To: **Warden and Members of County Council**

From: **Director of Public Works**

2021 Oxford County Cycling Master Plan

RECOMMENDATIONS

1. **That Oxford County Council adopt the 2021 Draft Oxford County Cycling Master Plan as attached to Report No. PW 2022-34;**

2. **And further, that County Council direct Staff to file a Notice of Completion and commence the 30-day public review period as required under the Municipal Class Environmental Assessment process.**

REPORT HIGHLIGHTS

- The purpose of this report is to seek Oxford County Council approval to file a Notice of Completion and 30-day review period for the 2021 Draft Cycling Master Plan (CMP) in accordance with the Municipal Class Environmental Assessment (MCEA) process.

- The 2021 CMP has identified a long term cycling infrastructure implementation plan that will ultimately provide 190km of primary cycling routes on the County road network with connectivity between urban/settlement areas, neighbouring municipalities, local cycling/trail networks, tourist destinations and employment areas.

- High level costing for implementation of the primary cycling network identified in the 2021 CMP is estimated at approximately $28 million over the next 10 to 20 year horizon with anticipated funding sources to include provincial and federal grant programs, development charges and capital reserves.

Implementation Points

Upon Council approval, staff will proceed to issue and file a Notice of Completion for the draft CMP. Copies of the final draft of the CMP study report will be available at the Area Municipal Offices and the Oxford County Administration Building, as well as on the *Speak Up, Oxford!* CMP webpage.

Following the 30-day public review period and subject to comments received, the CMP Class Environmental Assessment Study Report can be finalized and filed with the Ministry of the Environment, Conservation and Parks.

Financial Impact

The approved budget for the CMP was included in the 2020 Business Plan and Budget and was partially funded through the Ontario Municipal Commuter Cycling Program.

High level costing for implementation of cycling infrastructure on the primary network identified in the CMP is estimated to be approximately $28 million over 10 - 20 years. Funding sources are anticipated to include provincial and federal grant funding, development charges and capital roads reserve.

This past January, Infrastructure Canada launched the Active Transportation (AT) Fund for new projects that improve community active transportation networks, with up to 60% grant funding available for eligible projects. Staff submitted a funding application (Report PW 2022-16) for AT projects including implementation of separated bike lanes (buffered paved shoulders) on various County roads identified as initial priorities in the draft CMP and identified as part of the province-wide cycling network within Oxford County.

The CMP recommendations will be utilized as an input to the 2024 update to the Oxford County Transportation Master Plan (TMP) that was initiated earlier this year in 2022. Cycling infrastructure implementation projects in the CMP will be taken into consideration for coordination with road network improvements identified in the 2024 TMP update.

Completion of the 2024 TMP update by Q4 2023 will further inform the next County development charges (DC) background study that is scheduled for 2024, with a comprehensive list of DC eligible transportation projects including on-road cycling infrastructure.

Funding for individual CMP implementation projects will be subject to County Council approval through annual budget and business plan submissions.

Communications

A copy of Report No. PW 2022-34 will be distributed to Area Municipalities and will be included on the Oxford County website and the *Speak Up,Oxford!* CMP webpage. Subsequent to the 30-day review period, the County will develop a communication plan to promote highlights from the Cycling Master Plan and show how it was informed by public feedback.

Strategic Plan (2020-2022)

					
WORKS WELL TOGETHER	***WELL CONNECTED***	***SHAPES THE FUTURE***	***INFORMS & ENGAGES***	***PERFORMS & DELIVERS***	***POSITIVE IMPACT***
1.ii.	2.i.	3.iii.			

DISCUSSION

Background

WSP Canada Group Limited (WSP) was retained by the County to develop the 2021 County-wide CMP. This undertaking commenced in April 2020 with a project team consisting of staff from Public Works and external project management support.

The development of a County-wide CMP was identified as part of the Active Transportation (AT) Strategy in the Oxford County 2019 Transportation Master Plan (TMP) adopted on April 24, 2019 (Report PW 2019-16). The AT Strategy was one of several key strategies identified in the 2019 TMP to promote multi-modal mobility and long term sustainability of the overall County transportation network. The need for multi-modal transportation options beyond that of single occupant motor vehicles is also identified as a key strategic direction within Oxford County's 2019-2022 Strategic Plan to help ensure that the County is well connected.

In 2018, the provincial government identified a province-wide cycling network and announced the development of a long term network implementation plan as part of the Ontario Cycling Strategy (Report No. PW 2018-12). The province-wide cycling network includes an east-west link within Oxford County primarily along County rural roads extending from east of Drumbo, through Woodstock, and continuing west of Ingersoll.

CMP Vision and Key Objectives

The CMP is a planning document that outlines a 20-year implementation plan for cycling infrastructure on the County road network and defines the vision for the future of cycling in Oxford County as follows:

To create an integrated and connected cycling network that promotes active transportation, tourism, and low carbon travel options as part of a sustainable multi-modal transportation network.

The CMP vision is supported by the following key objectives:

- On-road connectivity between communities and local cycling and trail networks;
- Alignment with provincial cycling initiatives and connectivity to province-wide cycling routes;
- Formation of a continuous network of cycling routes throughout Oxford County (on County roads and trails) which supports connectivity to community areas of significance, key destinations and attractions, etc. (i.e. high priority routes);
- Intermodal integration with public/inter-regional transit, car pool lots, passenger rail, etc.;
- Commuter cycling and tourism opportunities; and
- Affording cycling program education (and related initiatives) on the County's website or at public venues.

2021 CMP Methodology

The undertaking to prepare the CMP included the following methodology:

- Compliance to the MCEA Master Plan process;
- Inventory of existing and future cycling infrastructure including off road trails;
- Review of existing and planned cycling facilities and trail networks in each Area Municipality and neighbouring municipality;
- Recommendations for a future County-wide cycling network and multi-year implementation plan with high-level costing and financial strategy;
- Application of best practice design standards for cycling infrastructure within the road allowance; and
- Recommendations for programs and policies to promote cycling.

Consultation and Engagement Strategy

An extensive consultation and engagement strategy was developed as part of the CMP in order to seek community and stakeholder input. Due to COVID restrictions, consultation was conducted virtually.

A Notice of Commencement was issued at the start of the project and was distributed to Review Agencies, Indigenous Communities, Community Members, Area and Neighbouring Municipalities, public interest groups and businesses, and other various stakeholders. The Notice was also posted on *Speak Up, Oxford!* (SUO) and advertised in local newspapers (Oxford Review, Tillsonburg News, Ayr News).

Internal and external technical advisory committees (INTAC/EXTAC) were established and included key stakeholders and agencies. The INTAC consisted of internal County staff from Public Works, Community Planning, Strategic Initiatives, Strategic Communications and Engagement, and Tourism Oxford. The EXTAC consisted of representatives from Area and Boundary Municipalities, Conservation Authorities, Public Health, Ministry of Transportation, Oxford County Cycling Advisory Committee, and public interest groups and businesses.

Stakeholder (INTAC/EXTAC) engagement was undertaken in two distinct phases through virtual workshops and stakeholder interviews. The first round focused on confirming existing cycling conditions including routes and facilities, as well as identifying opportunities and challenges related to infrastructure, design, policy and programming. The second round focused on reviewing the proposed cycling network and identifying priorities, phasing and programming.

Public consultation was undertaken through an online engagement tool held from July 7 to August 31, 2020 that included three interactive activities:

- Identification of priorities and objectives to help inform cycling network recommendations;
- Mapping tool to identify destinations, barriers, missing links and design improvements; and,
- Online survey/questionnaire.

A total of 274 survey responses were received that resulted in the following key responses as summarized below:

- **Reasons not to Cycle**
  - Too many barriers.
  - Cycling network not accessible.
  - Cycling network lacks connectivity.

- **Reason to Cycle**
  - Health and quality of life.
  - Connection to natural areas.

- **Cycling Improvements**
  - Shoulders or shoulder paving.
  - Destinations: natural areas, shops.
  - Major Barriers: highways and lack of shoulders.

A Public Information Centre (PIC) was held on February 25, 2021 through a live virtual webinar that was recorded and posted on the County's website for viewing by those unable to attend the live presentation. The PIC presented an overview of the project and proposed recommendations and implementation plan of a County-wide cycling network. Input and feedback received through the PIC was used to make further adjustments to network routing and finalize CMP recommendations.

Historical Cycling Policy Implementation

In addition to the development of a County-wide CMP, the AT Strategy in the 2019 TMP includes provisions for infrastructure and policies to support AT (walking, cycling, etc.) that are in part a continuation of cycling initiatives originally adopted in 2012 as part of the amended Cycling Policies in the 2009 Oxford County TMP (Report No. PW 2012-63).

Since 2012, the following ongoing measures of the amended Cycling Policies have been implemented to accommodate cycling on the County road network and provide incremental safety improvements for both cyclists and motorists:

- Ongoing placement of 8.7m wide asphalt (where road width permits) with white edge/fog line to delineate a 1.0m wide paved shoulder as part of regular road resurfacing on County rural roads;
- Implementation of cycling infrastructure (bike lanes) as part of capital road reconstruction projects in urban areas;
- Installation of Share the Road (STR) signage; and
- Facilitation of an Oxford County Cycling Advisory Committee (OCCAC).

Collaboration with municipal and community partners has been facilitated through the OCCAC that has been active since 2013 and has provided input and feedback on implementation of cycling initiatives, including identification of preferred roads for cycling and associated STR sign installation and tourism oriented cycling routes. The OCCAC was also involved as a stakeholder for development of the 2019 TMP and 2021 CMP.

The OCCAC will be replaced with the Active Transportation Advisory Committee (ATAC) for the next Council term (2023-2026) with a similar mandate and broader focus on AT and low carbon travel options (Report No. CS 2022-21).

Ongoing implementation of the cycling policies as part of scheduled capital road improvements since being adopted in 2012 has provided cycling improvements that include 8.7m wide asphalt (1.0m wide paved shoulders) and dedicated bicycle lanes in urban areas. As of 2021, this has resulted in:

- 1.0m paved shoulders on approximately 20% of the County road network;
- Designated bike lanes on approximately 4km (centreline) of urban County roads; and
- Installation of approximately 500 STR signs on County roads.

It is anticipated that implementation of 8.7m wide asphalt (1.0m wide paved shoulders) will continue on rural roads that are not part of the CMP cycling network. The wider asphalt platform reduces asphalt edge cracking caused by heavy vehicles and minimizes shoulder drop-offs that can result in vehicle loss of control.

Existing Shoulder Conditions

The road right-of-way (ROW) pertaining to the County arterial road network varies in width from 20 – 30 metres (m) resulting in varying road platform and shoulder conditions. County rural roads with a 20m ROW typically have narrow or no shoulders whereas roads with 30m ROW have wider shoulders. County road cross sections also vary in rural versus urbanized areas.

Shoulder surfaces on rural County roads are typically gravel and/or partially paved, and through urban, urban villages and settlement areas, vary from gravel to fully paved (with/without curbing). Fully urbanized roads (curbing, sidewalks) typically have paved/grassed boulevards and can range from single to multi-lane.

An inventory of existing of County-road shoulder conditions was completed as part of the 2021 CMP in order to analyze the degree of capital investment required to provide on-road cycling infrastructure and further inform route selection based on feasibility and connectivity objectives.

Comments

The final draft of the 2021 Oxford County CMP (refer to Attachment 1) represents a culmination of the different phases of plan development and technical reports completed to detail the outcome of each phase of the project.

The objective of the initial project phase was to establish a strong understanding of existing cycling infrastructure conditions and programs/policies, define CMP vision and goals, and identify potential opportunities. The second phase of the project involved developing a connected and continuous cycling network with supportive implementation and financial strategies. In the final phase of the project, the recommendations were confirmed and revised accordingly based on stakeholder and public feedback received following the outcomes of the second phase.

The CMP has identified approximately 190km of primary cycling routes on the County road network with a prioritized implementation and high-level costing plan in order to achieve the vison and key objectives established in the draft CMP. Additional recommendations are also included in the plan on programs and policies for consideration to further promote cycling and ongoing collaboration with municipal partners.

The draft CMP is not intended to be prescriptive in nature, but rather a guidance document to support the County's AT strategy and decision making on cycling infrastructure implementation based on location, facility type and financial strategy.

Primary and Secondary Cycling Network

Implementation of a primary cycling network is the general focus of the draft CMP; however, secondary cycling routes have also been identified to demonstrate future expansion and additional connectivity of the County-wide cycling network and to provide guidance for cycling infrastructure accommodation when planning future capital road improvements.

A map of the primary (red routes) and secondary (blue routes) cycling routes is included as Attachment 2 and shows inter-regional connections to existing/future on-road cycling routes in neighbouring municipalities, as well as, key off-road connections (Trans Canada Trail, Hickson Trail, Pittock Park South Shore) and MTO carpool locations.

The primary cycling routes were established using various criteria that considered connectivity, implementation feasibility, key destination linkages and populated areas. The primary network also incorporates the section of the province-wide cycling network within Oxford County.

Existing road platform and shoulder conditions were considered as part of the primary network development to ensure implementation could be achieved without significant capital intervention (i.e. road widening, property acquisition), whereas secondary routes may require more extensive road improvements to accommodate cycling infrastructure.

Facility Design Selection

The draft CMP provides high level guidance pertaining to facility types within the primary network based on provincial and federal standards/best practices that will be further assessed as part of detailed design during implementation. Facility design selection will also be subject to various existing conditions and coordination with other capital road works.

However, it is anticipated that cycling infrastructure on rural roads will generally consist of a separated/buffered paved shoulder - 2.0 – 2.5m wide to provide 1.5m bi-directional bike lanes and 0.5 to 1.0m buffer zones with rumble strips and or pavement markings (refer to Attachment 3). Buffered paved shoulders have also been implemented in other municipal jurisdictions such as Essex and Grey Counties with arterial road networks similar to Oxford County.

Buffered paved shoulders can be accommodated throughout most of the primary cycling network in rural areas based on existing shoulder conditions and/or where roads have been previously identified for future improvement. Buffered paved shoulders can also be accommodated without impacting movement of agricultural equipment or requiring additional efforts for winter road maintenance.

Cycling facilities in urban areas are expected to initially consist of 1.5m wide standard bike lanes which in some cases have already been incorporated (e.g. North Street, Tillsonburg) or are part of current capital works (e.g. Huron Street, Woodstock). The Town of Ingersoll is also currently extending the multi-use path on Ingersoll Street/Oxford Road 10 that will be linked as part of the primary network. In-boulevard multi-use paths, such as that on Ingersoll Street, and/or protected bike lanes may need to be considered in some specific urban areas or as part of future cycling infrastructure improvements.

Implementation and Costing Plan

Implementation of the primary network over the next 10-20 years has been prioritized based on overall network significance and with a systematic approach to avoid disconnected/stranded facilities. In some cases, the implementation timing may be adjusted to coincide with other planned capital roadworks and/or grant funding opportunities.

Cycling infrastructure on rural roads consisting of buffered paved shoulders could be completed as stand-alone projects or incorporated as part of other road resurfacing work. On urban arterial roads, cycling facilities may be accommodated as part of full road reconstruction or may simply involve the repurposing of existing lanes with revised line painting/pavement markings.

High level costing for primary network implementation has been included in the draft CMP, as noted in the Financial Impact section of this report, for planning purposes. Opportunities where on-road cycling facilities can be implemented as part of scheduled road reconstruction will allow for optimization of resources and reduce budgetary impacts.

The draft CMP identifies potential grant funding opportunities that could be leveraged to fund cycling infrastructure projects including tourism, recreation and culture, and AT oriented funding streams. Prioritization of climate change strategies by provincial and federal governments are anticipated to include grant funding opportunities for active transportation projects (e.g. Active Transportation Fund – Infrastructure Canada) that promote reduction in greenhouse gas emissions and low carbon travel options.

Cycling Programs and Initiatives

The social strategy in the draft CMP has included a series of programs and initiatives targeted at fostering a stronger cycling culture for consideration to further support and promote cycling by leveraging and expanding on existing initiatives and partnerships.

