- For older children and youth, ensure that important destinations that cannot be a walk away are no more than a bicycle ride away;
- For younger children, ensure that sidewalks are suitable for their tricycles and bicycles;

- Ensure that bicycle riders are well provided for at intersections and have sufficient priority for forward movement; and
- At destinations, provide secure, convenient bicycle parking.

The Guidelines should be considered by Go for Health Windsor-Essex / Windsor Essex County Health Unit and the County as active transportation educational materials are developed, particularly for those that specifically target children and youth.

Recommendations:

7-23: Go for Health Windsor-Essex / Windsor Essex District Health Unit and the County and Local Municipal partners should consider the implementation of cycling and pedestrian/trail education programs and partner with other not-for-profit organizations, school boards, local municipalities, and agencies to educate residents on walking and cycling (short to medium term);

7-24: Go for Health Windsor-Essex / Windsor Essex District Health Unit should implement a new position to coordinate the outreach initiatives identified in the Outreach strategy for the CWAT Master Plan. This role would begin as a part time position at 2 or 3 days a week and may expand into a full time position if necessary (short term);

7-25: The Design Guidelines identified in the CWAT Plan should be considered by Go for Health Windsor-Essex / Windsor Essex District Health Unit, the County and Local Municipalities as active transportation educational materials are developed, particularly for those that specifically target children and youth (short to medium term);

7-26: Go for Health Windsor-Essex / Windsor Essex District Health Unit, County, and Local Municipalities should continue to educate children on the use of sustainable modes of transportation such as walking, cycling and public transit (where available), and reduce their auto-dependency (through their parents) so they may be more inclined to choose active modes of transportation when they are adults (short term);

Recommendations Cont'd:

7-27: Develop and distribute newsletters and / or digital newsletters to promote and educate the public on AT opportunities, recommendations for routes and destinations and updates on available and safe routes. These initiatives are proposed to be undertaken as a combined effort by the Health Unit as well as the local area municipalities (short to medium term); and

7-28: Utilize educational programming and materials to promote and inform people of the benefits of AT on the health, environment, economy and tourism of the County of Essex. The coordination of these programs and materials will be coordinated and development by the Health Unit in collaboration with the local area municipalities (short to medium term).

7.5.2 Encouragement

In order to encourage residents, workers and visitors in the County of Essex to walk and bike more often, a strong and focused range of programs aimed at encouraging and promoting active transportation, as well as a supporting marketing strategy and convenient infrastructure, is required. One of the objectives of this Study is to change the attitudes and behaviours of residents, employees and visitors within the County, resulting in a higher number of people of all ages that walk and cycle and utilize other non-motorized modes of transportation, and thus support a greater frequency of walking and cycling trips.

Community-based Social Marketing

People can be encouraged to adopt more sustainable transportation habits, including walking and cycling more often, through community-based social marketing (CBSM)[2]. CBSM is a practical approach that stresses direct contact among community members and focuses on removing structural

[2]Transport Canada Urban Transportation Showcase Program. "The Role of Community-based Social Marketing in Supporting Active and Sustainable Transportation", May 2008.

barriers that prevent people from changing their behaviour. A CBSM program involves five steps:

- Identify the desired behaviour change;
- Identify barriers;
- Design the program;
- Pilot the program with a small segment of the community; and
- Evaluate and improve the program on an ongoing basis as it is implemented.

A number of examples of CBSM programs from other communities show how public attitudes and behaviours can effectively be influenced, and include "tools" such as:

- Obtaining a commitment – People are asked to pledge or agree to carry out a specific action (example: the City of Mississauga's "Towards an Idle-Free Zone" anti-idling campaign asked drivers to commit to reducing the frequency and duration of engine idling and to declare their commitment by placing a decal on their vehicle's windshield).
- Prompts – Prompts are used to remind people to perform a particular action (example: the City of Ottawa's "Walk the Talk" program provided participants with a bright yellow card and memo holder to remind them to track their walking, cycling and transit trips).
- Personalized communication – Information is tailored to a target audience's specific needs, with particular information and images (example: the City of Vancouver's "TravelSmart" program provides a form to interested households with which they can request specific materials on select topics that suit their travel needs, be it transit maps, cycling guides, trail maps, bike shop discount coupons, etc.).
- Norm appeals – Making group standards, or the behaviour and attitudes that people observe around them, more apparent to encourage a desired behaviour (example: the national "Commuter Challenge" encourages the senior staff of participating workplaces to lead by example in adopting more sustainable transportation choices for their commute).
- Word-of-mouth – Information that people hear from family, friends or colleagues, which they often respond best to because it comes from someone they trust (example: the City of Seattle's "In Motion" initiative provided lawn signs to participants who received

Expanding the utilitarian active transportation population will be essential to reaching future mode share targets. To achieve this, employers should be motivated to encourage and support walking, cycling and the use of non-motorized vehicles among their employees.

information about travel options, stimulating conversation within their neighbourhoods about the program).

- Overcoming specific barriers – Information or initiatives targeted at specific issues or groups that have been identified as significant (example: British Columbia's "Bike Smarts" program provided specific information about bicycle safety to parents and children, since this was identified as the primary concern for parents).
- Incentives and disincentives – Rewards for desired behaviour or punitive measures for the behaviour being discouraged (example: the Government of Canada's change to the Canadian Income Tax Act to make the cost of monthly transit passes deductible in order to encourage regular transit use).
- Feedback – Demonstrating the outcomes, particularly the positive impacts, or behaviour changes (example: the successes of the City of Boulder's "Go Boulder" program were publicized in local newspapers and on the community television channel, highlighting the results of the program's initiatives aimed at encouraging residents to shift to more sustainable travel modes).

Initiatives include bike racks, showers, lockers, cycling subsidies and transportation allowances. As well as fighting congestion, these programs reduced expenses, increased workplace morale and were considered a valuable employee recruiting and retention tool.

Go for Health Windsor-Essex / Windsor Essex County Health Unit, the County and Local Municipalities should apply the principles of CBSM in their respective marketing and promotional efforts related to the CWAT Master Plan.

Leadership by Example

Expanding the utilitarian active transportation population will be essential to reaching future mode share targets. To achieve this, employers should be motivated to encourage and support walking, cycling and the use of non-motorized vehicles among their employees. The Windsor Essex County Health Unit, County and Local Municipalities can show leadership in promoting active transportation and set an example for others to follow.

A comprehensive approach should be put in place to encourage municipal employees to walk or cycle to work, and to combine these modes with transit for longer distance trips. A Pollution Probe Survey in 2001 provided information on the number of employers in the United States and Canada that have included walking / cycling-supportive initiatives and programs to encourage more employees to walk or ride their bicycles to work and

decrease the use of single-occupant motor vehicles for work related trips.[3] Initiatives include bike racks, showers, lockers, cycling subsidies and transportation allowances. As well as fighting congestion, these programs reduced expenses, increased workplace morale and were considered a valuable employee recruiting and retention tool.

Go for Health Windsor-Essex / Windsor Essex County Health Unit, the County and Local Municipalities can lead by example in encouraging walking and cycling by:

- Encouraging the private sector and local municipalities to develop a bike share program, whereby bikes are made available to registered users to sign-out for short-term use;
- Create an incentive program and develop contests for employees who walk or cycle to work, perhaps based around car-free commuter days;
- Organize a bicycle mentoring program that allows employees who want to cycle to work to find a colleague with whom they can share the ride;
- Make CAN-BIKE or similar courses available to all Windsor Essex County Health Unit, County and Local Municipal staff to maximize their exposure to safe cycling skills when commuting to work and using a bicycle;
- Ensure bicycle access to all municipal owned buildings by conducting an inventory of trip-end facilities available at these buildings, then create a prioritized schedule to install expanded or new facilities; and
- Incorporate trip-end facilities within building lease negotiations.

The Windsor Essex County Health Unit, County and Local Municipalities can show leadership in promoting active transportation and set an example for others to follow.

[3] Pollution Probe. “North American Workplace-based Trip Reduction Programs”, November 2001.

Recommendations:

7-29: Go for Health Windsor-Essex / Windsor Essex District Health Unit, County and Local Municipalities should apply the principles of CBSM (Community-based Social Marketing) in their respective marketing and promotional efforts related to the CWAT Master Plan (short term); and

7-30: A comprehensive approach should be put in place by the District Health Unit / Local Municipalities to encourage students and employees to walk or cycle to school or work, and to combine these modes with transit (where available) for longer distance trips (medium term).

7.5.3 Enforcement

Enforcement is key to pedestrian, cycling and non-motorized vehicle safety, with the principal objective of reducing incidents causing property damage, injury and death.

Enforcement is key to pedestrian, cycling and non-motorized vehicle safety, with the principal objective of reducing incidents causing property damage, injury and death.

Essex County Ontario Provincial Police and Local Police Services

The responsibility for enforcement rests primarily with the Ontario Provincial Police in Essex County and local municipal police forces including LaSalle, Amherstburg and the Windsor Police Service, who are already active in educating and enforcing pedestrian and cycling safety in the County of Essex.

The Police Cyclists Program (http://www.essexcountyopp.com/services/bicycle.cfm)

The Essex County OPP Cop Camp (http://www.essexcountyopp.com/services/community_policing.cfm)

The Essex County OPP also offers safety information on their website (www.essexcountyopp.com).

To strengthen the effectiveness of enforcement in the County of Essex, the County, in association with the Essex County OPP, should consider the following:

- The creation of cycling patrols and safety blitzes along walking and cycling routes and pathways enforcing safe operating procedures for pedestrians, cyclists and other sidewalk, road and pathway users;
- The collection of accurate cycling collision data in an effort to help identify any potential problem areas as well as safety and enforcement priorities; and
- The development of materials to inform pedestrians and cyclists about the steps they should take if they are involved in a collision.

It is important that police officers receive instruction in the proper training of cyclists and cyclists' rights, and understand the operating characteristics of bicycles to better identify causal factors when investigating cycling collisions. Once trained, officers can aid in the instruction of safe cycling at special events. The Essex County OPP and Local Municipal Police Services should continue to be an active member in the development and delivery of cycling safety programs in the County.

It is important that police officers receive instruction in the proper training of cyclists and cyclists' rights, and understand the operating characteristics of bicycles to better identify causal factors when investigating cycling collisions.

Local Municipal By-Law Enforcement Officers

The enforcement activities of Essex County OPP may be supplemented by local municipal by-law enforcement officers. In some cases their involvement may be required, for example where a parked vehicle obstructs a sidewalk and interferes with pedestrian access (i.e. enforcement of the County's parking by-laws).

Recommendations:

7-31: The Essex County OPP and Local Municipal Police Services should continue to be an active member in the development and delivery of cycling safety programs throughout the County (short term); and

7-32: Enforcement activities of the OPP and local police services should be supplemented by local municipal by-law enforcement officers for issues relating to sidewalk obstruction, misuse of bicycle and pedestrian facilities and misuse of trails etc. (medium term).

Recommendations Cont'd:

7-33: Consider transportation operational measures in the future as part of the transportation system management to support safe and convenient active transportation. These measures may include, but are not limited to:

- » Exemptions from turn prohibitions for cyclists;
- » Bicycle detection at intersections;
- » Management of loading zones and street parking to minimize disruption to cyclists and pedestrians; and
- » Enforcing speed limits on roadways where observed speeds exceed acceptable levels. (medium to long term)

7.5.4 Working with Others

The County and its partners should work with partners that have similar mandates in order to ensure consistent messages and avoid duplication of efforts.

As indicated above, the County of Essex, Windsor Essex County Health Unit, and Local Municipalities will need the cooperation of outside agencies, volunteer groups and individuals to achieve the positive results expected for active transportation education, and to increase the number of cycling and pedestrian trips. The County and its partners should work with partners that have similar mandates in order to ensure consistent messages and avoid duplication of efforts.

To help generate and maintain interest in active transportation activities, County of Essex should continue to work with others, such as Essex County Ontario Provincial Police, school boards, Ministry of Transportation, Ministry of Health Promotion, neighbouring local and regional municipalities, Ontario Parks, Essex Region Conservation Authority, CN Rail and local and provincial cycling organizations such as the Share the Road Coalition to promote and encourage active transportation.

7.6 THE INVESTMENT

7.6.1 The Investment Approach

There are a number of benefits that emphasize why the County of Essex, ERCA and the Local Municipalities commitment to implement the Active Transportation Study is so important. Section 2.4 of this report details the various benefits of walking and cycling in terms of health and fitness

benefits; transportation benefits; environmental benefits; economic benefits and tourism benefits. The County's investment in the CWAT Master Plan can be expected to yield benefits in all of these areas.

In addition to these important benefits, the costs of the CWAT Master Plan can be justified as part of the cost of providing a more sustainable, balanced and efficient transportation system in the County of Essex. Finally, as the consultations conducted as part of this study confirmed, residents want a more liveable and walkable County of Essex.

The public and stakeholder input received during the preparation of the CWAT Plan indicate that both residents and visitors to the County of Essex support improving pedestrian and cycling facilities and programs to promote these activities in the County and to reduce the use of single occupant automobiles. County and Local Municipal Councils' leadership in adopting this Study will directly connect and improve the livability of communities in the County of Essex and support the objectives of the County and Local Municipal Official Plans and Transportation Master Plans.

In addition to these important benefits, the costs of the CWAT Master plan can be justified as part of the cost of providing a more sustainable, balanced and efficient transportation system in the County of Essex.

7.6.2 How much will it Cost?

The CWAT Master Plan is both an infrastructure and operations plan. Therefore, it requires infrastructure, program development and operations (maintenance) funding to ensure successful implementation and monitoring. For example, some of the active transportation routes outlined in the CWAT Plan, especially on-road paved shoulder bikeways and some bike lanes, require little improvement beyond a change in pavement markings and signage. These types of improvements should be included in the County and Local Municipal capital budget and forecasts. Details pertaining to the maintenance costs are discussed in detail in Sub-Section 7.3.4. Table 7-1 identifies the CWAT Master Plan cost implementation summary while Table 7-2 presents the implementation cost summary in more detail by facility type, jurisdiction for the ultimate network (all phases). Tables E-1, E-2 and E-3 in Appendix E provide the same information separately for each phase.

It is estimated that the total investment to implement the network and develop outreach and promotional programming is about $52,601,720 over the next 20+ years. This cost consists of approximately $51,601,720 for the proposed network and $1,000,000 for updates, outreach and programs. Out of the total investment of the 20+ year longer-term strategy, $28,279,000 is

estimated to be the County of Essex's share. $22,277,720 would be subject to the responsibility of the local municipalities within the County of Essex and ERCA as the proposed facilities fall on roads / corridors under their jurisdiction. $2,045,000 would be subject to the responsibility of the Province of Ontario.

The network cost of $52,601,720 is a conservative estimate and is based on stand-alone unit prices presented in Table 7-2. However, it is assumed that on-road components of the network will typically be included as part of the same tender for a road resurfacing, reconstruction or widening project. Therefore, through economies of scale, the construction cost charged by a contractor should be less.

For on-road facilities identified in the tables, the distance represents the length of the road with two-way bike facilities on it. The distances for multi-use trails in the County and local municipal road rights-of-ways have been assigned to the local municipalities because multi-use trails, like sidewalks, are the responsibility of local municipalities in the County of Essex.

The County of Essex's CWAT Master Plan can only be successful if funding and staff resources are committed by County and Local Municipal Councils on an annual basis.

7.6.3 Funding and Partnership Strategy

The County of Essex's CWAT Master Plan can only be successful if funding and staff resources are committed by County and Local Municipalities on an annual basis. The County should also seek out other sources of revenue from its partners, including local municipalities plus the Provincial and Federal Governments.

A portion of the proposed Active Transportation network falls on roads and lands under local municipalities and other jurisdictions. It is recommended that the County consider a cost-sharing strategy to encourage the implementation of proposed County network segments on roads not owned by the County of Essex.

A proposed implementation cost-sharing strategy is provided in Table 7-3. It was developed and refined by the study team based on input from County and Local Municipal staff who contributed to the development of the CWAT Master Plan. It is proposed that the County and the Local Municipalities could also consider seeking partnership funding in the future from the Federal and Provincial Governments for implementing segments of the CWAT network and outreach initiatives.

CWAT PLAN COST IMPLEMENTATION SUMMARY (BY PHASE and JURISDICTIONAL COST SHARE)									
	By Phase[1,2]				By Jurisdictional Cost Share[2,3]				
JURISDICTION	Phase 1 (Years 1-5)	Phase 2 (Years 6-10)	Phase 3 (Years 11-20+)	TOTAL	COUNTY OF ESSEX TOTAL	LOCAL MUNICIPAL TOTAL	PROVINCIAL TOTAL	ERCA TOTAL	TOTAL
Amherstburg	$ 854,000	$ 2,826,400	$ 3,414,440	**$ 7,094,840**	$ 3,615,240	$ 2,679,600		$ 800,000	**$ 7,094,840**
Essex	$ 3,951,200	$ 522,000	$ 1,505,000	**$ 5,978,200**	$ 3,321,520	$ 2,024,680	$ 400,000	$ 632,000	**$ 6,378,200**
Kingsville	$ 3,435,320	$ 2,284,600	$ 2,468,420	**$ 8,188,340**	$ 5,640,540	$ 2,411,800		$ 136,000	**$ 8,188,340**
Lakeshore	$ 962,840	$ 7,523,260	$ 1,683,680	**$ 10,169,780**	$ 4,668,380	$ 2,885,900		$ 2,920,000	**$ 10,474,280**
LaSalle	$ 539,800	$ 242,800	$ 3,674,300	**$ 4,456,900**	$ 2,703,900	$ 1,796,400		$ 16,000	**$ 4,516,300**
Leamington	$ 2,747,980	$ 2,552,000	$ 647,000	**$ 5,946,980**	$ 2,405,980	$ 3,301,000		$ 240,000	**$ 5,946,980**
Tecumseh	$ 250,940	$ 279,200	$ 2,519,060	**$ 3,049,200**	$ 978,760	$ 1,682,340	$ 600,000	$ 752,000	**$ 4,013,100**
Segments along Common Municipal Boundaries	$ 202,540	$ -	$ 4,469,940	**$ 4,672,480**	$ 3,944,680				**$ 3,944,680**
Province of Ontario	$ 1,000,000	$ -	$ 1,045,000	**$ 2,045,000**		$ -	$ 1,045,000	$ -	**$ 1,045,000**
TOTAL - NETWORK	**$ 13,944,620**	**$ 16,230,260**	**$ 21,426,840**	**$ 51,601,720**	**$ 27,279,000**	**$ 16,781,720**	**$ 2,045,000**	**$ 5,496,000**	**$51,601,720**
OUTREACH / PROMOTION									
CWAT Partnership Fund	$ 500,000	$ -	$ -	**$ 500,000**	$ 500,000	$ -	$ -	$ -	**$ 500,000**
AT Promotion via Windsor Essex County District Health Unit	$ 125,000	$ 125,000	$ 250,000	**$ 500,000**	$ 500,000	$ -	$ -	$ -	**$ 500,000**
GRAND TOTAL - NETWORK, OUTREACH / PROMOTION	**$ 14,569,620**	**$ 16,355,260**	**$ 21,676,840**	**$ 52,601,720**	**$ 28,279,000**	**$ 16,781,720**	**$ 2,045,000**	**$ 5,496,000**	**$ 52,601,720**

NOTES:

[1] Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in the jurisdictional totals.

[2] The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.

[3] Local Municipal Shares of Segments along Common Municipal Boundaries have been included Local Municipal Totals, where applicable.

Table 7-1:
CWAT MASTER PLAN COST IMPLEMENTATION SUMMARY

CWAT MASTER PLAN IMPLEMENTATION COST BY FACILITY TYPE AND JURISDICTION - ALL PHASES

Jurisdiction	Proposed Routes[2,3]															TOTAL DISTANCE AND COST			
	Multi-Use Trail[5]			Bike Lane			Paved Shoulder			Signed Route			Context Sensitive Solution						
	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Total (km)	% (km)	Total ($)	%($)
Province of Ontario	4.0		$ 1,000,000	0.0		$ -	9.5	$ 110,000	$ 1,045,000	0.0		$ -	0.0	$ 330,000	$ -	13.5	1.9%	$ 2,045,000	4.0%
Local Municipality																			
CWATS Route Segments on Shared Local Municipal Boundary Roads[4]	3.0		$ 375,000	3.6		$ 420,000	35.2	$ 110,000	$ 3,872,000	27.4		$ 5,480	0.0	$ 330,000	$ -	69.2	9.8%	$ 4,672,480	9.1%
Amherstburg	11.6		$ 1,200,000	2.5		$ 30,000	25.8	$ 110,000	$ 2,838,000	44.0		$ 23,840	9.1	$ 330,000	$ 3,003,000	93.0	13.2%	$ 7,094,840	13.7%
Essex	7.9		$ 632,000	0.4		$ 4,800	48.5	$ 110,000	$ 5,335,000	10.4		$ 6,400	0.0	$ 330,000	$ -	67.2	9.5%	$ 5,978,200	11.6%
Kingsville	3.2		$ 511,000	0.0		$ -	50.4	$ 110,000	$ 5,544,000	23.9		$ 21,340	6.4	$ 330,000	$ 2,112,000	83.9	11.9%	$ 8,188,340	15.9%
Lakeshore	42.5		$ 4,420,000	0.6		$ 7,200	51.9	$ 110,000	$ 5,709,000	65.3		$ 33,580	0.0	$ 330,000	$ -	160.3	22.7%	$ 10,169,780	19.7%
LaSalle	3.2		$ 766,000	0.0		$ -	0.0	$ 110,000	$ -	23.4		$ 27,900	11.1	$ 330,000	$ 3,663,000	37.7	5.3%	$ 4,456,900	8.6%
Leamington	25.2		$ 2,016,000	2.0		$ 118,000	25.7	$ 110,000	$ 2,827,000	63.0		$ 28,980	2.9	$ 330,000	$ 957,000	118.8	16.9%	$ 5,946,980	11.5%
Tecumseh	13.4		$ 1,752,000	1.7		$ 20,400	11.5	$ 110,000	$ 1,265,000	34.7		$ 11,800	0.0	$ 330,000	$ -	61.3	8.7%	$ 3,049,200	5.9%
TOTAL (km)	**114.0**		**$ 12,672,000**	**10.8**		**$ 600,400**	**258.5**		**$ 28,435,000**	**292.1**		**$ 159,320**	**29.5**		**$ 9,735,000**	**704.9**		**$ 51,601,720**	

NOTES

1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.

2 - Future roads, where known, were taken into consideration when developing the network.

3 - Proposed on-road routes indicated for each local municipality represent the draft CWATS network that are on local roads in each municipality.

4 - CWATS routes on roads that also form the boundary between 2 or more local municipalities have been included in the Shared Local Municipal Boundary Roads total.

5 - Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in th local municipal totals.

5b - The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.

6 - Unit costs for Multi-Use Trails, Bike Lanes and Signed Route are based on scenarios listed in unit cost / facility type table. Refer to Appendix C tables for detailed segment information.

Cost Estimated Based on the Following Unit Prices:

Facility Type	Cost / Km
Multi-Use Path (Limestone, On Abandoned Rail Bed)	$ 80,000
Multi-Use Path (Asphalt, In Boulevard)	$ 250,000
Bike Lane (Restripe Only)	$ 12,000
Bike Lane (Constructed as part of Road Project)	$ 200,000
Paved Shoulder	$ 110,000
Signed Route (Urban)	$ 2,000
Signed Route (Rural)	$ 200
Context-Sensitive Solution	$ 330,000

Table 7-2

Implementation Cost Summary

By Facility Type and Jurisdiction

All Phases

The recommended cost sharing strategy is summarized in Table 7-3 and is based on a principle that the cost to implement the CWAT Master Plan should be shared by the County and local municipalities. The funding strategy outlined below was reviewed and refined based on input from all of the local municipalities in the County of Essex.

1. Funding by the County and local municipalities should be confirmed by their respective Councils on an annual basis.

2. 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 Local Municipal Council selects not to fund the project in the year designated) the project may be deferred until such time funding becomes available.

3. The cost of implementing sidewalks on both Local and County Roads is the sole responsibility of local municipalities. The County of Essex will not fund sidewalks under any of the funding scenarios presented in the CWAT Master Plan.

4. The County will be responsible to provide all CWATS signs for both County and Local road segments. Local municipalities will be responsible for sign and pole installation for local road segments within their jurisdiction.

5. The County will be responsible for 100% of the cost of CWAT network facility implementation on County Roads that are located in rural areas and serve as a connection between designated urban areas.

6. The addition of paved shoulders on County Roads outside of the urban areas are proposed to be implemented when these roads are resurfaced, consistent with the County's capital plan and as funding is available and confirmed by County on an annual basis. Roads identified in the current County Road rehabilitation plan where shoulders may be feasible (e.g. existing granular shoulder width already exists) may be 100% covered by the County and again is funding dependent.

7. Each local municipality will be responsible for 100% of the cost of CWAT network facility implementation on roads under their jurisdiction in both urban and rural areas of their respective municipality.

The recommended cost sharing strategy is summarized in Table 7-3 and is based on the principle that the cost to implement the CWAT Master Plan should be shared by the County and local municipalities.

8. The cost for on-street bike lanes, paved shoulders, in-boulevard multi-use trails including context sensitive facility solutions designated as part of CWATS proposed for **County roads** in urban areas, is to be shared 40% County and 60% Local municipality. CWAT routes on County Roads in urban areas will have greater benefit to local municipal residents and businesses in terms of travel within town (e.g. going to work, local retail/commercial destinations, to school etc.) compared to travel between towns in the County. Therefore the local municipality should be a partner. A 60% funding role confirms this "partnership" and gives the local municipality a formal role in ensuring the route and facility design meets with their needs in the urban area.

9. The cost for on-street bike lanes, paved shoulders, in-boulevard multi-use trails including connecting links and context sensitive facility solutions designated as part of CWATS **on all Local roads** (includes both rural and urban areas) is 100% a Local municipality responsibility.

10. The cost for new off-road multi-use trails in parks, open space and other non-road corridors identified in the CWAT Master Plan is the responsibility of ERCA and/or each respective local municipality. The County may be a minor funding partner through the proposed County Wide Active Transportation Master Plan Municipal Partnership Program. Consistent with current policy, local municipal contributions (annual levy) to ERCA are not to be used for capital improvements such acquisition of land for trails or trail construction. Funding of new trails (including CWATS routes) under the jurisdiction of ERCA is expected to come from one or more sources such as corporate and private citizen donations, provincial/federal grants and separate funding agreements with the local municipality(s) in which a segment of trail is proposed.

11. The phasing strategy in the CWAT Master Plan is a suggested implementation timeframe or guide only, but should be used as a blue print for securing annual budgets for CWAT related projects at the County, ERCA and Local municipal levels.

12. In principle, facilities within urban areas should be constructed or upgraded before connections between urban areas. Consistent with the CWAT funding strategy, rural routes on County Roads will be scheduled by the County and timing coordinated with local municipalities. If a local municipality selects not to fund their portion of a CWAT

connection on a County Road in an urban area at the time the County is considering implementation of the connecting rural segment, the County may select to defer and reschedule the connection in the rural area of the local municipality until such time as the local municipality is able to secure funding for their part of the connection in the urban area.

13. Costs associated with the design and tendering of CWAT projects is proposed to be consistent with the proposed funding strategy (cost sharing options), however the lead for each project will be the responsibility of the jurisdiction that owns the roadway or corridor.

Table 7-3 summarizes the proposed CWAT funding strategy.