A variety of organizations that support cycling and active transportation were identified through the CMP consultation and engagement process; however, collaboration efforts and partnerships may not be as strong as they could be. Facilitation of stronger partnerships will increase support for cycling and AT throughout the County and promote a more connected network.

Conclusions

Previous amended cycling policies originally adopted in 2012 as part of the AT strategy in 2009 has resulted in incremental safety improvements on the County road network for both cyclists and motorists. The recommendations in the draft 2021 CMP provides a focused approach to cycling infrastructure implementation on a defined network that will provide a continuous AT network with due consideration given to economic impacts and road user safety.

SIGNATURES

Report Author:

Original signed by:

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Manager of Transportation and Waste Management Services

Departmental Approval:

Original signed by:

David Simpson, P.Eng., PMP
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Approved for submission:

Original signed by:

Michael Duben, B.A., LL.B.
Chief Administrative Officer

ATTACHMENTS

Attachment 1: Oxford CMP - Master Plan Report June 2022
Attachment 2: Primary and Secondary Cycling Networks Map
Attachment 3: Buffered Paved Shoulder Drawing

Oxford County
Growing stronger together

2021 CYCLING MASTER PLAN

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1.0

Introduction

In 2020, Oxford County initiated the development of its own Cycling Master Plan (CMP), as an implementation project identified as part of the road network strategy in the 2019 Oxford County Transportation Master Plan (TMP). The CMP intended to develop and advance a series of actions which could be taken to support cycling as a means of travel, recreation and exploration to residents and visitors of the area. This included a series of policy tools, strategies and frameworks that could be taken to actualize this vision. These components were adapted from a thorough understanding of the local culture, physical landscapes and existing initiatives that shape how cycling is perceived and understood across the County.

As a leading cycling destination within Southern Ontario today, cycling not only has the potential to improve mobility but, generate new economic activity, increase connectivity to the natural realm and foster a stronger sense of community. Given this range of opportunity, all CMP recommendations were categorized based off their contribution to the County's unique social, environmental, and economic interests.

Chapter 1 of the Cycling Master Plan will overview these frameworks that remain fundamental to how this document and its cumulative recommendations were selected and are rationalized. It will also describe other key pillars of the plan's development including, outcomes of its associated public engagement program, the expressed cycling vision and accompanying objectives of the local community.

1.1 Development

The Oxford County Cycling Master Plan was developed through a robust, comprehensive process, that balanced an application of leading technical expertise with thorough understandings of the local context. Although comprised of three phases of planning and design work; each marked by the submission of a different technical report, the entire approach remained consistent with the requirements of the Municipal Class Environmental Assessment (MCEA) process. Each of these phases, including their objective (purpose), what we heard (public engagement activities) and what we achieved (outcomes), is described within the diagram below. This report represents the culmination of the CMP's 3 Phases and the subsequent completion of the entire project.

Phase 1
Establish Foundations

Objective
Establish a strong understanding of existing on and off-road cycling infrastructure conditions.

What we heard
+ Confirmed understandings of existing conditions and defined CMP goals and vision

What we did
+ Establish vision and objectives
+ Confirm existing conditions
+ Assess relevant policies and programs
+ Identify potential improvements

Phase 2
Developing the Network

Objective
Identify a connected and continuous cycling network and supportive implementation strategy.

What we heard
+ Drafted network of cycling facilities and set of supportive programming and policies

What we did
+ Confirm cycling routes
+ Identify preferred facility types
+ Identify costing considerations
+ Prepare design guidelines

Phase 3
Finalize Recommendations

Objective
Finalize a set of recommended policies and actions to achieve the County's cycling vision.

What we heard
+ Confirmed draft recommendations and finalized costing and implementation details

What we did
+ Develop a series of policies and programs
+ Finalize cycling network
+ Confirm CMP finances
+ Publish the CMP

1.2 Vision & Goals

A functional master plan such as this Cycling Master Plan is designed to provide topic specific direction that builds upon recommendations, policies and strategies identified in high-order policies such as the County's Official Plan and Transportation Master Plan, as well as the Future Oxford Community Sustainability Plan.

A critical component of any functional master plan is the development of a vision statement which articulates the desired future for the community. A strong vision statement not only looks to the future but identifies opportunities for alignment with current community goals and objectives. To appropriately capture the expressed needs, aspirations and concerns of the local community, it should also feature a high degree of localized knowledge, as acquired through preliminary public engagement

The vision that has been prepared for the future of cycling in Oxford County was developed based on input from staff, stakeholders and community members and is as follows...

To create an integrated and connected cycling network that promotes active transportation, tourism, and low carbon travel options as part of a sustainable multi-modal transportation network.

While the vision statement articulates a high-level direction for the CMP process to follow, it is also accompanied by a series of recommended actions. These actions remain the primary vehicle through which the intent and objectives articulated in the vision statement can be achieved. While primarily derived from the vision statement, all recommendations were equally formulated through discussions held with County staff and key stakeholders. This basis of localized knowledge was also balanced with understandings of best cycling practices, as observed within leading industry standards and the precedent successes of comparable jurisdictions.

1 Introduction

The cycling specific goals and the supportive actions as identified in the Sustainability Plan are presented below.

Economy

Action 1iiA – grow a sustainable economy

Cycling Goal #1 - Cycling is a sustainable mode of transportation which contributes to the economic viability and sustainability of the County and helps to stimulate investment and growth.

Community

Action 1ib - accessible transportation options

Action 1iE - engagement in decision affecting the public good

Action 1iiB - community dialogue on sustainability issues

Cycling Goal #2 - Cycling is part of the culture of Oxford which is created through effective communication and engagement. Major communities and larger hubs within and outside of Oxford are accessible by bike for both recreational and commuting purposes.

Environment

Action 3iB – move away from fossil fuels and enhance low carbon transportation

Cycling Goal #3 - Cycling is integrated and enhanced by equitable and accessible programs and initiatives which is encouraged through partnerships, programs and incentives and part of a wider Transportation Demand Management (TDM) strategy.

Cycling goals for Oxford County...

The intent of the goals is not to provide a prescriptive set of measures but to provide a foundation upon which the existing cycling conditions, policies and programs can be assessed and new recommendations can be identified.

1.3 Developing the Network

Phase 2 of the Cycling Master Plan marks the points at which cycling routes, facilities and design treatments will be identified, phased and costed. The information gathered through Phase 1 of the project provides a strong foundation of understanding regarding the existing conditions, cyclist preferences, conditions and criteria.

An overview of the two approach options is presented on the following page along with the pros, cons and outcomes.

Option #1: Improvement Approach

All County roads are considered 'part of the network' and a facility type and phasing strategy is identified for each. The County would then ensure there are provisions for these recommended cycling facilities within future planned roadway capital / infrastructure projects based on project objectives.

Pros.

+ Facilities are built based off a municipality's financial capacity
+ Provides savings through achieving 'economies of scale' with other capital projects being implemented.

Cons.

+ Reliance on other public works project may be too incremental and result in a fragmented network
+ Facilities may be cut back if bundled capital projects run over budget

Outcomes.

+ Guidance on recommended cycling improvements focusing on critical links and priorities.

Option #2: Network Approach

Features of the recommended cycling network based off a set of criteria / assumptions. Projects are mostly phased as part of a separate implementation plan though, coordinated with other capital when additional funding is required.

Pros.

+ Enables investment to be more strategically targeted towards higher-order facilities.
+ Facilities are recommended using a consistent set of criteria based on community priorities.

Cons.

+ May miss opportunities to implement cycling facilities within road construction projects
+ Approach may neglect consideration for more local routes, leaving the network more disjointed

Outcomes.

+ Specific linkages identified along County Roads that form a defined cycling network
+ Phasing provided in the short, medium and long-term.

Both options have distinct benefits and challenges which were identified and considered. For the Oxford County Cycling Master Plan, the preference was to proceed with a hybrid approach which identified a specific network of improvements; focusing on a spine / primary cycling network (i.e. a minimum grid of strategic improvements complemented by previously planned / existing routes) and "secondary" enhancements should the spine be achieved / implemented. The details of the assumptions, approach and outcomes are described in more detail in the following sections.

The assumptions are...

The primary cycling network will focus on County roads that provide strategic connections to local cycling routes, off-road trails, and tourism destinations/routes. The primary cycling network also includes part of the Ministry of Transportation Ontario (MTO) Province-wide Cycling Network inclusive of routes on County roads and local municipal roads.

The primary cycling network should include County roads where existing road platforms can accommodate adequate separation from motor vehicle traffic and that facilitate connectivity between the County's main urban areas including Woodstock, Ingersoll and Tillsonburg.

The secondary cycling network would provide further connectivity to smaller settlement areas. The secondary network is not the focus of the CMP but should be reviewed as community interest and demand warrants in the future.

Option #2 – the Network Approach, included four steps. Each step included several key inputs and considerations based on the assumptions noted above. The outcomes of the steps supported the iterative process and created design and implementation tools and supports for staff. The details are provided on the following pages.

Step 1. Confirm existing conditions

An inventory of existing conditions was developed and mapped including previously planned and promoted routes, existing infrastructure and roadway shoulder conditions. In addition, the "potential need" for cycling was identified by applying step 1 of the OTM Book 18 process to determine the preliminary level of separation needed.

1

Step 2. Confirm cycling network

A set of criteria was established and used to select and refine routes to form part of a cycling network for Oxford County. The cycling network is made up of a set of continuous and connected facilities providing direct connection between major destinations. It builds upon the proposed province-wide cycling network.

2

Step 3. Network costing

Based on the cycling routes identified in step 2, capital costs estimates were developed using a set of unit prices. Cost estimates are high-level and developed for the County's consideration to inform future budgets and decision making.

3

Step 4: Network prioritization

A suggested implementation plan including phasing horizons and priorities for the County's cycling network was developed. The implementation plan is not intended to be prescriptive but rather guide next steps to help the County achieve its cycling goals.

4

1.4 Public Engagement

Public Engagement organized for the Oxford County Cycling Master Plan was held in two separate rounds to keep the public informed of the project and to ensure their input was reflected in its delivery. Based on public health measures at the time, all activities were entirely virtual due to the ongoing Covid-19 pandemic. To gather a high quality and quantity of feedback a variety of interactive tools were utilized.

Key objectives and associated takeaways of these two public engagement rounds included the following ...

Round 1 ...

Confirmed understandings of existing cycling conditions including routes, facilities and programming and identified opportunities and challenges related to infrastructure, design, policy and programming.

Round 2 ...

Reviewed and confirmed the proposed cycling network and identified potential network priorities, phasing and programming.

Stakeholders Consulted ...

+ Stakeholders were each consulted using a unique approach tailored to their needs
+ Internal Technical Advisory Committee (INTAC)
+ External Technical Advisory Committee (EXTAC)

Engagement Methods Used ...

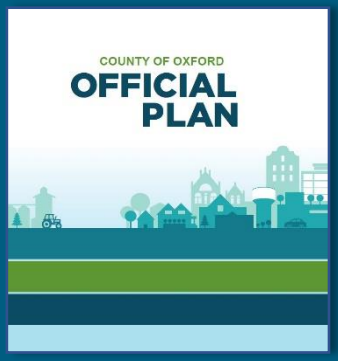
+ Two workshops were held with both the INTAC and EXTAC, during each consultation rounds
+ Review of the cycling network was facilitated using the Miro Mapping tool
+ A total of **274 responses** were submitted to the Metro Quest tool, between **July 7th and August 31st, 2020,** off the County's "Speak Up Oxford!" engagement platform

1.5 Policies

Oxford County's CMP was also tailored to align and address gaps identified in the municipality's existing regime of policies and plans that have and continue to support cycling today. This approach is not only more efficient but guarantees a more clear and supportive policy direction on cycling. As an upper-tier municipality, the County can support the delivery of cycling programs and infrastructure directly and through empowering its comprising Area Municipalities. Listed below are some of the key policies reviewed in developing the Oxford CMP and how they were applied.

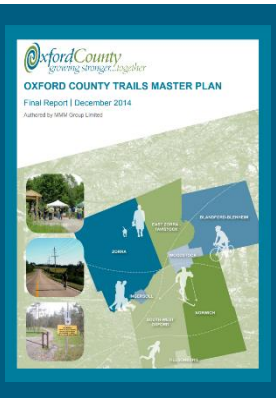
Oxford County Official Plan (2017)

Guides growth and development across the County and within area municipalities through a set of policies. The plan contains several policies addressing themes that influence the implementation and use of cycling networks, and the accommodation of motorists, cyclist and pedestrians as the primary function of the County's transportation network.



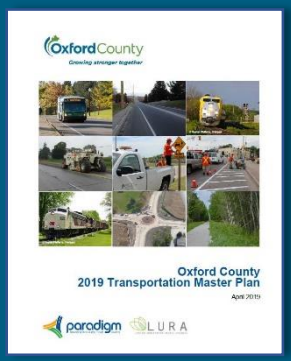
Oxford County Trails Master Plan (2014)

Provides topic-specific guidance for the planning and design of trail infrastructure in Oxford, which serve as vital off-road cycling facilities. Recommends that facilities be placed and designed to be better integrated with on-road cycling facilities to improve broader connectivity and access.



Oxford County Transportation Master Plan (2019)

Establishes a comprehensive transportation vision for the County, through the development of a County-wide multi-modal transportation network that affirms priorities regarding greater sustainability. Specifically encourages the continued development of bike facilities throughout the County, including physically separated trails and paved shoulder. Also prescribes cycling modal targets for 2038 and policy to include paved shoulder facilities within all new road reconstruction projects (where feasible).

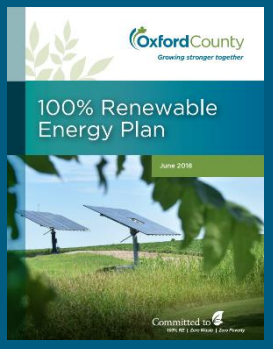


Future Oxford Sustainability Plan (2015)

Initiative to guide the County in becoming a leader in resiliency and sustainability, with a commitment to achieve 100% renewable energy by 2050. Among the actions listed to achieve this target includes a shift towards lower carbon methods of transportation, such as cycling through the provision of a highly developed cycling network across the county.

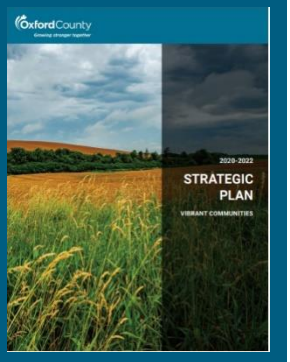
100% Renewable Energy Plan (2018)

Builds upon the objectives of the Future Oxford Plan, through the identification of baseline information, targets, and actions to reach its target of 100% renewable power by 2050. In support of which, the Plan encourages the adoption of active mobility, including walking and cycling, public transport, and mixed-use developments to develop a sustainable transportation sector.



Oxford County Strategic Plan 2020-2022

Establishes a vision to build towards “a vibrant community committed to the prosperity of its people” as established in the County’s first Strategic Plan (2013). Among the Strategic Directions is an objective to create a County that “is well connected through transportation networks and internet connectivity”, with more detail provided in goal 2.1 - Improve travel options beyond the personal vehicle by Continuing to facilitate the coordinated implementation of an active transportation system



1.5.1 Best Practices Review

To ensure the CMP was informed by leading industry expertise, its development was preceded by an extensive best practices review. This activity featured a series of interviews among representatives of comparable municipalities, on the successes and lessons learned from past and current cycling supportive efforts. Representatives were selected from The County of Essex, The Town of Saugeen Shores, The County of Simcoe and The Town of Collingwood. Based on the results of these interviews, the following suggested opportunities for improvement were identified:

- A focus on targeted infrastructure investments;
- A county-led effort to “Scale Up” existing municipal efforts;
- A reorienting of internal resources to ensure that Oxford County is well positioned to deliver on the suggestions from this Cycling Master Plan; and
- A focus on youth education and engagement.