Table 7-3: Active Transportation Facilities – Implementation Budget Cost Sharing Options

Facility Type	County of Essex Share	Local Municipality Share	ERCA Share
On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road in a Rural Area	100%	0%	0%
On Street Bike Lanes / Paved Shoulder / Multi-use Trail with or without separation/ Context Sensitive Solution - on a County Road, in an Urban Area	40%	60%	0%
On Street Bike Lanes / Paved Shoulder / Multi-use Trail with or without separation/ Context Sensitive Solution - on a Local Road anywhere.	0%	100%	0%
Signed Routes - anywhere on the AT Network	100%	0%	0%
Sidewalks - anywhere on the AT Network	0%	100%	0%
Multi-Use Trails - outside of County and/or Local Right-of-way	0%	0%	100%
Multi-Use Trails - outside of County and/or Local Right-of-way and owned by Municipality	0%	100%	0%

Note: Cost sharing is applied to the design, construction and maintenance of facilities. However, the maintenance of multi-use trails on County Roads within urban areas is the responsibility of the host municipality.

County Wide Active Transportation Master Plan Municipal Partnership Program

In order to encourage local municipalities and ERCA to begin investing in the CWAT network, it is recommended that the County implement a County Wide Active Transportation Master Plan Municipal Partnership Program. This proposed five year (Phase 1) program is intended to assist Local Municipalities, ERCA and the Go for Health Windsor-Essex / Windsor-Essex County Health Unit in implementing CWAT active transportation outreach initiatives, or facilities that are under their jurisdiction and are proposed for connecting link roadways.

In order to encourage local municipalities and ERCA to begin investing in the CWAT network, it is recommended that the County implement a County Wide Active Transportation Master Plan Municipal Partnership Program.

Therefore, it is proposed that the County establish a budget of $100,000 per year for a total of $500,000 for active transportation related projects. It is recommended that Local Municipalities, ERCA and the Go for Health Windsor-Essex / Windsor-Essex County Health Unit submit proposals to the County under this program. The proposals would set out the following information:

- The details of the project;
- The funding request (i.e. how much the County is being asked to fund);
- A demonstration of why this is a priority for the local municipality / agency;
- Confirm the funding commitment by the local municipality; and
- Demonstrates how this project is consistent with the CWAT Master Plan as well as the CWAT Phasing Strategy.

It is proposed that the County consider providing funding up to a maximum of 50% of the estimated cost of any project under this program. It is expected that the County would take a balanced approach with the goal of providing funding under this program to all local municipalities who apply for it.

This program is intended for funding capital expenditures of active transportation facilities or outreach initiatives and not for ongoing operation and maintenance cost of the same facilities.

Recommendations:

7-34: That the County and Local Municipalities establish a budget on an annual basis, with the approval of their respective Councils, to support implementation of the CWAT Master Plan (short term);

7-35: That the County and local municipalities seek out cost sharing opportunities and other sources of revenue from partners in the County of Essex as well as the Provincial and Federal Governments (short term);

7-36: Identify the annual implementation budget for the CWAT Master Plan in the Active Transportation Coordinator's annual report (short term);

7-37: Implement the Recommended Actions identified in the CWAT Master Plan as per the suggested schedule contingent on the available capital funding and County and Local Municipal Council authorization (short term);

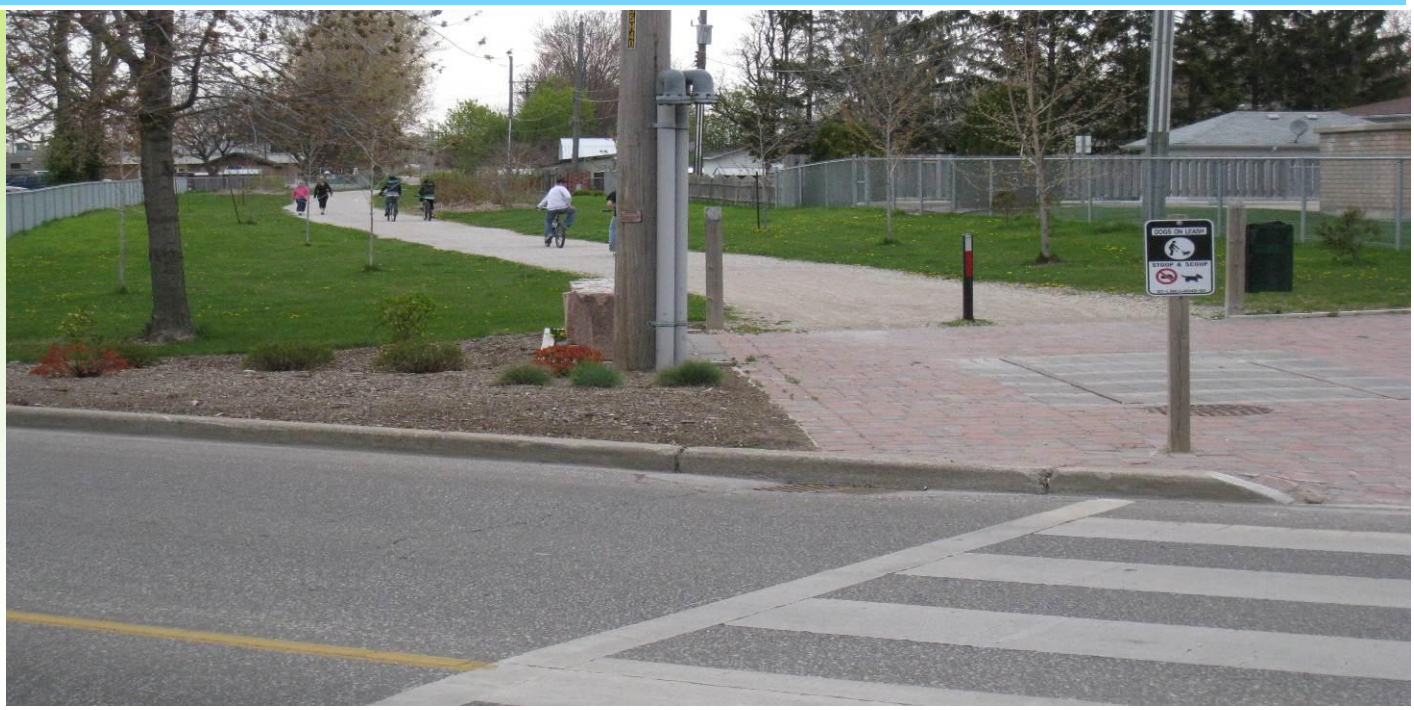
7-38: The County should develop a partnership program with Local Municipalities, ERCA and the Windsor Essex County District Health Unit to provide funding for AT projects and facilities on roadways. These funds would be used for the development and implementation of the proposed AT network and select outreach initiatives as outlined in the CWAT Master Plan at the local/agency level (short term);

7-39: Recognize that implementation of the CWAT network plan requires coordination between the County, Local Municipalities and ERCA, and consistent with the funding strategy, a cost sharing commitment for certain sections of the network (short term);

7-40: That the County schedule implementation of rural network segments once it is confirmed that local municipalities are prepared to implement the associated connecting urban area links (short term);

7-41: Local Municipalities should review their Development Charges Bylaws and if it doesn't already exist, provide a line item that permits the use of DC funds for providing and improving active transportation facilities (short term); and

7-42: The County should explore the development of a County Development Charges Bylaw in order to allocate funds towards the development, improvement and maintenance of active transportation facilities (medium to long term).



8.0 AT POLICIES AND RECOMMENDATIONS

The following are suggested AT supportive policies and recommendations of which some or all should be considered in the future development of transportation related policies for the County as well as its local area municipalities. Ultimately, it is the decision of the County, Local Municipal Councils and municipal staff to adopt these proposed policies and recommendations and apply them in the development of future AT routes and initiatives. The following is a compilation of all the proposed CWAT Master Plan policies and recommendations. The recommendations have been organized by chapter and theme area and are cross-referenced by page number.

8.1 CHAPTER 5 POLICIES & RECOMMENDATIONS

Chapter 5 illustrates and provides details regarding the proposed CWAT Master Plan network. In addition, it outlines proposed facility types and network features specific to the AT network for the County of Essex. It includes policies and recommendations to support the network development and to ensure the successful implementation and maintenance of the

Ultimately, it is the decision of County, Local Municipal Councils and municipal staff to adopt these proposed policies and recommendations and use them to mould the development of future AT routes and initiatives.

proposed CWAT Master Plan. The following policies speak directly to the proposed AT network for the County and the facilities included in the network.

Recognize that the CWAT Plan will evolve over time and improve and expand upon this network by adjusting the routes/facility types as necessary, adding missing links through opportunities offered by unopened road allowances, hydro rights-of-way, abandoned rail trails, open greenspace development and future roadway improvements.

Network:

a. Recognize that all County and Local Municipal roads except 400-series highways are accessible for active transportation unless otherwise designated, and that a vehicular approach to cycling be adopted that recognizes the bicycle as a vehicle which operates on public roadways or within road rights-of-way with the same rights and responsibilities as motor vehicles.

   » Recommendations:

   5-1: The active transportation network as identified in the CWAT Plan should be adopted by the County, ERCA and Local Municipalities (p. 5-7); and

   5-2: Recognize that the proposed CWAT network will change over time by adding missing links and opportunities offered by unopened road allowances, hydro rights-of-way, existing or abandoned rail corridors, open green-space and future roadway improvements (p. 5-27).

b. Protect for and develop the active transportation network which includes sidewalks, off-road multi-use trails, and on-road cycling facilities, consistent with the County of Essex County Wide Active Transportation Master Plan as a Schedule in the County's Official Plan as well as local municipal plans. Recognize that the CWAT Plan will evolve over time, and improve and expand upon this network by adjusting the routes/facility types as necessary, adding missing links through opportunities offered by unopened road allowances, hydro rights-of-way, abandoned rail trails, open greenspace development and future roadway improvements. Amendments to the network plan are not required for route or facility type revisions, provided that the continuity and functionality of the network is maintained in the same general location and/or is consistent with the route selection principles included in the CWAT Master Plan.

» Recommendations:

5-3: Consider the application of the Institute of Transportation Engineers (ITE) recommended practices for the application site design guidelines that "Promote Sustainable Transportation Through Site Design"[1] (p. 5-27).

8.2 CHAPTER 6 POLICIES & RECOMMENDATIONS

The Design Guidelines for the proposed AT network for the County of Essex outline a wide variety of possible facility and the necessary design requirements for each. Throughout the document there are "guidelines" which are meant to be considered when designing an AT facility type now and in the future. Guidelines are different from recommendations as they are meant to be used to "guide" future development rather than dictate design (e.g. standard). The following are some recommendations with regards to facility type design and development for the CWAT Master Plan.

Facility Design

Ensure that the design of active transportation facilities follows recognized and generally accepted guidelines to maximize pedestrian and cycling safety, security, accessibility, convenience and enjoyability.

» Recommendations:

6-1: Apply prevailing, recognized and best available guidelines and standards in the planning, design, construction, maintenance and operations of active transportation facilities (pedestrian & cycling) (short term) (p. 6-105); and

6-2: Refer to the suggested guidelines set out in the Active Transportation Planning and Design Guidelines, TAC Bikeway Traffic Control Guideline and the MTO Bikeway Planning and Design Guidelines when implementing the CWAT Master Plan (short term) (p.6-105).

Guidelines are different from recommendations as they are meant to be a used to "guide" future development rather than determine.

1 Promoting Sustainable Transportation Through Site Design: An ITE Proposed Recommended Practice, Canadian Institute of Transportation Engineers, 2004.

It is recommended that the County establish and chair an Inter-Municipal Active Transportation Advisory Committee that includes local municipal staff representatives, as well as representation from the Essex Region Conservation Authority (ERCA), the Go for Health Windsor – Essex / Windsor Essex County District Health Unit, and other stakeholders as determined by the County.

8.3 CHAPTER 7 POLICIES & RECOMMENDATIONS

County Wide Active Transportation Study

Adopt the County of Essex County Wide Active Transportation Study that includes goals and objectives for creating a pedestrian and cycling friendly region through an integrated AT network plan and implementation strategy, policies, and supporting education, enforcement, promotion and monitoring programs. Complete a formal update of the CWAT Plan at least every five years, with the next update to be scheduled no later than 2016.

» Recommendations:

7-1: Adopt the 20+ year active transportation network implementation plan as identified in the CWAT Master Plan and include it as a schedule in the County and Local Municipal Official Plans (when next updated) (short term); (p. 7-4);

7-2: The County should establish and chair an Inter-Municipal Active Transportation Advisory Committee. It is proposed that this AT Committee include local municipal staff representatives, as well as representation from the Essex Region Conservation Authority (ERCA), Go for Health Windsor-Essex / Windsor Essex County District Health Unit, and other stakeholders as determined by the County (short term) (p. 7-4);

7-3: The AT Committee should provide input and guidance to local municipalities as segments of the CWAT network are implemented that are under local municipal ownership (short term) (p. 7-4); and

7-4: The County should coordinate active transportation network implementation with the County's Transportation Services Department Five-Year Road Rehabilitation (short term) (p. 7-4).

Leadership Role

Adopt a "leadership by example" role that showcases to other municipalities and employers the implementation of infrastructure and innovative programs that support, encourage, educate and enforce safe cycling.

» Recommendations:

7-5: That the role of Active Transportation Coordinator, responsible for the "championing" of AT related issues, initiatives and programming throughout the County be assumed by the County's Manager of Transportation Planning (short term) (p. 7-6); and

7-6 The Active Transportation Coordinator should be responsible for the implementation and follow-up of the CWAT Master Plan at the County level and provide updates on the progress of the study when necessary (short term) (p. 7-6).

A Five-Step Implementation Process

The five-step implementation process is a tool for guiding the implementation of the active transportation network facilities in the County of Essex. It ensures that roads designated in the CWAT Master Plan for future pedestrian and cycling routes are given due regard when planning, designing and budgeting larger capital / infrastructure projects.

» Recommendation:

7-7: The AT Committee, County and Local Municipal staff should review the proposed five-step process tool for guiding the implementation of active transportation network facilities in the County of Essex and adapt it as necessary (short term) (p. 7-13); and

7-8: The CWAT Plan should be reviewed and given consideration when County Roads (or local municipal roads identified as part of the CWAT network) and other capital infrastructure projects are identified and scheduled (short term) (p. 7-13).

The CWAT Plan should be reviewed and given consideration when County Roads (or local municipal roads identified as part of the CWAT network) and other capital infrastructure projects are identified and scheduled.

Bicycle Parking & End Trip Facilities

Encourage the continued expansion of bicycle trip end facilities (parking, lockers, showers) at all cycling destinations, whenever possible or practical through the following measures:

- Development of a comprehensive bicycle parking program that establishes public and private sector responsibilities and opportunities;

Practice Transportation Demand Management by identifying methods to help developers reduce costs and land requirements by avoiding or reducing the need for large surface land area parking lots

- Requiring the land use planning approval process and zoning by-laws to set standards for bicycle parking that is adequate to meet demands, and produce secure, illuminated, highly visible, sheltered and convenient bicycle parking where feasible;
- Providing leadership by example through focusing bicycle trip end facilities on County and locally owned properties and inter-regional transit hubs;
- Practice Transportation Demand Management by identifying methods to help developers reduce costs and land requirements by avoiding or reducing the need for large surface land area parking lots;
- Ensuring that the location and design of bicycle parking minimizes any impediments with other systems such as pedestrians and emergency vehicles; and
- Developing effective strategies to prevent bicycle theft.

» Recommendations:

7-9: The AT Committee, County, Local Municipalities, ERCA and respective partners should make the development of end-of-trip facilities a priority during the planning and implementation of active transportation facilities (medium term) (p. 7-16); and

7-10: Create partnerships with local public and private organizations and integrate end-of-trip facilities into active transportation promotional strategies and initiatives (medium term) (p. 7-16).

Construction

It is suggested that any construction or reconstruction under the County's and/or local area municipalities' review or authority include provisions to provide for active transportation facilities to meet the needs and ensure the safety of pedestrians and cyclists.

» Recommendations:

7-11: Review the CWAT Master Plan with County or Local Municipal road or other infrastructure projects that are

identified or scheduled by the County and its local area municipalities (short term) (p. 7-18); and

7-12: That the County, Local Municipalities and ERCA should recognize that adjustments to the proposed network plan in the CWAT Plan will occur from time to time and that this is consistent with a goal of ensuring the Master Plan is flexible and can respond to changes and new opportunities (short term) (p. 7-18).

Operations and Maintenance

It is suggested that transportation operational measures undertaken as part of system management work are identified and implemented to support safe and convenient cycling. These measures may include, but may not be limited to:

- Exemptions from turn prohibitions;
- Contra-flow cycling lanes on one way streets;
- Vehicle/bicycle detection equipment at intersections; and
- Management of loading zones to minimize disruption of cyclists.

Endeavour to ensure the safe and comfortable year round operation of the primary pedestrian system and cycling network through the adoption, implementation and monitoring of pedestrian and cycling maintenance practices and standards for both on and off-road routes.

» Recommendations:

7-13: The County/Local Municipalities should consider that additional snow storage space be designed into the road cross section in their next review of respective road rights-of-way and design guidelines/standards (medium term) (p. 7-18);

7-14: That the County, Local Municipalities and ERCA review their annual maintenance budgets to accommodate the addition of AT infrastructure (short term) (p. 7-18); and

7-15 That the County, Local Municipalities and ERCA consider updating existing pedestrian and cycling infrastructure to current guidelines (as noted in the Planning, Design and Operation Guidelines in Chapter 6 of the report) (medium or long term) (p. 7-18).

Endeavour to ensure the safe and comfortable year round operation of the primary pedestrian system and cycling network through the adoption, implementation and monitoring of pedestrian and cycling maintenance practices and standards for both on and off-road routes.

Ensure public safety and the integrity of the transportation system by incorporating bicycle facilities in a compatible, complimentary and non-conflicting manner.

Land Use Planning & Development

Incorporate considerations for active transportation in the land use planning, development and approval process to ensure that land use patterns and transportation systems support and/or give priority to active transportation facilities such as multi-use trails, bicycle lanes, paved shoulders and trip end facilities (e.g. secure bike parking, showers, and lockers).

» Recommendation:

7-16: Work to encourage AT (pedestrian & cycling) friendly streetscaping, urban design and AT oriented land development in collaboration with local area municipalities and the conservation authority through planning and design studies and development reviews (short term) (p. 7-23).

Quality of Life/Liveability

Ensure public safety and the integrity of the transportation system by incorporating bicycle facilities in a compatible, complementary and non-conflicting manner. For example, the County and its local municipalities will continue to minimize interference with pedestrians by prohibiting cycling on sidewalks by adults.

» Recommendation:

7-17: Explore land use planning initiatives and policy development such as mixed land use, higher density urban areas and pedestrian and cyclist friendly streetscapes to promote / facilitate an increased quality of life and liveability within the communities of the County of Essex (medium term) (p. 7-23).

Sustainable Transportation

Recognize and support walking and cycling as an important mode of transportation to help facilitate the development of a more sustainable transportation system that uses resources in a manner that is efficient and considerate of the sustainability of the County.

» Recommendations:

7-18: Continue to increase pedestrian and cycling connectivity to key destinations through the development of continuous

links to local public transit and trails as well as shorter blocks (medium term) (p. 7-23);

7-19: Build upon the existing Safe Routes to School Program throughout the County in collaboration with the Safe Routes to School Organization as well as the Health Unit (medium term) (p. 7-24); and

7-20: The AT Committee, County and Local area municipalities should adopt a Pedestrian Charter to help facilitate and promote the development of a walkable and pedestrian friendly environment throughout the County as well as the local municipalities (medium to long term) (p. 7-24).

Transportation Efficiency

Recognize active transportation as an important consideration when coordinating transportation and land use planning, by helping to reduce space needed for facilities such as parking, and being supportive of more intensive land use practices.

» Recommendation:

7-21: Promote the development of high-density living, mixed land uses, development in close proximity to schools and integrated transportation planning to decrease time spent travelling and increase the likelihood of walking and cycling to key destinations throughout the community (medium term) (p. 7-24).

Integration

Recognize that active transportation is an important component of a multimodal transportation network by incorporating considerations for pedestrians and cyclists within an integrated land use and transportation planning and decision making process.

» Recommendation:

7-22: Consider elements of AT transportation planning when addressing land use planning and design considerations throughout the County. These could include the design of

Explore land use planning initiatives and policy development such as mixed land use, higher density urban areas and pedestrian and cyclist friendly streetscapes to promote / facilitate an increased quality of life and liveability within the communities of the County of Essex.

streets, additional pedestrian and cycling routes and transit planning (short term) (p. 7-24).

Education and Outreach

Support education and pedestrian and cycling skills training initiatives that create an awareness of safe walking and cycling practices for all road, sidewalk and pathway users.

» Recommendations:

7-23: Go for Health Windsor – Essex / Windsor Essex District Health Unit, the County and Local Municipal partners should consider the implementation of cycling and pedestrian/trail education programs and partner with other not-for-profit organizations, school boards, local municipalities, and agencies to educate residents on walking and cycling (short to medium term) (p. 7-29);

It is recommended that the Windsor Essex District Health Unit should implement a new position to coordinate the outreach initiatives identified in the Outreach strategy for the CWAT Master Plan.

7-24: Go for Health Windsor – Essex / Windsor Essex District Health Unit should implement a new position to coordinate the outreach initiatives identified in the Outreach strategy for the CWAT Master Plan. This role would begin as a part time position at 2 or 3 days a week and may expand into a full time position if necessary (short term) (p. 7-29);

7-25: The Design Guidelines identified in the CWAT Plan should be considered by the Windsor Essex District Health Unit, the County and Local Municipalities as active transportation educational materials are developed, particularly for those that specifically target children and youth (short to medium term) (p. 7-29); and

7-26: The Windsor Essex District Health Unit ,County, and Local Municipalities should continue to educate children on the use of sustainable modes of transportation such as walking, cycling and public transit (where available), and reduce their auto-dependency (through their parents) so they may be more inclined to choose active modes of transportation when they are adults (short term) (p. 7-29).

Mobility and Access

Improve and enhance access to active transportation facilities and destinations by supporting a broad range of initiatives that improve route network infrastructure, encouragement and promotion of active transportation, and education and enforcement programs for a safer, more knowledgeable pedestrian and cycling community.

» Recommendation:

7-27: Develop and distribute newsletters and / or digital newsletters to promote and educate the public on AT opportunities, recommendations for routes and destinations and updates on available and safe routes. These initiatives will be undertaken as a combined effort by the Health Unit as well as the local area municipalities (short to medium term) (p. 7-30).

Benefits of Active Transportation

Recognize and promote the many benefits associated with the development of an active transportation network and the implementation of AT facilities. Active Transportation provides benefits that include increased community health due to increased exercise, economic returns from retail sales and tourism, positive environmental impacts from a reduction in air pollution, energy consumption and mobility space requirements, and increased social interactions.

» Recommendation:

7-28: Utilize educational programming and materials to promote and inform people of the benefits of AT on the health, environment, economy and tourism of the County of Essex. The coordination of these programs and materials will be coordinated and development by the Health Unit in collaboration with the local area municipalities (short to medium term) (p. 7-30).

Encouragement & Promotion

Encourage and promote active transportation (walking and cycling) as a preferred mode of transportation for both utilitarian and recreational purposes

Active Transportation provides benefits that include increased community health due to increased exercise, economic returns from retail sales and tourism, positive environmental impacts from a reduction in air pollution, energy consumption and mobility space requirements, and increased social interactions.

through activities such as infrastructure and accessibility improvements, educational programs, enforcement campaigns and promotional initiatives.

» Recommendations:

7-29: Go for Health Windsor – Essex / Windsor Essex District Health Unit, County and Local Municipalities should apply the principles of CBSM (Community-based Social Marketing) in their respective marketing and promotional efforts related to the CWAT Master Plan (short term) (p. 7-34); and

7-30: A comprehensive approach should be put in place by the District Health Unit / Local Municipalities to encourage students and employees to walk or cycle to school or work, and to combine these modes with transit (where available) for longer distance trips (medium term) (p. 7-34).

Work with County Police to increase the effective enforcement of proper behaviour for both on-road and multi-use pathways, to comply with regulations of the Highway Traffic Act and Municipal By-Laws

Enforcement

Work with Essex County OPP and Local Municipal Police Services to increase the effective enforcement of proper behaviour for both on-road and multi-use pathways, to comply with regulations of the Highway Traffic Act and Municipal By-Laws. It is also recognized and encouraged that the bicycle be used as a law enforcement tool for trained police officers who reflect role models and exhibit proper cycling behaviour in the community.

» Recommendations:

7-31: The Essex County OPP and Local Municipal Police Services should continue to be an active member in the development and delivery of cycling safety programs throughout the County (short term) (p. 7-35); and

7-32: Enforcement activities of the OPP and area municipal police services should be supplemented by local municipal by-law enforcement Officers for issues relating to sidewalk obstruction, misuse of bicycle and pedestrian facilities and misuse of trails etc. (medium term) (p. 7-35).

Safety and Security

Encourage safe and secure active transportation (walking and cycling) practices and behaviour to the greatest extent possible by all road and path users through education, skills training and the application of active transportation facility guidelines and best practices.

- Recommendation:

  7-33: Consider transportation operational measures in the future as part of the transportation system management to support safe and convenient active transportation. These measures may include, but are not limited to:

  - Exemptions from turn prohibitions for cyclists;
  - Bicycle detection at intersections;
  - Management of loading zones and street parking to minimize disruption to cyclists and pedestrians; and
  - Enforcing speed limits on roadways where observed speeds exceed acceptable levels (medium to long term) (p. 7-36).

Funding

The County of Essex's CWAT Master Plan is an integrated body of components, and requires a strategic approach for implementation. Central to this is the need for committed funding and staff resources on an annual basis.

- Recommendations:

  7-34: That the County and Local Municipalities establish a budget on an annual basis, with the approval of their respective Councils, to support implementation of the CWAT Master Plan (short term) (p. 7-43);

  7-35: That the County and local municipalities seek out cost sharing opportunities and other sources of revenue from partners in the County of Essex as well as the Provincial and Federal Governments (short term) (p. 7-43);

  7-36: Identify the annual implementation budget for the CWAT Master Plan in the Active Transportation Coordinator's annual report (short term) (p. 7-43);

Ensure safe and secure active transportation (walking and cycling) practices and behaviour to the greatest extent possible by all road and path users through education, skills training and the application of active transportation facility guidelines and best practices.

It is recommended that the County should explore the development of a Development Charges Bylaw in order to allocate additional funds towards the development, improvement and maintenance of active transportation facilities

7-37: Implement the Recommended Actions identified in the CWAT Master Plan as per the suggested schedule contingent on the available capital funding and County and Local Municipal Council authorization (short term) (p. 7-43);

7-38: The County should develop a partnership program with Local Municipalities, ERCA and the Windsor Essex County District Health Unit to provide funding for AT projects and facilities on roadways. These funds would be used for the development and implementation of the proposed AT network and select outreach initiatives as outlined in the CWAT Master Plan at the local/agency level (short term) (p. 7-43);

7-39: Recognize that implementation of the CWAT network plan requires coordination between the County, Local Municipalities and ERCA, and consistent with the funding strategy, a cost sharing commitment for certain sections of the network (short term) (p. 7-43);

7-40: That the County schedule implementation of rural network segments once it is confirmed that local municipalities are prepared to implement the associated connecting urban area links (short term) (p. 7-43);

7-41: Local Municipalities should review their Development Charges Bylaws and if it doesn't already exist, provide a line item that permits the use of DC funds for providing and improving active transportation facilities (short term) (p. 7-43); and

7-42: The County should explore the development of a County Development Charges Bylaw in order to allocate funds towards the development, improvement and maintenance of active transportation facilities (medium to long term) (p. 7-43).

8.4 CHAPTER 9 POLICIES & RECOMMENDATIONS

Performance Measures

The success of the CWAT Master Plan should be evaluated on an annual basis by applying and assessing a series of performance measures as well as assessing the ease with which it is being integrated with other municipal and operational initiatives.

- Recommendations:

  9-1: The AT Committee, the County, Local Municipalities, and ERCA should consider the application of performance measures (outlined in Chapter 9) to evaluate the implementation of the CWAT Master Plan (short to medium term) (p. 9-5).

9.0 NEXT STEPS

Measuring Success

Implementation of the CWAT Master Plan is expected to begin in 2012 (with some initiatives possibly starting in 2011). It is recommended that the County, in partnership with ERCA and the local area municipalities implement the CWAT Plan in accordance with the proposed phasing, and as capital funding is made available by the County and local municipal Councils.

Collecting data to evaluate the different and changing aspects of pedestrian and cyclist behaviour will assist in evaluating the effectiveness and overall contribution of various activities to achieve the stated vision and goals of this plan.

Data collection should begin in 2012 in order to support the various CWAT initiatives. If funding is available, this could include conducting a public attitude survey in partnership with other public and potential private sector partners. The data will establish a benchmark with which to compare later data as the CWAT Plan is implemented.

It is recommended that the County, in partnership with ERCA and the local area municipalities implement the CWAT Plan in accordance with the proposed phasing, and as capital funding is made available by the County and local municipal Councils.

The data collection could be used to:

- Confirm the overall direction and implementation of the CWATS;
- Confirm statistics on the number and type of pedestrians and cyclists;
- Verify the route selection process; and
- Identify the supply and demand for bicycle parking.

Over time, the CWAT monitoring system should identify changes in route preference to assist in determining where to implement changes to "hard and soft" pedestrian and cycling infrastructure. The results of this assessment may be used to determine the success of implementing various types of pedestrian and cycling facilities. However, caution must be used in relying on an immediate response to a given improvement. An extended timeframe should be established to ensure that pedestrian and cycling awareness initiatives are in place to assist in changing travel patterns and habits.

Assessing the impact and costs of the implementation program might be based on information such as:

- Origin/destination counts;
- Screen line counts on a finer scale that are appropriate to pedestrian and cycling travel patterns;
- Intersection counts to coincide with routes on which improvements are proposed, and also on parallel routes; and
- User counts on major trail systems.

This information should be collected every two to three years (maximum every 5 years) and during the cycling season.

Data collected through evaluation/monitoring programs along with information collected through on-going public consultation exercises, such as user surveys and public attitude surveys conducted every five years, will inform and assist in preparing the list of annual priorities and measuring the performance of the Plan.

A component of measuring the implementation of the Plan and its success in meeting objectives is to establish performance measures and targets.

Table 9-1 identifies a set of outreach and infrastructure performances measures, and targets by Phase. It is proposed that these performance measures be reviewed and confirmed by the proposed AT Committee and included as part of the recommended five-year update to the CWAT Plan.

Table 9-1: Proposed Performance Measures

PERFORMANCE MEASURE	EXISTING BENCHMARKS	TARGET		
		PHASE 1	PHASE 2	PHASE 3
Number of schools and students participating in pedestrian or bicycle safety education programs or events	TBD	TBD	TBD	TBD
Percentage of children that walk bike or take transit to school in the County of Essex	TBD	40%	60%	70%
Percentage of reported pedestrian and bicycle collisions per 1000 population in the County of Essex	TBD – OPP / Local Municipal Police	Reduction	Reduction	Reduction
Percent of all County residents who commute to work primarily by walking or cycling	2.7% (2006 Census)	3.0%	5.0 to 7.5 %	15%
Kilometres of new on and off-road AT and Trail facilities implemented as per the CWATS	75	321	174	209

Monitoring and Performance Indicators – Proposed Actions:

Consider the CWATS performance measures when evaluating the implementation of the CWATS and updating the Master Plan every five years.

Where Do We Go From Here?

There are a number of recommended steps that the County of Essex should take in 2011 and 2012 to advance the CWAT Master Plan:

There are a number of recommended steps that the County of Essex should take in 2011 and 2012 to advance the CWAT Master Plan.

- Submit the CWAT Master Plan report to Council with a recommendation that it be adopted in principle. Issue a public notice announcing the completion of the CWATS and note that the report is available for public review for a 30 day period, following which, if there are no major concerns, it will be confirmed by Council. The draft report should be posted in digital format on the County's website so that it can be viewed and downloaded by the public and copies made available at the County's offices. All stakeholders and agencies that were invited to comment during the study should be emailed the link to the CWAT Plan along with an invitation to review and provide comments within the time period defined (30 days proposed);
- Copies of the CWAT Plan should be provided to all County Departments;
- Issue a digital copy of the CWAT Plan to local municipalities, adjacent municipalities, the Ontario Ministry of Transportation (Policy Branch and Design Branch), and local school boards for information and as input to their long range planning initiatives.

The County Wide Active Transportation Study presented in this report is the product of the hard work and effort of many people. The study team would like to thank the members of the public, agency representatives and stakeholders who gave their time and energy in the development of this planning study, especially those who participated in the public open houses, completed the online survey, and the many others who provided written or verbal input to the study team.

Recommandations:

9-1: The AT Committee, the County, Local Municipalities, and ERCA should consider the application of performance measures (outlined in Chapter 9) to evaluate the implementation of the CWAT Master Plan.

The study team would like to thank the members of the public, agency representatives and stakeholders who gave their time and energy in the development of this planning study, especially those who participated in the public open houses, completed the online survey, and the many others who provided written or verbal input to the study team.

Appendix A

ONLINE QUESTIONNAIRE RESULTS

County Wide Active Transportation Study (CWATS) Questionnaire

1. Do you agree that the County of Essex should invest in improvements that provide opportunities for trail and active transportation use? (Select one response)

	Response Percent	Response Count
Strongly Agree	76.5%	228
Agree	18.8%	56
Neutral	3.0%	9
Disagree	1.3%	4
Strongly Disagree	0.3%	1
answered question		298
skipped question		4

2. How often do you use the following for commuting, recreation, fitness, tourism, travel or other purposes? (Select one of the following for each mode)

	Every day	A few times a week	A few times a month	A few times a year	Never	Response Count
Hiking	2.1% (5)	16.0% (38)	20.2% (48)	**34.9% (83)**	26.9% (64)	238
Cycling	19.8% (55)	**35.6% (99)**	14.7% (41)	19.1% (53)	10.8% (30)	278
Walking/jogging	18.6% (51)	**44.9% (123)**	16.8% (46)	11.3% (31)	8.4% (23)	274
Roller Blading/Skateboarding	0.5% (1)	9.5% (20)	8.5% (18)	19.4% (41)	**62.1% (131)**	211
					Other (please specify)	45
					answered question	**298**
					skipped question	**4**

Open Ended Responses:

Other (please specify)

1	Travelling from Tecumseh to Stoney Pointe area in Lakeshore 2-3 times/week in summer.
2	cross country skiing
3	dog walking 3-5 times per day
4	I would walk and cycle more if there was proper infrasturcture to allow me to safely cycle. Its hard to bike when there are no bike lanes anywhere or if there are, they are poorly maintained. Its hard to use active transportation, when things are designed to make it hard for you to do so. Dont just design for getting cars from point A to point B.
5	driving
6	Tobagan hills - frequently in Winter.
7	Seasonal
8	snow shoeing and cross country skiing
9	Cross Country Skiing and Snow Shoeing
10	Birding
11	would love to roller blade on Greenway
12	Plan to walk and cycle daily for fitness and local shopping purposes
13	Public Transportation
14	Snowmobiling
15	Cross Country Skiing (A few times a year)

16	Cross Country Skiing (A few times a year)
17	Cross Country Skiing (A few times a year)
18	Cross Country Skiing (A few times a year)
19	Cross Country Skiing (Never)
20	Cross Country Skiing (Never)
21	Public Transport
22	ATV
23	ATVing
24	not enough ATV trails
25	ATVing
26	ATV riding
27	Atving
28	I atv-utv-rtv ride once a week
29	ATV Trail = Few Times a Week
30	atv
31	ATV Trails - Travel a few times a month
32	riding an ATV about once a week on the few meager trails that are there
33	Atving
34	ATV riding / few times a week
35	ATV activities
36	Like to see more Atv trails
37	Atv riding on essex county atv trails
38	ATV Club
39	Recreationsal ATVing a few times a month with family and friends.
40	atving - when weather permits
41	ATV riding would use the trails at least a few times a week
42	ice skating
43	Boat Ramps
44	Running and Training for Running Races throughout the county
45	Dirt Jumping, Pedal biking would be nice to have an area where bikes could go almost like a skate park and ride and hit jumps and berms.

3. Please select in order the types of uses you think should be considered in the development of a County-Wide Active Transportation System:

	1. Most often	2. Less often	3. Not often	4. Least often	5. No opinion	Response Count
Hiking	22.9% (59)	**34.9% (90)**	21.7% (56)	14.0% (36)	6.6% (17)	258
Cycling	**77.6% (225)**	14.5% (42)	2.8% (8)	2.8% (8)	2.4% (7)	290
Walking/jogging	**57.8% (166)**	31.7% (91)	4.5% (13)	3.5% (10)	2.4% (7)	287
Roller Blading/Skateboarding	13.6% (32)	24.7% (58)	18.3% (43)	**32.3% (76)**	11.1% (26)	235
					Other (please specify)	44
					answered question	**298**
					skipped question	**4**

Open Ended Responses:

Other (please specify)

1	Bus system for the county
2	bus
3	wheelchair use - walking/jogging with stroller
4	Cross Country Skiing and Snow Shoeing
5	Birding
6	good roadways and public transport should be considered first
7	Boating example Cedar Creek link to Lake
8	Public Transporation
9	multi use paths for many forms of active transportation
10	Cross Country Skiing (less often)
11	Cross Country Skiing (Least Often)
12	Cross Country Skiing (Not Often)
13	Cross Country Skiing (No Opinion)
14	Cross Country Skiing (Least Often)
15	Cross Country Skiing (Less Often)
16	Cross Country Skiing (Least Often)
17	Cross Country Skiing (Least Often)

18	Cross Country Skiing (Least Often)
19	Public Transport
20	ATV/ORV
21	ATVing
22	ATVING
23	Multi-Use motorized and non-motorized
24	develop ATV trails
25	I believe we could incorporate a multi-use trail system whereby ATV riders (who would give the right of way to any pedestrian or bicycle rider) As up north, they can all co-exist well.
26	ATVing
27	ATV riding
28	Atving
29	atv riding and utv-rtv
30	ATVING
31	ATV trail most often
32	atv
33	ATV Riding - Most often
34	ATV'ing
35	Atving
36	ATV Riding / most often
37	Multipurpose trail to include ATV usage
38	Atv Is # 1
39	atv recreation trails
40	ATV
41	Atving 3rd.
42	atv use more often
43	ATV riding, there are many ATV riders in the county
44	Trails for wheel chairs and scooters

4. Please select which reasons motivate you to use the active transportation system? (Please rank the purposes for which you use Active Transportation)

	1. Most often	2. Less often	3. Not often	4. Least often	5. No opinion	Response Count
Active Commuting, which involves journeys to and from work	**30.2% (80)**	18.5% (49)	16.2% (43)	26.0% (69)	9.1% (24)	265
Active Workplace Travel, which includes trips during work hours such as delivery of materials or attending meetings	13.0% (33)	19.7% (50)	26.4% (67)	**28.3% (72)**	12.6% (32)	254
Active Destination Oriented Trips, which includes trips to and from school, shops, visiting friends and running errands	**36.4% (98)**	34.9% (94)	16.0% (43)	8.6% (23)	4.1% (11)	269
Active Recreation, which involves the use of an active transportation mode for fitness or recreational persuits, such as hiking or cycling	**78.8% (231)**	9.9% (29)	5.5% (16)	3.4% (10)	2.4% (7)	293
					Other (please specify)	22
					answered question	**298**
					skipped question	**4**

Open Ended Reponses:

Other (please specify)

1	Training. 5-7hrs per day on these roads. Give us a wide shoulder to ride.
2	unable to from belle river to windsor -to far esp in winter
3	Public Transportation
4	if we had one near our house I would use it
5	Refer to Questionnaire #1, hard copy
6	decreased ability to afford private/automobile transport. Cars, gas, road maintenance too costly.
7	WindsorEats' Wine Trail Rides
8	ATVing
9	ATVING

10	Atving
11	atv-utv-rtv riding
12	ATVING
13	ATV - RECREATION
14	Active Recreation
15	Atving
16	ACTIVE ATV CLUB MEMBER
17	Atv # 1
18	atv trails
19	ATV ing
20	ATV's being outdoors and enjoying nature
21	cycling
22	I walk the most for my health

5. Please rank from most important (1) to least important (5) the improvements that might encourage you to walk or bike more often? (Rank all that apply)

	1. Most important	2.	3.	4.	5. Least important	Response Count
More recreational multi-use hiking and cycling trails	**65.3% (173)**	23.8% (63)	5.7% (15)	1.9% (5)	3.4% (9)	265
Bike lanes or paved shoulders (on-road)	**67.0% (175)**	17.6% (46)	8.0% (21)	3.1% (8)	4.2% (11)	261
Better connections to key destinations (school, retail/employment node, community centre, bus stop, etc.)	**46.0% (116)**	27.8% (70)	18.3% (46)	5.2% (13)	2.8% (7)	252
Better education for motorists, cyclists and hikers/pedestrians	**34.8% (88)**	28.9% (73)	23.3% (59)	6.7% (17)	6.3% (16)	253
County cycling, trail and pedestrian route map	**37.4% (96)**	25.3% (65)	19.8% (51)	9.7% (25)	7.8% (20)	257
Shower/change facilities at work/school	13.7% (33)	22.0% (53)	21.2% (51)	17.4% (42)	**25.7% (62)**	241
Secure bicycle parking at work/school and other key destinations	**26.8% (67)**	23.6% (59)	23.6% (59)	16.0% (40)	10.0% (25)	250
					Other (please specify)	23
					answered question	**270**
					skipped question	**32**

Open Ended Reponses:

Other (please specify)

1	Best would be a cycling velodrome, where cyclists are 100% safe to train on.
2	Regular trail maintenance.
3	well maintained trails in all seasons would be important
4	Bike Exchange Program as kids out grow bikes you get a bigger one

5	please consider that bike lanes and paved shoulders are still not safe for children--trails much more family friendly
6	Public Transporation
7	Refer to Questionnaire #1, hard copy
8	Commercial Locations as well - need standards
9	ATVing
10	ATVING
11	Need ATV trails
12	multi-use trails should allow ATV use to travel from town to town, great for tourism, and health, outdoor activities
13	atv riding
14	WE NEED ATVING TRAILS
15	ATV TRAILS, SNOWMOBILE TRAILS
16	ACTIVE ATV TRAILS THROUGH COUNTY 1 most import.
17	more atv trails very important
18	ATVing
19	TRue mulyi-use (ATV's, horses etc.)
20	more ATV trails so there can be legal and safe riding
21	have washrooms available
22	MAKE ACCESS TO DOWNTOWN HARROW THROUGH OPP FENCED OFF PARKING LOT. THIS CUTS OFF PEDISTRIAN ROUTE FROM HOMES TO SHOPPING IN TOWN.
23	Ensure that these are within 400m of ALL residences in the urban area.

6. For each of the following statements, please indicate your personal comfort level. (Please rank all statements)

	1. Most comfortable	2.	3.	4.	5. Least comfortable	Response Count
Cycling / Hiking / Walking on multi-use trails within rights-of-way along County roads / local streets	**43.6% (116)**	24.1% (64)	16.9% (45)	6.0% (16)	9.4% (25)	266
Cycling / Hiking / Walking on multi-use trails typically found in parks, open space, natural areas, along abandoned railway lines, in utility corridors	**68.7% (182)**	20.8% (55)	6.0% (16)	1.9% (5)	2.6% (7)	265
Hiking / Walking along County Roads with paved or gravel shoulders.	15.1% (39)	22.1% (57)	**24.0% (62)**	20.5% (53)	18.2% (47)	258
Cycling on local streets and sharing the road with motor vehicle traffic	8.4% (22)	16.4% (43)	21.4% (56)	17.9% (47)	**35.9% (94)**	262
Cycling on County roads with bike lanes or paved shoulders	**35.7% (94)**	22.8% (60)	19.8% (52)	12.2% (32)	9.5% (25)	263
Cycling and sharing the road with motor vehicle traffic on County roads without bike lanes or paved shoulders	5.4% (14)	9.6% (25)	12.3% (32)	11.5% (30)	**61.3% (160)**	261
					answered question	**270**
					skipped question	**32**

7. Please rank from most important (1) to least important (9) the reasons why you think an active transportation system (on-road and off-road) should be developed: (Rank all answers)

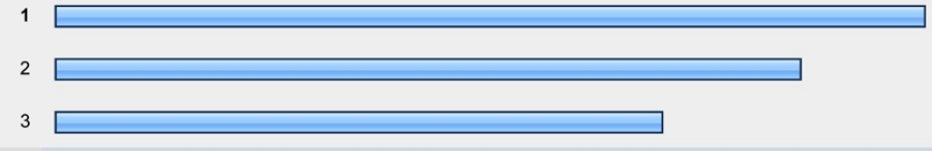
	1. Most important	2.	3.	4.	5.	6.	7.	8.	9. Least important	Response Count
To provide places to walk and cycle within communities	**66.2% (176)**	15.8% (42)	7.9% (21)	4.1% (11)	3.0% (8)	1.5% (4)	0.4% (1)	0.4% (1)	0.8% (2)	266
To improve quality of life and health of County of Essex residents	**70.9% (190)**	15.7% (42)	6.0% (16)	3.4% (9)	2.6% (7)	0.0% (0)	0.4% (1)	0.7% (2)	0.4% (1)	268
To connect communities to each other	**35.6% (94)**	17.0% (45)	18.9% (50)	10.2% (27)	8.0% (21)	4.9% (13)	1.1% (3)	0.0% (0)	4.2% (11)	264
To provide access to historic / cultural destinations and support tourism	**19.2% (50)**	14.2% (37)	17.3% (45)	16.2% (42)	13.5% (35)	4.6% (12)	6.2% (16)	3.5% (9)	5.4% (14)	260
To improve walking and cycling as transportation options	**52.7% (138)**	16.8% (44)	14.1% (37)	6.1% (16)	6.5% (17)	0.8% (2)	1.1% (3)	0.8% (2)	1.1% (3)	262
To provide access to commercial areas (e.g. Central Business Districts, Retail/Shopping areas, etc.)	**22.9% (60)**	20.2% (53)	16.8% (44)	12.2% (32)	10.7% (28)	7.3% (19)	4.6% (12)	3.1% (8)	2.3% (6)	262
To provide access to recreational facilities (e.g. Community Centres, Areas, Urban and Rural Parks, etc.)	**35.2% (93)**	25.0% (66)	13.6% (36)	7.6% (20)	5.3% (14)	5.3% (14)	4.5% (12)	1.9% (5)	1.5% (4)	264
To provide access to institutional uses (e.g. Schools, Churches, Hospitals, Libraries, Municipal Buildings, etc.)	**26.4% (69)**	21.1% (55)	13.4% (35)	8.4% (22)	8.8% (23)	4.6% (12)	4.6% (12)	10.3% (27)	2.3% (6)	261
To provide access to industrial and business park areas	12.2% (32)	9.5% (25)	13.7% (36)	9.5% (25)	13.3% (35)	6.1% (16)	7.2% (19)	6.8% (18)	**21.7% (57)**	263
									Other (please specify)	18
									answered question	**270**
									skipped question	**32**

Open Ended Reponses:

Other (please specify)

1	Training for full time athletes. Sorry, I'm selfish. we have no dedicated training facilities in Essex county. We'll take whatever we can get for good roads.
2	provide safe and accessible travel options for seniors/youth and those in wheelchairs in addition to the general public
3	I beleive a fairly extensive system of sidewalks, roads & pathways already exists within most communities in the County and don't think that this study is a good use of resources.
4	again please consider these answers based on safe options only-not lanes on highways for bikes etc.
5	Refer to Questionnaire # 1, hard copy
6	Any alternative to automobile/private transport is beneficial
7	To provide a safe invirоment for recreational atving
8	ATVING
9	To fully connect the Essex County Urban Area...should be broad focused and inlcude all user groups. Questions are to narrowly focused.
10	Many ATV's in Essex County would appreciate a trail network.
11	to provide atv lanes
12	To provide atv trails for tourism
13	Provide access to gas stations for ATV's
14	Provide recreational use of ATV activity
15	PROVIDE ATV TRAILS THROUGH ESSEX COUNTY (1)....
16	to atv trails
17	ATV riding to different towns for shopping or eating, would be great for small town businesses
18	Eco-Tourism. Cycle Holidays. Bike rental industry.

8. In your opinion, what are the top three locations or corridors (please indicate both the start and end points) in the County of Essex where you think new or better connected trails or bikeways should be considered? (Enter up to three responses in order of importance - maximum 100 characters)



	Response Percent	Response Count
1	100.0%	208
2	85.6%	178
3	69.7%	145
answered question		208
skipped question		94

Open Ended Reponses:

Other (please specify)

	1	2	3
1	Amherstburg to Lasalle	Amherstburg to Essex	Amherstburg to Harrow
2	Leamington to Kingsville	Wheatley to Leamington	Point Pelee to Leamington
3	County Rd 42 between Elmstead and Lakeshore Rd 103	County Rd 42 between Patillo and Lakeshore Rd 105	Seacliffe Drive West between Erie St (Leamington) and Wigle Rd (Kingsville)
4	CR 34 from tracks to CR 19	CR 19 from CR 42 to north of CR 22	
5	CR20 (Seacliff Dr) b/w Leamington and Kingsville - lots of cycling traffic	CR45 b/w CR20 and CR34 - popular corridor for cycling as well	HWY77 b/w Leamington and Blytheswood - plenty of migrant cyclists
6	Manning road (providing a reasonable way to parallel this road for cyclists	Improving and providing bike lanes along the Essex County Bikelane	
7	County Road 20, Leamington - Kingsville	County Road 20, Amherstburg - Lasalle	County Road 22, Puce - Tecumseh
8	KIngsville to Windsor	Kingsville to Leamington	Kingsville to Amherstburg
9	Between Windsor and the Town of Essex (there is currently just unmarked county roads)	Between Windsor and the start of the Greenway Trail (currently there is not an easy way to get to the trail head)	Between LaSalle and Amherstburg
10	Town of Tecumseh - Brighton Rd. east to Deerbrook Ruscom River Rd.	Windsor - Walker & Provincial Road To Town of Essex Talbot St. S & Fairview	Windsor - Sandwich St. & Brock to Amherstburg, Sandwich St. S & Lowes
11	Lakeside Park to Leamington via Park Street and CR 20	Zehrs Kingsville to Leamington via CR 20	Highway 77 from northern greenhouses to downtown Leamingtn

	1	2	3
12	paved shoulder improvements along entire Essex County bikeway	Paved shoulder along CR 20 from Kingsville to Leamington	Paved shoulder on CR 45 from CR 20 to CR34
13	leamington to kingsville....hwy 18		
14	Old Tecumseh rd from Brighton to Puce then along CR22 thru belle river, along Tecumseh road to St.Point	From Riverside dr. along Manning to Talbot rd N. thru Essex, Cottam, Division rd to Kingsville, along CR50	Front rd from Lasalle to Amhersburg.
15	Develop a complete uninterrupted bike lane/access along water of Pennisula of Essex (100kms)	A good N-S link along the eastern boundary between Essex and Kent	A good diagonal bike link from Windsor to Point Peele (follow the old Talbot Trail #3)
16	Amherstburg to Windsor	Leamington to Amherstburg	Leamington or Kingsville to Tecumseh
17	tecumseh/la salle urban to chysler greenway	point pelee/holiday beach to chysler greenway	essex to amherstburg
18	Windsor to Essex	Windsor to Amherstburg	Amherstburg to Lemington(water scenic)
19	North Talbot road. the road the ciocaro club is on. many club rides/training rides leave from there.	Hwy 50	Arner Town line Hwy 23
20	Old Anderdon township to Amherstburg Proper	Old Malden township to Amherstburg Proper	McGregor to Amherstburg Proper
21	pathways connecting to parks, rivers, etc.		
22	Paved shoulders on CR20 (Seacliffe Drive) between Leamington and Kingsville (dangerous section for migrant workers riding bikes)	Paved shoulders on CR33 (Bevel Line & Pt. Pelee Drive) between Leamington & Pt. Pelee National Park (connecting to the trails in the Park)	
23	County Rd. # 50 from malden Centre to Leamington.		
24	If bikeways are on the sides of roads, the bikers should have too follow the rules of the road. IE Stop signs		
25	windsor to essex	windsor to amherstburg	arner rd from essex to harrow
26	Downtown Windsor (Ouellette and Riverside) to Downtown Tecumseh (Manning and Tecumseh)	Tecumseh (New Waterfront Park) to Lakeshore (Belle River, Waterfront Park/Beach)	Windsor (Waterfront) to Leamington (Point Pelee)
27	no		
28	Leamington to Point Pelee	Leamington to Kingsville (Cty Rd 20)	
29	County Road 19 from County Road 22 to at least County Road 42	County Road 22 from Patillo to Banwell	County Road 42 from County Road 19 to Windsor limits
30	amherstburg front rd and texas into amherstburg downtown area	lasalle and amhesrtburg (bike trail preferred)	
31	Amherstburg to Harrow	Windsor to Harrow	
32	Leamington Marina & Dock to Uptown Leamington	Leamington to Kingsville	Leamington Marina & Dock to Point Pelee Park
33	Seacliff Drive, Kingsville to Leamington	Victoria Street, Amherstburg	Richmond St., Amherstburg
34	From east to west across the city so that	linking the city to the county	

	1	2	3
	people can commute to work		
35	Connect the Greenway from Ruthven to Leamington and Point Pelee.		
36	County Road 31 from County Road 2 to County Road 42. Many people who live along this road walk around the Ruscom River	County Road 2 from the Ruscom River Bridge to Belle River, very narrow road, narrow shoulder. This would allow access to the roads that link to lake roads where there are bridges to cross the creeks etc, Duck Creek, Moison Creek.	County Road 2 from Ruscom River bridge to the Ruscom Shores Conservation area, very narrow road and shoulder, access is needed to the conservation area.
37	Connections between Heritage Rd to west Kingsville (ie: Cedar Island/Cedar Beach)	Paved shoulders along the Arner Townline or alternative to connect Kingsville to Essex	Paved shoulder/multiuse path on CR 24/CR 45 (Union Rd.)
38	north shore between Tecumseth & Lakeshore	north south connection to chrysler trail	path along Lake St. Clair
39	County Rd 22 - Manning Road East to the Myers Road - Town of Belle River	Comber - Leamington	County Rd. 2 Patillo Road to Emeryville
40	Any corridor coming off the established Greenway	Bikeways along the main roads to access facilities, such as stores, business and workplaces	
41	Knigsville to Windsor	Kingsville to Leamington	Kingsville to Cottam
42	Tecumseh to Windsor	Tecumseh to Lakeshore	
43	Pt.Pelee	Ojibway	near the lake
44	Kingsville	Leamington	Ruthven
45	Leamington to Kingsville	Leamington to Amherstburg	Leamington to Harrow
46	Tecumseh to Windsor	Tecumseh to Lakeshore	
47	At the 3 corners of Kingsville (main street)	Along busy intersections	Around parks and such
48	County Rd. 20 to County Rd. 31 (Leamington to Albuna Townline)	County Road 20 from Albuna into Kingsville	County Road 34 to County Road 31 (Leamington)
49	I dont think we need trails .We need buses for connection of communities		
50	bike/hiking trail along lake in Belle River does not really accomdate both cyclist and hikers.	In the town of Belle River we need safe and secure cross walks to cross Notre Dame St.	Most sidwalks in the town of Belle River do not accomadate two people and deffinately not wheel chair friendly
51	Wheatley, Leam, Essex Windsor corridor with access from city limits to downtown ****	Windsor to Tilbury	Windsor to Aburg, Harrow, Kingsville, Leam, Wheatley
52	Couty to the City of Windsor	County to each respective county	Municipalities to respective points of interest
53	Windsor to Essex	Essex to Leamington	Essex to Amherstburg
54	Harrow to Amherstburg	Amherstburg to Windsor	Harrow to Essex
55	Ruthven to Point Pelee National Park	Harrow to Amherstburg	Belle River to Village of Colchester (via Town of Essex proper)
56	Amherstburg to Windsor	Amherstburg to Essex	AMherstburg to Kingsville
57	A route from the city of Windsor out to the county towns. One east end and one west end.	A route from Kingsville into Windsor East	A route from Amhersterg into Windsor East

	1	2	3
58	Windsor to Amherstburg	Windsor to St. Clair Beach	
59	Leamington To Windsor	Amherstburg to Windsor	Leamington to Amherstburg
60	winery route	Lasalle at Malden Road into Amherstburg up to Alma	detailed trails throughout Amherstburg
61	Town of Leamington to Kingsville and beyond.	Town of Leamington to Point Pelee National Park.	Leamington to Wheatley.
62	Road cycling from Essex to Harrow	Road cycling from Essex to Leamington	Sidewalks from Park Lane in Essex to the Essex Library
63	Leamington to Kingsville	Lakeshore to Tecumseh	Amherstburg to Harrow
64	Riverside Drive	Tecumseh Rd	Walker
65	Lakeshore to Tecumseh	Tecumseh to Windsor	Leamington to Essex
66	Seacliffe Drive through Leamington	Walker Road from North Talbot to the end	
67	Old Tecumseh Road to Riverview Road in Chatham.	Highway from Wheatley to Erieau.	Riverside Drive from West End to Belleriver.
68	Within Windsor to areas in the County of Essex		
69	Amherstburg to Lasalle	Amherstburg to Essex	Amherstburg to Kingsville
70	Perimeter of the county and North/South Bissection - Bike Lane	paved shoulders on CR20 (Seacliffe Drive) between Leamington and Kingsville	
71	signage and paved shoulder improvements along the entire Essex County Bikeway	paved shoulders on CR20 (Seacliffe Drive) between Leamington and Kingsville	paved shoulders on CR45 (Union Ave) between CR20 and CR34
72	Town of Lakeshore - north shore trail connecting eaterly through to the Town of Tecumseh	Trails leading from Essex to surrounding municipalities (sort of like a Central Hub) as well as a contour trail connecting north south east and westerly borders with trails	South Shore of Essex County - would be great to connect all the communities on Erie for recreational purposes as well as tourism. Could incorporate the Wine Route
73	Kingsville - Leamington	Belle River - Woodslee	Woodslee - Kingsville
74	RIVERSIDE DRIVE, WINDSOR/TECUMSEH	WYANDOTTE, WINDSOR	TECUMSEH ROAD
75	lakeshore to tecumseh		
76	cr20 betwenn Leamington and Kigsville	cr45 (Union Ave.) between cr20 and cr34	
77	seacliff rd.	highway 50	
78	LaSalle to Windsor	LaSalle to Essex	Essex to Windsor
79	All along the Coast line around the county to Wheatley	From Wheatley to Stoney Point	From Windsor to Chatham
80	signage and paved shoulder improvements along the entire Essex County Bikeway	paved shoulders on CR20 (Seacliffe Drive) between Leamington and Kingsville	paved shoulders on CR45 (Union Ave) between CR20 and CR34.
81	Belle River to Windsor	Tecumseh to Essex to Leamington	Tecumseh to Lasalle/
82	continued links to the Chrysler Canada Greenway	linking the Greenway with the City of Windsor	Linking the Greenway with other potential abandoned rail corridors and with urban centres of each municipality.
83	Nothing comes to mind on any of this.		