These findings were essential in developing effective recommendations included as part of Oxford County’s CMP, particularly, those related to programming that are listed under the Social Strategy (Chapter 4).

1.6 Using the Plan

As a key recommendation of Oxford County's recently updated Transportation Master Plan, the Cycling Master Plan represents an essential addition to the County's existing policy regime. A Cycling Master Plan defines the aspirations of a municipality and to provides detailed advice pertaining the development and implementation of new projects and programs to support cycling, as well as suggestions to measure and monitor on the success of those elements. Some of the objectives which underline how a Cycling Master Plan is designed include:

- Blueprint the planning of future cycling investments, including facilities and supportive programming;
- Identify a range of financial and implementation tools that can be leveraged by County staff and council to achieve better cycling outcomes;
- Offer high-level guidance to inform the design of cycling faculties and structure of municipal operations relevant to cycling;
- Support a cultural shift towards a greater recognition of cycling's benefits; and
- Amend policies to better reflect leading cycling trends and practices observed at the provincial, regional and local level.

This Master Plan document, accompanied by the Phase 1 and 2 Technical Reports, aims to provide the necessary tools to support Oxford County as it strives to become a better place for residents and visitors alike to ride a bike.

2 Environmental Strategy

While designed for various audiences, each is likely to value and employ the CMP differently. This includes decision makers, staff, residents, and agency partners, for which the document fulfills the following roles

DECISION MAKERS

+ Offers an understanding of community goals and objectives related to cycling to inform decisions accordingly
+ Outlines future resource needs, both for capital costs and operational and staffing considerations

COUNTY STAFF

+ Identifies day-to-day and long-term decisions that can be made in support of cycling across the County. This includes decision related to municipal budgets as well as major policy decisions
+ Identifies organizational structures and potential partnerships with external agencies to support the Vision of the CMP

RESIDENTS

+ Details how the municipality is advised to advance cycling locally and provides a rationale behind why these decisions are to be made
+ Creates a mechanism through which the County can be held accountable for future decisions related to cycling investments

AGENCY STAKEHOLDERS

+ Lists potential program and infrastructure recommendations that can impact their operations
+ Identifies opportunities for agencies to provide additional support in developing a stronger culture of cycling

2.0 Environmental Strategy

Supporting widescale cycling adoption within Oxford County must be based on an understanding of the environment where that modal shift is desired. This includes understanding where key travel destinations exist as well as the popular paths chosen to connect to them. With most travel currently made by private automobile, a network of safe, connected and comfortable cycling facilities is imperative to shift travel behaviour in Oxford County. A successful cycling network will build upon the existing successes in Oxford County, including existing on and off-road routes, local municipal connections, tourism loops and more.

Key in designing Oxford's proposed cycling network was a comprehensive account of the existing physical and social conditions that define cycling travel across the County. Based on this understanding, all further expansions should be identified and designed through a process that is consistent, comprehensive and publicly lead. This can be achieved through the application of trusted industry references, such as the Ontario Traffic Manual's Book 18 and the Ontario Bikeways design manual. This approach, referred to as the Environmental Strategy, is detailed within the following chapter of the Cycling Master Plan. Underlined by three recommended actions, with supportive rationale and detail, this strategy details a critical step in the delivery of Oxford County's cycling vision.

2 Environmental Strategy

2.1 Environmental Strategy Overview

The Environmental Strategy details all recommended considerations, processes and actions related to development of a safe, comfortable and connected cycling network across Oxford County. As a key determinant of most people's willingness to cycle, the strategy remains instrumental to the Cycling Master Plan's overall success. Its goal is to ....

"Detail the process and outcomes related to the development of a safe and connected network of cycling facilities, adapted from the County's existing facilities and policies."

Like all other components of the CMP, the cycling network was predicated on a thorough understanding of the local context. This included existing conditions, both physical and social, that influence where cycling is practiced today or, has the greatest potential to be adopted in the future. Relying on this framework, a series of cycling facility expansions and upgrades were then identified through the application of a comprehensive set of network planning assumptions. These items reflect core understandings of local cycling behaviour and planning objectives, formulated through extensive public engagement and ongoing discussion with County staff and stakeholders. The design of chosen facility types was also informed by the guidelines of trusted industry references, to ensure the incorporation of technical best practice. Finally, to guide all these decisions, an iterative multi-stage network development process was followed to ensure outcomes remain consistent and defendable. This approach is reflected within how the Environmental Strategy is structured. To begin, a rationale is provided behind why the strategy was chosen, directly referring to public consultation outcomes that supported and informed its inclusion.

2.2 Existing Context & Need

The inclusion of the Environmental Strategy underscores the importance in providing a cycling network that ensures user safety and comfort, and accommodates cycling's various functions. While a source of mobility, cycling also provides recreational access to the County's various natural areas and growing trails network. This creates opportunities for economic growth through tourism, with the County already receiving many visitors annually, drawn by an abundance of natural beauty and small-town charm. As a community that is largely reliant on private automobile travel, the provision of a well-designed cycling network also aligns with objectives to decarbonize the local transportation sector. This includes associated modal shift targets set out for 2038 within the Transportation Master Plan and the intent of Future Oxford Sustainability Plan - which seeks to make the County a leader in climate resiliency.

Improved Environmental Performance:

- Eliminates carbon emissions otherwise generated by car travel
- Enables a greater connection to the natural realm
- Retrofits roadways to accommodate multi-modal travel

Increased Recreational Activity

- Improves access to the County's natural areas, rolling countryside and quaint small towns
- Promotes active, healthier lifestyles

Greater Economic Activity

- Draws more tourists to visit and explore the County
- Increases activity and animates commercial main streets
- Supports new businesses which cater to cyclists

The design of the Cycling network was equally informed by an objective of offering universal access. Accordingly, an All Ages and Abilities (AAA) approach was applied to ensure all facilities were designed to accommodate and wide range of physical and cognitive abilities.

2 Environmental Strategy

Like all components of the Cycling Master Plan, both the outcomes and directions of the Environmental Strategy were heavily influenced by a robust public engagement program. This included overarching planning assumptions and a 4-step process used to confirm all cycling network route segments and facility assignments. Related activities were mostly held within the project's Round 2 of consultations, which leveraged the MetroQuest survey tool. The interactive Miro mapping tool was also used within working sessions held among members of the internal technical advisory committee (INTAC) and the external technical advisory committee (EXTAC). The following are key themes that emerged from these activities:

INTAC Meeting

- Emphasized the importance of ensuring the cycling network connects to areas surrounding the County, (requiring close collaboration with Tourism Oxford and other key stakeholders)

EXTAC Meeting

- Stressed the need to consult private cycling groups for their feedback in developing the cycling network, including the Oxford County Cycling Advisory Committee
- Long distances and low existing cycling demand identified as key challenges in improving cycling connectivity between communities

MetroQuest Survey

Results of the survey highlighted several noteworthy considerations. While not exclusively centered on the cycling network, several insights remained particularly pertinent:

Reasons not to Cycle
Cycling network too inaccessible (28% of responses)
Cycling network lacks proper connectivity (9% of responses)
Cycling Improvements
Major Improvements:
Shoulders or shoulder paving (32% of responses)
Major Destinations
Natural areas and shops (24% of responses)
Major Barriers
Highways and lack of shoulders (12% of responses)

2.3 Action #1: Detail Existing Conditions

The cycling network outlined within the CMP's Environmental Strategy is not proposed upon a blank slate but is meant to be combined with existing facilities and infrastructure. All facilities should strive to build upon previous investments made by Oxford County, the area municipalities, local committees, interest groups, and other agencies to leverage past efforts and identify new opportunities. To confirm the scale and exact location of these assets, a detailed review and inventory of existing conditions was completed as a vital preliminary action. This helped to ensure that the cycling network would:

- Provide realistic recommendations based on existing conditions;
- Establish a foundation and inventory of assets to support management; and
- Integrate the previously planned and promoted routes and facilities adopted prior to the development of the CMP.

The following section provides a high-level overview of how this action was completed and the associated documentation that it produced. This activity was heavily reliant on the collective input of various external and internal stakeholders, who possess some form of jurisdiction or awareness of these existing segments. Notable examples include Ontario Ministry of Transportation which maintains segments of the Province-wide Cycling Network found in Oxford County and Tourism Oxford which has identified a network of informal touring routes. Tours and visits were also completed among the various sites to verify whether they exist and confirm details of their current condition.

Since the development of the Oxford County Trails Strategy (2013) there have been significant changes with regards to the design of cycling routes and facilities. Therefore, while useful to leverage the investment of these past efforts, improvements must be made to ensure they reflect up-to-date guidelines and standards.

2.3.1 Existing Cycling Conditions

Previously planned routes do not always mean that the routes “exist”. Without a comprehensive understanding of the existing conditions of County roadways it can be a challenge to determine and confirm potential routes and cycling improvements. An inventory of County roads with a focus on cycling conditions and opportunity was undertaken through a detailed inventory and investigation. This was completed through a two-part approach, starting with in-field investigations and documentation of shoulder conditions, followed by a desktop review to provide further confirmation. Information gathered was then supplemented by input from the County based on recently built capital projects and context specific conditions.

The intent of this exercise was not to provide comprehensive information on the roadway conditions. Instead, the inventory was developed as a master plan level asset management tool which could be then used during the network development process to confirm preferred routing and to support the implementation of the cycling network, following adoption. This activity ensured all recommendations were locally adaptive and respective of existing network as well as the roadway conditions. A total of 7 conditions were observed on County Roads, reflecting both urban and rural cycling facilities.

They are further organized into three categories and presented / illustrated below.

On-Road Facilities

Urban Shoulders (23.5 KM)

Width: 1.2m or more

Parking Provision:

Permitted or Time of use provisions

Bike Lanes (3.7 KM)

Width: 1.5m

Parking Provision:

Not permitted

County Shoulder Conditions

No Shoulders (56.7 KM)

Width: 0m

Parking Provision:

None

Narrow Gravel Shoulders (154.1 KM)

Width: Less than 1m

Parking Provision:

None

Full Gravel Shoulders (234.2 KM)

Width: Greater than 1m

Parking Provision:

No restrictions

Partial Paved/ Gravel Shoulders (202.2 KM)

Width: 0.5 - 1m

Parking Provision:

No restrictions

Paved Shoulders (6.3 KM)

Width: 1.0m or more

Parking Provision:

No restrictions

Off-road Facilities

Off-Road Trail (32.3 KM)

Width: <3.0m

Parking Provision: N/A

Paved Shoulder Policy

Since 2012 the County has maintained a policy to implement 1.0m paved shoulders on County Roads that can accommodate that surface width. This has led to the reconstruction of approximately 131 kilometres of County Roads (or just under 20% of the County's overall road network) to include a 1.0m paved shoulder, implemented on both sides of the road. It is advised that the policy be maintained to support the continued implementation of the County's proposed cycling network. The results of this policy are presented in **Figure 1**.

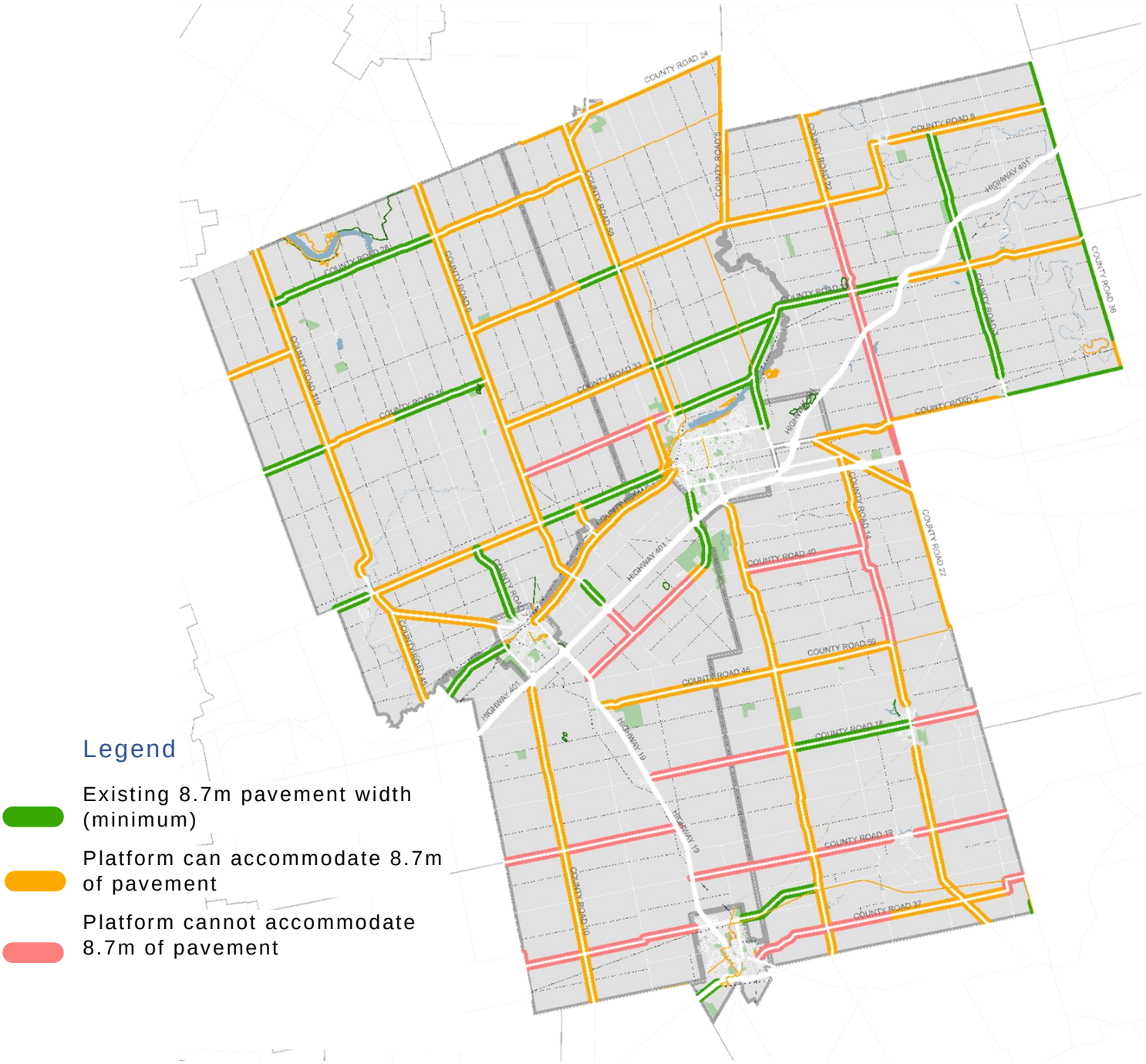


Figure 1. Existing Paved Shoulder Facilities

2.4 Action #2: Adopt Proposed Cycling Network

With one's willingness to cycle dependent on the presence of safe and connected infrastructure, the adoption of a defined cycling network remains vital.

A defined cycling network consisting of priority primary linkages, separated from motor vehicle traffic, will facilitate connectivity between the County's rural and main urban areas including Woodstock, Ingersoll and Tillsonburg. Secondary cycling routes have also been identified to consider Future connectivity to other settlement areas. While these secondary connections are not the focus of the network they should still be reviewed as community interest and demand warrants their inclusion in the future. The cycling network routing has also considered parts of the Ministry of Transportation Ontario (MTO) Province-wide Cycling Network inclusive of routes on County roads and local municipal roads. This adaptive approach not only preserves the value of past investments but helps to ensure broader regional connectivity.

This outcome provides a balanced reflection of leading industry best practices, tailored to municipalities unique cycling objectives, concerns and trends. Informational inputs that underlined this approach include noteworthy feedback raised throughout the project's public engagement program, successful precedents identified among comparable municipalities and guidance from applicable provincial standards and design guidelines. These considerations were subsequently represented through four overarching assumptions that determined all route selection and facility identification decisions.