	1	2	3
84	End of Greenway to Leamington	Matchette Road in LaSalle	Connection of Greenway at Oldcastle into Windsor
85	Old Tecumseh/Riverside Drive from Lakeshore to Ambassador bridge (willprovide commuter/leisure access to city)	Circle route around the county (Lighthouse cove through Amherstburg to Leamington)	North/South Leamington to Stoney Point/Lakeshore
86	Emeryville to Belle River		
87	dougall hwy 401 to riverside dr	walker- north talbot to riverside dr.	lauzon - cty rd 42 to riverside dr.
88	Tecumseh to Sandwich South	End of Ganatchio Trail to Riverside and Strabane bike lane	
89	North/South access routes such as Malden Rd.	East. West access routes such as the new Laurier Extension in Lasalle	The scenic route along the Detroit River, Lake Erie, and Lake St. Claire.
90	Tecumseh to Wheatly	Tecumseh to Amherstburg	Tecumseh to Leamington
91	Riverside Drive from Lesperance east to Manning Road	Connecting Leamington to Kingsville	
92	bike lanes on Riverside Dr. from Riverdale to western city limits	bike lanes on Old Tecumseh Road in Tecumseh/St. Clair Beach to Puce	bike lanes on County Road 22 from Belle River east to Deerbrook
93	Riverside Drive east from city border to Ambassador Bridge	Riverside Drive east from Brighton to Town border	East Puce rd. from #42 to N. Rear
94	cty rd. 46 from manning to the city	manning from cty rd8 to tecumseh rd	cty rd 20 from leamington to windsor
95	#3 hwy from Windsor to Leamington	County rd #8 from Essex to Amherstburg	42 hwy from tecumseh to Belleriver
96	Maidstone	Essex	Tecumseh
97	Essex to Amherstburg	Tecumseh to Tilbury	Windsor to Leamington (direct route versus the greenway)
98	Tecumseh to Windsor	Tecumseh to Belle River	Windsor to Lasalle
99	reverside in Tecumseh from Lesperance to pike creek		
100	Tecumseh Rd. East and West	Riverside Dr, East and West	Wyandotte St, East and West
101	Lasalle to Amherstburg	Bellriver to Tecumseh	Kingsville to Leamington
102	Comber Side Road (Comber to Stoney Point)	St Clair Road (continue the path along the whole road	
103	Ruthven to Leamington and on east	Leamington to Stoney Point	Essex to Amherstburg
104	Tecumseh access beyond the end of the Gnatchio Trail	Riverside Drive East of Strabane through to lakeshore - big time	
105	Ganatchio Trail		
106	Essex to Amherstburg	McGregor to Harrow,Kingsville	McGregor to Lasalle and Windsor
107	Old railways		
108	along the lake area		
109	Lakeshore-specifically belle river to emeryville-puce-tecumseh-at points there is only one road-too congested-too narrow, not enough lanes, commute now takes 15	lakeshore -belle river-to essex	lakeshore-windsor

	1	2	3
	minutes longer than it used to (45 minutes) now--windsor to essex--much shorter and better-b/c roads have been upgraded , speed limit is high enough and it was done quickly-		
110	City of Windsor	Leamington	Amherstburg
111	Kingsville to Leamington Highway 20 migrant workers need to use this corridor --a safety must for them	Highway leading to downtown Leamington--for safety of migrant workers and others	Highway 77 to Leamington-link to downtown Leamington
112	Connect to Wine Routes example to the Wine Stores		
113	LaSalle to Windsor	Windsor to Tecumseh	Lasalle to Amherstburg
114	Rural areas	Along waterfront areas (bring in tourism)	Urban areas not required; already have sidewalks & most people leave urban areas to peacefull cycling
115	Howard Ave	County rd 10	
116	Essex	Lakeshore	Tecumseh
117	na	na	na
118	County Rd 22 from Belle River thru to Banwell	Essex Greenway link at South Talbot and Highway 3 through to Greenway link near Paquette Corners	Somehow connect communities together via biking paths (Emeryville to Essex, Essex to McGregor etc)
119	south windsor into downtown via dougall under the viaducts	West windsor into Lasalle (malden or matchette)	anything on Tecumseh Rd
120	Essex to Mcgregor to Amherstburg	Keep the Greenway going right into Leamington	
121	Essex (Former Town) to Amherstburg	Tecumseh to the south with a destination of Maidstone to connect with Oldcastle trail or Essex	Current Essex Greenway to Puce Road (old dump) and new trails within landfill could be developed
122	Harrow to Colchester		
123	Manning Rd	Highway #3	401
124	bike lanes connecting Lakeshore to riverside Dr. following the water to point pelee.	connect the bike lanes in Windsor,they start and stop with no flow	when paving roads add another 2ft of paved shoulder everywhere
125	Lemington to Windsor	Essex to Windsor	Amherstburg to Windsor
126	All of Riverside Dr. Sandwich to Brighton Rd.	Wyandotte St.	Banwell Rd from Tecumseh Rd. to County Rd 42
127	Lauzon to Walker road along Wyandotte St. E	Downtown Windsor to LaSalle (Front Road)	Windsor to Emeryville - Riversdie Drive
128	County Road 22 from Old Tecumseh Road to East Puce Road	Seacliff Drive between Leamington and Kingsville	County Road 11 between Pike Road and Malden Road
129	windsor east techumseh road through to west end	riverside drive from east side all the way though to west side	north and south walker road right out of town

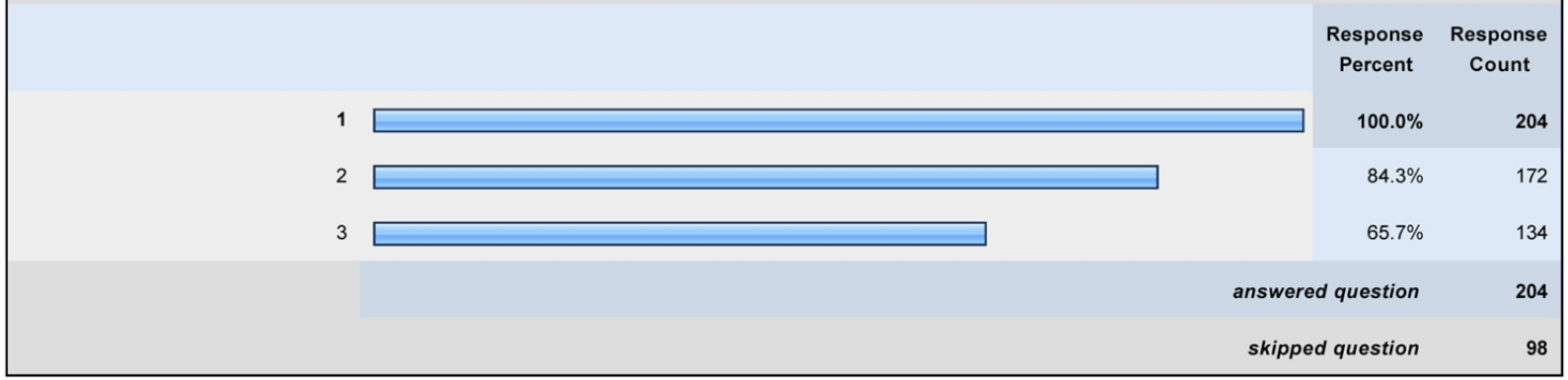
	1	2	3
130	ruthven to leamington	trail into Essex	
131	Hwy # 3	Hwy # 18	County Rd 50
132	connecting routes between communities in addition to Chrysler Greenway		
133	Main street in Essex = Talbot Street throughout the town of Essex	County Road 8 / Maidstone Town Line	Fairview Ave.
134	Town of Essex	Kingsville	Comber
135	lesperance road at riverside,(continue the ganacho trail) down to brighton and then circle back to lesperances throung manning then tecumseh		
136	Windsor to LaSalle	LaSalle to Amherstburg	McGregor to LaSalle
137	LaSalle	Amherstburg	Essex
138	from Front Rd at Malden, along Malden to Todd Lane	Along the length of Todd Lane, along Cabana to Howard	Along the length of Howard from Hwy 401 to Riverside Drive
139	Kingsville to Leamington on Seacliff Drive	Road 2 Kingsville to Leamington	Graham Side Road from Road 3 to Seacliff Drive
140	County Road 20 - Kingsville to Leamington	Greenway from Kingsville to Leamington	Greenway from Kingsville to Lakeshore
141	Amherstburg to Malden Centre to Colchester to Kingsville to Leamington to Point Pelee		
142	tecumseh to windsor (manning to banwell)		
143	Belle River	Puce	Tecumseh
144	Brighton Road (St. Clair Beach) into Lakeshore (Puce, Emeryville, Belle River)	Anywhere there is public-accessable waterfront areas	Within the City of Windsor
145	Lasalle - Windsor	Amherstburg - Lasalle	Amherstburg - Old Castle
146	Windsor/Lasalle	Lasalle/Amhersburg	throughout Amherstburg
147	Amherstburg to Lasalle	Amherstburg to Harrow	Amherstburg to Essex
148	Lakeshore between St Joachim + Belle River	Belle River to Lighthouse Core	Seacliff Park Leamington to Point Pelee
149	County Rd 42 - Tilbury to Windsor	County Rd 46 - Kent County to Windsor	County Rd 22 - Belle River to Tecumseh
150	From Belle River to St. Clair Beach City rd 22		
151	From 22 to arena/library		
152	Leamington to Windsor	Leamington/Kingsville/Amherstburg	Leamington, Essex, Belle River, Tecumseh.....to Windsor
153	Add a paved section to the Chysler Greenway		
154	cty rd 20 between leamington and kingsville	cty rd 33 between leamington and point pelee	cty rd34 between leamington and ruthven
155	Windsor/Essex	Essex/Leamington	Leamington/Ruthven
156	Walker Rd. out to County	Tecumseh Rd. from Tecumseh to Walker Rd.	Manning Rd. & County Rd. 42
157	I've made a google map of lanes, troutes and trails here http://tinyurl.com/y2cd5rj including the greenway	I think that there needs to be a east link on the greenway to amherstburg, but i'm not sure where it would go.	I've rode trails down through lasalle and roads to amherstburg but I wish there was a more established trail to those locations.
158	The abandoned railline along Walker Road that is tunnel under EC and 401 and connect to the Greenway	Remove the rocks on Dougal by the overpasses and put in a decent lane	Take the new fence off of the howard side walk by the new over pass...it's downright dangereous!
159	From the trail by the Roma Club in	Leamington Marina to Point Pelee	

	1	2	3
	Leamington along 18 hwy to the green way in Kingsville. Most important by far.		
160	Paths that connect the city of windsor from one end to another - an EC Row for bikes	In the county, trails, lanes, to connect one town to the next	Further expansion of the greenway.
161	connecting each and every winery with a bike corridor	connecting point pelee with the wineries	
162	Amherstburg to Windsor	Amherstburg to Essex	Amherstburg to Leamington
163	Essex-Amherstburg	Essex-Tilbury	
164	Greenway		
165	Amherstburg-Essex County	Should look at joining the Ontario Trails	
166	Essex	Mcgregor	
167	Amherstburg to Essex	Amherstburg to Lasalle	Amherstburg to Harrow
168	Amherstburg to Leamington	Amherstburg to Essex	
169	McGregor to Harrow	McGregor to Essex	McGregor to Comber
170	old railways to travel distances to create tourism for multi use like atv's, hiking, cycling, snow mobiling. If multi use trails like this were created, it would bring revenue into smaller towns by supporting restaurants, gas stations, stores, lodging. I think the farther you can travel on the trails the better. We need to create something different for our area, to bring in new revenue, create new jobs.		
171	Essex windsor	Essex leamington	Leamington amherstburg
172	From Amherstburg to Eastern part of County		
173	Amherstburg,Ont.to Lasalle or possibly Windsor Ont.	Amherstburg,Ont.through to Essex,Ont and onto Chatham/Kent areas	
174	Allow ATV riders road access and bylaw ammendments similar to Haliburton County. All Essex County.	Connect ATV trails with trails from other ATV trails in Chatham Kent.	Allow ATV riders access under provisions of Ontario Bill 11.
175	River Canard (Amherstburg) into Windsor	LaSalle into Windsor	Dougall Ave. Windsor
176	Amherstburg to Essex (ATV trails)	Amherstburg to Harrow (ATV trails)	Amherstburg to Kingsville/Leamington (ATV trails)
177	Riverside Dr. LaSalle to Dearbrooke		
178	Point Pelee	Kingsville	Essex
179	Amherstburg - Essex	Essex - Harrow	Essex - Tilbury
180	canada greenway trail	along the waterways and lakefronts. potential for cycling tourism if you have a trail that connects communities through their waterfronts	connect existing trails within essex county communities so that one can ride from one town/city to the next
181	Riverside Drive East (Strabane to Brighton)		
182	Talbot Road (old #3 highway) from one end to the other	Division Road (one end to the other and all the way through Kingsville)	anywhere around Harrow
183	Amherstburg	Belle River	Essex
184	old Tecumseh road from Windsor to Tilbury	Riverside Drive from Tecumseh to the other side of Windsor	

	1	2	3
185	riverfront to south windsor (ie:to 401) via Howard or Walker	east - west central corridor (ie:tecumseh ave)	north - south dougall ave from tecumseh ave to hwy #3
186	County Road 22 Corridor outside of the road (maybe using VIA corridor or CR 2) from Belle River to Windsor City Limits	East connection to the proposed Essex-Windsor Parkway Trail System outside or the road alonf Hwy 3 to Chrysler Trail	Tecumseh North to Essex using outside of the road trails of local roads but not along Manning Road
187	TRAVEL ROUTE FROM HARROW TO AMHERSTBURG	FROM ESSEX TO AMHERSTBURG	FROM HARROW TO WINDSOR
188	Colchester to Windsor	Leamington to Windsor	Amherstburg to Leamington
189	Within 400m of all urban area residences (generally accepted walking distance)	Cty Rd 20 from Leamington through Amherstburg to Windsor	Cty Rd 10 corridor
190	Leamington-Kingsville)Essex-Windsor (Walker) to Downtown	Amherstburg-Lasalle-Windsor to Airport. Cabana-Walker. Railway Lines or low traffic Concession Roads	Lakeshore-Manning-Tecumseh-Windsor
191	LaSalle	Windsor	Tecumseh
192	Matchette Road From Tecumseh to Sprucewood.	Dougall Ave, between Tecumseh and Cabana	
193	from east to west in city of Windsor	from Windsor to Point Pelee	
194	On the rural roads;concessions. Fear cycling along uneven pavement on NARROW gravel shoulders with deep ditches	The length of Erie St. North & South. Very difficult to cycle on this main artery of town; high traffic volume.	Oak st. East to West. Very poor sidewalk conditions (no sidewalk on opposite side of road). Main thoroughfair; high traffic volume, only sidewalked part way, afraid to ride on the road for fear of being hit by inattentive drivers (on cellphones, eating, drinking coffee)
195	Amherstburg	Harrow	Kingsville
196	Dougall Road, from South Windsor to Downtown	Riverside Drive	Lakeshore
197	riverside drive	amherstburg	Windsor
198	Ganatchio Trail into Tecumseh to L'Essor	Country Rd. 42 to Old Highway 3	Airport Road
199	Heritage Road (county road 50) between McCain Sideroad east to Cull Drive		
200	SeaCliff Drive from Kingsville to Leamington	Belle River to Riverside/Windsor	Amherstburg to Lasalle to Windsor
201	Matchette road needs to be a complete street for better access to Monseigneur Augustin Carron and access to Windsor. See www.completestreets.ca	Front rd. also needs upgrades for biking.	See www.completestreets.ca
202	Cedar Marina to intersection of Cull Drive and Heritage Road, Kingsville	Ruthven to Leamington along old railroad tracks	Cedar Marina to Colchester Marina
203	Windsor-Leamington	Windsor-Amherstburg	Windsor Colchester,Kingsville
204	essex to mcgregor abandoned rail corridor	leamington to comber rail corridor	
205	Windsor - Belle River	Windsor - LaSalle / Amherstburg	Windsor - Essex
206	e	e	e

	1	2	3
207	Leamington to Point Pelee	Leamington to Wheatley	Wheatley to Point Pelee
208	Seacliff Drive between Kingsville and Leamington Start Kingsville End Leamington	County Road 50 Starting At Cull and heritage in Kingsville althe way through to Amhersburg	County Road # 2 in Kingsville from Division to Union (or # 3 or # 4) either way there is no county road suitable for bike or run

9. What do you think are the top three biggest challenges, constraints or barriers to improving conditions for hiking/walking and cycling? (Enter up to three responses in order of importance - maximum 100 characters)



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3	65.7%	134
answered question		204
skipped question		98

Open Ended Reponses:

Other (please specify)

	1	2	3
1	motorists not used to cyclists on roads are often confused by how the situation should be handled when faced woth right of way situations	terrain. flat hiking trails are boring! try to make things a little interesting when creating trails, please.	
2	Personal Safety along the trails - criminals use them to avoid police detection	Physical Safety along the trails - Maintenance of the trail so it's safe to use	Educating drivers to watch out for walkers and cyclists
3	Lack of political will	money	laziness
4	funding		
5	Apathy - seems that most citizens don't care	Education - people need to know the importance of these for commuting and fitness	Knowledge - I'm not sure many citizens know about what's there and the need for improvement
6	Lack of dedicated well engineered bike lanes (no rumble strips, and one on each side of road with flow of traffic	Driver education that bikes belong on road	A continuous and safe route through the county
7	Lack of money	Lack of a Right of Way	Improving driver's abilities (not hitting cyclists)
8	Motorists co existing with cyclists	Cost	Time delays
9	Motorists not sharing the road.	Cyclists not obeying the rules of the road.	Our focus on building trails that lead to no where. We need SAFE trails that take us from town to

			town.
10	Motorists, not educated enough	Other people that ride bikes and do not obey traffic rules (not 'real cyclists')	Will of people on council. Seem to have other priorities to work on
11	cost of widening CR 20 K'ville to Leamington	ignorance and bad attitude to non-vehicular travel by motorists	government lack of will
12	lack of interest from councellors regarding the health and wellness of the people in their community	not enough people stepping forward to support the large interest (to necessitate need)	poor finanacial management of municiple governement funds and therefore no money for these concerns to be paid for
13	it is not safe to ride or walk beside roadways. There are no paths		
14	The width of the roads is by far the biggest constaints for all but the most experienced cyclists.	Biggest challenge is for decision makers and the public to see the big picture if a cycling network was in place	the realisation that we would have better and healther communities if we had a safe way to commute around.
15	Apathy	Lack of Education and awareness	Lacking political will and vision
16	Money - to improve the road cross sections to safely accommodate all road uses	Getting support from municipalities to act on making improvements	Convincing the public it will be safe to use the improvements when they are in place.
17	preserving remaining greenspace/woodlots	purchasing properties to connect areas especially to avoid roadways	cost
18	Funding projects	Getting municipalities to cooperate	Connecting to rest areas or areas of interest
19	money		
20	Bike and walking paths on county roads	Getting bike and walking paths to conect from one town to another	
21	politicians	money	public apathy
22	Funding	Prejudice to car owners - residents	
23	Educating the motoring public	Educating all cyclists to consistently follow the rules of the road	
24	lack of bike lanes on the road	lack of connection between communities	inconsiderate motorists
25	Municipalities working together	Drivers knowledge of sharing the road	land and monetary restraints
26	no		
27	traffic	no bike lanes or walkways	
28	Political cooperation/vision and vision of Administration responsible for designing final road improvements	Public Awareness/Education on its importance (culture of lazyness / addiction to car)	Not using "its too expensive" as an excuse to exclude these improvements. If built, people will use it.
29	maintenance of paths	purchase of land	
30	Cost	Taxpayer support	
31	Money/Funding	Property Owners	Safety
32	roads not wide enough,		
33	Farmers in the Ruthven-Leamington area.		
34	property available for establishing the trails and/or bike paths	Driver, pedestrian and cyclist education on the rights of the road. I believe peole should walk against traffic so they can see the oncoming vehicles etc, but if they walk on the road and face traffic that causes havoc for the person driving the car.	I don't mind using the shoulder of the road for cycling or walking but it should be wide enough to accomodate the walker or cycler and an even surface would be nice.

		People need to realize their life is more important then being able to walk freely on the road	
35	Safety for pedestrians and cyclists	Promotion of the trails through an online mapping system and promotional map	Trails need to go "somewhere". There is poor connectivity between trails and linking them to places, such as municipal buildings, schools, business district
36	money	money	political will
37	Money	land expropriation	Opposition
38	in the rural area distance to accomplish active transportation to stores and workplaces	no connecting links to motorized transportation	
39	money		
40	Lack of support from municipal politians	Lack of resources to maintain current trails	To many people are fat and lazy and do not care; unfortuneately their vote counts
41	Danger to cyclist on public roads	Lack of respect be drivers to cyclist	
42	large county area to cover - difficult to connect them all		
43	Narrow roads.	Heavy traffic.	Disrespectful drivers.
44	Economic	public awareness	location
45	knowledge of what trails exist	upkeep of trails such as trash can ect..	making trails accessible
46	Need a transporation system put in place	People cannot access services due to lack of transporation.	Why not have a bus system for the county??? Residents cannot get to and from appointments because of it.
47	who pays	land aquisition	to develop a properly phased plan that links communities (budget)
48	people cant walk the long distances		
49	enlarging sidwalks to accomadate wheel chairs so they are not on the streets	providing separate paths for strictly hikers/walkers and cyclist	Providing safe and legal cross walks in town
50	driver attitudes on shared roadways	safe riding lanes on or off road	
51	Economics (Funding)	Politics (Municipal Council)	
52	Funding	Planning	Public Safety
53	Cost	Property allocation	Cost of building
54	Lack of investment in trails, greenways and waterways to make them more accessible for residents.	Irregular or lack of investment in maintenance of existing trails.	Lack of bike lanes on regular roadways.
55	Develop Bike ways along roads	Pathways through nature areas	
56	Money will be the biggest challenge. It will be a big up front cost that will have positive effects long term on Health Care	Once routes for cycling are made, they should easily be interconected	Informing the driving public to be cautious of these new routs and to be mindful of pedestirans.
57	Cars	Gravel road sides	lack of contiguous trails
58	Money	Lack of Public Support	Low Price of Gasoline
59	funding	route choices	upkeep