While facilities would be ideally implemented on every roadway where cycling is permitted, geometric constraints and a limited pool of financial resources requires investments to be prioritized. Without the appropriate criteria to define which, it remains challenging to compare, contrast and assess the merits of each candidate route or facility relative to the overall network. For Oxford County, two core criteria were identified based on the interests and objectives of Oxford County and the needs for future improvement:

Criteria #1 Feasibility

Feasibility is a measure of both the existing geometric constraints and the resultant capital intervention required to implement a candidate cycling route and facility. In most cases, building a cycling facility with a higher level of separation is more expensive, and can be limited by the available right of way. Table 1 shows a summary of feasibility based on the relationship between the desired facility type (see page 31 for more details) and the existing conditions on roads throughout Oxford County. Where existing road platform width would allow the desired cycling facility to be added, feasibility was deemed to be higher. Where a widening of a road platform or the relocation of curbs, ditches or other utilities is required, costs are higher, and feasibility is shown as lower. Where possible, the County can improve feasibility by reallocating existing road space (ie through Road Diets) or aligning projects with existing capital works projects. Figure 2 shows the results of the preliminary feasibility assessment based on existing conditions throughout the County.

Table 1. Preliminary Feasibility Assessment

Existing Conditions	Shared	Designated	Separated
No shoulder	$	$$$	$$$
Partial gravel shoulder	$	$$	$$$
Full gravel shoulder	$	$$	$$
Partial paved shoulder and gravel shoulder	$	$	$$
Paved shoulder	-	$	$$
Urban shoulder	-	$	$$
Bike lane	-	$	$$

$ Low degree of capital investment
$$ Moderate degree of capital investment
$$$ High degree of capital investment

2 Environmental Strategy

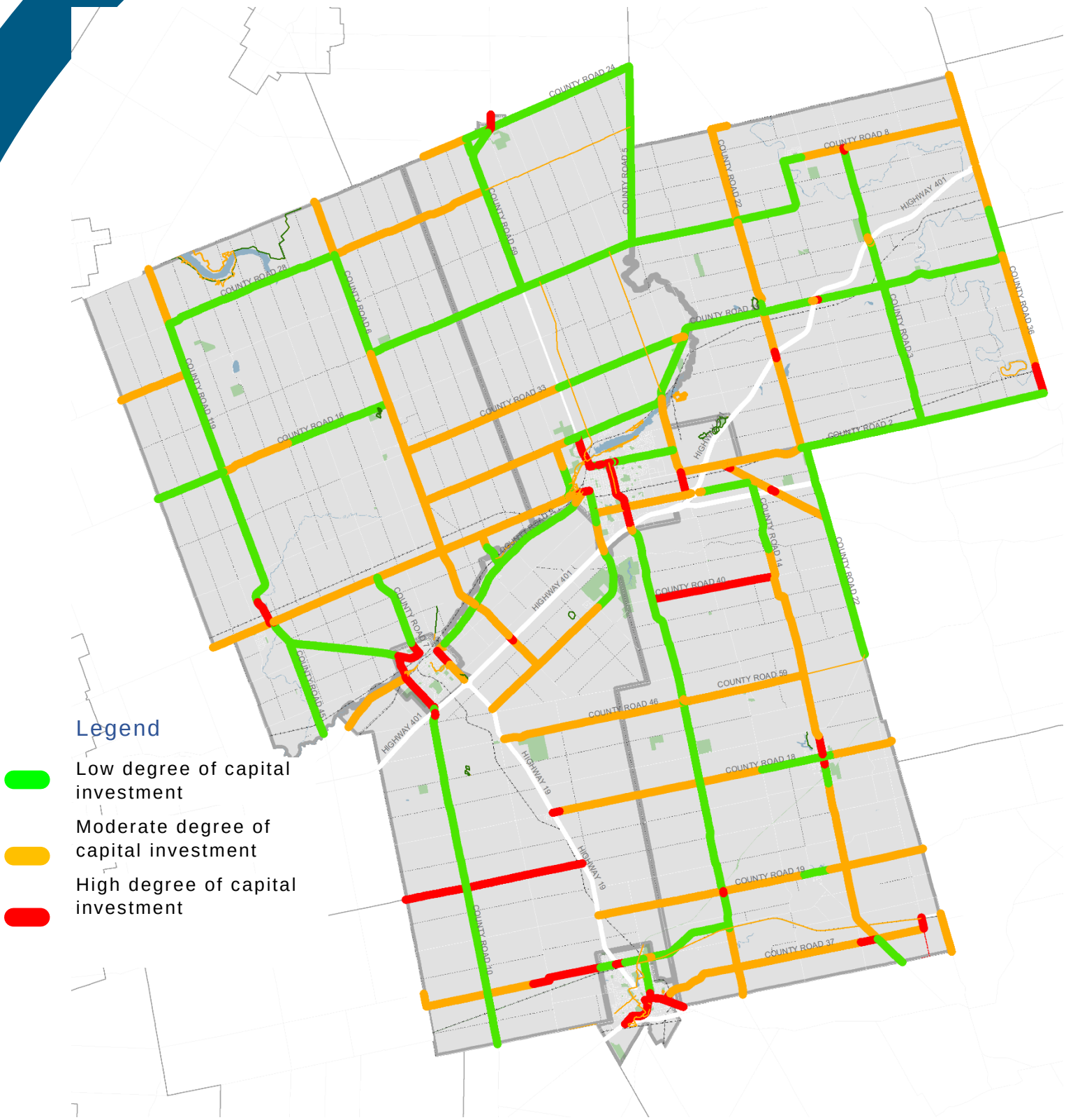


Figure 2. Outcomes of feasibility criteria application

Criteria #2 Connectivity & Accessibility

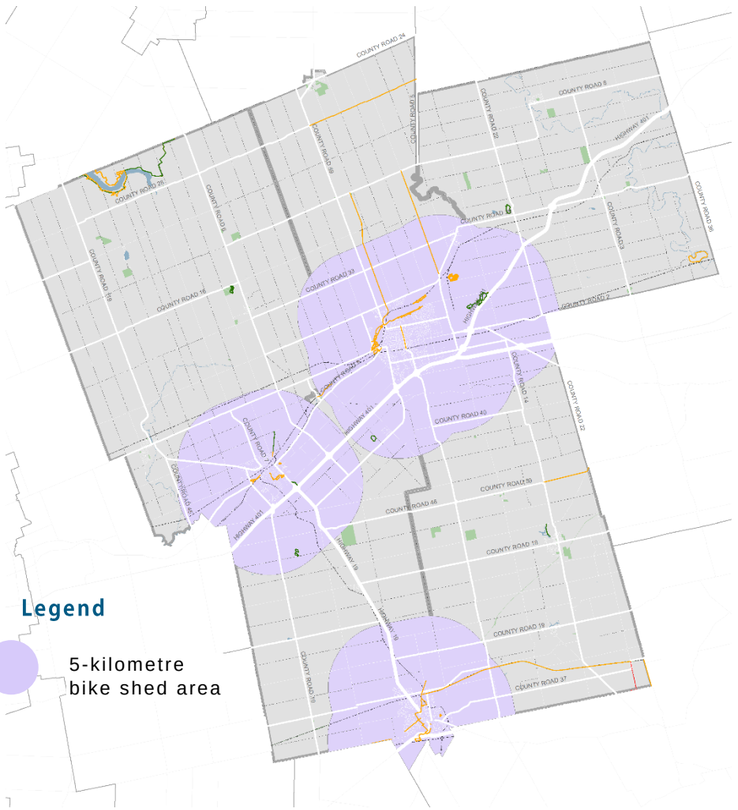
For Oxford County to take advantage of the potential benefits that cycling can bring, cycling infrastructure needs to form a coherent, cohesive network across the County, providing residents and visitors alike with seamless access to safe cycling facilities. Cycling routes and facilities which maximize the network's overall connectivity and accessibility to key destinations should be prioritized. This can be measured through three separate indicators:

Cycling Potential: Areas of Oxford County which are deemed to be "cyclable" from a best practice perspective. This is typically based off spatial distributions of population within 5km areas – based off what is considered a bikeable distance for most people.

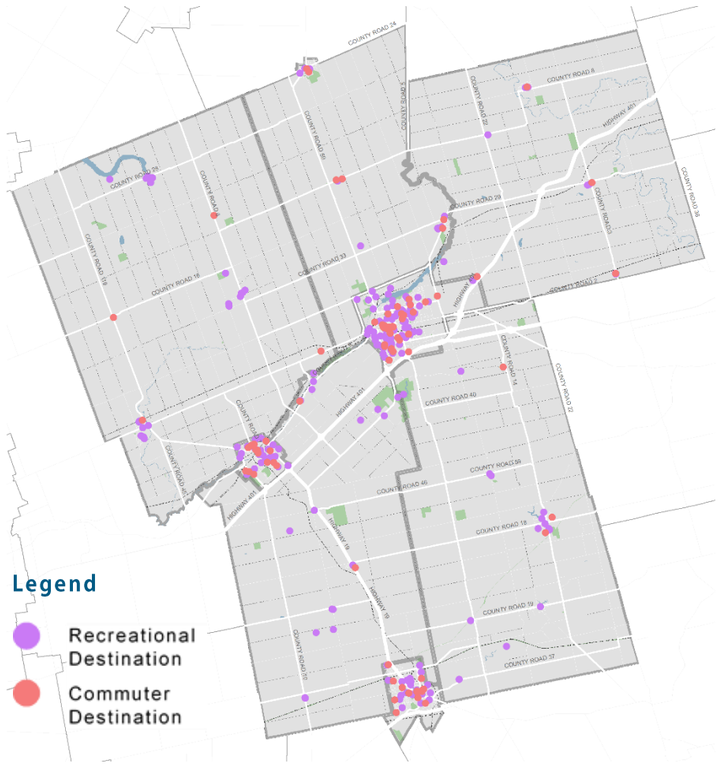
Destinations: As a means of mobility, cycling investments should prioritize access and to and between trip generating destinations.

Demand: To ensure an appropriately tailoring to existing cycling trends, routes and their facility types were selected based off demand observed using Strava's crowdsourcing data tool.

5-kilometre Bike Shed Areas Surrounding Major Build-up Areas in Oxford County



Recreational and Commuter Destinations in Oxford County



High Demand Routes in Oxford County

Guided by an understanding of existing conditions and selective criteria informed by input from consultation with local stakeholders and best practices, a complete Cycling Network for Oxford County was developed. As previously mentioned, the proposed cycling network was conceptualized within a system of primary linkages found on County Roads; and secondary linkages that provide additional connectivity County-wide. The province-wide cycling network and select local connecting links are also considered part of the system. Finally, Oxford County also continues to pursue additional off-road trail connections which could accommodate cycling in the future. Once alignments and locations are confirmed, they will be pursued for implementation at the same time as the Cycling Master Plan. Though not formally part of the cycling network, these facilities represent a significant opportunity to enhance off-road connectivity. An overview of the different network components and their intended function is provided within the table listed below. The proposed cycling network at a County-wide scale and within each of the local area municipalities are identified within **Figure 3C**.

Primary Network Critical corridors connecting to the urban centres and settlement areas within the County, as well as the Province-Wide Cycling Network and Trans Canada Trail. Focuses on enhanced connectivity to major tourism destinations and potential for utilitarian travel.	**189 km**
Secondary Network Corridors that connect smaller settlement areas to the Primary Cycling Network, should there be demand, interest or funding available.	**181 km**
Local Connecting Links Part of the cycling network but includes routes on local roads (not under the County's jurisdiction) that form part of the MTO Province-wide Cycling Network.	**20 km**
Proposed Off-road Trail Proposed off-road trail from Tillsonburg to Norwich along an abandon rail corridor.	**15 km**
Total	**405 km**

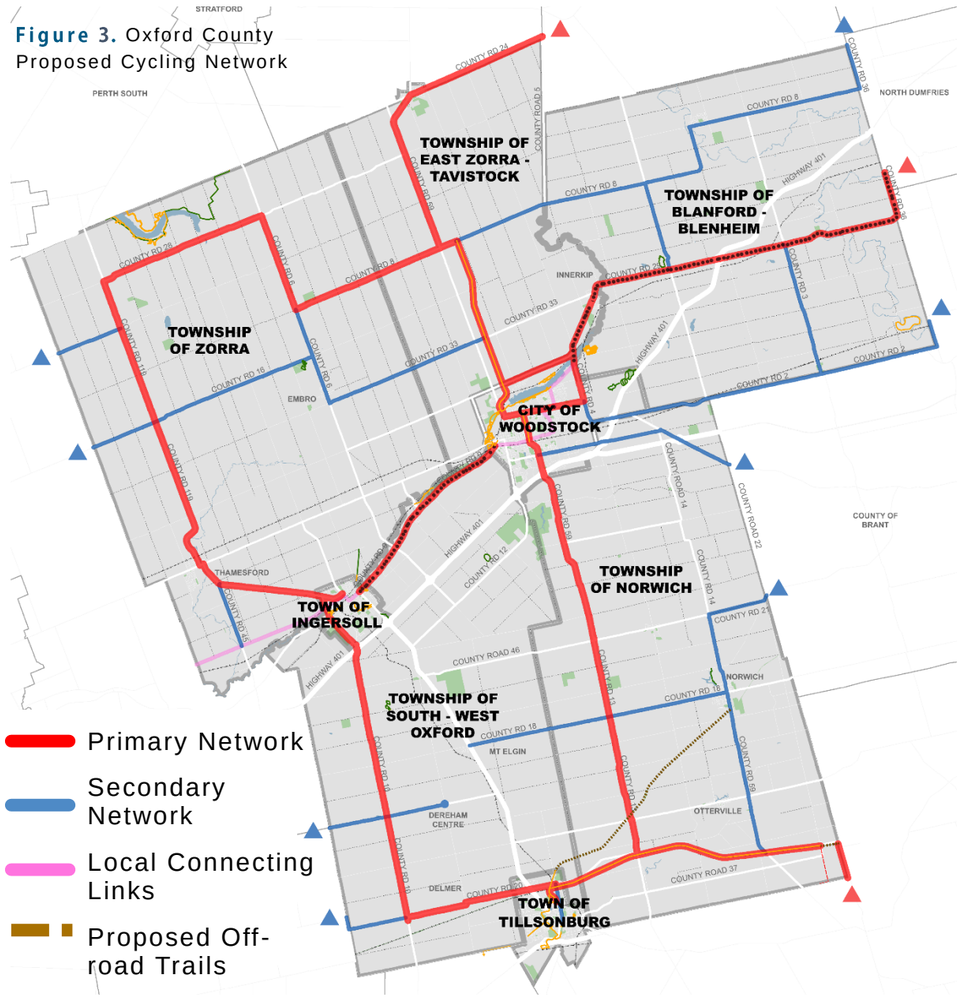


Figure 3. Oxford County Proposed Cycling Network

2.5 Section #3: Apply Associated Facility Design Guidance

In recent years, there has been a growing recognition across North America that tailoring the cycling network to the user experience remains a defining consideration of a successful cycling network. This includes ensuring all facilities serve the abilities of riders of all ages and all cycling trip types. All segments which make up Oxford County's proposed cycling network must be based off trusted design guidelines, prescribed for their respective facility type. This includes guidance related to their dimensions, degree of separation from traffic and recommended choice of physical delineators. To ensure these standards referenced applicable best practices, a range of trusted references were reviewed, with key examples listed below.

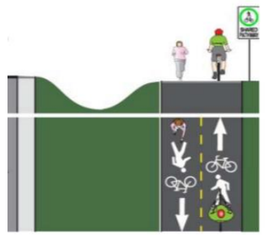
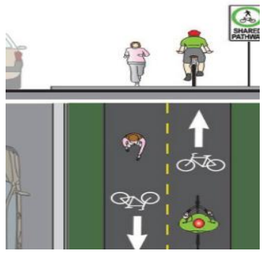
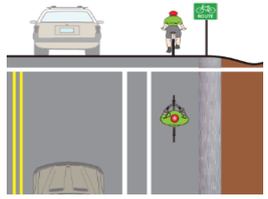
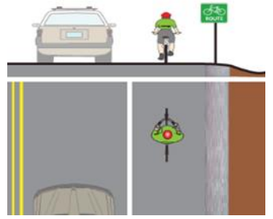
OTM Book 18: Cycling Facilities (2021):
Offers practical guidance on the planning, design, and operation of cycling facilities in Ontario. It applies to on- and off-road cycling facilities, primarily within the road right-of-way and, offers guidance for key conflict points and amenities. The updated version of Book 18 was approved in 2021.