60	MONEY	Willingness	MONEY
61	Money		
62	Geography and distance	Lack of will from residence	Lack of education of health benefits
63	Stop talking and get moving	Ask the cyclists - Noncycling people are trying to develop routes they know nothing about!	
64	Finanacial Support		
65	Non cyclist type people who don't care about anything, but getting from point AtoB in their cars.	Money	people
66	Acquiring enough road space to support bike paths / hiking / walking trails	Training motorists to respect the rights of others	Coperation between towns
67	Financial restraints	priorities of local government are generally with core infrastructure and less often with recreation and soft services	Need for PPP public private partnerships to involve the communities and the public and encourage use
68	Private property connecting to major roads used for transporation of seasonal farm labourers (HWY 18)	Vast distance between communities	Money
69	MUNICIPAL LEADERS NOT COMMITTED	RESIDENTS OPPOSE, TIE UP IN COURT	COUNTY LEADERS HAVE NO PLAN AND DON`T WORK TOGETHER TO RESOLVE ISSUES
70	funds	aquiring land	
71	Ignorant and un-healthy attitudes/opinions of both residents, and city leaders.	Educating and gaining support.	
72	safety		
73	The will of the politicians.		
74	Funding	Green space encrouchment	Road way accsess
75	time	money	space
76	Mixed priorities of types of walkers & cyclisyts i.e. I am a road cyclist who averages 30km/h in a ride- I should not be on trails with people walking dogs	misuse of current bike lanes	acceptance of cyclists on the roads
77	lack of funding	lack of political will	regional cooperation
78	Lack of money	Lack of political will	
79	politics	road conditions	$$$$$$
80	Lack of safe, paved space for bicycles on road	Aggressive Drivers (Most cyclists drive, non-biking drivers are frequently dangerous.)	Lack of safe cycling routes to commute
81	County Road with open ditches, gravel shoulders		
82	driver attitude	costs	
83	traffic	lack of interest	site areas
84	Lack of Understanding of councillors who cater to industries and companies first		
85	Cost of improvements and maintenance.	Narrow-minded politics and the general	The general Automobile Culture of the region

		lack of Political Will!	(influencing such things as the lack of sidewalks in subdivisions).
86	Money	Political will	Anti-biking public
87	available public funds	lack of county council support	public disinterst in healthy living alternatives
88	funding of bike lanes	driver resistance to cycling	
89	Political will	Planning for the future	Government financing
90	political will		
91	Auto Knowledge		
92	money	municipalities	lack of knowledge
93	Very hard to transition from the county in Windsor	E.C. Row Expressway limits North - South cycling routes	Very few North - South county routes from mid county westward. Manning Road is dangerous
94	Vehicle traffic	Funding	Resident buy in
95	Implimenting it to drivers, making them share the road	educating the public on bike safety, which side of the road to walk/ride on	involvement or approval from the residence around where the bike lanes or walkways would be installed
96	Money	money	money
97	Funding	County and City disagreement	Enviroment
98	money	maintenance	
99	Up keep. A crew should have the responsibility for the trails full time.	Acquiring the land where private land owners object to others crossing their land.	Educating people who use the trails to use them properly
100	small shoulders on municipal and county rds (ex. cty rd 50 in harrow/essex, road 2 e kingsville)		
101	Local home owners who have the Not in my back yard attitude	Adequate access to local funding	Under utilization of provincial, federal and private funding opportunities
102	funding	political will	
103	McGregor to Windsor	McGregor to Amherstburg	McGregor to Essex
104	Funding	trails have a large span	
105	council and dollars		
106	making it safe for all who use it (children and disabled as well)	need for motor traffic problems to be fixed first-then add active transit 9or at least simultaneous progress	
107	Lack of Funding	Lack of Interest	Lack of Initiative to invest in green, healthy alternatives for transportation.
108	on Highway 20 probably enroachment on homeowners property due to already narrow road		
109	Budget	Conflict in levels of Government ie Getting all to aggree	
110	Not a priority	You don't see a way to make money	Obesity, inactivity, isn't important
111	Concerns of being hit by a vehicle on roadways	Greenways require more benchs/resting spots, garbage cans, washroom facilites	
112	Finance	Gov. support	
113	Traffic	poor road conditions	poor lighting
114	nana	na	na
115	Identifying walking/ cycling trails & then somehow prioritizing (master planning)	Budgeting for trail/ sidewalk construction/ maintenance (including municipal staff to	Getting municipal councils to agree on mutual planning to link their community trails together

		inspect/ maintain)	
116	driver tolerance/education	funding	commitment by political powers
117	I think that the roads need to be more biker and walker friendly as vehicles do not care	keep the horses of the greenway or make sure that the owners clean up after them	
118	Funding ....money doesn't grow on trees	co-operation with land owners	
119	county roads - insufficint shoulder width	driver education	
120	Costs	Community Support	
121	Links	Funding	Existing corridors
122	education	money	people are in love with there car
123	Installing wide, paved shoulders along county roads	Installing bike lanes in the city	
124	Public Opinion	Education of motorists and public	
125	Money	money	ignorant people
126	money	politicians seem to care more about building more big box stores and roads	acquiring property
127	people in the area in learn to give up on there cars for transportation to work		
128	cost	manpower	available space for trails
129	Lack of Funds devoted to better cycling access on all roads		
130	financial	priority setting	demand
131	Cost of creating infrastructure	Agreement on which areas need to be developed thereby leading to prioritizing questions	Time required to achieve a full-fledged Active Transportation system to address needs of survey respondents
132	Funding	In cities not enough space eg on roads	Lack of community involvement in the cause
133	neglect of these activities as being worthy of improvements		
134	acquiring land	maintaining it	getting people to use it
135	Funding	Physical distance between towns	Cooperation between communities
136	reluctance of governments to spend money on multi use paths	lack of advertisements or information to residents and visitors of these multi use paths	lack of realization of benefits of multi use paths for residents and potential visitors to area by politicians
137	Seacliff Drive	Road 2 linking Kingsville to Leamington	Road 3 linking Kingsville to Leamington
138	costs of constructing adequate infrastructure	lack of funding	
139	funding	area to build bike/walkway	
140	money		
141	Motorized Vehicles	Money	Available Land
142	Communities are far apart	Keeping them safe in dark and bad weather	Connecting them to locations people want to go
143	No vision in ruling class	Lack of creativity	Education
144	too much corporate input	not enough public input	not enough public education
145	Traffic	Space	Attitude of Motorists
146	Cost	Municipal support	Upkeep

147	Lack of Safe routes Linking county to windsor	Lack of dedicated trails	lack of locking/storage facilities
148	funding	not in my backyard neighbours (bitter, vandalism)	safety
149	designated paths	incosiderate motorists	
150	No sidewalks on Rourke Line		
151	Building public knowledge of cycling/walking routes/trails	Encouraging more people to leave the car at home.	Not enough public transportation to support alternative methods of travel.
152	There isn't sidewalks/paved shoulders in the county so bikers and walkers can use	Cars not paying attention to cyclists	
153	money to build	money to maintain	increasing density of development to shorten distances between residential and commercial/industrial sites. having buildings clser to streets with parking behind (shorter distances between buildings along roads)
154	Motorized vehicle drivers see bike lane tax dollars as a waste	Motorized vehicles do not like seeing bicycles on the roads.	A lot of farmland runs along major corridors in Essex County, and will make trail building difficult.
155	High volumes of traffic	Sharing the road with truck traffic	Driver Courtesy
156	Cost would be one of the top challenges I think	Motorists would be another challenge since I keep wanting to see more of their space given over to cyclists. like on riverside drive.	Education is another challenge since I'm always frustrated with seeing cyclists not using bike lanes or riding on the right side of the road.
157	Inactive people in power who lack vision, too scared to promote a good idea combined with the fear of losing their job to promote anything that may raise taxes and go againist out dated policies	Cheapskates....paving a shoulder would make the road last longer, the paved shoulder gets chewed up long before the road does	Once agian cheapskates...it's easier to sell off the trail head of the greenway than to keep it alive, and to kill off any chance of it connecting to an exisiting trail. Leamington got rid of a section they could have used to keep migrant workers off of the road with.
158	Funding	Access to land	Political will
159	municipal government buy in - most municipal people are fat and lazy and only go where they can park their giant pickup close to the door. Its sad you have to convince these types of the benefits of exercise	That tubby guy in Lasalle who got bikes banned from the park - again fat municipal decision makers	the "have to drive everywhere" mind set of Windsor/Essex county
160	Road ways are not wide enough in county and city	No designated bike lanes (do not use textered separation ie rumble strips)	Educate motorists & cyclists on ontario law
161	User group involvement		
162	Should include all user groups	Better education on safe use for all user groups including motorized and non-motorized	Partnering with user groups for monitoring and complaince.
163	cost	usage	up keep
164	Cost	Residents	Education

165	Farm Fields	No Trail System for motorized recreational vehicles	Traffic
166	Driver courtesy		
167	Access to private land for riding		
168	A common multi use trail system that would serve not only one or two groups but all the different activities that pertaining to trail usage including motorised vehicles such as ATV's		
169	Having council acknowledge the benefits and financial growth of promoting ATV riding in Essex County.	AMENDING AREA BYLAWS TO ALLOW ATV RIDERS UNDER BILL 11.	Educating public on benefits and encouraging active / continual use of Hiking/walking/cycling and ATV.
170	Will	Money	
171	Up keep of trails	Staying off private property	Proper signage and laws
172	Closed minds	unfit people	No one wants to make a desision!
173	Private property	enforcement	environment
174	user group involvement	financing	maintenance
175	funding	politics	education
176	Opposition from residents in the Riverside Drive corridor		
177	educating drivers on sharing the road	having the right people (those who make final decisions) to truly understand how much our area needs to promote fitness and health	money
178	Cost	Traffic	Social/public acceptance/respect
179	Motorists education -- they have no idea what it is like to ride in traffice or the effect of road/weather conditions on cycling	money	
180	widening of established roadways and properties to make room for alternative transportation	never having access to safer transportation, people generally are not aware of the overall community benefits	getting started!! "build it and they will come"!
181	Lack of interest from average people	Dangerous conditions for cyclist shared the road with trucks and vehicles	Destinations and attractions to far apart
182	COST	MAINTENANCE	USE OF PUBLIC INTEREST
183	finances to install paved shoulders	convincing motorists bike lanes are for them, so traffic is not bothered ---having to pass bicycles	Concincing motorists bicycles are vehicles
184	we have planned our communities for cars and not people	large % of the population is too young to drive or getting old - the "Grey Tsunami"	municipalities facing increased budgetary pressures due to major economic restructuring
185	Seperated (Elevated Bike Lanes like Denmark) Budget. Need o incorporate Bike/Rollerblading/walking	Driver Mind Set	Need Tourism market to promote destinations. Needs bike access to Wineries. CY20/CY50
186	Connecting Amherstburg, LaSalle, Windsor and Tecumseh as a regional cycling pathway	Paved pathways as opposed to gravel pathways	Ensuring pathways are clear of debris and grafetti
187	Overcomming municipal car-oriented planning ideologies		

188	Costs	cars believe they own the road	people who don't want to pay for the costs
189	Migrant workers disrespect cycling rules; they congest sidewalks & weave in & out/across traffic.		
190	Money	Available Land space	
191	North America is a car centred continent	The attitudes of motorists	The laziness of humanity
192	People with too much hold on city	People not caring about healthy living	a so called small budget for these improvments but larger for something else not even needed
193	Not enough users because bike lanes are not safe	No buffered facilities to provide safety	no law enforcement presence especially at night on hiking/walking trails
194	Safety, well lighted areas.	designated areas for walking, cycling, hiking; not on the main highways, no shoulders, no lights	education and promotion of these trails.
195	inadequate road width	no shoulder on narrow sections of some county roads	inadequate lighting along sections of developed areas on County roads
196	provide clear cycling lanes between towns and in towns	educating drivers and cyclists to road satety	money
197	There is no current plan to mandate stakeholders to justify not making hiking/cycling streets whenever roads are reconstructed.	Planners do not control what happens, developpers do and they are not interested in added expenses.	We need to make bike traffic more mainstream and acceptable. Break down cultural beleifs that our weather does not allow for bike commuting.
198	cost of creating and paving new trail systems	acquiring land to put trails on	Keeping away from motor vehicle traffic completely
199	Funding	Planning	Public Awareness
200	available funding	lack of available land	liability concerns
201	Crossing and or bypassing major intersections and roadways	Separation of routes from traffic	Joining exsiting routes
202	e	e	e
203	Washroom facilities especially for women	Rest areas, benches	Available water source, to fill water bottles
204	Road width or existing structures creating barriers to road widening roads	Financial	Construction time

10. Please indicate the first three letters of your home postal code:

	Response Count
	249
answered question	**249**
skipped question	**53**

Open Ended Reponses:

Not included

11. Please enter any other comments you have regarding the Essex CWATS.

	Response Count
	134
answered question	134
skipped question	168

Open Ended Responses:

1	bike lanes or paved shoulders on highways are needed badly! I've been run off the road by cars passing not expecting (or watching for) people coming in the other direction on a bike.
2	None at this time
3	When it comes to cycling in Essex County there are many roads that are suitable for this purpose. Unfortunately they are not well connected and require travel along busy and high speed roadways. Addressing these connectors should be the highest priority. It makes little sense to spend money improving roads for cycling that no one needs (for example Patillo Road between Little Baseline and County Road 42.
4	Cannot stress the importance of a quality alternate transport network for recreation, fitness, and commuting. We have a great opportunity to bring the same culture of recreation and fitness that you see in many New England communities. Our geography, climate, attractions and population mix should be prime ingredients to support such a network.
5	This area has great potential as a cycling mecca due to the flat terrain and could become a cycling destination driving tourism and all sorts of benefits to local communities... we need to prioritize the Essex County Bike way and work first on bike lanes along this route... from there you can stem off more and more pathways and bike lanes... a map of all this either physical or online would be great!
6	Consider off-road facilities.
7	It is viatally important to encourage the use of natural resources and Bike pats etc especially now that a lot of people are not near as active as they should be. Obesity in young people is at a lifetime high. We need to set the example for this and other generations.
8	I sincerely hope that they are able to gain support from the administrators and politicians in each of the towns so that they can work TOGETHER to build a network that connects us. There are lots of trails out there, but they either start and stop and lead to no where, or are focused in natural areas. We need more options for commuting between towns.
9	Thanks for doing the hardwork on this and hopes this helps to get things moving along and the general community on board.
10	Getting out of our cars is a must for our health and the health of our environment
11	I see what goes on in BC and how healthy those people are. We need active transportation methods like they have. If our government continues to take funding from our local hospitals where will we go for our health? In my opinion we must take charge of our own health in the first place through exercise. We must have safe routes to do this. This will help our kids for their furture health as well.
12	The more we do to create pathways to encourage walking, hiking and cycling...the more we encourage fitness, community and tourism. We can all benefit from this initiative.
13	Essex County could be seen as a community that supports healthy living for a healthier and safer environment. Walking and cycling are the only two realistic forms of exercise that most people can do.

	When constructing new roads, planners and policy makers should avoid at all costs, plans to encourage cyclists to use sidewalks, especially in lieu of providing on-street bicycle facilities. When more than a couple of driveways and intersections are present there are dangers posed by sidewalk riding, like a pathways on only one side of the road (E.G.) Old Tecumseh RD, or with rumble strips (E.G.) East Puce Rd. Keeping cyclists off of the sidewalk is beneficial to all members of the community. BIKES BELONG ON THE ROAD WHERE THEY ARE SEEN AND PREDICTABLE!!!
14	Develop a 100 mile perimeter around the Pennisula of Windsor-Essex ! We a longer usage season this could be a micro Niagara Pennisula for Wineries ,cycling and tourism !! Hope you get political buy-in!
15	I'm very happy to see there is some serious movement in this direction. I will be anxious to see what comes of this.
16	connecting the chrysler greenway to kent county would be great (trans canada trail)
17	I use the county roads for training and training only. I put about 25,000km on our county roads per year.... I'll take anything you can do to improve the road system for cycling/training. Connections to the Ciociaro Club would be very nice since hundreds of cyclists leave from there several days a week. Thanks.
18	get community connected with bike paths which in turn will bring more activities to EC i.e. bike races, wheelchair races
19	I look forward to improvements.
20	no
21	We need politicians to take these master plans seriously and FUND the recommendations. Some one should investigate how far behind the city of windsor is in implementing the recommendations of the Bicycle .Use .Master .Plan. in front of council and challenge the polititians. A good study is useless if it is never implemented.
22	See previous comments.
23	Although I have an N0R postal code I do not live in Harrow - I'm close to Amherstburg. As well as considering active transportation, I think a bus linking county and city is something that needs to be implemented and is LONG overdue.
24	a waste of money it will not work!!!!!
25	Glad to see public consultation is being undertaken. More and more people are becoming active and are looking for areas to walk or cycle however safety needs to be the first thing that is considered.
26	Excellent initiative and way to engage local residents in each municipality. With an increasing number of people using cycling or walking as a mode of transportation, it is important that our municipalities and county provide the necessary infrastructure to support users. great job - i look forward to the final plan and report
27	I currently run along County Rd. 22 in the Belle River area in the early morning time and find it very dangerous that I must share the road with vehicular traffic. Despite wearing a safety vest, it is a great safety concern. Although I realize the creation of pathways will not happen overnight, the County pursuing this endeavour is a step in the right direction.
28	certainly in rural areas, for excercise and quality of life, but workplace access would be difficult, and what would be maintained during the winter months in rural/urban areas for active transporation.
29	We need to be more environmentally conscious. Also, improving and promoting a healthy lifestyle is key to wellness and decreased cost in health care.

30	Congratulations to the people who have been able to get the program this far.... I commend you. Nothing would make me happier then to see extend trails for both cyclists and pedestrians alike throughout Essex County. We need one Regional Government to make things really work not this hodge podge of municipalities currently making up the County....
31	It is critical for the safety of the migrant workers in the Kingsville, Leamington & Ruthven areas during the summer months especially, that we work together to find a solution to protect these people from losing their lives due to unsafe cycling conditions. Driver's really need to slow down around cyclists (whether we are cycling for pleasure or work).
32	Education is needed for cyclist. Adults must Stay off sidewalks and follow the rules of the road. Proper instruction of using bike lanes. Most people ride on the wrong side of the road!!! Dangerous for everyone.
33	I believe that the county needs to come together and develop some form of transporation system to get around Kingsville, Harrow and Essex. People cannot get around, and makes it hard for them to attend appointments.
34	We need buses to connect communities not trails
35	Walking trails are an excellent way to get safe excercise.
36	This is a great initiative and I would support increased taxes for these improvements, especially if followed through with. Thanks for the opportunity to have some imput into a very important aspect of our lifestyles, health and well being!
37	Investing the time and money that it would take to make proper trails throughout the County of Essex would be beneficial beyond what I am able the write in this Window. Not only will it have a positive effect on the Health care system, Mental Health of the comunity, environmental factors and so many more. A good comuting system would bring this county closer together and I think that everyone will benefit from this. Not implementing a system like this should be considered irresponsible.
38	More education needed for both cyclists and cars drivers. Should be part of driver testing. Rules of bike riding should be given with the sale of every bike. Should be part of elementary education in schools.
39	There are ALOT of cyclist that train for races such as triathlons and would really like to have a paved sholders on County Road so we can bike safely. Alot more people would also cycle to work if the County Roads were safer to cycle.
40	All plans must eventually consider inegrating with existing city infrastructure to allow full movement in the entire region
41	Bike paths to the winery's in the area would be a benefit
42	HOPE IT HELPS CHANGE THE MIND SET OF MUNICIPAL LEADERS
43	We need to pursue this quickly we should have stuck to the master plan that was established over 20 years ago we could be finshed by now at half the cost .Thanls for putting this out to the public g
44	The plan needs to accommodate a wide range of needs. Not all cyclists are the same. I road cycle and should never be on a trail with pedestrians, rollerbladers, and dogs. I should be on the road. paved shoulders & informede drivers are needed for this. I also run and walk, and mountain bike - trails are better for this.
45	great idea
46	Amherstburg police harrass cyclists. Roads and drivers are not bike friendly. Essex should be as bike friendly as Holland, but is worse than Vancouver, Montreal, Chicago, etc.
47	Informative and thank you for providing my input and comments.
48	Show some action and prove that my time filling out this survey was not a waste
49	All new developments should be designed and built to be bicycle and pedestrian friendly. This is a must and should become a formal and legal part of the developmental strategies of the County as a whole as well as its municipal governments. This may be more costly up front, but it will contribute to the overall health, well being, and quality of life of citizens. Such an investment will pay itself back in the long term through increased

	community involvement, better overall health, increased property values, and other related general effects. To do anything less than this is not only short-sighted, but will continue to result in the continued degeneration of community life.
50	Thank you for investigating and pursuing options for healthier living options in Essex County!
51	If the county wants to promote tourism ,retirement living in the 100 mile penninsula it had better start making it safer for its residents to be active in there golden years or they will start moving out
52	Get involved with the local running and cycling communities. Get there opinion as councils have no clue as to what is needed.
53	More paved bicycle lanes. This area has a lot to offer eco-tourism, but it's not very cycle friendly. A education campaign would be wonderful so that cars and bikes can work in harmony. This would be aimed at drivers AND cyclists
54	I don't think that a lack of trails / roadways is a significant barrier to having a more active community - - I think that those who are active now are likely the same residents who will be active after this study is done & implemented.
55	I think this is a great idea and I wish whom ever is doing this good luck as I think it will be met with much criticism.
56	A Southern Essex County w Trail should be considered for tourism
57	I would love to have more bike paths available to me and my family as we live in the country of Stoney Point- we have to drive into to town do go for a walk because living on Comber Side road it is far to busy and people drive really fast. I also want to mention I see a lot of cyclist on the Comber Side Road who would benefit from a bike path. Thank you for allowing me to express my thoughts on this wonderful idea to encourage fitness, and more sound ways of travel
58	I fully support this initiative as it will serve to improve the overall health and well being of Windsor-Essex County. It will also serve to attract individuals and businesses to a more liveable and desireable community. This is the future. We need to work to shed our lunch bucket community reputation - this will help do that.
59	Hope these bike lanes along the roads will become a reality in the near future
60	I live outside of Leamington and it can be very dangerous walking or cycling down the county roads. Last year I took advantage of the walkway from the local Marina to Oak St. many times. Trails and walkways promote healthy lifestyles for our communities and should be easily accessible by all community members (including people with different types of disabilities). They should be both functional as well as recreational. Bike lanes allow people a safe alternative for a healthier lifestyle and/or people with transportation issues to access their community resources. As a large migrant worker community I feel it is our responsibility to be pro-active and address the needs of the migrant workers. Their main source of transportation is biclycling.There have been too many deaths associated with the lack of safe cycling lanes used to get to and from their destinations. Education has been key piece in this puzzle but only acts as a bandaid rather than a solution.
61	Good luck, this would be wonderful to see come to fruition! Thanks for offering the opportunity for input!
62	This is somewhat of a senseless survey, as I doubt there is a budget for what the fat public views as unnecessary
63	Good Luck.
64	I feel this is a long overdue necessity for our area for the safety of our own residents as well as the safety of the MANY migrant workers who use our roads. We have an obligation to provide safe transportation for them. They are an important part of our economy and deserve our serious consideration. Their only means of transportation is by bicycle.
65	Post the Charts routes that now exist on a County Web site Show links, get all the Towns to highlight the routes
66	Kids, teenagers need to get off X Box and have great trails to bike. Adults need to get in shape for confidence and physical health sake!

	I need to cycle without wondering when I'll get hit!
67	It would be very nice to have walking/cycling paths along municipal/cty roads, however with economy, how affordable if this?
68	great !!!
69	I would see the ultimate goal being to link Essex County communities together via groomed/ paved trails to provide a safe/ lighted path for exercise, travel to and from work or for an adventure to another community. The trails could have maps of the connecting routes, strategically placed bus stop type shelters to get some shade or step out of the rain and maybe some guestimated travel times from point to point whether it be by foot or bike.
70	Having cycled in many north american cities, i am appalled at the conditions of interacting with traffic here, as a pedestrian or cyclist.
71	I think one of the biggest obstacles are the roads not being biker friendly. The speed of the traffic when they encounter a walker or biker. The trails are awesome but need to be patrolled more and would be great if they were paved.
72	Obviously you have determined that we need more trails. We need more trails..... More trails that are "natural" in design may be more cost effective and provide volunteers some creative licence. I know that liability is an issue, but perhaps trails could be well posted and advertised as natural and "use at your own risk" areas. It is flat here, no cliffs to fall from, and many other areas of the province and world have natural trails that seem to persist.
73	Many roads in Windsor and area are very dangerous for cyclists. Adding paved shoulders and bike lanes would help imensely, but the public definitely needs to be educated as far as laws regarding sharing the road with cyclists.
74	Hoping this study will improve the trails and quality of life in this region.
75	Once the plan is complete work should be focussed on connecting links first
76	Putting in public transportation corridors like this is a great idea to get people back on there bikes by giving them a safe place to commute to work away from the traffic
77	I am pleased to see that Active Transportation is being considered. I am only concerned that nothing of any consequence will actually be done in response to this survey.
78	Hope it comes, and comes soon. Also hope there is a continued maintenance and improvement plan
79	People's attitudes and lifestyles need changing. They are active running all over doing things, but are they useful things or time fillers? If we go back to setting time for regular exercise and doing it with others, we facilitate interaction, togetherness, caring, and happiness. But, that often takes structure and today's families lack that.
80	Interesting idea
81	My hope is that the powers that be come to realize the huge potentials for better health to our local residents and the potential for increased tourism to our area by putting in the initial capital needed to transform our area into a preferred destination for people looking for a great place to live and also for people looking for a great place to visit. We have so much history (war of 1812, underground railroad, rumrunning, labour history etc. etc.) and beauty (our wineries, our riverfront, our parks such as ojibway, holiday beach, point pelee, etc.) that we could really attract more people by making our county more cycling, walking, hiking friendly.
82	In my 15 years living in Kingsville, the one problem that does not ever seem to be resolved is safe biking access on our roadways. It has deterred me from biking, but I feel more deeply about the many migrants living in our communities whose only transportation is a bicycle and who have to risk their safety in order to access the amenities in nearby towns.
83	I think it is a very worthwhile venture to consolidate and link the individual plans of the separate muncipalities at a County wide "Community" level and even going further to link to the neighbouring municipalities such as Windsor and Chatham-Kent
84	Thie result of this study should drive better town planning with less sprawl and less autocentric development.
85	There needs to be a much greater balance to offset the private/auto form of transport. More accessiblity for all.

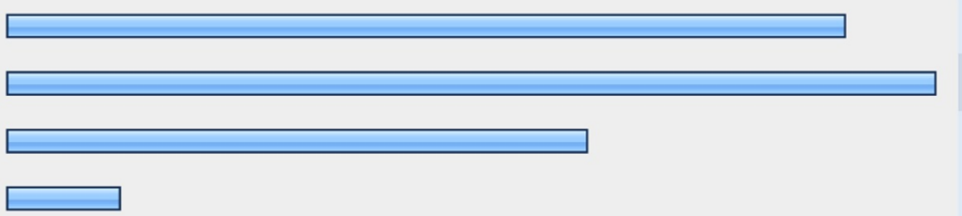
86	Hope this survey goes further than just being completed! We need (in Essex County) to get people taking an active role in their health!!
87	So far, I am impressed with that has been done
88	I am strongly in favour of more active transportation in Essex County, however I also feel that public transport is just as important and should work in conjunction with any cycling/walking facilities. There should be the alternative choices of methods of transport to support activities such as walking and cycling.
89	should focus on connections between municipalities that have strong connections (interconnected urban/suburban development, shared commercial draw, shared schooling system) with each other first ie; Area 1 - Kingsville, Ruthven, Union, Leamington, Wheatley, Point Pelee area, Area 2 - Amherstburg, Lasalle, Windsor, Tecumseh, Puce, Belle River area The connections across the county would be used less frequently as the distances are too far for the average cyclist, and would be lightly used.
90	I support this study fully. I hope that many people will have great hiking/cycling futures within Essex County.
91	I am an experienced volkmarcher - but have never had much success arousing any interest in the event. Friends/peers don't like to walk in the city parkland areas because there is too much traffic noise and smog - the only place where you don't experience this is downtown Windsor where the parkland trails are not at road level. In Tecumseh there is much less traffic and it is more pleasant to walk. The Ganatchio Trail is really the best because it is also separated from the traffic noise and smog. Really, if you want to encourage walking/cycling, don't try to squeeze us onto a road where we are lost among high volumes of traffic and a small mistake could be our last!
92	I made a google map using the map the city of windsor has been handing out, but added to it the new additions to the trails and the greenway. http://tinyurl.com/y2cd5rj I don't feel like we have a good area map though for essex county. I rode with 3 friends last fall on our bikes along the greenway and beyond to Leamington but there wasn't a very good map of the greenway available. Also, I feel like there could be so many connections made along the greenway and other trails that should be noted on a map. Already the bike train is coming and more tourism can come if help can create such maps to highlight what we have here.
93	A bicycle is a vehicle and the city has the responsiblity to move all vehicles in an orderly fashion, however they seem to do everything in their power to discourage riding in the city. New roads are built, with raise curbs (ashpalt is 2 inches below the form) Railways blocking sidewalks. Bicycling commities trying hard promoting the same old message of wearing helmets....maybe they should talk about the rules of the road and how cyclists should use signals and go with the flow. The greenway is slowly being erroded, oh sure there is talk of a McGregor to Aburg route...why hasn't it been done and why haven't the squatters been removed. Same goes for the stretch of the greenway that Tec owns. They were all for it and cleared their section of rail then someone builds on it. It would be so easy to have a fat tire fundraising ride on the Greenway to help fund those things..... Oldcastle to Joe's C, 5 parking lots on route, 5 mechanics shops for repairs with cheap entertainment and sag stops.....but no one is listening.
94	Multi use trails should include motorized groups where the enviroment allows. ie. rural areas where walking/biking are not as common.Clubsd are in place to assist in financing, wardening and creating safe trails.
95	We should aloow AtVing on them to
96	This survey seems to be narrowly focused and is not in line with the broader user base. Essex County is an Urban area including which stretches large distances. Both Motorized and non motorized usage should be looked at for tourism. Creating a legal muti-use trail with bring both added use and better compliance keeping unwanted users from private properties and help connect already established user groups with their properties.
97	Old rail line could be extened to Mcgregor. For cycling or other uses.