MTO Bikeways Design Manual (2014)
The manual contains a set of guidelines that are to be applied to the design of on- and off-road bicycle facilities located within provincial highway rights-of-way.

TAC Geometric Design Guide for Canadian Roads (2017)
Provides guidance to planners and designs in developing design solutions that meet the needs of a range of road users while addressing the context of policy decisions and the surrounding environment.

TAC Bikeway Traffic Control Guideline for Canada (2012)
Outlines the appropriate traffic control for the installation of signs and pavement markings on bikeways and contains diagrams of typical installation

High-level design guidance pertaining to the facility types suggested within Oxford's Proposed Cycling Network, are listed below. Additional specifications are provided within any of the manuals mentioned on the preceding page.

	Off-road trail (park / open space)	Off-road trail beyond the ditch	In-boulevard multi-use path	Buffered paved shoulder	Buffered bike lane	Paved shoulder
						
Facility Description	Pathways within a park or public plaza that accomodates the shared travel of cyclists and pedestrians. While typically lacking most regulatory measures, facilities may require cyclists to yield or dismount across certain segments	A two-way path, placed **beyond** the roadway boulevard separated from the travelled portion of the roadway by a platner strip or some other form of physical delineator. Multi-use paths are shared by cyclists and pedestrians	A two-way path, placed **within** the roadway boulevard separated from the travelled portion of the roadway by a platner strip or some other form of physical delineator. Multi-use paths are shared by cyclists and pedestrians	Similar to a paved shoulder but adds some form of physical delineation between the cycling facility and the adjacent roadway, whether painted lines, a rumble strip or bollards	Similar to a conventional bike lane but adds some form of physical delineation between the cycling facility and the adjacent roadway, whether painted lines, a rumble strip or bollards	A portion of the roadway along it's lateral edges, which is designated for stopped motor vehicles, emergency uses, pedestrians and cyclists, as well as for lateral support of the pavement structure.
Geometry	**Unspecified** (feature geometry of multi-use path at minimum if designed for shared pedestrian and cyclist use)	**Desired Width:** 3.5m **Suggested Minimum:** 3.0m	**Desired Width**: 3.5m **Suggested Minimum:** 3.0m	**Desired Width:** Shoulder: 1.5m–2.0 m Buffer: 0.5m–1.0m **Suggested Minimum:** 1.5 metre shoulder +0.5 metre buffer	**Desired Width:** Lane: 1.8m Buffer: 1m **Suggested Minimum:** 1.5m lane + 0.3m buffer	**Desired Width:** 1.5m–2.0m **Suggested Minimum:** 1.2 m
Signs & Pavement	Typically no pavement markings are present but "yield to pedestrians" or "cyclists dismount" signs may be needed	Shared pathway sign In-boulevard multi-use path pavement markings Pathway organisation sign	Shared pathway sign In-boulevard multi-use path pavement markings Pathway organisation sign	Bicycle Route sign (M511 OTM) Solid White Edge line Painted Buffer Strip	Reserved Bicycle lane sign Bicycle lane pavement marking Solid White Edge Line Painted Buffer Strip	Bicycle Route sign (M511 OTM) Solid White Edge line Painted Buffer Strip

Physical Separation — **Spatial Separation**

High traffic volumes and speeds — **Low to moderate traffic volumes and speeds**

Level of comfort

2.1 Environmental Strategy Implementation

Environmental Strategy actions require a robust and iterative process to guarantee their implementation. Several considerations underline this process, including: finances, government jurisdictions, geometric constraints, public feedback and regulatory requirements. While this section offers such high-level guidance, it cannot prescribe the more technical details that are determined within the design, tendering and construction of each project. As a leading reference among practitioners within Southern Ontario, OTM Book 18's 5-Step process remains a trustworthy baseline to inform the implementation of all recommended cycling facilities. Outcomes and activities involved with each step are detailed below:

Step 1. Strategic Planning

Project selected based off alignment with network and priorities outlined within the master plan. Project is informed by a locally adaptive approach guided by a statement of community values. Project is coordinated with other major capital projects to minimize redundant expenses.

Step 2. Feasibility Assessment & Functional Design

A complete understanding of the local community's existing conditions, both physical and cultural, is gathered (i.e. traffic data, parking data, land uses, growth projections). Project location is visited and experienced from the perspective of cyclist. A public consultation strategy is developed to acquire a comprehensive public understanding. A feasibility study is undertaken, to understand various geometric, cost, utilities and facility design considerations.

Step 3. Design

Project's detailed design is developed, incrementally, towards three stages of percentage completion:

+ 30% Detailed Design: Builds upon the pre-functional design, project illustrated at a higher-level plan view, defining details shown (parking, travel lanes, areas of constraint and cross-sectional designs)

+ 60% Detailed Design: Concept is refined, defining details listed (Curb radii, traffic signal layouts, landscaping and signage plans)

+ 90%/100% Detailed Design: Draft 100% submission, defining details listed (specs, quantities, cost estimates, permits, drawings, licensees, monitoring programs)

Step 4. Feasibility Assessment & Functional Design

Project is tendered out and implemented based off its approved detailed design. Construction related activities are tailored to the conditions of the project site. Contingency plans are devised to mitigate potential schedule cost overruns and delays. Construction activities are routinely monitored to ensure compliance with project guidelines.

Step 5. Post-Completion

The Oxford County Cycling Network is comprised of 380 kilometres of cycling facilities that are broken into four components – primary linkages, secondary linkages, local connecting links and additional off-road trails.

For the purposes of the Oxford County infrastructure action plan, there are two distinct horizons which have been identified with focus placed on the implementation of the 189 kilometres of primary cycling network within the first “horizon”. The first horizon is scheduled to occur over a 10-20 year period starting in 2023. The implementation of the primary cycling network is intended to be undertaken as standalone projects where feasible and/or in parallel with planned road resurfacing and capital road improvement projects. the County’s paved shoulder policy, with buffered paved shoulders being appropriate along most segments of the cycling network as determined through the County’s capital budget process.

The secondary network is not the main focus of the action plan however secondary routing shall be considered as part of any future capital road improvements to ensure that cycling infrastructure can be accommodated as part of capital upgrades or at a later date. While the Primary network represents routes of significant enough importance to justify pursuing the improvements as standalone projects in some cases, the secondary network should be thought of as a guide for where new cycling facilities can be added when a road is being reconstructed.

Both elements of the ultimate network have been reviewed and priorities have been identified to support future decision making. The priorities identify the order in which Oxford County is recommended to pursue implementation. This is not meant to be prescriptive but a recommendation for the County’s consideration.

3.0

Economic Strategy

While a vital part of Oxford County's mandate, investments into cycling do not exist in a vacuum but among a wide range of different municipal priorities. These priorities not only compete for the County's attention but its limited pool of financial resources, funded by a relatively small available tax base. While this imposes constraint on the scale and scope of actions able to be taken, it raises an imperative to ensure all recommendations are properly evaluated and costed, to justify them as worthy investments.

While calculating the specific costs of each project remains beyond the scope of a CMP, an overview should still be provided to assess project feasibility and inform better decision making. This should rely on applicable facility and program costs, assumed from trusted industry references and applicable precedents. Equally underlying of the CMP's financial commitment is the availability of funding tools and strategies that can be employed to generate needed revenue. This includes local funding tools and streams as well as those offered by higher levels of government.

The Economic Strategy will therefore detail the rationale, 3 core recommended actions and associated implementation approach, suggested to ensure the CMP is accurately costed and adequately funded.

3.1 Economic Strategy Overview

The Economic Strategy details the costing and resultant funding required to fully finance and implement all CMP recommendations. With project costs and funding being reciprocal; informing each other's need, their identification remains crucial to understanding what and, how planned recommendations should be implemented. Accordingly, the economic strategy seeks to achieve the following goal ...

> *Explore the finances associated with realizing the cycling recommendations, including high level cost estimates and suggested revenue sources*

The Economic Strategy not only identifies the commitment behind the CMP's recommendations but provides a vital indication of their feasibility. As a relatively small municipality with a limited tax base, it remains unrealistic to propose all CMP recommendations be delivered at once. This warrants a comprehensive overview of each recommendation's costing relative to their significance, to respectively assign an appropriate implementation horizon for each.

Importantly, all costing and funding information is only useful if it is flexible. With the circumstances and details specific to each project likely to evolve, details provided must be adequately nuanced to support directions that can adapt to this uncertainty. These costs would then need to be reviewed and confirmed once the County determines when projects or initiatives will proceed. While the information contained within a master plan should be used to help inform over arching implementation priorities and timelines, it should not determine whether a project proceeds. Instead, costing information listed should be used to start the conversation around funding and budgeting options and alternatives – both internal and external.

3.2 Existing Context & Need

The inclusion of an Economic Strategy not only captures the fiscal considerations underlining all cycling measures, but those which apply to Oxford County specifically. While the County has financed cycling projects before, recent innovations in municipal finance provide an optimal opportunity to examine this approach for improvement. Like all other municipalities, Oxford County features a wide range of funding tools and strategies it can use to finance CMP recommendations. While by no means an exhaustive list, provided below are some key internal and external measures worthy of application:

Internal Funding Tools

- ***Capital Budget***: Annual funding pool allocated towards stand-alone projects. Within the context of the CMP, the capital budget would be a key funding source in implementing new cycling facilities
- ***Operating Budget***: Annual funding pool allocated towards recurrent expenses related to the routine operations of local services and programs. As a key source of municipal revenue, that can support the routine maintenance of facilities and administration of programs.
- ***Development Charges***: Funding levied from new development intended to cover the cost of supportive services. Within the context of the CMP, development charges can be used to cover upfront costs involved in implementing new cycling initiatives.

External Funding Tools

External funding options represent funding streams that are provided from sources external to Oxford County. These options can be distinguished by their respective donors, including: the federal government, provincial government or local partners

Federal Funding Steams:

- Federation of Canadian Municipalities (FCM) funding streams
- Green Municipal Fund
- Federal Gas Tax

Provincial Funding Streams

- Province-wide Cycling Network Funding
- Provincial Gas Tax
- Ontario Trillium Fund Local External Funding Steams

Additional Funding Streams:

- Private Citizen Donation (primarily for off-road trails)
- Opportunities for cost-sharing with lower-tier and neighbouring municipalities

Like the rest of the CMP, the Economic strategy was informed by the outcomes of a robust and comprehensive public engagement program. With much of the CMP expected to be funded through local tax revenue, it was imperative that all associated financial commitments reflect the concerns and priorities expressed by local stakeholders. From the range of consultation exercises arranged, listed below are some key insights that informed the CMP's Economic Strategy:

EXTAC Meeting.

- Encouraged engaging with local corporate entities (i.e. Toyota) as possible partners to support and sponsor CMP recommendations. This would provide an additional external funding source that could compliment existing revenue streams in guaranteeing the complete financing of the CMP.
- Suggested the CMP recommend the hiring of a cycling coordinator to secure funding for new facilities and coordinate cycling events. Tasking a newly hired cycling coordinator with seeking out and apply for available funding grants would help to secure more external funding, necessary in supporting the CMP's complete financing.

Interviews

- Connecting with Tourism partners to deliver the CMP has the potential to significantly boost the County's appeal to visitors from both Ontario and beyond. The creation of comfortable cycling connections will support the County's goals of becoming a leader in sustainable tourism development.
- Long term benefits of investing in active transportation provide significant return on investment over time. These returns come in the forms of reduced infrastructure costs, better public health outcomes and increased attraction and retention of both residents and employers.

Survey Results

- Users are interested in exploring their own communities by bike, opening up new avenues for a stronger 'staycation' economy in Oxford County.
- Multi-modal travel boosts support for local businesses and creates new opportunities for neighbourhood and community connections.

3.3 Action #1: Fully Cost All CMP Recommendations

The first recommended action of the Economic Strategy is to identify the costing information of all actions listed within the CMP. While beyond the scope of a CMP to calculate specific details determined on a project-by-project basis, considerations should still provide a general sense of the plan's required financing. To complete this exercise, all costs should be based on a set of assumptions that guarantee a reasonable degree of confidence. Listed below are some key suggested examples:

- Rely on unit prices from the past projects of other municipalities in Southern Ontario
- Linkages listed under the Province-Wide cycling network were costed
- Should not be prescriptive but offer a preliminary estimate of potential cost impacts
- Multi-Use Pathways were priced at $300,000 per kilometre, assuming a 3m wide operating space
- Primary Network connections were priced at $150,000 per km based on existing platform width and desired facility types
- Should serve as the foundation for annual budgetary decisions and routinely reviewed for updates
- Exclude voluntary efforts made by County staff, community members or partners
- Facility costs assume similar conditions and topography, and include contingencies

Beyond these more general considerations, costs related to the CMP are equally distinguished between those which apply to infrastructure and programs, listed under the Environmental and Social Strategies, respectively.

3.3.1 Infrastructure Costs

As detailed with the Environmental Strategy, a key recommendation of the CMP involves the implementation of a network of safe, comfortable and integrated cycling facilities. Given their high and consequent prohibitive costs, facilities should be prioritized on their degree of forecasted travel demand and overall network significance. This approach is not only strategic but avoids the creation of stranded facilities (otherwise known as "network edge lines") which are less useful and potentially unsafe for users. Accordingly, only facilities listed within the County's "Primary Network" were costed, with the remaining "Secondary Network" advised to be delayed beyond the horizon of this CMP. Relying on the cost assumptions previously stated, the primary cycling network is estimated to cost just over ***$28 million***. This total cost is derived from the 11 "Primary Network" priorities, based on the outcomes of the CMP's consultation and network development process. While the chosen facility types for these routes remains to be determined through subsequent project feasibility studies, additional details related to each item is provided within the table below:

Priority	Project	County Road	From	To	Suggested Facility Type	KM	Cost
1	Province-wide Cycling Network (Woodstock to Ingersoll)	County Road 9	Harris Street	Main Street	Designated Facilities	13.6km	$ 2.04 M
2	Province-wide Cycling Network (Woodstock to Innerkip)	County Road 4	Blandford Road	Devonshire Avenue	Separated and Designated Facilities	8.5km	$ 1.28 M
3	Province-wide Cycling Network (Innerkip to County boundary)	County Road 29 & Trussler Road	Blandford Road	Piper Street	Designated Facilities	21.0km	$ 3.15 M
4	Woodstock to Trans Canada Trails	County Road 13 & County Road 59	Juliana Drive	Trans Canada Trail	Designated Facilities	25.1km	$ 3.77 M
5	County Road 17	County Road 17	Vansittart Avenue	County Road 4	Designated Facilities	4.8km	$0.72 M
6	Cycling Facilities within East Zorra-Tavistock	County Road 59 & County Road 24	County Road 8	County Road 5	Designated Facilities	19.0km	$ 2.85 M
7	Cycling Facilities within Woodstock	Devonshire Avenue	Vansittart Avenue	County Road 4	Designated Facilities	5.0km	
		Huron Street/Wilson Street/Cedar Street/Norwich Avenue	Devonshire Avenue	Juliana Drive	Separated and Designated Facilities	3.6km	

Priority	Project	County Road	From	To	Suggested Facility Type	KM	Cost
7	Cycling Facilities within Woodstock	Vansittart Avenue	Frederick Street	Devonshire Avenue	Separated Facilities	0.7km	$ 1.40 M
		Ingersoll Road	Dundas Street	Anderson Street	Separated Facilities	0.7km*	
8	Cycling Facilities within Ingersoll	Bell Street	Scourfield Drive	Thames Street North	Designated Facilities	1.6km	$ 0.52 M
		Ingersoll Street North	Bell Street	Thomas Street	Separated Facilities	1.9km	
9	Ingersoll to Thamesford Connection	County Road 119, Allen Street, and Dundas Street East	McCarty Street	Scourfield Drive	Designated Facilities	9.9km	$ 1.48 M
10	Township of Zorra Loop	County Road 6, County Road 8, County Road 28, County Road 119	Hickson Trail	McCarty Street	Designated Facilities	46.1km	$ 6.92 M
11	Tillsonburg to Ingersoll Connection	County Road 10 & County Road 20	Clarke Road	Tillsonburg Boundary	Designated Facilities	28.4km	$ 4.26 M
					Total	**189.2km**	**$28.38 M**

**This section of the Ingersoll Road is approved for a planned road resurfacing, and it has been incorporated into the upcoming capital costs. Therefore, this short section of 0.7km is not included into the preliminary costs.*

As noted above, the 189 kilometers of proposed primary cycling linkages have been prioritized to inform future capital budgets and plans over the next 10-20 years – starting in 2023. A map of the different primary network segments is presented in **Figure 4**. For the purposes of the CMP, the existing off-road facilities have been included in this map, since they form an important part of the County's Primary Cycling Network. The remaining priority linkages are presented to show how each connects to the County's existing facilities. The priorities identified here are meant to provide a framework for the County to prioritize funding applications, but it should not be seen as prescriptive – if roadworks come up on a road identified in Priority 10, for example, that work should include the cycling facility outlined in this Plan regardless of if priorities 1 through 9 are still awaiting completion. Several of these priorities, especially the longer loop routes, may require more than one year of construction to complete, but the consistent implementation and improvement of the County's Primary Cycling Network should always be the overarching goal as this Plan is utilized in the future.