	If their is other property like this ATV'S have very little trails in Essex County. Could the OFATV and Essex County ATV Club could develop.
98	my husband I are ATVers, and we would like to see more trails made for us to ride, we follow the rules, have insurance, buy a yearly pass, and have a plates on both our bikes, this sport is growing and we enjoy family outing while atving
99	Essex County needs to include Atving as a part of any MULTI PURPOSE trail system. Being able to connect recreationally with the rest of Essex County and beyond is very important to me. Southern Ontario is the missing link in a Great Province, we need to connect.
100	As mentioned, if we had multi-use trails, hiking, biking, horsebackriding, ATV use -we could develop destinations. Therefore, as up north, families or groups would consider this area a tourist attraction and travel the county via abandoned railway lines and go from town to town, eat, sleep, good for the economy
101	I would like to see better atv road allowance so riders can connect to trail systems
102	Trail systems need to be available for motorized recreational vehicles-ATV'S, Snowmobiles. It would be nice to travel from community to community on a safe trail system.
103	I really think that a multi use trail system for atv's, cycling,hiking, snow mobling would be a great asset to this area. It would create new jobs, revenue, tourism to this area.
104	would like to see more atv trails
105	we need more atv trails.
106	We need more trails to ride our ATV's leagally.
107	I feel that thee also needs to be more trails for ATV use. I have a disability that limits my walking and the only way I can get out and enjoy the trails is if I could use my ATV. I was an active outdoors person until my disability took that from me and really desire the opportunity to enjoy this great region as other prople do
108	I think this survey should serve to bring recognition to the advantages provided by the trail systems already in existance in the area. The benefits already realised by our communities in better health and fitness are reason alone that our trail systems should be a priority to be addressed and we should definitly look to expand and make this system second to none.
109	As an active member of an ATV club I strongly promote all outdoor activities. I am encouraged by this CWATS and hope it does not collect dust on a shelf after completion. Other counties have found benefits of promoting ATV riding in their counties and have received financial benefits and gains from doing so. No reason why we cannot copy.. We just have to overcome false biases and prejudices against the sport. Realistically, the nay sayers can find negatives an all walking, cycling, ATVing etc. We have to many successes on all levels to let this happen.....
110	I would love to see ATV's allowed on the old rail lines. Someplace safe where a familly can ride responsibly. I see no conflict between ATV's, walkers, cyclists, or horse back riders.
111	I personaly feel that too much emphasis has been put on trails for walking, cycling, hiking, ect. We already have several areas throughout Essex County for walking, cycling, hiking, and things such as E-Bikes and scooters. All these activities can be done on all local streets, county roads, and trails. It's time to create recreational trails that can be used by legal law-obiding ATV users. This would also bring in tourism dollars by hosting such events as poker runs and fund raisers. It would also keep atvs from riding on illegal properties. It would also allow riders to stay local and spend money in these areas.
112	ATV clubs are all over Canada and Ontario, and Essex County is FAR behind a growing recreational sport.We are not snowmoble country,but with a huge county surounded by the great lake system and numerous towns waterfront, we could have a great atv trail layout.It benefits tourism greatly.

113	I ride a bike everywhere, wether we have trails or not I will take my spot. But I do know lots of people who would ride if they felt safe. Make bike lanes a must for all new streets. My motto is, if you build them they will come. It is a proven fact.
114	ATV's are an excellent tourist / recreational avtivity. If you actually do a study on the average age of ATV owners you will be shocked to find out that it is alot higher than you think.
115	All user groups should be involved in this process!
116	this is a great starting point and initiative. It would be great to see every community in Essex County connected by trails. Could be a great catalyst to increase tourism in the area and encourage visitors and residents alike to connect and get to know our region.
117	This is an important issue that needs to be addressed. We are a society of inactivity and we need to provide adequate facilities to promote healthly lifestyles.
118	We have travelled north america quite a bit. We are always amazed at how much better U.S. communities are at keeping natural open space and developing alternative safe travelling routes (for non-motorized vehicles). Amazing city to visit is Boulder, CO
119	VERY GOOD, ATLEAST AN ORGANIZATION FEELS IT IMPORTANT FOR PEOPLE TO HAVE RECREATION OUTLET THAT DOES NOT COST A FEE LIKE A GYM OR PROFIT ORGANIZATION. IT IS WORTH IT EVEN IF IT COSTS US SOME IN OUR TAXES.
120	Paved shoulders should be the first priority, on roads going to destinations such as shopping areas, schools, and places of work.
121	The most important issue is to provide access to active transportation options within the generally accepted walking distance of 400m from all urban area residences. There is a growing obesity epidemic and we need to do our part through responsible land use and recreation planning to provide opportunities for Essex County residents to live more active lifestyles. I hope that the CWATS initiative can provide Essex County residents with these opportunities.
122	A path should be used by rollerblading and cycling. A separate Walking path too. Need this to increase numbers to live in County. The Danish and Dutch Model is one to research. I have lived in Denmark and visited the Netherlands. The bike routes and attitude works. This increases overall health to community.
123	I believe this to be a priority challenge as every community needs to have good bike/hiking/cycling pathways to connect from one town to another. Other communities are able to achieve a pathway of successful biking/hiking/cycling trails - we should have them as well.
124	I believe we have studied this to death and it is time to take action.
125	It is imperative to have a transportations system connecting Leamington to Windsor city services. For decades its been impossible for poor Leamington residents to get into Windsor for essential services (Court, lawyers, medical specialists; post-secondary education or employment training). Many individuals have had to do without going to court for child support, divorce, contesting Children's Aid for custody or access of children; educating themselves beyond highschool because they can't access affordable, reliable transporation. This has left a SELECT grouping of people isolated & marginalized. I know, because I've faced great adversity & immense difficulty with trying to access the Ontario Court of Justice for 9 years!!!. I have not been able to apply for any programs at St. Clair College or UofW, because I'm in the lowest percentile of Ontario Works recipients ($475.00/month). If social services didn't subsidize me for a Leamington Town Transit bus pass, I couldn't afford to get around town for shopping & medical in winter. I have implored for years that the most disadvantaged persons of Essex County have been grievously ignored & dismissed in a Community of wealth. Their needs go unheeded. This transportation project is a lifeline to Windsor services so DESPERATELY needed for a VERY, VERY long time. I know I'd be eternally grateful to see it come to fruition.
126	I am not an active person, but I do value the importance of safe available spaces for active transportation.
127	At the current speeds on county roads, the only thing that makes sense and provides safety are cycling/walking facilities that are separated from the road by a physical buffer - anything else risks carastrophic consequences
128	Heritage Road #50) between McCain Sideroad and Cull Drive to the east is only 23 feet wide in some sections with telephone poles 18 inches or less from the roadbed and NO shoulder for walkers. The area is no longer rural and there are many walkers along this section of the road. Please provide a walkway and more lighting along this stretch of county road 50!
129	cycling routes in towns that run parallel to main arteries with clear signage. In North Vancouver secondary town roads are used as safe passage

	away from major car/truck roads...very effective. In Quebec much of the "route vert" 7000 km of cycling route is well signed both on sign posts and the road itself...several major roadways have separate lanes for cycling only traffic. Essex county should add another BLUE line on their roads that indicate bike lanes. That would indicate to the vehicle driver that inside the blue lane was the safe area for bikers...if they chose to pass they should do so out side the blue lane markings. It also tells the biker how far onto the highway they could ride. This is a good start for roads that do not have paved shoulders. It also clears the misconception of some vehicle drivers that cyclists should be off the road entirely ...while controlling where a biker may safely ride. It is also cost affective ...painting a dotted blue line along a roadside(Seacliff Drive) with a print of a cyclist every .5 km is a good start to developing a safer road for all.
130	You could use fluidsurveys next time because the privacy bylaws are Canadian not American.
131	I've contact council members of Kingsville with a proposal for a trail system from Cedar Beach Marina to the town of Kingsville, ending through the newly acquired Conservation area at the intersection of Cull Drive and Heritage Road. I hope the VERY DANGEROUS ride along Heritage Road can be eliminated as this is an area that is very narrow and an accident waiting to happen.
132	Realisticly, Good Luck in your endeavours.
133	e
134	Hope to have clearly marked bike routes on the shoulder of main road ways like #34, #31, #3 Talbot Rd between Leamington and Wheatley

12. Please enter your e-mail address here if you would like to be kept informed about the status of this study. (The address that you supply here will be used only to send you updates about the current planning process and the status of this study.) If you wish to provide additional comments to the study team or be notified directly when a study update is posted on the County of Essex's web site, please provide us with the following information: (The contact information that you supply here will be used only to send you updates about the current planning process and the status of this study.)



	Response Percent	Response Count
Name	88.9%	120
Email	**98.5%**	**133**
Phone number	61.5%	83
Fax number (optional)	11.9%	16
answered question		135
skipped question		167

Open Ended Responses:

Not included

Appendix B

FACILTY TYPE MATRIX

Ontario Ministry of Transportation | MMM GROUP | MRC McCORMICK RANKIN CORPORATION | alta PLANNING + DESIGN

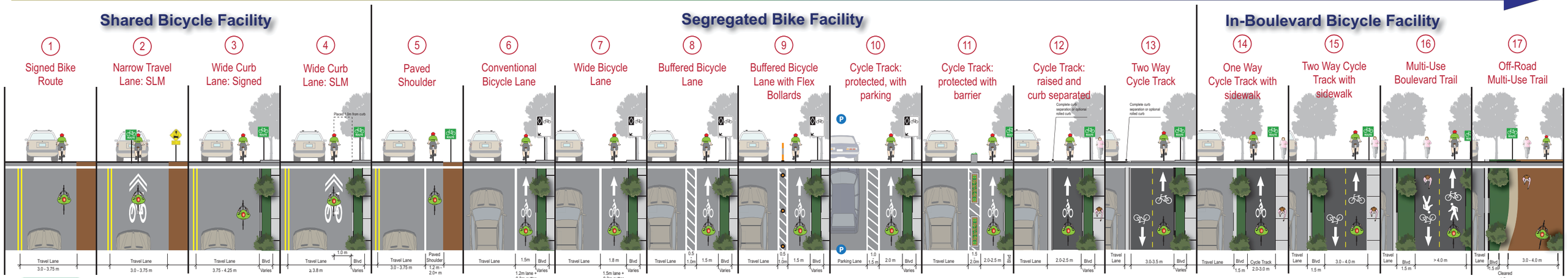
Typical Cycling Facility Types Matrix

least separation → more separation → most separation

Shared Bicycle Facility

Segregated Bike Facility

In-Boulevard Bicycle Facility



	1 Signed Bike Route	2 Narrow Travel Lane: SLM	3 Wide Curb Lane: Signed	4 Wide Curb Lane: SLM	5 Paved Shoulder	6 Conventional Bicycle Lane	7 Wide Bicycle Lane	8 Buffered Bicycle Lane	9 Buffered Bicycle Lane with Flex Bollards	10 Cycle Track: protected, with parking	11 Cycle Track: protected with barrier	12 Cycle Track: raised and curb separated	13 Two Way Cycle Track	14 One Way Cycle Track with sidewalk	15 Two Way Cycle Track with sidewalk	16 Multi-Use Boulevard Trail	17 Off-Road Multi-Use Trail
Minimum Design Specifications																	
	Travel lane widths (TAC Standards): o Minor arterial: 3.5 m o Collector (residential): 3.0 m o Collector (industrial/ commercial): 3.7 m.	Travel lane widths (TAC Standards): Where travel lane less than 4.0 m and the posted speed limit is 50 km/h or less, the stencils should be placed in the centre of the travel lane to allow single file bicycle and vehicle operations.	Travel lane widths: o 3.75 m o greater than 3,000 ADT/lane o less than 60km/h o 6-12% trucks	Markings should be placed 1.0 m from face of curb (or shoulder edge) on streets without on-street parking.	Minimum width: 1.2 m	Recommended width: 1.5 m	Speeds > 70 km/h: 1.8 m	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	2.0 m minimum width to allow for passing 0.6-1.0 m buffer zone width	2.0 m minimum width to allow for passing 1.5 m buffer zone width	2.0 m minimum width to allow for passing 0.6-1.0 m buffer zone width	3.0 m minimum width to allow for passing Striped centre line to separate traffic	2.0 m minimum width to allow for passing Shy distance of 5.0 cm suggested between cycle track and sidewalk	3.0 m is the minimum desired standard in most situations. Should be separated from the roadway with a 1.5 m buffer or a physical barrier	4.0 m is the minimum desired standard in most situations. Should be separated from the roadway with a 1.5 m buffer or a physical barrier	3.0 m is the minimum desired standard for bi-directional travel. Should be separated from the roadway with a 1.5 m buffer or a physical barrier
Preferred Design Specifications																	
	Travel lane widths (TAC Standards): o Minor arterial: 3.7 m. o Collector (residential): 3.7 m. o Collector (industrial/ commercial): 3.7 m.	Should not be placed on roadways with a speed limit over 50 km/h for single file applications. "Shared Use Lane Single File" sign should be used when the travel lane is less than 4.0 m.	Travel lane widths: o 4.25 m o less than 3,000 ADT/lane o less than 60km/h o less than 6% trucks	Should not be placed on roadways with a speed limit over 60 km/h for side-by-side applications. "Share The Road" signs should be provided.	The preferred minimum width is 1.5 m wide. "Share The Road" signs should be provided. Increase width based on speed and vehicle composition: o 2.0 m for a posted speed > 70 km/h and 5,000 ADT	Increase width based on speed and vehicle composition: o Over 6,000 ADT, or if trucks > 10% of traffic volumes: 2.5 m o Speeds > 100 km/h: 2.5 m	Lanes should not exceed 2.0 m where speeds > 70 km/h. Wider lanes allow 2-way bicycle travel and encourages vehicle parking in the lane.	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	Guidelines for buffer width varies: o 80 cm (London and Brussels) o 50-75 cm (CROW Guide) o 183 cm (Portland, OR)	2.5 m width	2.5 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists.	2.5 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists.	4.3 m recommended width (New York City) Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists. Pavement markings should indicate direction	3.0 m width Innovative bicycle-friendly design needed at intersections to reduce conflicts between turning motorists and cyclists.	4.0 m or greater - recommended for heavy use situations with high concentrations of users.	6.0 m or greater - recommended for heavy use situations with high concentrations of multiple users.	4.0 m or greater- recommended for heavy use situations with high concentrations of multiple users.
Typical Criteria																	
	Travel lane minimum width: 3.0 m for low volume streets (less than 3,000 ADT) with little or no truck or bus traffic. "Share the Lane" signs are recommended	These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints.	3.75 - 4.0 m wide lanes Lanes should be sufficiently wide to allow motor vehicles to pass cyclists without encroaching on an adjacent travel lane	These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints.	Shoulder bikeways are appropriate bicycle facilities on rural roads with a large shoulder and where there is no curb and gutter. Facilities are typically used by experienced commuters rather than inexperienced riders.	Most appropriate on urban arterial and collector streets where higher traffic volumes and speeds warrant user separation.	Reserved bicycle lane signs should be provided either directly above or adjacent to the bicycle lane after each intersection and spaced at least every 200 m.	Designed to increase the space between the bicycle lanes and the travel lane or parked cars. Appropriate where bike lanes are located on streets with high speeds (>50 km/h).	Designed to increase the space between the bicycle lanes and the travel lane or parked cars. Appropriate where bike lanes are located on streets with high speeds (>50 km/h).	Use along roadways with high motor vehicle volumes and/or speeds (>50 km/h). Best on streets with parking lanes with a high occupancy rate	Use along roadways with high motor vehicle volumes and/or speeds (>50 km/h). Best on streets with long blocks and few driveways or mid-block access points for vehicles.	Use along roadways with high motor vehicle volumes and/or speeds (>50 km/h). Where cyclists may enter/leave , or where motorists cross at a driveway, the curb should be rolled with a small 45 degree ramp	Desirable when there are more destinations on one side of a street or if the cycle track will connect to a shared-use path or bicycle facility on one side of the street.	Use along roadways with high motor vehicle volumes and/or speeds Where cyclists may enter/leave , or where motorists cross at a driveway, the curb should be mountable with a small 45 degree ramp	Recommended for areas with high volumes of pedestrian and bicycle traffic to reduce conflict.	Ideal for families and recreational users. Suggested when on-road improvements are not feasible along roadways, and when ample ROW is available.	Ideal for families and recreational users. Suggested when on-road improvements are not feasible along roadways, and when ample ROW is available.
References																	
	TAC Geometric Design Guide for Canadian Roads Chapter 3: Bicycles; Section 3.4.3.1. Widths are discussed in section 3.4.6.2.	TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	TAC Geometric Design Guide for Canadian Roads Chapter 3: Bicycles; Section 3.4.3.1. Widths are discussed in section 3.4.6.2.	TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings	TAC Geometric Design Guide for the Design and Application of Bikeway Pavement Markings AASHTO Guide for the Development of Bicycle Facilities	City of Portland, OR. (2010). Bicycle Master Plan for 2030 Bikeway Design Best Practices.	City of Portland, OR. (2010). Bicycle Master Plan for 2030 Bikeway Design Best Practices.	CROW Design Manual for Bicycle Traffic Alta Planning + Design. Cycle Tracks: Lessons Learned.	CROW Design Manual for Bicycle Traffic Alta Planning + Design. Cycle Tracks: Lessons Learned. Velo Quebec. (2003). Technical Handbook of Bikeway Design.	CROW Design Manual for Bicycle Traffic Alta Planning + Design. Cycle Tracks: Lessons Learned. Velo Quebec. (2003). Technical Handbook of Bikeway Design.	CROW Design Manual for Bicycle Traffic Alta Planning + Design. Cycle Tracks: Lessons Learned. Velo Quebec. (2003). Technical Handbook of Bikeway Design.	London Cycling Design Standards Alta Planning + Design. Cycle Tracks: Lessons Learned. Velo Quebec. (2003). Technical Handbook of Bikeway Design.	FHWA. Designing Sidewalks and Trails for Access. AASHTO Guide for the Development of Bicycle Facilities	FHWA. Designing Sidewalks and Trails for Access. York Region Pedestrian and Cycling Master Plan Planning and Design Guidelines Version 1.3 AASHTO Guide for the Development of Bicycle Facilities	York Region Pedestrian and Cycling Master Plan Planning and Design Guidelines Version 1.3
In Constrained Corridors																	
	Alert motorists to the presence of cyclists.	Encourage bicyclists to ride an appropriate distance away from the "door zone" on streets with parking.	"Share the Road" signs can be added to increase driver awareness.	Markings can be as little as 0.75 m from the curb on streets without on-street parking.	If available width is less than 50% of the desirable bicycle lane width AASHTO allows striping the shoulder in lieu of bike lanes.	1.2 m acceptable where road width is limited; not suitable for roads with high ADT's and commercial vehicles.	Bicycle lane widths less than 1.8 m makes it challenging for bicyclists to pass each other without leaving the bicycle lane.	1.2 m bike lane is acceptable.	1.2 m bike lane is acceptable.	1.5 m bike lane is acceptable.	Width should never be taken from the pedestrian zone to make room for a cycle track.	Change in level clearly demarcates space for different users and reduces conflicts between bicyclists and pedestrians.	Parking should be banned on the side of the street with the cycle track to ensure adequate site distances for motorists crossing the path.	Change in level and planted buffer clearly demarcates space for different users and reduces conflicts between bicyclists and vehicles.	3.0 m is the minimum allowed for a two-way shared-use facility and is only recommended for low traffic situations.	3.0 m is the minimum allowed for a two-way shared-use facility and is only recommended for low traffic situations.	Typically incorporated into parkland and valley land. Cyclists may choose to remain in the roadway.

This document is for information purposes only.

Appendix C

DETAILED LOCAL MAPS AND ASSOCIATED TABLES

Appendix C

In order to support local municipalities in their efforts to implement their respective components of the CWAT plan, the CWAT network has been broken out into maps for each of the local municipalities in the County.

The proposed CWAT routes are numbered by segment on each map. These numbers correspond to a database MMM has created to assist County and local municipal staff in implementing the plan. Digital and hard copies of the maps and database will be provided under separate cover to each of the local municipalities as well as ERCA, and is not included in this report.

The data base is sorted by local municipality and then by the funding approach identified in Table 7.3 in the Implementation Chapter of the Master plan. The database includes the following information:

1. Network segment number
2. Route segment name (e.g. road name)
3. Segment location e.g. “from Road X to Road Y”
4. Municipal jurisdiction (e.g. Leamington, Tecumseh etc.)
5. Segment length in kms
6. Proposed implementation phase for segment (e.g. short, medium, long term)
7. Facility type proposed (e.g. bike lane, paved shoulder etc.)
8. Unit cost for facility type
9. Estimated cost of segment (length x unit cost)
10. Funding partnership (e.g. County 40% / local municipality 60%)
11. County, Local and ERCA shares in dollar amounts.

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-1: LOCAL NETWORK with CWATS OVERLAY AMHERTSBURG

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Amh-1. Refer to Table C-1.

SEPTEMBER 2012

0 1.5 3 6 Kilometres

TransActive Solutions

MMM GROUP

Table C-1 Amherstburg

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Amh-1	County Road 18	Meloche Road	Amherstburg / Essex Border	Amherstburg	9.1	Long Term	Paved Shoulder	$ 110,000	$ 1,001,000	$ 1,001,000	$ -	$ -
Amh-2	County Road 50	County Road 20	Amherstburg / Essex Border	Amherstburg	5.6	Short Term	Paved Shoulder	$ 110,000	$ 616,000	$ 616,000	$ -	$ -
Amh-3	County Road 20	80m west of Adams Ave	County Road 50	Amherstburg	6.2	Mid Term	Paved Shoulder	$ 110,000	$ 682,000	$ 682,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Amh-4	County Road 20	Amh-5	Amh-14	Amherstburg	2.5	Mid Term	Bike Lane	$ 12,000	$ 30,000	$ 12,000	$ 18,000	$ -
Amh-5	County Road 20	Amh-4	80m east of Adams Ave	Amherstburg	0.5	Mid Term	Paved Shoulder	$ 110,000	$ 55,000	$ 22,000	$ 33,000	$ -
Amh-6	Alma St	Fryer St.	Meloche Rd.	Amherstburg	1.3	Short Term	Paved Shoulder	$ 110,000	$ 143,000	$ 57,200	$ 85,800	$ -
Amh-7	County Road 20	County Road 8	Texas Road	Amherstburg	7.3	Long Term	Context Sensitive Solution	$ 330,000	$ 2,409,000	$ 963,600	$ 1,445,400	$ -
Amh-8	County Road 20	Texas Road	180m north of Brunner Ave.	Amherstburg	0.8	Mid Term	Context Sensitive Solution	$ 330,000	$ 264,000	$ 105,600	$ 158,400	$ -
Amh-9	Sandwich St. N	180m north of Brunner Ave.	Alma St.	Amherstburg	1.0	Mid Term	Context Sensitive Solution	$ 330,000	$ 330,000	$ 132,000	$ 198,000	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Amh-10	Alma St.	Meloche Rd.	3rd Concession North	Amherstburg	0.8	Short Term	Paved Shoulder	$ 110,000	$ 88,000	$ -	$ 88,000	$ -
Amh-11	Texas Rd.	County Road 20	County Road 5	Amherstburg	2.3	Mid Term	Paved Shoulder	$ 110,000	$ 253,000	$ -	$ 253,000	$ -
Amh-12	Thomas Rd.	260m South of Texas Rd	Alma St.	Amherstburg	1.6	Mid Term	Multi-Use Trail	$ 250,000	$ 400,000	$ -	$ 400,000	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Amh-13	County Road 5	County Road 10	260m South of Texas Road	Amherstburg	2.1	Short Term	Signed Route	$ 200	$ 420	$ 420	$ -	$ -
Amh-14	County Road 20	Lowes Side Rd	Amh-4	Amherstburg	0.5	Mid Term	Signed Route	$ 2,000	$ 1,000	$ 1,000	$ -	$ -
Amh-15	Alma St.	Sandwich St.	Fryer St.	Amherstburg	1.1	Short Term	Signed Route	$ 2,000	$ 2,200	$ 2,200	$ -	$ -
Amh-16	Sandwich St. S	Alma St.	Lowes Side Rd	Amherstburg	2.5	Mid Term	Signed Route	$ 2,000	$ 5,000	$ 5,000	$ -	$ -
Amh-17	Meloche Rd.	Alma St.	Simcoe St.	Amherstburg	1.2	Short Term	Signed Route	$ 2,000	$ 2,400	$ 2,400	$ -	$ -
Amh-18	2nd Concession North	County Road 8	County Road 10	Amherstburg	5.4	Long Term	Signed Route	$ 200	$ 1,080	$ 1,080	$ -	$ -
Amh-19	3rd Concession North	County Road 8	Alma St.	Amherstburg	8.5	Short Term	Signed Route	$ 200	$ 1,700	$ 1,700	$ -	$ -
Amh-20	8th Concession / Alma St. / 9th Concession	County Road 8	County Road 18	Amherstburg	9.9	Long Term	Signed Route	$ 200	$ 1,980	$ 1,980	$ -	$ -
Amh-21	6th Concession South	County Road 18	County Road 20	Amherstburg	4.2	Long Term	Signed Route	$ 200	$ 840	$ 840	$ -	$ -
Amh-22	Meloche Rd.	Simcoe Street	Creek Rd.	Amherstburg	1.4	Short Term	Signed Route	$ 200	$ 280	$ 280	$ -	$ -
Amh-23	Creek Rd.	Meloche Rd.	County Road 20	Amherstburg	2.7	Long Term	Signed Route	$ 200	$ 540	$ 540	$ -	$ -
Amh-24	Laird Av / Fort Malden / Dalhousie St.	Sandwich St.	County Road 20	Amherstburg	3.2	Mid Term	Signed Route	$ 2,000	$ 6,400	$ 6,400	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Amh-25	Proposed Amherstburg - Essex Greenway	County Road 5	County Road 11	Amherstburg	10.0	Mid Term	Multi-Use Trail	$ 80,000	$ 800,000	$ -	$ -	$ 800,000

Total CWAT in Amherstburg Cost	$ 7,094,840
Total County Share	$ 3,615,240
Total Local Share	$ 2,679,600
Total ERCA Share	$ 800,000

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-2: LOCAL NETWORK with CWATS OVERLAY ESSEX

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Ess-1. Refer to Table C-2.