Figure 5 identifies an appropriate level of separation that matches the context of the road for the primary network. This map is informed by the results of Step 2 in the OTM Book 18 facility selection process. The appropriate level of separation for cycling facilities is determined by the road speed, average annual daily traffic, and lane configuration. The majority of Oxford County's primary network connects communities through rural landscapes, requiring a different suite of considerations in terms of the types of facilities that should be selected. Based on the selection criteria for rural roads from OTM Book 18, the majority of Oxford County's primary cycling network would be well served with designated cycling facilities, which are primarily proposed as wide paved shoulders with a buffer.

The intent of Oxford County's primary cycling network is to provide a high-quality system of routes to major destinations with the intent of accommodating safe and comfortable travel by cyclists. As such, all of the routes illustrated below should have, at a minimum, a spatial separation i.e., a painted buffer line and / or rumble strip. Where cycling demand is high or where motor vehicle volumes are high, the County should consider implementing physical separation such as curbs, bollards, planters, or a cycling route outside of the road right-of-way to provide a safer, more comfortable user experience in those areas, particularly those within or near the County's urban centres.

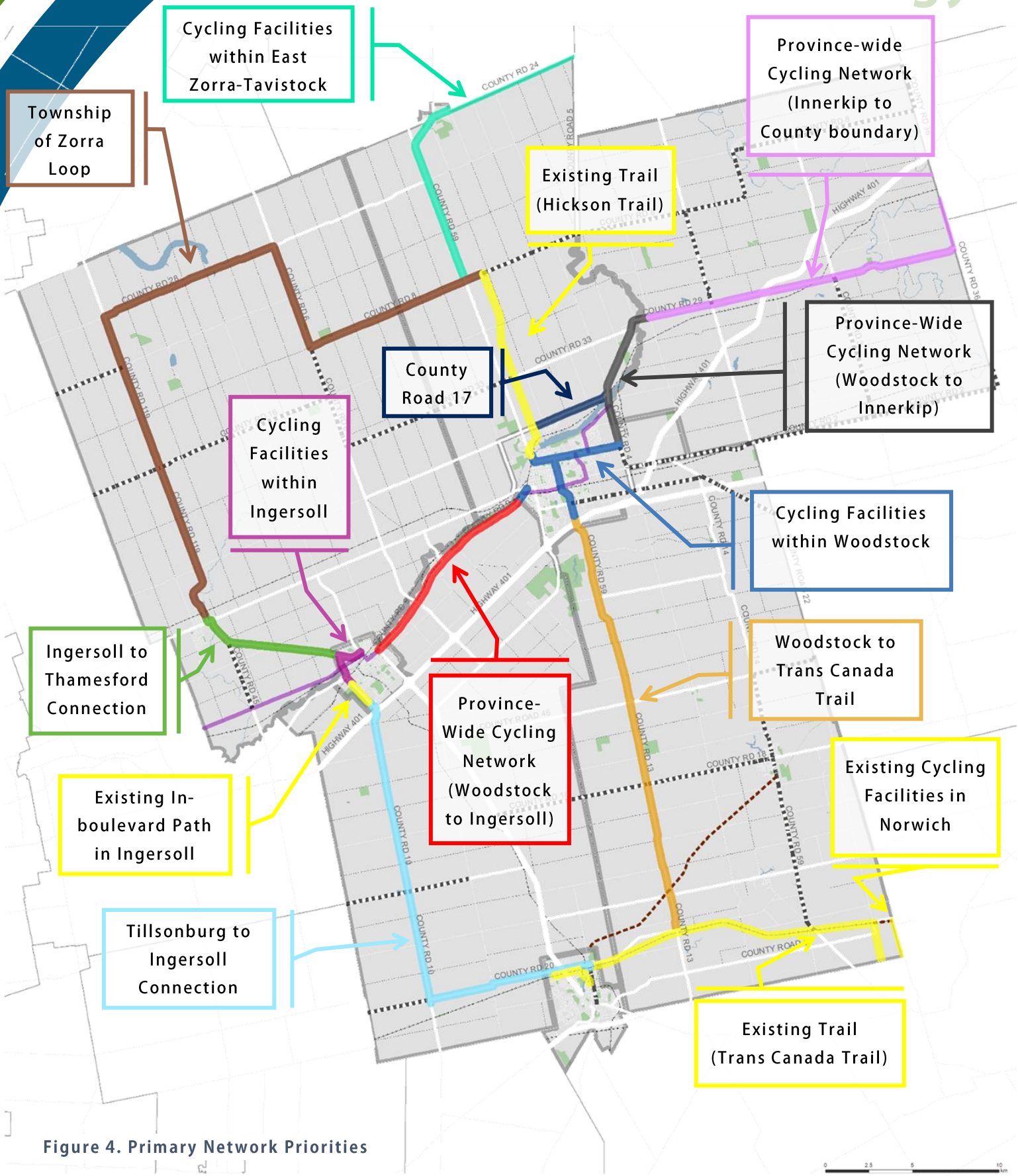
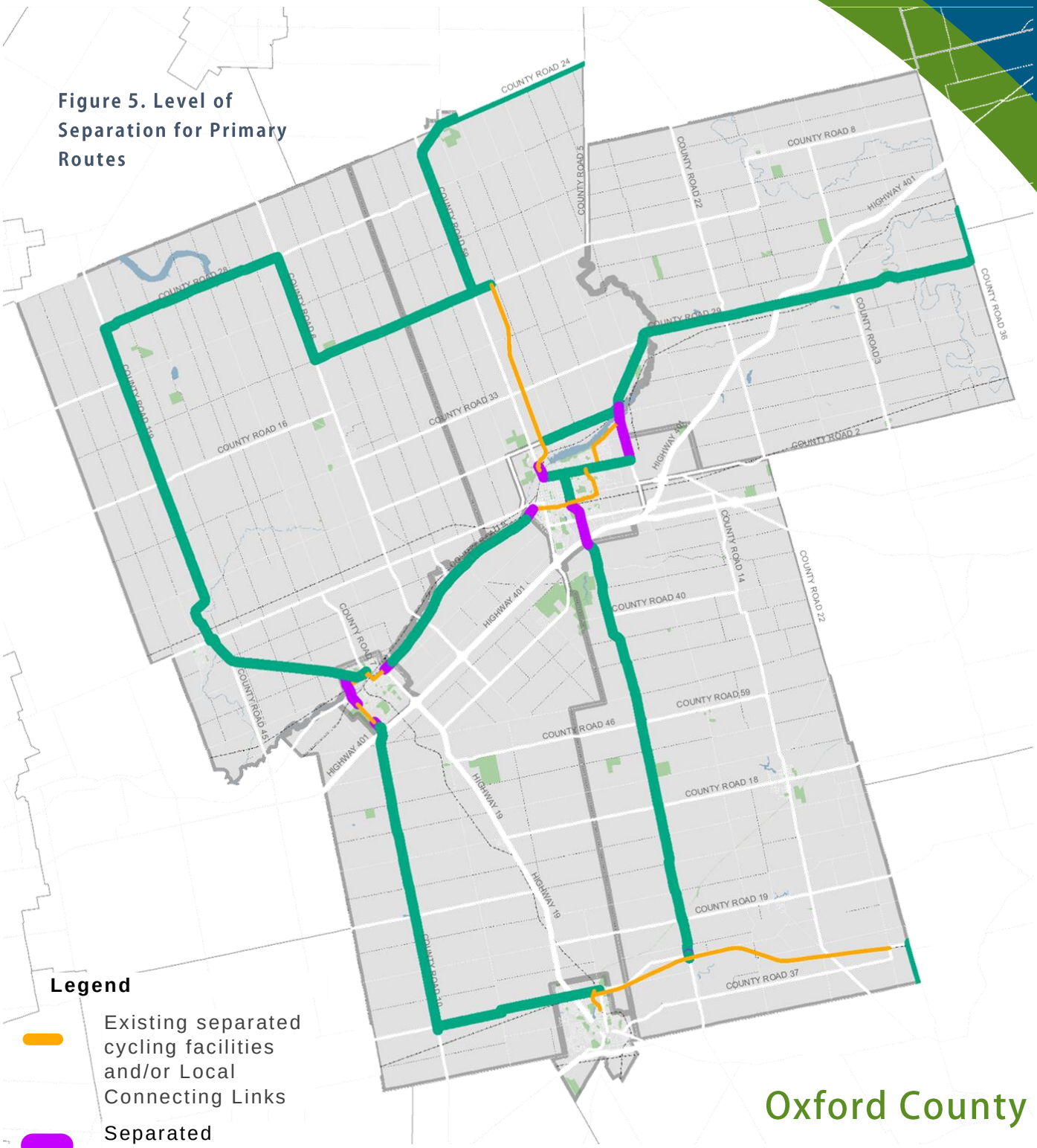


Figure 4. Primary Network Priorities

Figure 5. Level of Separation for Primary Routes



Oxford County

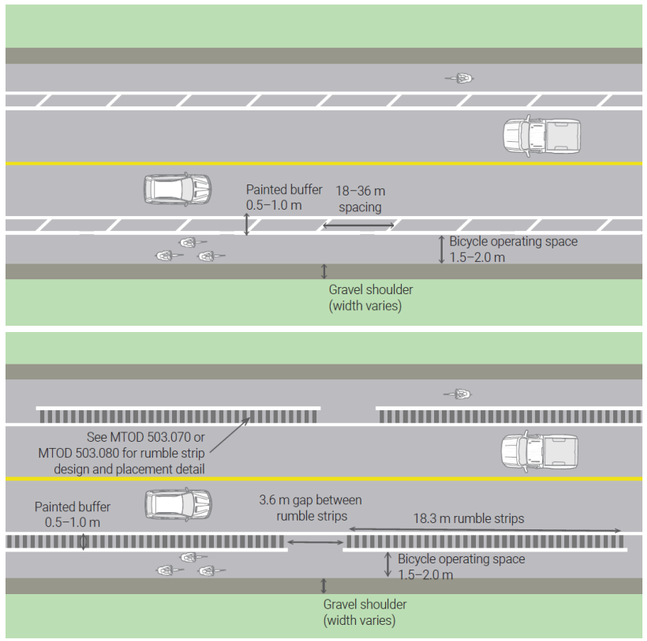
Cycling Route Level of Separation

3.3.2 Cycling Facilities

The majority of the primary network consists of designated cycling facilities, primarily buffered paved shoulders. Separated cycling facilities are identified on roads that have higher posted speed limits, traffic volumes, and lane configurations – mostly in the County's urban areas of Woodstock and Ingersoll. An overview of the potential design treatments for designated cycling facilities is provided below. In higher traffic areas, physical separation between cyclists and vehicles are suggested to increase safety, including the installation of curbs, planters, or bollards.

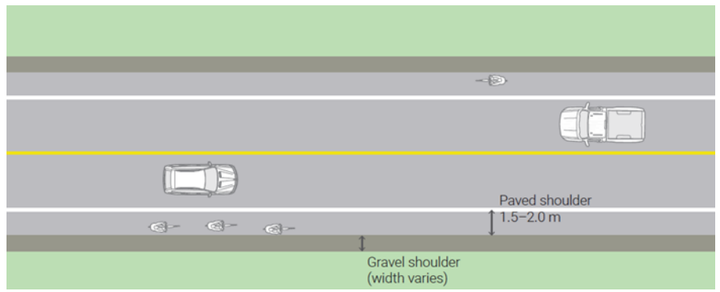
In urban areas where County roads are 4 lanes wide, Road Diets have been recommended as an **interim** solution to reallocate road space to provide increased space for cycling. When these areas of the primary cycling network are considered for capital construction, it is recommended that the County implement fully separated cycling facilities in the form of curb-separated cycle tracks or in-boulevard multi-use paths to provide an accessible, comfortable cycling environment along those corridors.

Buffered Paved Shoulders



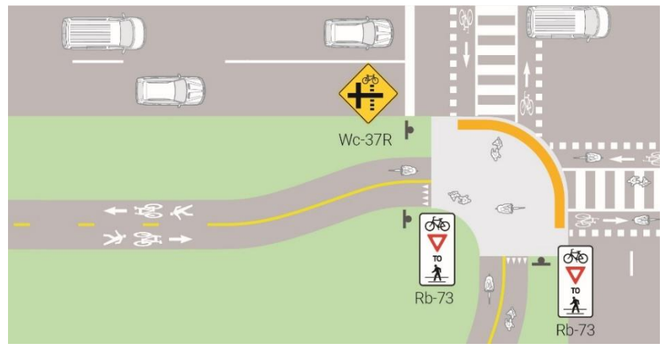
Example: County Road 50, Essex County

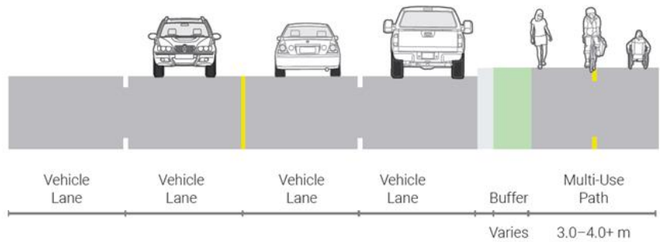
Paved Shoulders



Example: Champlain Road, Town of Penetangishene

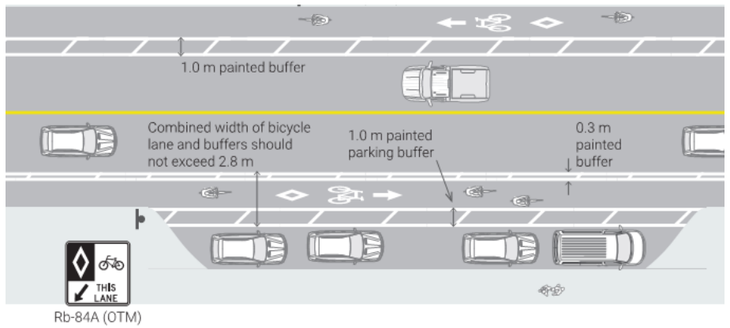
In-boulevard multi-use pathways

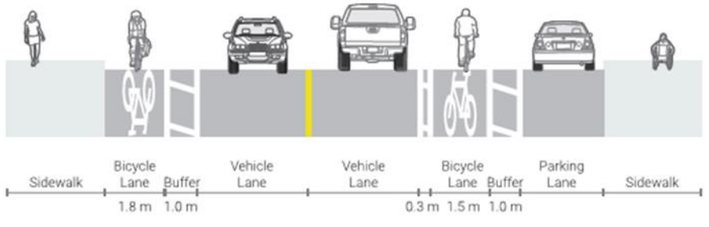




Example: Bayview Avenue, Town of Aurora

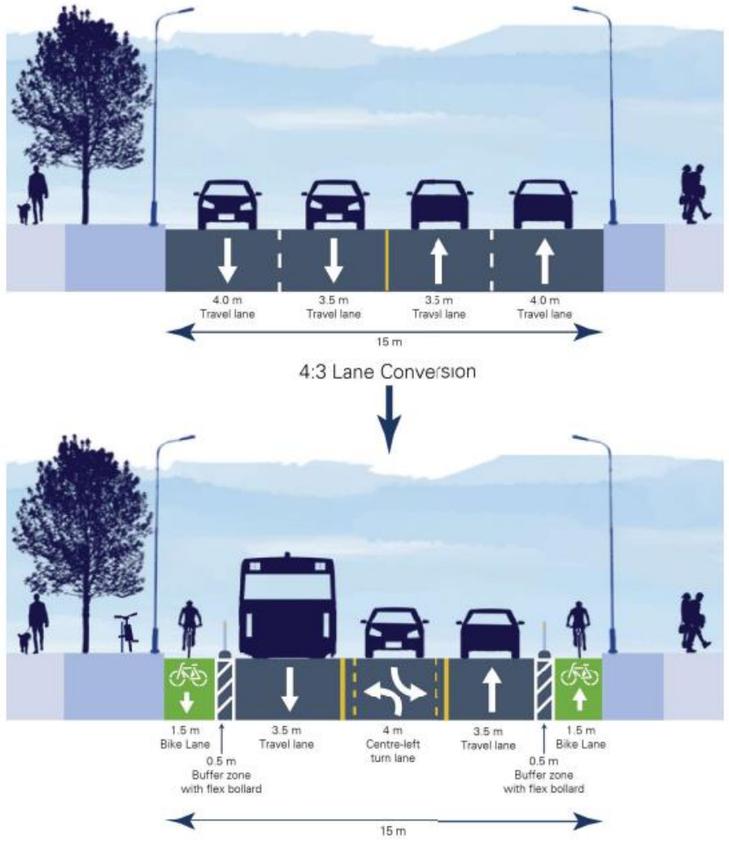
Buffered Bike Lanes with physical separation