0 2 4 8 Kilometres

SEPTEMBER 2012

TransActive Solutions

MMM GROUP

Table C-2 Essex

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Ess-1	County Road 18	County Road 11	County Road 23	Essex	12.9	Long Term	Paved Shoulder	$ 110,000	$ 1,419,000	$ 1,419,000	$ -	$ -
Ess-2	County Road 15 (South Malden Road)	Ess-21	Ess-3	Essex	1.7	Short Term	Paved Shoulder	$ 110,000	$ 187,000	$ 187,000	$ -	$ -
Ess-3	County Road 15	South Malden Road	County Road 11	Essex	4.6	Short Term	Paved Shoulder	$ 110,000	$ 506,000	$ 506,000	$ -	$ -
Ess-4	County Road 11	County Road 15	Harrow Settlement Area Boundary	Essex	1.9	Short Term	Paved Shoulder	$ 110,000	$ 209,000	$ 209,000	$ -	$ -
Ess-29	County Rd 8	Pinkerton Rd	Essex Settlement Area Boundary	Essex	0.3	Mid Term	Paved Shoulder	$ 110,000	$ 33,000	$ 33,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Ess-5	County Road 11	3rd Concession	Harrow Settlement Area Boundary	Essex	0.3	Short Term	Paved Shoulder	$ 110,000	$ 33,000	$ 13,200	$ 19,800	$ -
Ess-6	County Road 50	120m east of Howe Ave	County Road 23	Essex	7.8	Short Term	Paved Shoulder	$ 110,000	$ 858,000	$ 343,200	$ 514,800	$ -
Ess-7	County Road 50	County Road 41	100m west of Crystal Beach Rd	Essex	0.7	Short Term	Paved Shoulder	$ 110,000	$ 77,000	$ 30,800	$ 46,200	$ -
Ess-8	County Road 13	200m north of Dunn Rd	Dunn Rd	Essex	0.2	Short Term	Paved Shoulder	$ 110,000	$ 22,000	$ 8,800	$ 13,200	$ -
Ess-9	County Road 34	Irwin Ave	Essex-Kingsville Boundary	Essex	0.3	Mid Term	Paved Shoulder	$ 110,000	$ 33,000	$ 13,200	$ 19,800	$ -
Ess-10	County Road 13	Erie Rd	200m north of Dunn Rd	Essex	0.5	Short Term	Paved Shoulder	$ 110,000	$ 55,000	$ 22,000	$ 33,000	$ -
Ess-11	County Road 50	100m west of Crystal Beach Rd	120m east of Howe Ave	Essex	7.9	Short Term	Paved Shoulder	$ 110,000	$ 869,000	$ 347,600	$ 521,400	$ -
Ess-12	County Road 8	320m west of Allen Av	180m west of Bell Av	Essex	0.6	Mid Term	Paved Shoulder	$ 110,000	$ 66,000	$ 26,400	$ 39,600	$ -
Ess-13	County Road 8	180m west of Bell Av	20m east of Bell Av	Essex	0.2	Mid Term	Bike Lane	$ 12,000	$ 2,400	$ 960	$ 1,440	$ -
Ess-14	County Road 8	Brien Ave E	County Road 23	Essex	0.2	Long Term	Paved Shoulder	$ 110,000	$ 22,000	$ 8,800	$ 13,200	$ -
Ess-15	Maidstone Av E	Talbot Rd N	Brien Ave E	Essex	1.6	Mid Term	Paved Shoulder	$ 110,000	$ 176,000	$ 70,400	$ 105,600	$ -
Ess-16	Maidstone Av E	20m east of Bell Av	Talbot Rd N	Essex	0.2	Mid Term	Bike Lane	$ 12,000	$ 2,400	$ 960	$ 1,440	$ -
Ess-17	Talbot Rd S	170m south of Gossfield	Irwin Ave	Essex	0.3	Mid Term	Paved Shoulder	$ 110,000	$ 33,000	$ 13,200	$ 19,800	$ -
Ess-18	Queen St.	3rd Concession	Chrysler Canada Greenway	Essex	0.7	Short Term	Paved Shoulder	$ 110,000	$ 77,000	$ 30,800	$ 46,200	$ -
Ess-28	County Rd 8	450m east of South Talbot Rd	Essex Settlement Area Boundary	Essex	0.7	Mid Term	Paved Shoulder	$ 110,000	$ 77,000	$ 30,800	$ 46,200	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Ess-19	Dunn Rd	County Road 50	County Road 13	Essex	4.9	Short Term	Paved Shoulder	$ 110,000	$ 539,000	$ -	$ 539,000	$ -
Ess-20	Erie Rd	King St. W	County Road 13	Essex	0.4	Short Term	Paved Shoulder	$ 110,000	$ 44,000	$ -	$ 44,000	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Ess-21	County Road 15	County Road 8	South Malden Rd	Essex	8.0	Short Term	Signed Route	$ 200	$ 1,600	$ 1,600	$ -	$ -
Ess-22	Talbot Rd S	Maidstone Av E	170m south of Gossfield	Essex	1.6	Mid Term	Signed Route	$ 2,000	$ 3,200	$ 3,200	$ -	$ -
Ess-23	Queen St / King St. W	Chrysler Canada Greenway	Erie Rd	Essex	0.8	Short Term	Signed Route	$ 2,000	$ 1,600	$ 1,600	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Ess-24	Provincial Highway 3	Amherstburgh -Essex Greenway	Victoria Av. / North Malden Rd.	Essex	1.6	Short Term	Multi-Use Trail	$ 250,000	$ 400,000	$ -	$ -	$ 400,000
Ess-25	Amherstburgh -Essex Greenway	Highway 3	County Road 15	Essex	5.9	Short Term	Multi-Use Trail	$ 80,000	$ 472,000	$ -	$ -	$ 472,000
Ess-26	Trail Connection	Thomas Rd.	Essex Boundary	Essex	1.2	Mid Term	Multi-Use Trail	$ 80,000	$ 96,000	$ -	$ -	$ 96,000
Ess-27	Trail Connection	County Road 8	Thomas Rd.	Essex	0.8	Long Term	Multi-Use Trail	$ 80,000	$ 64,000	$ -	$ -	$ 64,000

Total CWAT in Essex Cost	$ 6,378,200
Total County Share	$ 3,321,520
Total Local Share	$ 2,024,680
Total Provinicial Share	$ 400,000
Total ERCA Share	$ 632,000

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-3: LOCAL NETWORK with CWATS OVERLAY KINGSVILLE

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Kings-1. Refer to Table C-3.

0 1.5 3 6 Kilometres

SEPTEMBER 2012

TransActive Solutions

MMM GROUP

Table C-3 Kingsville

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Kings-1	County Road 34 W	Essex-Kingsville Boundary	Cottam Settlement Area	Kingsville	4.9	Mid Term	Paved Shoulder	$ 110,000	$ 539,000	$ 539,000	$ -	$ -
Kings-2	County Road 34 E	Cottam Settlement Area	Ruthven Settlement Area	Kingsville	10.8	Mid Term	Paved Shoulder	$ 110,000	$ 1,188,000	$ 1,188,000	$ -	$ -
Kings-3	County Road 18	County Road 23	County Road 31	Kingsville	14.7	Long Term	Paved Shoulder	$ 110,000	$ 1,617,000	$ 1,617,000	$ -	$ -
Kings-4	County Road 29	South Talbot Rd	210 m north of Road 2	Kingsville	5.1	Long Term	Paved Shoulder	$ 110,000	$ 561,000	$ 561,000	$ -	$ -
Kings-5	County Road 34	100m east of Elgin St	County Road 31	Kingsville	1.9	Mid Term	Paved Shoulder	$ 110,000	$ 209,000	$ 209,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Kings-6	County Road 34 W	260m north of King St	Cottam Settlement Area Boundary	Kingsville	1.0	Mid Term	Paved Shoulder	$ 110,000	$ 110,000	$ 44,000	$ 66,000	$ -
Kings-7	County Road 34 E	Clark St	Cottam Settlement Area Boundary	Kingsville	1.1	Mid Term	Paved Shoulder	$ 110,000	$ 121,000	$ 48,400	$ 72,600	$ -
Kings-8	County Road 50	County Road 23	90 m south of Sycamore Av	Kingsville	4.1	Short Term	Paved Shoulder	$ 110,000	$ 451,000	$ 180,400	$ 270,600	$ -
Kings-9	County Road 50	90 m south of Sycamore Av	Cull Dr	Kingsville	3.2	Short Term	Paved Shoulder	$ 110,000	$ 352,000	$ 140,800	$ 211,200	$ -
Kings-10	County Road 34	County Road 45	100m east of Elgin St	Kingsville	0.5	Mid Term	Paved Shoulder	$ 110,000	$ 55,000	$ 22,000	$ 33,000	$ -
Kings-11	Division St. N	Thorncrest St.	210 m north of Road 2	Kingsville	1.2	Short Term	Paved Shoulder	$ 110,000	$ 132,000	$ 52,800	$ 79,200	$ -
Kings-12	County Road 45	County Road 20	County Road 34	Kingsville	1.5	Short Term	Multi-Use Trail	$ 250,000	$ 375,000	$ 150,000	$ 225,000	$ -
Kings-13	County Road 20	Chrysler Canada Greenway	County Road 31	Kingsville	6.4	Short Term	Context-Sensitive Solution	$ 330,000	$ 2,112,000	$ 844,800	$ 1,267,200	$ -
Kings-27	County Road 34 E	Ruthven Settlement Area	County Road 34	Kingsville	0.5	Mid Term	Paved Shoulder	$ 110,000	$ 55,000	$ 22,000	$ 33,000	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Kings-14	Road 3	County Road 29	Conservatory	Kingsville	1.3	Long Term	Paved Shoulder	$ 110,000	$ 143,000	$ -	$ 143,000	$ -
Kings-15	Road 3	County Road 31	130m west of CR 31	Kingsville	0.1	Long Term	Paved Shoulder	$ 110,000	$ 11,000	$ -	$ 11,000	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Kings-16	County Road 14	County Rd 27	County Rd 31	Kingsville	7.9	Short Term	Signed Route	$ 200	$ 1,580	$ 1,580	$ -	$ -
Kings-17	County Road 27	County Road 8	110m east of Whitewood Ave	Kingsville	4.7	Short Term	Signed Route	$ 200	$ 940	$ 940	$ -	$ -
Kings-18	County Road 29	County Road 34	South Talbot Rd	Kingsville	2.1	Long Term	Signed Route	$ 200	$ 420	$ 420	$ -	$ -
Kings-19	County Road 50	Cull Dr	Chrysler Canada Greenway	Kingsville	0.8	Short Term	Signed Route	$ 2,000	$ 1,600	$ 1,600	$ -	$ -
Kings-20	County Road 34	260m north of King St	Clark St	Kingsville	0.8	Mid Term	Signed Route	$ 2,000	$ 1,600	$ 1,600	$ -	$ -
Kings-21	County Road 27	County Road 34	110m east of Whitewood Ave	Kingsville	0.8	Short Term	Signed Route	$ 2,000	$ 1,600	$ 1,600	$ -	$ -
Kings-22	Heritage Rd/ Main St W/E	Chrysler Canada Greenway	Chrysler Canada Greenway	Kingsville	3.0	Mid Term	Signed Route	$ 2,000	$ 6,000	$ 6,000	$ -	$ -
Kings-23	Division St. N	Main St	Thorncrest St.	Kingsville	0.6	Short Term	Signed Route	$ 2,000	$ 1,200	$ 1,200	$ -	$ -
Kings-24	Wigle/Lakeview /Park /Division St S	Main St W	Main St. E	Kingsville	3.2	Short Term	Signed Route	$ 2,000	$ 6,400	$ 6,400	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Kings-25	Trail Connection	Chrysler Canada Greenway	Road 3	Kingsville	1.0	Long Term	Multi-Use Trail	$ 80,000	$ 80,000	$ -	$ -	$ 80,000
Kings-26	Trail Connection	Chrysler Canada Greenway	County Road 31	Kingsville	0.7	Long Term	Multi-Use Trail	$ 80,000	$ 56,000	$ -	$ -	$ 56,000

Total CWAT in Kingsville Cost	$ 8,188,340
Total County Share	$ 5,640,540
Total Local Share	$ 2,411,800
Total ERCA Share	$ 136,000

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-4: LOCAL NETWORK with CWATS OVERLAY LAKESHORE

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Lake-1. Refer to Table C-4.

N W E S

0 3.5 7 14 Kilometres

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Table C-4 Lakeshore

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Lake-1	County Road 2	County Road 1	County Road 37	Lakeshore	6.4	Mid Term	Paved Shoulder	$ 110,000	$ 704,000	$ 704,000	$ -	$ -
Lake-2	County Road 2	Rail Corridor	County Road 37	Lakeshore	3.0	Mid Term	Paved Shoulder	$ 110,000	$ 330,000	$ 330,000	$ -	$ -
Lake-3	County Road 39	County Road 2	Rail Corridor	Lakeshore	2.8	Mid Term	Paved Shoulder	$ 110,000	$ 308,000	$ 308,000	$ -	$ -
Lake-4	County Road 46	Rochester Townline Rd	Rail Corridor	Lakeshore	3.5	Mid Term	Paved Shoulder	$ 110,000	$ 385,000	$ 385,000	$ -	$ -
Lake-5	County Road 2	Lakekshore Settlement Area Boundary	St. Clair Rd	Lakeshore	1.1	Mid Term	Paved Shoulder	$ 110,000	$ 121,000	$ 121,000	$ -	$ -
Lake-6	County Road 27	Lakekshore Settlement Area Boundary	Woodslee Settlement Area Boundary	Lakeshore	6.9	Long Term	Paved Shoulder	$ 110,000	$ 759,000	$ 759,000	$ -	$ -
Lake-7	County Road 27	190m south of Stowe St.	County Road 8	Lakeshore	2.4	Long Term	Paved Shoulder	$ 110,000	$ 264,000	$ 264,000	$ -	$ -
Lake-8	County Road 23	S Middle Rd	County Road 8	Lakeshore	3.1	Short Term	Paved Shoulder	$ 110,000	$ 341,000	$ 341,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Lake-9	County Road 2	Rail Corridor	County Road 22	Lakeshore	6.9	Mid Term	Paved Shoulder	$ 110,000	$ 759,000	$ 303,600	$ 455,400	$ -
Lake-10	County Road 27	Lakekshore Settlement Area Boundary	Woodslee Settlement Area Boundary	Lakeshore	2.3	Long Term	Paved Shoulder	$ 110,000	$ 253,000	$ 101,200	$ 151,800	$ -
Lake-11	County Road 2	E Pike Creek	Rail Corridor	Lakeshore	5.0	Mid Term	Paved Shoulder	$ 110,000	$ 550,000	$ 220,000	$ 330,000	$ -
Lake-12	County Road 2	County Road 22	Stuart Lane	Lakeshore	0.6	Mid Term	Paved Shoulder	$ 110,000	$ 66,000	$ 26,400	$ 39,600	$ -
Lake-13	County Road 39	Rail Corridor	Melody Dr	Lakeshore	0.9	Mid Term	Paved Shoulder	$ 110,000	$ 99,000	$ 39,600	$ 59,400	$ -
Lake-14	County Road 27	S Middle Rd	190m south of Stowe St.	Lakeshore	0.7	Long Term	Paved Shoulder	$ 110,000	$ 77,000	$ 30,800	$ 46,200	$ -
Lake-15	County Road 42	County Road 21	Lakeshore Rd 105	Lakeshore	2.3	Short Term	Paved Shoulder	$ 110,000	$ 253,000	$ 101,200	$ 151,800	$ -
Lake-16	County Road 22	Rail Corridor	W Belle River Rd	Lakeshore	6.0	Mid Term	Multi-Use Trail	$ 250,000	$ 1,500,000	$ 600,000	$ 900,000	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Lake-17	South Talbot Rd	County Road 19	County Road 8	Lakeshore	2.5	Short Term	Paved Shoulder	$ 110,000	$ 275,000	$ -	$ 275,000	$ -
Lake-18	Patillo Rd	Conway Drive	Silver Creek Industrial	Lakeshore	0.9	Mid Term	Paved Shoulder	$ 110,000	$ 99,000	$ -	$ 99,000	$ -
Lake-19	First St / Lake Dr	Broadway Ave	End	Lakeshore	0.6	Short Term	Paved Shoulder	$ 110,000	$ 66,000	$ -	$ 66,000	$ -
Lake-27	Patillo Rd	County Road 2	Conway Drive	Lakeshore	0.6	Mid Term	Bike Lane	$ 12,000	$ 7,200	$ -	$ 7,200	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Lake-20	County Road 37	County Road 2	County Road 8	Lakeshore	13.7	Short Term	Signed Route	$ 200	$ 2,740	$ 2,740	$ -	$ -
Lake-21	County Road 21	Rail Corridor	County Road 42	Lakeshore	3.7	Short Term	Signed Route	$ 2,000	$ 7,400	$ 7,400	$ -	$ -
Lake-22	County Road 22	Duck Creek Blvd	County Road 2	Lakeshore	0.3	Short Term	Signed Route	$ 2,000	$ 600	$ 600	$ -	$ -
Lake-23	County Road 39	Melody Dr	End	Lakeshore	0.5	Mid Term	Signed Route	$ 2,000	$ 1,000	$ 1,000	$ -	$ -
Lake-25	Notre Dame St	Duck Creek Blvd	W River St	Lakeshore	2.1	Short Term	Signed Route	$ 2,000	$ 4,200	$ 4,200	$ -	$ -
Lake-26	South St / First St	Rail Corridor	Broadway Ave	Lakeshore	1.1	Long Term	Signed Route	$ 2,000	$ 2,200	$ 2,200	$ -	$ -
Lake-28	Old Tecumseh Rd	Brighton Rd	E Pike Creek	Lakeshore	0.2	Mid Term	Signed Route	$ 2,000	$ 400	$ 400	$ -	$ -
Lake-29	Ellis, Wiilson, Lakeshore 201	South Talbot Rd	S Middle Rd	Lakeshore	3.5	Short Term	Signed Route	$ 2,000	$ 7,000	$ 7,000	$ -	$ -
Lake-30	North Talbot Rd	County Road 19	S Middle Rd	Lakeshore	2.4	Long Term	Signed Route	$ 200	$ 480	$ 480	$ -	$ -
Lake-31	S Middle Rd	North Talbot Rd	Rochester Townline Rd	Lakeshore	20.7	Short Term	Signed Route	$ 200	$ 4,140	$ 4,140	$ -	$ -
Lake-32	Rochester Townline Rd	S Middle Rd	County Road 46	Lakeshore	1.4	Mid Term	Signed Route	$ 200	$ 280	$ 280	$ -	$ -
Lake-33	Lakeshore 105, N rear Rd, Lakeshore 203	County Road 42	S Middle Rd	Lakeshore	8.8	Short Term	Signed Route	$ 200	$ 1,760	$ 1,760	$ -	$ -
Lake-34	St. Clair Rd	County Road 2	End	Lakeshore	6.3	Mid Term	Signed Route	$ 200	$ 1,260	$ 1,260	$ -	$ -
Lake-35	Clairview	St. Clair Rd	County Road 2	Lakeshore	0.6	Mid Term	Signed Route	$ 200	$ 120	$ 120	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Lake-36	Trail Connection	Lakeshore/Chatham-Kent	County Road 8	Lakeshore	32.4	Mid Term	Multi-Use Trail	$ 80,000	$ 2,592,000	$ -	$ -	$ 2,592,000
Lake-37	Pelton Spur	County Road 8	County Road 19	Lakeshore	4.1	Long Term	Multi-Use Trail	$ 80,000	$ 328,000	$ -	$ -	$ 328,000

Total CWAT in Lakeshore Cost	**$ 10,408,280**
Total County Share	**$ 4,668,380**
Local Share	$ 2,581,400
Additional Local Share (Common Municipal Boundaries)	$ 304,500
Total Local Share	**$ 2,885,900**
Total ERCA Share	**$ 2,920,000**

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-5: LOCAL NETWORK with CWATS OVERLAY LASALLE

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Las-1. Refer to Table C-5.

N W E S

0 0.5 1 2 Kilometres

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Table C-5 LaSalle

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Las-1	County Rd 3	LaSalle Settlement Area Boundary	County Rd 8	LaSalle	2.1	Long Term	Context Sensitive Solution	$ 330,000	$ 693,000	$ 693,000	$ -	$ -
Las-2	County Rd 7	LaSalle Settlement Area Boundary	County Rd 9	LaSalle	2.5	Long Term	Context Sensitive Solution	$ 330,000	$ 825,000	$ 825,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Las-3	County Rd 3	Reaume Ave	LaSalle Settlement Area Boundary	LaSalle	3.6	Long Term	Context Sensitive Solution	$ 330,000	$ 1,188,000	$ 475,200	$ 712,800	$ -
Las-4	County Rd 7	Sandwich West Pkwy	LaSalle Settlement Area Boundary	LaSalle	2.4	Long Term	Context Sensitive Solution	$ 330,000	$ 792,000	$ 316,800	$ 475,200	$ -
Las-5	Huron Church Rd	Cousineau Rd	Sandwich West Pkwy	LaSalle	0.5	Long Term	Context Sensitive Solution	$ 330,000	$ 165,000	$ 66,000	$ 99,000	$ -
Las-6	Todd Ln (County Rd 6)	Malden Rd	Huron Church Rd	LaSalle	2.1	Short Term	Multi-Use Trail	$ 250,000	$ 525,000	$ 210,000	$ 315,000	$ -
Las-11	Malden Rd (County Road 3)	Normandy St	Windsor Boundary	LaSalle	0.9	Mid Term	Multi-Use Trail	$ 250,000	$ 225,000	$ 90,000	$ 135,000	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Las-6	Todd Ln	Malden Rd	Huron Church Rd	LaSalle	2.1	Short Term	Signed Route	$ 2,000	$ 4,200	$ 4,200	$ -	$ -
Las-7	County Rd 20	County Rd 3	320m south of Martin Lane	LaSalle	2.5	Long Term	Signed Route	$ 200	$ 500.00	$ 500	$ -	$ -
Las-8	County Rd 20	320m south of Martin Lane	Gary Av	LaSalle	2.1	Long Term	Signed Route	$ 2,000	$ 4,200.00	$ 4,200	$ -	$ -
Las-9	Front Rd	Gary Av	Windsor Boundary	LaSalle	3.3	Long Term	Signed Route	$ 2,000	$ 6,600	$ 6,600	$ -	$ -
Las-10	Sprucewood Av	Windsor Boundary	Malden Rd	LaSalle	0.9	Short Term	Signed Route	$ 2,000	$ 1,800	$ 1,800	$ -	$ -
Las-11	Malden Rd (County Road 3)	Normandy St	Windsor Boundary	LaSalle	0.9	Mid Term	Signed Route	$ 2,000	$ 1,800	$ 1,800	$ -	$ -
Las-12	Laurier Dr	Front Rd	County Rd 3	LaSalle	3.6	Short Term	Signed Route	$ 2,000	$ 7,200.00	$ 7,200	$ -	$ -
Las-13	7th Concession, Broderick, Kelly, Shake, Canard	County Rd 9	County Rd 8	LaSalle	7.7	Short Term	Signed Route	$ 200	$ 1,540.00	$ 1,540	$ -	$ -
Las-14	Sandwich West Pkwy	Heritage Dr	Talbot Rd	LaSalle	0.3	Short Term	Signed Route	$ 200	$ 60	$ 60	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		**0%**		**Local Municipality Share**		**0%**		**ERCA Share**			**100%**	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Las-15	Todd Ln Trail	Todd Ln	Windsor Boundary	LaSalle	0.2	Mid Term	Multi-Use Trail	$ 80,000	$ 16,000	$ -	$ -	$ 16,000

Total CWAT in LaSalle Cost	**$ 4,582,300**
Total County Share	**$ 2,703,900**
Local Share	$ 1,737,000
Additional Local Share (Common Municipal Boundaries)	$ 59,400
Total Local Share	**$ 1,796,400**
Total ERCA Share	**$ 16,000**

0 1.5 3 6 Kilometres

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-6: LOCAL NETWORK with CWATS OVERLAY LEAMINGTON

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Leam-1. Refer to Table C-6.

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Table C-6 Leamington

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-1	County Road 18	County Road 31	Leamington Settlement Area Boundary	Leamington	3.0	Long Term	Paved Shoulder	$ 110,000	$ 330,000	$ 330,000	$ -	$ -
Leam-2	County Road 34	County Road 31	Crest View Dr	Leamington	0.6	Mid Term	Paved Shoulder	$ 110,000	$ 66,000	$ 66,000	$ -	$ -
Leam-3	County Road 34	County Road 33	Kent County Road 1	Leamington	10.5	Mid Term	Paved Shoulder	$ 110,000	$ 1,155,000	$ 1,155,000	$ -	$ -
Leam-11B	County Road 20	0.6 km east of CR 31	Leamington Settlement Area Boundary	Leamington	0.6	Short Term	Context-Sensitive Solution	$ 330,000	$ 198,000	$ 198,000	$ -	

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-4	County Road 18	Highway 77	Leamington Settlement Area Boundary	Leamington	0.7	Long Term	Paved Shoulder	$ 110,000	$ 77,000	$ 30,800	$ 46,200	$ -
Leam-5	County Road 33	Bevel Line Road (Leam-10)	350m south of Monarch Lane	Leamington	2.0	Mid Term	Paved Shoulder	$ 110,000	$ 220,000	$ 88,000	$ 132,000	$ -
Leam-6	County Road 34	County Road 33	200m east of County Road 33	Leamington	0.2	Mid Term	Bike Lane	$ 200,000	$ 40,000	$ 16,000	$ 24,000	$ -
Leam-7	Unnamed Road	County Road 33	County Road 20	Leamington	2.7	Mid Term	Paved Shoulder	$ 110,000	$ 297,000	$ 118,800	$ 178,200	$ -
Leam-8	Talbot St W	Rail Corridor	Albert St	Leamington	0.4	Mid Term	Bike Lane	$ 12,000	$ 4,800	$ 1,920	$ 2,880	$ -
Leam-9	Talbot St E	Victoria Ave	200m east of County Road 33	Leamington	1.1	Mid Term	Bike Lane	$ 12,000	$ 13,200	$ 5,280	$ 7,920	$ -
Leam-10	Bevel Line Road	Seacliff Rd	County Road 33 (Leam-5)	Leamington	0.9	Mid Term	Paved Shoulder	$ 110,000	$ 99,000	$ 39,600	$ 59,400	$ -
Leam-11A	County Road 20	County Road 31	0.6 km East of Cty Rd 31	Leamington	0.6	Short Term	Context-Sensitive Solution	$ 330,000	$ 198,000	$ 79,200	$ 118,800	$ -
Leam-11C	County Road 20	Paglione Drive	Leamington Settlement Area Boundary	Leamington	1.7	Short Term	Context-Sensitive Solution	$ 330,000	$ 561,000	$ 224,400	$ 336,600	$ -
Leam-13	Oak St	Industrial Rd	Sherk St	Leamington	0.3	Short Term	Bike Lane	$ 200,000	$ 60,000	$ 24,000	$ 36,000	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-12	Mersea Rd 3	County Road 31	Rail Corridor	Leamington	5.3	Short Term	Paved Shoulder	$ 110,000	$ 583,000	$ -	$ 583,000	**$ -**

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-14	County Road 14	County Road 31	Kent County Road 1	Leamington	14.7	Short Term	Signed Route	$ 200	$ 2,940	$ 2,940	$ -	$ -
Leam-15	County Road 37	County Road 8	Mersea Rd 6	Leamington	8.2	Short Term	Signed Route	$ 200	$ 1,640	$ 1,640	$ -	$ -
Leam-16	County Road 20 / County Road 37	Seacliff Dr	Mersea Rd 2	Leamington	7.2	Short Term	Signed Route	$ 200	$ 1,440	$ 1,440	$ -	$ -
Leam-17	County Road 33	350 m south of Monarch Lane	Mersea Rd E	Leamington	3.1	Short Term	Signed Route	$ 200	$ 620	$ 620	$ -	$ -
Leam-18	County Road 34	County Road 48	60m west of Fader Av	Leamington	0.7	Short Term	Signed Route	$ 200	$ 140	$ 140	$ -	$ -
Leam-19	County Road 48	County Road 34	Industrial Rd	Leamington	1.1	Short Term	Signed Route	$ 200	$ 220	$ 220	$ -	$ -
Leam-20	Talbot St W	60m west of Fader Av	Rail Corridor	Leamington	0.6	Short Term	Signed Route	$ 2,000	$ 1,200	$ 1,200	$ -	$ -
Leam-21	Talbot St W/E	Albert St	Victoria Ave	Leamington	0.5	Mid Term	Signed Route	$ 2,000	$ 1,000	$ 1,000	$ -	$ -
Leam-22	Seacliff Dr W/E (CR 20)	Paglione Drive	Unnamed Road (Leam-7)	Leamington	2.4	Short Term	Signed Route	$ 2,000	$ 4,800	$ 4,800	$ -	$ -
Leam-23	Mersea Rd 4,5,6,7,12,21	Highway 77	Kent County Road 1	Leamington	12.9	Short Term	Signed Route	$ 200	$ 2,580	$ 2,580	$ -	$ -
Leam-24	Mersea Rd 2, Carr, Silver, Cotterie Lakeshore Dr, Pulley Rd, Milo Rd, Deer Run Rd	County Road 37	Kent County Road 1	Leamington	6.0	Short Term	Signed Route	$ 200	$ 1,200	$ 1,200	$ -	$ -
Leam-25	Wilkinson Dr	Rail Corridor	Erie St N	Leamington	0.5	Short Term	Signed Route	$ 2,000	$ 1,000	$ 1,000	$ -	$ -
Leam-26	Erie St N	Wilkinson Dr	Talbot St W/E	Leamington	0.7	Short Term	Signed Route	$ 2,000	$ 1,400	$ 1,400	$ -	$ -
Leam-27	Cherry Lane	Robson Rd	Seacliff Dr	Leamington	0.8	Short Term	Signed Route	$ 2,000	$ 1,600	$ 1,600	$ -	$ -
Leam-28	Erie St S / Robson Rd	Dock	County Road 33	Leamington	3.6	Short Term	Signed Route	$ 2,000	$ 7,200	$ 7,200	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-29	Trail Connection	County Road 31	Rail Corridor	Leamington	3.0	Long Term	Multi-Use Trail	$ 80,000	$ 240,000	$ -	$ -	$ 240,000

Multi-Use Trails - outside of County and/or Local Right of way and owned by Municipality(Highlighted in Purple)

County Share		**0%**		**Local Municipality Share**		**100%**		**ERCA Share**			**0%**	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Leam-30	Trail Connection	Rail Corridor	Erie St N	Leamington	0.7	Short Term	Multi-Use Trail	$ 80,000	$ 56,000	$ -	$ 56,000	$ -
Leam-31	Trail Connection	Talbot St W	County Road 8	Leamington	13.3	Short Term	Multi-Use Trail	$ 80,000	$ 1,064,000	$ -	$ 1,064,000	$ -
Leam-32	Leamington Spur	County Road 8	CASO Line	Lakeshore	8.2	Mid Term	Multi-Use Trail	$ 80,000	$ 656,000	$ -	$ 656,000	$ -

Total CWAT in Leamington Cost	**$ 5,946,980**
Total County Share	**$ 2,405,980**
Total Local Share	**$ 3,301,000**
Total ERCA Share	**$ 240,000**

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-7: LOCAL NETWORK with CWATS OVERLAY TECUMSEH

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, Tec-1. Refer to Table C-7.