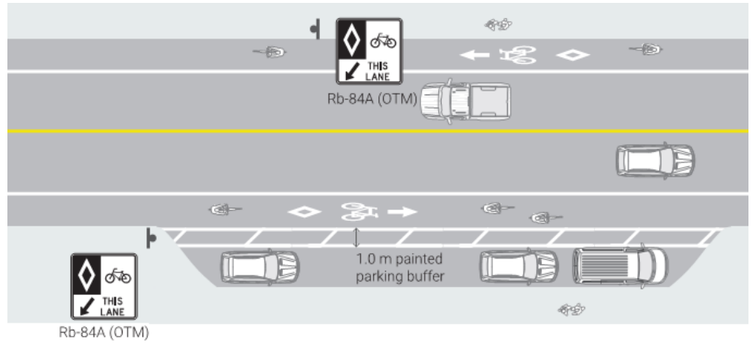
Example: Belmount Avenue, City of Kitchener (example of a Road Diet with physical separation implemented)

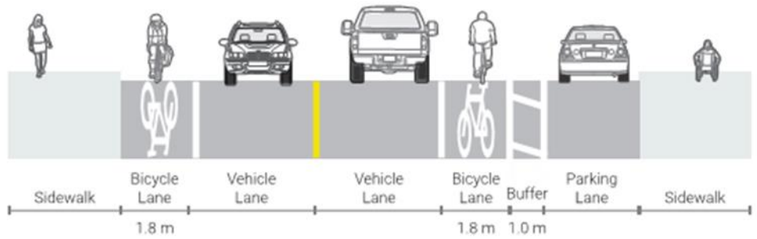
Road Diets



Example: Graphic example of a Road Diet, which can also be seen in the Belmount Avenue Example (L) and Springbank Avenue example (R)

Bike Lanes





Example: Springbank Avenue, City of Woodstock

3.3.3 Programming Costs

Complimentary to investments in infrastructure, the CMP also recommends a series of new supportive programs as detailed within the Social Strategy. Unlike the infrastructure costing, programming costs are far more difficult to estimate considering the range of potential options, tools, tactics and measures that could be implemented. Where possible, best practices from comparable programs have been reviewed as a reasonable estimate of potential cost impacts. Wherever feasible, partnership with either internal and external stakeholders should be leveraged, not only to harness their level of local expertise but also to build upon existing relationships and develop new capacity.

Regardless of which initiatives the County ends up implementing, it is recommended that additional staffing be acquired to support both new and existing cycling efforts. Per the description previously provided, this position would serve as a delivery agent and coordinator, serving both the County directly and its area municipalities with related services. It is recommended that this role begin as a part-time role, scaling up to full-time position as the County's cycling supports become more established. This additional staff position would need to be outlined in the annual Business Plan & Budget for Oxford County as per the Full-time Equivalent Plan and should be targeted for the 2023 budget cycle.

With an emphasis on applying a context sensitive approach, investments should prioritize the scaling up of existing initiatives and cycling groups with demonstrated success and presence within the local community. One example involves providing additional resources to the Oxford County Cycling Advisory Committee by supporting the hiring of a summer student position and allocation of a small discretionary budget of $10,000 for their own programing and projects.

Overall, the complete suite of programs is estimated to cost an additional ***$30,000***. This figure is inclusive of recommended items stated above as well as costs involved in delivering on the 3 actions listed under the CMP's Social Strategy. Specifically, this includes costs incurred from purchasing new materials such as bike racks or bike valet materials, the development and distribution of promotional materials and other costs associated with helping to deliver events across the County.

3 Economic Strategy

3.4 Action #2: Develop a Funding Strategy to Finance Recommendations

To meet the financial needs of the proposed Oxford County Cycling Master Plan, it is vital that a comprehensive and practical funding strategy be developed. While the County has funded cycling projects in the past, the scale and scope of recommendations listed in the CMP warrants a re-examination of available tools and strategies. This includes existing measures which can be either modified or expanded and new ones that the County has not yet implemented. Funding must not only cover upfront costs related to implementing new cycling facilities and programs but, their more routine costs which support their daily operations. These recommendations are similarly categorized as either internal or external and are equally informed on the successful precedence of comparable municipalities and understandings of the local context.:

Internal Funding Recommendations

Internal funding measures provide significant financial certainty and control when it comes to program delivery. While some internal resources are already used to support cycling initiatives, there are opportunities to expand and refine these measures further:

Development Charges [DC] (Modification)
Amend the existing bylaw to provide expanded and more explicit coverage for cycling facilities – both on and off-road.

Capital Budget (Expansion)
Consider accommodation of cycling facilities as part of capital road improvements where implementation costs are incremental to overall capital expenses.

Operating Budget (Expansion)
Enlarge to meet anticipated greater demand for facility maintenance from proposed network expansions.

Municipal Partnership Fund (New)
Develop a new cycling specific fund to match area municipal funding commitments on the implementation of programming and outreach initiatives. It is suggested that the fund rely on an initial annual allocation $150,000 and make up to $20,000 available to each local municipality every year for eligible projects.

External Funding Recommendations

To account for limitations in the County's available internal revenue streams, the County should explore a variety of external funding sources. This includes available grants from higher levels of government or possible sponsorships with local employers. Given that such funding is not guaranteed but subject to an uncertain application process, many options should be pursued as available.

Federal Funding Steams

+ Federation of Canadian Municipalities (FCM) funding streams;
+ Canada's National Active Transportation Strategy;
+ Investing in Canada Program;
+ Healthy Communities Canada Funding Initiative;
+ Green Municipal Fund; and
+ Federal Gas Tax.

Provincial Funding Streams

+ Province-wide Cycling Network Funding;
+ Provincial Gas Tax;
+ Ontario Trillium Fund;
+ Ontario Rural Economic Development Fund; and
+ Tourism Development Fund.

Local External Funding Steams

+ Trans Canada Trail Service Club Support;
+ Corporate Environmental Funds, especially to support off-road trails;
+ Private Citizen Donation; and
+ Cost-sharing with lower-tier and neighbouring municipalities.

One key external funding source is The Ministry of Transportation Ontario (MTO), given their indicated willingness to fund AT infrastructure. This includes projects found within corridors and connections that align with the province-wide cycling network. Specifically, there is a tremendous opportunity to leverage the County's 41.9km of proposed cycling facilities along the Province-Wide Cycling Network. Equally vital is the federal governments recently announced Active Transportation Strategy. The fund feature's $400 million dollars for new active transportation projects within municipalities across Canada, including new cycling projects. Finally, as a means of ensuring the financial sustainability of different recommendations, the County should develop an additional cost-sharing agreement with lower-tier municipalities. A Municipal Partnership Fund

helps to both advance implementation and model a more collaborative approach between stakeholders.

3.5 Action #3: Post Implementation Monitoring Scheme

Beyond ensuring all CMP actions are properly funded, the Economic Strategy should also include a robust monitoring scheme that maximizes their efficacy post-implementation. While all actions are informed by a thorough understanding of local cycling conditions and need, their success in practice cannot be fully predicted. All CMP actions are also based on assumptions which remain subject to evolve, potentially causing their rationale to no longer be supported.

The CMP must go beyond listing recommendations that are ideal today. outlining how they can remain effective going forward. A useful monitoring scheme should apply to all relevant priorities of the CMP while providing clear and objective indicators which can yield meaningful results. Other defining attributes of an effective monitoring scheme are listed below:

- Demonstrating the value of cycling projects to the public and elected officials;
- Accurately tracking the success of a program or facility post-implementation;
- Investing through data-driven measures of success;
- Fulfilling requirements for funding from varying levels of government;
- Yielding intended community outcomes, as defined within the CMP's vision and actionable objectives;
- Documenting information in a manner that is easily disseminated across a wide range of audiences; and
- Meaningfully implementing decisions going forward.

Measures selected should also be adaptive to the list of partnerships identified as integral to the CMP's financing, development and implementation. County staff are encouraged to track progress annually and document results within a report that is publicly accessible. This activity is essential in demonstrating the value behind different cycling investments and building public support for expanded efforts. Results of all these ongoing evaluations should therefore be summarized in a format that is easily disseminated and understood by the public.

3 Economic Strategy

The type of performance measures chosen by the County should consider both objectives of the CMP and its own institutional capacities. As new data collection methods and monitoring schemes are developed, they should be better incorporated into decision making processes tied to the CMP. The table below provides a list of performance measures that the County should consider in documenting the success of recommendations proposed through the CMP. These measures are tailored to the plan's underlying Environmental, Economic and Social Strategies.

CMP Strategy	Performance Indicators					
	Criteria	Measurement Unit	Criteria	Measurement Unit	Criteria	Measurement Unit
Environmental Strategy	Extend of cycling network built	KM	Coverage within each area municipality	KM	Access to key destinations	#
Social Strategy	Time walking or biking per day	#	Enrollment in cycling supportive programming / events	#	Number of bike supportive events and programs (hosted annually)	#
Economic Strategy	Amount of money spent on new cycling facilities	$	Amount of money spent on facility maintenance	$	Amount of money spent on administering cycling supportive programs	$
Other Metrics	Average annual air quality index	#	Cycling mode split	%	85th percentile traffic speed	#

3.6 Economic Strategy Implementation

Project implementation should be guided by a process that is easily adaptable as changes to the demographic, cultural, climate and political circumstances occur. OTM Book 18's 5-Step Implementation process provides proven guidance for practitioners to move a project from design to construction to evaluation. An overview of this process is described below, with additional detail found in OTM Book 18:

Phase 1. Strategic Planning
Projects are ...
+ Selected on their alignment with network and priorities;
+ Informed by a locally adaptive approach; and
+ Coordinated with other capital projects to minimize cost redundancies.

Phase 2. Feasibility Assessment & Functional Design
Foundational project information and details are assembled, including ...
+ An understanding of existing physical and cultural conditions;
+ How the site is experienced by cyclists;
+ A public consultation strategy to inform project engagement; and
+ A feasibility study into the various geometric, cost, utilities and facility design considerations (detailed in a formal report).

Phase 3. Design
Detailed design is developed, towards three stages of percentage completion:
+ 30%: Builds upon pre-functional design and defines high level details (i.e., parking, travel lanes and cross-sectional designs).
+ 60%: Construction activities are refined, and details are defined (i.e., curb radii, traffic signal layouts, landscaping and signage plans).
+90%/100%: Towards 100% design draft with final details defined (i.e., item specs, quantities, cost estimates and a complete drawing package).

Phase 4. Construction
Project is tendered out and built per its approved detailed design. Construction is tailored to the conditions of the project site and routinely monitored, with the appropriate contingency plans developed.

Phase 5. Post-Completion
The project is monitored and evaluated, with iterative improvements considered where warranted based on the available data.

4.0

Social Strategy

Like many communities across North America, Oxford County has long conceptualized and designed its transportation system to almost exclusively prioritize automobile travel. The impact of this approach has not only been the absence of supportive infrastructure but also cultural misconceptions and stigma against other modes of transportation, including cycling. While the County has communities that are separated by long distances, the fact remains that most residents in Oxford County live in an urban or semi-urban area where cycling is a viable option for most trips within the community.

As the County develops the physical infrastructure to support cycling, it is also important to establish a plan to build the social infrastructure to support behaviour change. The opportunities presented here in the Social Strategy have been developed based on a thorough understanding of Community-Based Social Marketing principles, which emphasize the importance of establishing broad messaging to encourage behaviour change delivered in conjunction with messages targeted to specific populations about what matters to them. These recommendations build upon the strong network of cycling supports already in place in the County, helping to reduce the amount of work expected of County staff while also building new capacity and connections within the County's civil society organizations.

4 Social Strategy

4.1 Social Strategy Overview

The Social Strategy details a suite of programs and initiatives that can be considered to achieve a broader societal and cultural shift in how cycling is appreciated. Complimentary to investments in hard infrastructure, significant cycling adoption is predicated on a range of “soft” initiatives that both encourage and education on its viability. Accordingly, the social strategy seeks to achieve the following goal ...

“Develop a comprehensive set of programs and initiatives, built upon the County’s existing social infrastructure to foster a stronger cycling culture.”

There is a growing body of evidence that clearly demonstrates that social supports for cycling play a strong role in shifting travel patterns. While physical infrastructure like trails, bike lanes and bicycle parking are important to support mode shift, behavioural change also relies on people feeling that their travel choices are supported and accepted by their community. For Oxford County to develop a more supportive culture to encourage a shift in transportation habits, the County and its partners will need to work closely together to create the social conditions that can lead to change. To achieve this vision, partnerships among relevant stakeholders should be identified and reinforced, providing resources to expand capacity and creating opportunities for these partner organizations to deliver programs that explicitly meet the needs of their communities and networks. As partners develop new programs, they feel a sense of ownership over the implementation of the CMP, establishing buy-in and additional supports required to implement the CMP. Within Oxford County there already exists strong supports for cycling, which is illustrated by the large number of organizations and groups who make cycling a part of their mandate.

The variety of organizations identified through the CMP process who engage in support for cycling was significant, but the connections between the work being done were not as strong as they could be, leading to a duplication of efforts or missed opportunities to leverage resources to deliver similar programs. This is a common finding when conducting studies with upper-tier municipalities, especially with many organizations working with limited resources across a wide geography. For Oxford County, establishing a central body to connect with and support all of these organizations when it comes to supporting cycling could provide substantial benefits, expanding capacity, increasing support for cycling

across the County and creating a more connected network of organizations working to make Oxford a more sustainable, active and welcoming County.