0 2 4 8 Kilometres

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Table C-7 Tecumseh

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Tec-1	County Road 46	Tecumseh Settlement Area Boundary	County Road 19	Tecumseh	4.8	Long Term	Paved Shoulder	$ 110,000	$ 528,000	$ 528,000	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Tec-2	Windsor Boundary	Tecumseh Settlement Area Boundary	County Road 19	Tecumseh	3.2	Long Term	Paved Shoulder	$ 110,000	$ 352,000	$ 140,800	$ 211,200	$ -
Tec-3	County Road 11	Windsor Boundary	North Talbot Rd	Tecumseh	0.9	Short Term	Multi-Use Trail	$ 250,000	$ 225,000	$ 90,000	$ 135,000	$ -
Tec-4	Manning Rd	Riverside Drive	Rail Corridor	Tecumseh	1.7	Short Term	Bike Lane	$ 12,000	$ 20,400	$ 8,160	$ 12,240	$ -
Tec-5	County Road 43 / 42 / 43	Rail Corridor	450 m south of CR 42	Tecumseh	2.0	Long Term	Multi-Use Trail	$ 250,000	$ 500,000	$ 200,000	$ 300,000	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a Local Road anywhere (Highlighted in Green)

County Share		0%		Local Municipality Share		100%		ERCA Share			0%	
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)
Tec-6	North Talbot Rd	CCG	Oldcastle Rd	Tecumseh	1.0	Long Term	Paved Shoulder	$ 110,000	$ 110,000	$ -	$ 110,000	$ -
Tec-7	Riverside Dr	Windsor Boundary	Manning Rd	Tecumseh	2.5	Mid Term	Paved Shoulder	$ 110,000	$ 275,000	$ -	$ 275,000	$ -
Tec-8	Banwell Rd	Windsor Boundary	Rail Corridor	Tecumseh	1.1	Long Term	Multi-Use Trail	$ 250,000	$ 275,000	$ -	$ 275,000	$ -

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Tec-9	County Road 43	450 m south of CR 42	County Road 46	Tecumseh	5.3	Long Term	Signed Route	$ 200	$ 1,060	$ 1,060	$ -	$ -
Tec-10	Brighton Rd	Rail Corridor	Old Tecumseh Rd	Tecumseh	0.6	Short Term	Signed Route	$ 2,000	$ 1,200	$ 1,200	$ -	$ -
Tec-11	South Talbot Rd	County Road 9	County Road 19	Tecumseh	10.8	Short Term	Signed Route	$ 200	$ 2,160	$ 2,160	$ -	$ -
Tec-12	Malden Rd	County Road 8	County Road 19	Tecumseh	5.5	Short Term	Signed Route	$ 200	$ 1,100	$ 1,100	$ -	$ -
Tec-13	Holden Rd	South Talbot Rd	County Road 8	Tecumseh	4.2	Short Term	Signed Route	$ 200	$ 840	$ 840	$ -	$ -
Tec-14	Oldcastle Rd	South Talbot Rd	Highway 3	Tecumseh	1.2	Short Term	Signed Route	$ 200	$ 240	$ 240	$ -	$ -
Tec-15	Oldcastle Rd, 8th Concession Rd	County Road 46	Highway 3	Tecumseh	2.3	Long Term	Signed Route	$ 200	$ 460	$ 460	$ -	$ -
Tec-16	Baseline Rd	Windsor Boundary	County Road 19	Tecumseh	2.5	Long Term	Signed Route	$ 200	$ 500	$ 500	$ -	$ -
Tec-17	Riverside Dr	Manning Rd	Brighton Rd	Tecumseh	2.1	Mid Term	Signed Route	$ 2,000	$ 4,200	$ 4,200	$ -	$ -
Tec-18	North Talbot Rd	County Road 19	Tec-20	Tecumseh	0.2	Long Term	Signed Route	$ 200	$ 40	$ 40	$ -	$ -

Multi-Use Trails - outside of County and/or Local Right of way (Highlighted in Purple)

County Share		0%		Local Municipality Share		0%		ERCA Share			100%	
Network Segment No.	**Route Segment Name / Description**	**From (Road or Trail)**	**To (Road or Trail)**	**Municipal Jusridiction**	**Length (km)**	**Phasing**	**Facility Type**	**Unit Cost /km**	**Segment Cost**	**County Share ($)**	**Local Share ($)**	**ERCA Share ($)**
Tec-19	Provnicial Highway 3	CCG	DRIC	Tecumseh	2.4	Short Term	Multi-Use Trail	$ 250,000	$ 600,000	$ -	$ -	$ 600,000
Tec-20	Trail Connection	County Road 46	North Talbot Rd	Tecumseh	0.5	Long Term	Multi-Use Trail	$ 80,000	$ 40,000	$ -	$ -	$ 40,000
Tec-21	CASO Line	County Road 19	Windsor Boundary	Tecumseh	8.9	Long Term	Multi-Use Trail	$ 80,000	$ 712,000	$ -	$ -	$ 712,000

Total CWAT in Tecumseh Cost	**$ 4,013,100**
Total County Share	**$ 978,760**
Local Share	$ 1,318,440
Additional Local Share (Common Municipal Boundaries)	$ 363,900
Total Local Share	**$ 1,682,340**
Total Provincial Share	**$ 600,000**
Total ERCA Share	**$ 752,000**

COUNTY WIDE ACTIVE TRANSPORTATION STUDY (CWATS)

APPENDIX C-8: LOCAL NETWORK with CWATS OVERLAY SEGMENTS ON COMMON BOUNDARIES

LEGEND

EXISTING	PROPOSED	
		Local On-Road Route
		Local Off-Road Route
		ERCA Off Road Route
		CWATS On-Road Route
		CWATS Off-Road Route

OTHER CWATS INFORMATION

- Chrysler Canada Greenway
- Highway / Freeway
- County Road
- Local Road
- Rivers and Creeks
- Railway
- Schools
- Wineries
- Parks/Open Space /Recreation Areas
- Conservation Area
- Woodlots / Natural Environments
- Settlement Areas
- Municipal Boundary

NOTE: For information regarding numbered network segments, COE-1. Refer to Table C-8.

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Table C-8 Segments along Common Municipal Boundaries

On Street Bike Lanes / Paved Shoulder / Context Sensitive Solution - on a County Road within a Rural Area (Highlighted in Blue)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%		Individual Local Share ($)
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)	
COE-1	County Road 9	LaSalle / Tecumseh Settlement Area Boundary	County Road 8	LaSalle / Tecumseh	3.9	Long Term	Paved Shoulder	$ 110,000	$ 429,000	$ 429,000	$ -	$ -	$ -
COE-2A	County Road 19	Tecumseh Settlement Area Boundary	Maidstone Area Boundary, N. Edge	Tecumseh / Lakeshore	6.4	Long Term	Paved Shoulder	$ 110,000	$ 704,000	$ 704,000	$ -	$ -	$ -
COE-2B	County Road 19	Maidstone Settlement Area Boundary, Southern Edge	South Talbot Rd	Tecumseh / Lakeshore	1.3	Long Term	Paved Shoulder	$ 110,000	$ 143,000	$ 143,000	$ -	$ -	$ -
COE-3	County Road 23	County Road 18	County Road 18	Essex, Kingsville	0.5	Long Term	Paved Shoulder	$ 110,000	$ 55,000	$ 55,000	$ -	$ -	$ -
COE-4	County Road 8	County Road 23	Highway 77	Lakeshore/ Kingsville, Leamington	17.5	Long Term	Paved Shoulder	$ 110,000	$ 1,925,000	$ 1,925,000	$ -	$ -	$ -
COE-5	Kent County Road 1	County Road 14	Mersea Rd 6	Leamington / CK	1.8	Short Term	Paved Shoulder	$ 110,000	$ 198,000	$ 198,000	$ -	$ -	$ -

On Street Bike Lanes / Paved Shoulder / Multi-Use Trails with or without Separation / Context Sensitive Solution - on a County Road within an Urban Area (Highlighted in Red)

County Share		40%		Local Municipality Share		60%		ERCA Share			0%		Individual Local Share ($)
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)	
COE-6	County Road 9	Sixth Concession Rd	LaSalle / Tecumseh Settlement Area Boundary	LaSalle / Tecumseh	1.5	Long Term	Paved Shoulder	$ 110,000	$ 165,000	$ 66,000	$ 99,000	$ -	$ 49,500.00
COE-7	County Road 19	Maidstone Settlement Area Boundary, Northern Edge	Maidstone Settlement Area Boundary, Southern Edge	Tecumseh / Lakeshore	2.0	Long Term	Paved Shoulder	$ 110,000	$ 220,000	$ 88,000	$ 132,000	$ -	$ 66,000.00
COE-8	County Road 19	County Road 22	250m south of CR 42	Tecumseh / Lakeshore	3.0	Long Term	Bike Lane	$ 200,000	$ 300,000	$ 120,000	$ 180,000	$ -	$ 90,000.00
COE-9	County Road 9	Highway 3	Sixth Concession Rd	LaSalle / Tecumseh	0.3	Long Term	Paved Shoulder	$ 110,000	$ 33,000	$ 13,200	$ 19,800	$ -	$ 9,900.00
COE-10	Manning Rd	County Road 22	Windsor Boundary	Tecumseh / Lakeshore	0.6	Long Term	Bike Lane	$ 200,000	$ 120,000	$ 48,000	$ 72,000	$ -	$ 36,000.00
COE-8	County Road 19	County Road 22	250m south of CR 42	Tecumseh / Lakeshore	3.0	Long Term	Multi-Use Trail	$ 250,000	$ 375,000	$ 150,000	$ 225,000	$ -	$ 112,500.00

Signed Routes - anywhere on the network (Highlighted in Orange)

County Share		100%		Local Municipality Share		0%		ERCA Share			0%		Individual Local Share ($)
Network Segment No.	Route Segment Name / Description	From (Road or Trail)	To (Road or Trail)	Municipal Jusridiction	Length (km)	Phasing	Facility Type	Unit Cost /km	Segment Cost	County Share ($)	Local Share ($)	ERCA Share ($)	
COE-11	County Road 3	County Road 20	County Road 8	LaSalle / Amherstburg	1.9	Short Term	Signed Route	$ 200	$ 380	$ 380	$ -	$ -	$ -
COE-12	County Road 8	County Road 3	South Talbot Rd	LaSalle, Tecumseh / Amherstburg, Essex	18.2	Short Term	Signed Route	$ 200	$ 3,640	$ 3,640	$ -	$ -	$ -
COE-13	County Road 8	Highway 77	County Road 37	Lakeshore, / Leamington	4.7	Long Term	Signed Route	$ 200	$ 940	$ 940	$ -	$ -	$ -
COE-14	Kent County Road 1	CK Boundary	Deer Run Rd	Leamington / CK	2.1	Short Term	Signed Route	$ 200	$ 420	$ 420	$ -	$ -	$ -
COE-15	Kent County Road 1	Mersea Rd 6	CK Boundary	Leamington / CK	0.5	Short Term	Signed Route	$ 200	$ 100	$ 100	$ -	$ -	$ -

Total CWAT in Common Municipal Boundaries Cost	$ 4,672,480
Total County Share	$ 3,944,680
Total Local Share	$ 727,800
Total ERCA Share	$ -

Appendix D

PEDESTRIAN CHARTER

Active Transportation Charter for the County of Essex

Active transportation by definition is any form of human powered travel such as walking, cycling or in-line skating used for utilitarian and / or recreational purposes. When properly designed and implemented, active transportation (pedestrian / cycling) facilities can provide residents with a safe, convenient and comfortable means of getting to and from their destinations and is an important form of exercise and recreation. Every daily trip taken by an individual involves walking whether it is alone or combined with other modes of transportation such as public transit, driving or cycling.

To ensure active transportation is a safe, connected, comfortable and convenient mode of both urban and rural travel, the County of Essex along with its seven local municipalities (Amherstburg, Essex, Kingsville, Lakeshore, LaSalle, Tecumeseh and Leamington) respects the following principles:

Accessibility
Walking, cycling and other modes of active transportation are free and provide a direct means of accessing local goods, services, and community amenities and public transit for people of all ages and abilities.

Equity
Active transportation is affordable and allows all residents including children, youth and the elderly to travel independently and safely in a well planned environment.

Health and Well-being
Active transportation promotes healthy living by enhancing physical and mental health and the overall personal well-being of community members.

Environmental Sustainability
Active transportation relies on human power and has negligible environmental impact. Urban or rural environments which support active transportation decrease auto-dependency and environmental impacts associated with driving.

Personal and Community Safety
An environment where people feel safe and comfortable walking or biking increases community safety for all.

Community Cohesion and Vitality
Active transportation encourages social interaction through face-to-face encounters and facilitates local economic vitality.

In order to create an urban and rural environment that supports active transportation across our County, the County of Essex, with its local area municipalities will:

- Support all residents and visitors in their right to have safe, convenient, direct and comfortable walking and cycling conditions;

- Provide an urban environment within the public right-of-way and in public parks that encourages people to walk or bike for utility and recreation;
- Support and encourage the planning, design and development of compact, human-scale and mixed-use urban environments in both public and private spaces that meet the needs of pedestrians and cyclists;
- Develop and maintain infrastructure that provides pedestrians and cyclists with safe and convenient passages along street corridors and more importantly at intersections;
- Ensure that residents' access to basic community amenities and services does not depend on car ownership;
- Provide outreach programs that educate local residents about the social, economic, environmental and health benefits of active transportation as a form of travel, exercise and recreation;
- Set policies that reduce conflict between all users of the public right-of-way including pedestrians, cyclists and drivers;
- Promote laws and regulations that support and respect the unique needs of pedestrians and cyclists;
- Advocate for improving provincial and federal regulatory and funding frameworks that affect our ability to make the county more pedestrian and bicycle friendly;
- Work with individual citizens, community groups and agencies, businesses and other levels of government to achieve these goals.

An environment that encourages and facilitates walking active transportation supports overall community vitality. It provides accessibility and connectivity for all residents regardless of age or ability; it decreases car dependency leading to active living and cleaner air; it supports green tourism and economic growth; and it increases safety and encourages social interaction among residents. All of these things lead to vibrant, liveable urban and rural communities.

Please note that the Active Transportation Charter for the County of Essex was developed based on charters from other Regions and municipalities throughout Ontario such as the Regional Municipality of Waterloo, the City of Toronto, and the Town of Halton Hills. This document is a preliminary draft and is meant to be a base from which the AT Committee can build a future AT or pedestrian charter.

Appendix E

DETAILED COSTING (EACH PHASE)

TABLE E1 - PHASE 1 IMPLEMENTATION COST BY FACILITY TYPE[1]

Jurisdiction	Proposed Routes[2,3]															TOTAL DISTANCE AND COST			
	Multi-Use Trail[5]			Bike Lane			Paved Shoulder			Signed Route			Context Sensitive Solution[6]						
	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Total (km)	% (km)	Total ($)	%($)
Province of Ontario	4.0		$ 1,000,000	-		$ -	-	$ 110,000	$ -	-		$ -	0.0	$ 330,000	$ -	4.0	1.2%	$ 1,000,000	7.2%
Local Municipality																			
CWATS Route Segments on Shared Local Municipal Boundary Roads[4]	0.0		$ -	0.0		$ -	1.8	$ 110,000	$ 198,000	22.7		$ 4,540	0.0	$ 330,000	$ -	24.5	7.6%	$ 202,540	1.5%
Amherstburg	0.0		$ -	0.0		$ -	7.7	$ 110,000	$ 847,000	15.6		$ 7,000	0.0	$ 330,000	$ -	23.3	7.3%	$ 854,000	6.1%
Essex	5.9		$ 472,000	0.0		$ -	31.6	$ 110,000	$ 3,476,000	8.8		$ 3,200	0.0	$ 330,000	$ -	46.3	14.5%	$ 3,951,200	28.3%
Kingsville	1.5		$ 375,000	0.0		$ -	8.5	$ 110,000	$ 935,000	18.0		$ 13,320	6.4	$ 330,000	$ 2,112,000	34.4	10.7%	$ 3,435,320	24.6%
Lakeshore	0.0		$ -	0.0		$ -	8.5	$ 110,000	$ 935,000	52.8		$ 27,840	0.0	$ 330,000	$ -	61.3	19.1%	$ 962,840	6.9%
LaSalle	2.1		$ 525,000	0.0		$ -	0.0	$ 110,000	$ -	14.6		$ 14,800	0.0	$ 330,000	$ -	16.7	5.2%	$ 539,800	3.9%
Leamington	14.0		$ 1,120,000	0.3		$ 60,000	5.3	$ 110,000	$ 583,000	62.5		$ 27,980	2.9	$ 330,000	$ 957,000	85.0	26.5%	$ 2,747,980	19.7%
Tecumseh	0.9		$ 225,000	1.7		$ 20,400	0.0	$ 110,000	$ -	22.3		$ 5,540	0.0	$ 330,000	$ -	24.9	7.8%	$ 250,940	1.8%
TOTAL (km)	**28.4**		**$ 3,717,000**	**2.0**		**$ 80,400**	**63.4**		**$ 6,974,000**	**217.3**		**$ 104,220**	**9.3**		**$ 3,069,000**	**320.4**		**$ 13,944,620**	

NOTES

1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.
2 - Future roads, where known, were taken into consideration when developing the network.

3 - Proposed on-road routes indicated for each local municipality represent the draft CWATS network that are on local roads in each municipality.

4 - CWATS routes on roads that also form the boundary between 2 or more local municipalities have been included in the Shared Local Municipal Boundary Roads total.
5 - Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in the local municipal totals.

5b - The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.
6 - Unit costs for Multi-Use Trails, Bike Lanes and Signed Route are based on scenarios listed in unit cost / facility type table. Refer to Appendix C tables for detailed segment information.

Cost Estimated Based on the Following Unit Prices:

Facility Type	Cost / Km
Multi-Use Path (Limestone, On Abandoned Rail Bed)	$ 80,000
Multi-Use Path (Asphalt, In Boulevard)	$ 250,000
Bike Lane (Restripe Only)	$ 12,000
Bike Lane (Constructed as part of Road Project)	$ 200,000
Paved Shoulder	$ 110,000
Signed Route (Urban)	$ 2,000
Signed Route (Rural)	$ 200
Context-Sensitive Solution	$ 330,000

TABLE E2 - PHASE 2 IMPLEMENTATION COST BY FACILITY TYPE[1]

Jurisdiction	Proposed Routes[2,3]															TOTAL DISTANCE AND COST			
	Multi-Use Trail[5]			Bike Lane			Paved Shoulder			Signed Route			Context Sensitive Solution[6]						
	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Total (km)	% (km)	Total ($)	%($)
Province of Ontario	-		$ -	-		$ -	0.0	$ 110,000	$ -	-		$ -	0.0	$ 330,000	$ -	0.0	0.0%	$ -	0.0%
Local Municipality																			
CWATS Route Segments on Shared Local Municipal Boundary Roads[4]	0.0		$ -	0.0		$ -	0.0	$ 110,000	$ -	0.0		$ -	0.0	$ 330,000	$ -	0.0	0.0%	$ -	0.0%
Amherstburg	11.6		$ 1,200,000	2.5		$ 30,000	9.0	$ 110,000	$ 990,000	6.2		$ 12,400	1.8	$ 330,000	$ 594,000	31.1	17.7%	$ 2,826,400	17.4%
Essex	1.2		$ 96,000	0.4		$ 4,800	3.8	$ 110,000	$ 418,000	1.6		$ 3,200	0.0	$ 330,000	$ -	7.0	4.0%	$ 522,000	3.2%
Kingsville	0.0		$ -	0.0		$ -	20.7	$ 110,000	$ 2,277,000	3.8		$ 7,600	0.0	$ 330,000	$ -	24.5	14.0%	$ 2,284,600	14.1%
Lakeshore	38.4		$ 4,092,000	0.6		$ 7,200	31.1	$ 110,000	$ 3,421,000	9.0		$ 3,060	0.0	$ 330,000	$ -	79.1	45.1%	$ 7,523,260	46.4%
LaSalle	1.1		$ 241,000	0.0		$ -	0.0	$ 110,000	$ -	0.9		$ 1,800	0.0	$ 330,000	$ -	2.0	1.1%	$ 242,800	1.5%
Leamington	8.2		$ 656,000	1.7		$ 58,000	16.7	$ 110,000	$ 1,837,000	0.5		$ 1,000	0.0	$ 330,000	$ -	27.1	15.5%	$ 2,552,000	15.7%
Tecumseh	0.0		$ -	0.0		$ -	2.5	$ 110,000	$ 275,000	2.1		$ 4,200	0.0	$ 330,000	$ -	4.6	2.6%	$ 279,200	1.7%
TOTAL (km)	**60.5**		**$ 6,285,000**	**5.2**		**$ 100,000**	**83.8**		**$ 9,218,000**	**24.1**		**$ 33,260**	**1.8**		**$ 594,000**	**175.4**		**$ 16,230,260**	

NOTES

1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.
2 - Future roads, where known, were taken into consideration when developing the network.

3 - Proposed on-road routes indicated for each local municipality represent the draft CWATS network that are on local roads in each municipality.

4 - CWATS routes on roads that also form the boundary between 2 or more local municipalities have been included in the Shared Local Municipal Boundary Roads total.
5 - Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in the local municipal totals.

5b - The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.
6 - Unit costs for Multi-Use Trails, Bike Lanes and Signed Route are based on scenarios listed in unit cost / facility type table. Refer to Appendix C tables for detailed segment information.

Cost Estimated Based on the Following Unit Prices:

Facility Type	Cost / Km
Multi-Use Path (Limestone, On Abandoned Rail Bed)	$ 80,000
Multi-Use Path (Asphalt, In Boulevard)	$ 250,000
Bike Lane (Restripe Only)	$ 12,000
Bike Lane (Constructed as part of Road Project)	$ 200,000
Paved Shoulder	$ 110,000
Signed Route (Urban)	$ 2,000
Signed Route (Rural)	$ 200
Context-Sensitive Solution	$ 330,000

TABLE E3 - PHASE 3 IMPLEMENTATION COST BY FACILITY TYPE[1]

Jurisdiction	Proposed Routes[2,3]															TOTAL DISTANCE AND COST			
	Multi-Use Trail[5]			Bike Lane			Paved Shoulder			Signed Route			Context Sensitive Solution[6]						
	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Distance (km)	Unit Cost[6]	Total Cost	Distance (km)	Unit Cost	Total Cost	Total (km)	% (km)	Total ($)	%($)
Province of Ontario	-		$ -	-		$ -	9.5	$ 110,000	$ 1,045,000	-		$ -	0.0	$ 330,000	$ -	9.5	4.5%	$ 1,045,000	4.9%
Local Municipality																			
CWATS Route Segments on Shared Local Municipal Boundary Roads[4]	3.0		$ 375,000	3.6		$ 420,000	33.4	$ 110,000	$ 3,674,000	4.7		$ 940	0.0	$ 330,000	$ -	44.7	21.4%	$ 4,469,940	20.9%
Amherstburg	0.0		$ -	0.0		$ -	9.1	$ 110,000	$ 1,001,000	22.2		$ 4,440	7.3	$ 330,000	$ 2,409,000	38.6	18.5%	$ 3,414,440	15.9%
Essex	0.8		$ 64,000	0.0		$ -	13.1	$ 110,000	$ 1,441,000	0.0		$ -	0.0	$ 330,000	$ -	13.9	6.6%	$ 1,505,000	7.0%
Kingsville	1.7		$ 136,000	0.0		$ -	21.2	$ 110,000	$ 2,332,000	2.1		$ 420	0.0	$ 330,000	$ -	25.0	12.0%	$ 2,468,420	11.5%
Lakeshore	4.1		$ 328,000	0.0		$ -	12.3	$ 110,000	$ 1,353,000	3.5		$ 2,680	0.0	$ 330,000	$ -	19.9	9.5%	$ 1,683,680	7.9%
LaSalle	0.0		$ -	0.0		$ -	0.0	$ 110,000	$ -	7.9		$ 11,300	11.1	$ 330,000	$ 3,663,000	19.0	9.1%	$ 3,674,300	17.1%
Leamington	3.0		$ 240,000	0.0		$ -	3.7	$ 110,000	$ 407,000	0.0		$ -	0.0	$ 330,000	$ -	6.7	3.2%	$ 647,000	3.0%
Tecumseh	12.5		$ 1,527,000	0.0		$ -	9.0	$ 110,000	$ 990,000	10.3		$ 2,060	0.0	$ 330,000	$ -	31.8	15.2%	$ 2,519,060	11.8%
TOTAL (km)	**25.1**		**$ 2,670,000**	**3.6**		**$ 420,000**	**111.3**		**$ 12,243,000**	**50.7**		**$ 21,840**	**18.4**		**$ 6,072,000**	**209.1**		**$ 21,426,840**	

NOTES

1 - For on-road routes the length indicated assumes facilities on both sides of the road. For example 1.0 km of roadway will have a Bike Lane on both sides of the roadway.
2 - Future roads, where known, were taken into consideration when developing the network.

3 - Proposed on-road routes indicated for each local municipality represent the draft CWATS network that are on local roads in each municipality.

4 - CWATS routes on roads that also form the boundary between 2 or more local municipalities have been included in the Shared Local Municipal Boundary Roads total.
5 - Proposed Trails under the jurisdiction of ERCA ($5 496 000) are included in the local municipal totals.

5b - The ERCA levy will not contain any funding component that relates to the purchase of land or capital upgrades for those trails or bicycle lanes/paths identified in the CWATS report.
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