It is thus recommended that the County consider the creation of additional supports for cycling in the form of an expanded and strengthened Oxford County Cycling Advisory Committee, including additional staffing support from various departments within the County governance structure. As the County looks to further expand its support for cycling, additional support should be considered, potentially with additional staff or utilizing external third-party services. There are funding streams available to the County, including the Canada Student Summer Jobs Grant and the Planning Stream of the Federal Active Transportation Fund, which could be accessed by the County to develop stronger supports for cycling. As the County continues to add physical infrastructure to support cycling, providing additional support for the development of social infrastructure for cycling can improve the County's cycling culture, and boost the value of the investments being made in the cycling network in Oxford County.

4 Social Strategy

4.2 Existing Context & Need

The inclusion of a Social Strategy underscores the importance in supporting cycling through a series of programs and initiatives targeted at achieving meaningful behavioral change. While informed upon the precedence of applicable best practices, the Social Strategy builds upon a context of existing initiatives and organizations that support cycling in Oxford today. Notably, Oxford County maintains a relatively active and engaged volunteer community that has shown strong local leadership and action on cycling issues. While this is demonstrated through a variety of pre-existing partnerships and initiatives, listed below are key examples:

Oxford County Cycling Advisory Committee	**Formal advisory body that advocates on behalf of the local cycling committee.**
Oxford County Trails Council	**Advocacy Group that supports trail development partnerships.**
Future Oxford Network	**Collection of groups helping to achieve the County's targets for environmental sustainability.**
Tourism Oxford	**Agency responsible for encouraging visitors to the County, including cycle tourists**
Ontario Active School Travel Program	**Oxford County injury prevention run initiative within local schools and workplaces providing advice on usage of active transportation.**
Recycle Cycles	**Program run in 2019 which saw the refurbishment of hundreds of used donated bikes**
Ride Oxford	**Online resource offered by Tourism Oxford which identifies activities and resources to explore**

This approach of building upon existing partnerships and successes supports greater incorporation of local knowledge in developing future programs. Accordingly, the Social Strategy suggests a scaling up of existing efforts rather than the implementation of completely new ones in many instances. Many of the actions identified emerged during the interviews with County Staff and stakeholders and were subsequently refined during workshop sessions. Notable insights are listed below, as categorized by the engagement method or activity where they were captured.

Technical Advisory Committee Meetings

A key focus of the meetings held with both the internal technical advisory committee (INTAC) and external technical advisory committee (EXTAC), was the development of meaningful programming. From discussions that ensued around this objective, the following items were raised:

- Encourage that the CMP be based upon a variety of partnerships, included those local corporate entities (i.e., Toyota) to sponsor recommendations; and
- Suggest the CMP identifies additional support for implementation of cycling initiatives.

Stakeholder Interviews

During stakeholder interviews, participants were asked about their suggestions for how the County could support existing programs and what new programs might be beneficial. Some examples of comments received during those interviews are presented below, with a more comprehensive overview of feedback available in the Phase 1 Report that accompanies this Master Plan document.

"In general, if you ask people who drive what they can and can't do, for example when you come to a stop sign and there is a bike in the bike lane, what they are supposed to do, and most of them wouldn't know. We've lost the education about proper bike riding as well - rules of the road for people on bikes as well. So, we need more of those programs to be delivered to young people"

"The Cycling Advisory Committee needs a stronger mandate - potentially to deliver on the education piece, providing them with some resources and budget to deliver projects."

In addition to this feedback, both engagement activities also helped to identify the extent of existing initiatives and organizations operating within Oxford County. Given the emphasis on scaling up existing initiatives rather than starting from scratch, this information was foundational to the Social Strategy's overall development.

4 Social Strategy

4.1 Action #1: Establish an Inter-Municipal Working Group

Beyond the tactics listed as part of the internal structural recommendations, the County should seek to establish and chair an Inter-Municipal Working Group to support CMP recommendations. As a local advisory body, the group should feature representatives from key stakeholders; including County and local municipal staff members, representatives from Tourism Oxford and Southwestern Public Health. This group should meet at least twice annually, potentially in concert with the Oxford County Cycling Advisory Committee, and should have a mandate to:

+ Share information related to cycling component of capital project plans and advocate on behalf of measures which optimize the implementation of continuous cycling routes;
+ Pursue available external funding opportunities
+ Develop and deliver cycling encouragement, education and promotion programs;
+ Keep up to date on emerging trends in planning and design of cycling facilities.

The municipal working group will not only assume key duties related to the CMP otherwise assumed by the County but, ensure more coordinated use of the County and local municipalities' collective resources.

4.2 Action #2: Position the County as a Regional Knowledge Sharing Hub

To coordinate the delivery of meaningful cycling initiatives by both the County and its local municipalities, Oxford County should position itself as a regional knowledge hub. This recommended action recognizes Oxford's unique capacity to create collateral related to cycling for distribution by area municipalities. Through both Tourism Oxford and the Future Oxford network, the County has already developed considerable expertise in messaging and media connections suitable in delivering programs that promote and educate on cycling. This includes possible initiatives run on a local level by area municipalities who are challenged by a relative lack of institutional infrastructure. To complete this action, there are a series of foundational considerations and tasks that the County may want to consider. This list is by no means exhaustive nor prescriptive but rather, offers a useful guideline as to how this objective can be actioned.

Task #1 Coordinate efforts around a collective "County Cycling" brand

Efforts to both improve education and promote cycling in Oxford County ought to be unified around a distinct "brand" that enables improved coordination and visibility. When well established, a consistent and locally adapted brand can both enhance the awareness of local cycling facilities and make them more enticing to local employers and residents. Many of the potential elements that could shape a cycling brand for Oxford County have already been created through the development of this Plan. This includes relevant outcomes of the CMP's public engagement program, as well as the elements of the document's underlying visionary statement and accompanying objectives.

Figure 6 - The "I Bike CPH" brand examples illustrates the significance in developing a strong brand cycling brand to reinforce local cycling culture

4 Social Strategy

Task #2 Achieve broad brand awareness through extensive and tailored "Marketing Campaigns"

To achieve broad awareness of the County's cycling brand, extensive and tailored marketing campaigns should be administered. These programs should also have space for segmented messaging – especially messaging that market cycling for different purposes within the community. The goal is to show cycling as an easy, fun and above all normal activity that can be done by a diverse set of people. While the County should assume the lead in developing materials and providing funding, local partners and area municipalities should be reached for support with materials development and message distribution.

Figure 7 – An advert within Malmo's "No Ridiculous Car Trips" Campaign, an example of a more 'humanized' marketing tactic

Task #3 Develop Toolkits and materials that can be easily adapted and used by key partners

The County should translate lessons from their own programming within the creation of materials and toolkits that support related initiatives adopted by their area municipalities. This could include guidebooks that detail steps in successfully delivering an event or purchasing shareable materials (portable bike racks, event fencing, tents etc.) for use at various events organized by area municipalities.

Figure 8 - A photo of an "Open Street', suggested as part of a complete of program of cycling supportive initiatives.

Task #4 Expand the mandate of the Oxford County Cycling Advisory Committee (OCCAC) to include all active transportation efforts, and empower it to play a bigger administrative role

The County should empower the Oxford County Cycling Advisory Committee's (OCCAC) current human capital through bolstering the reach, value and efficacy of its comprising volunteers. With additional support and its own budget, the OCCAC can be assigned key responsibilities related to: coordinating annual cycling events, disseminating branded messaging and administering certain events directly. It is suggested that the OCCAC include an expanded mandate, focusing on support for all Active Transportation initiatives and transitioning to an Oxford County Active Transportation Advisory Committee.

Figure 9 - A photo of a youth riding group in Windsor, Ontario

4.3 Action #3: Strengthen Key Partnerships in Delivering the CMP

Successful programming should be both informative and engaging, utilizing a variety of formats that can reach a wide range of audiences and entice them to consider cycling's potential. This includes as a form of transportation, recreation, source of physical activity and source of community building. While there is an exhaustive list of cycling programs that the County may consider adopting, listed below are some suggested examples, based off their successful precedence and applicability to the Oxford County context:

Program #1. Cycling into the Future

Oxford County is well situated to take advantage of one of Ontario's fastest growing and best recognized cycling education programs, Cycling into the Future (CITF). Situated in Waterloo Region, CITF is a program that teaches grade 5 students to ride safely and legally, providing them with basic bike handling skills as well as an overview of the rules of the road as they apply to people on a bike. Oxford County could facilitate the introduction of the CITF program into the County's School Systems through the provision of funding and in-kind support and could lead the expansion of this well-regarded program outside of Waterloo Region.

County Role

- Funding and in-kind support.

Partner Role

- Public Health to facilitate connections with schools;
- CITF to hire trainers and provide instruction in schools and provide bike for students who may not have access to a bike; and
- Schools to provide space and calendar time for promotional events that encourage kids to commute to school by bike.

Program #2. Social Rides

One of the most common, and easiest to deliver, methods of connecting to individuals and encouraging behaviour change is the hosting of regular bike ride events. Community bike rides provide residents with the opportunity to engage in an enjoyable, social activity while also exposing them to the possibilities that exist for getting around their community actively. Key aspects in designing a successful community ride program include:

Regularity
Rides should be held on a regular and predicable basis to ensure that residents can engage with the events - even if they miss one, there is another event coming up.

Visibility
"Brand" rides, either through having ride leaders wear a branded vest or tow a mobile billboard that publicly advertises the community bike ride.

Accessibility
Rides should be at a pace that is family friendly and allows for socialization. Ride distances should be a length manageable for first-time riders or children. If possible, routes should be placed along conditions with lower stress and better facilities.

Socialization
Rides should be at a pace that allows for casual conversation and allows participants to acquaint and form community outside of the organized events.

County Role

- Funding support for materials and promotions;
- Provide insurance for ride leaders as necessary;
- Promote events on County communications feeds;
- Print and distribute promotional materials; and
- Provide incentives to local municipalities to host their own rides as part of the Oxford County rides series.

Partner Role

- Local municipalities and local volunteers to lead rides; and
- Local businesses to donate materials for promotions and social events.

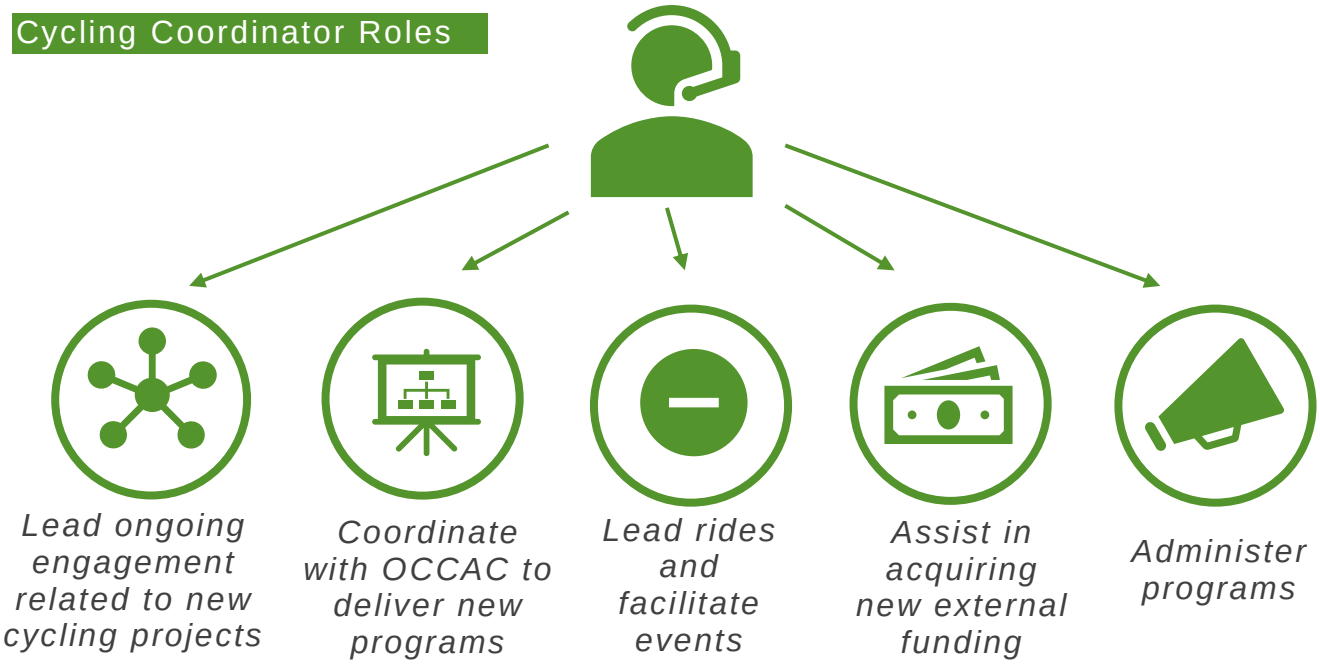
4.4 Social Strategy Implementation

Like all other components of Oxford County's Cycling Master Plan, the success of the Social Strategy hinges on a detailed and effective implementation approach. While distinctions between the actions warrants specificity in how they are each delivered, there are practices that should be universally applied. This includes consideration of additional interna/external support and establishing strategic partnerships with key stakeholders involved with cycling across Oxford County. Both these initiatives will support the acquisition of human and financial resources that the County may require to implement the Social Strategy in full as implementation of cycling infrastructure progresses and These measures also constitute a more collaborative approach which recognizes a wider range of interests and greater degree of localized knowledge.

Task #1: Consider additional resources for CMP implementation

To aid in the delivery and coordination of the various actions recommended as part of this CMP, additional resources are recommended at the County level. Through the Strengths, Weakness, Opportunity, and Threat (SWOT) analysis conducted on County's existing approach to administering active transportation initiatives, a shortage of designated county staff was identified as a key limitation. With the CMP focusing on both scaling up existing activities and implementing new programs, additional resources may be required to make this plan a success. While dependent on the extent of CMP implementation some suggested roles and responsibilities that may require additional resources are listed below:

Cycling Coordinator Roles



Task #2: Engage all relevant stakeholders through active partnerships

The effective implementation of all cycling programs and initiatives also requires strong partnerships. This includes partnerships with both internal and external stakeholders, who can either provide funding, administrative support or input. Potential partners have been organized into primary and secondary partners based on their suggested level of involvement and the input they may have on a project-by-project basis. Some may be involved as a regulatory or approval body and others may be responsible for providing input based on context sensitive considerations / issues. Listed below are the potential primary and secondary partners that could contribute to the implementation of the CMP's Social Strategy:

Primary Partners

Of the various partnerships that could be leveraged to support the CMP's implementation and development, there are select examples that are especially important. This includes relevant County departments who are integral to the CMP's internal delivery structure. These suggestions are not meant to be prescriptive, since shifting resources might necessitate departments aiding as required. They do, however, reflect both best practices from similar regional municipalities and existing roles within Oxford County.

Key Partners

Public Works

- Asset management and infrastructure planning
- Construction and maintenance of cycling facilities
- Assist in delivery of Funding programs
- Lead role in coordinating data collection and evaluation of new investments

Tourism Oxford

- Planning and implementing wayfinding signage, particularly along touring routes.
- Promotion and outreach, including the development and distribution of promotional materials.

Local Municipalities

- Communications and Engagement with local residents
- Connecting local cycling networks to County-wide facilities
- Development and distribution of promotional materials
- Ongoing support for evaluation and monitoring efforts including cycling counts

Secondary Partners

Secondary partners are responsible for providing input on projects that directly or indirectly impact lands they own, or concerns matters they possess expertise on. This can include stakeholders who hold some form of jurisdiction relevant to construction of a new cycling facility or the administration of recommended programs and policies.

Key Partners

+ Southwestern Public Health
+ Oxford County Trails Council
+ Conservation Authorities
+ Ontario Ministry of Transportation
+ School Boards
+ Local Businesses
+ Cycling Clubs and Interest Groups
+ Ontario Provincial Police – Oxford Detachment

5.0

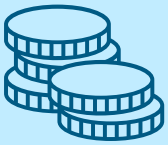
Summary & Next Steps

Oxford County is well positioned to establish itself as a leader in its support of cycling among rural Counties in Ontario. With a strong foundation of existing cycling facilities, a dedicated group of volunteers and partners, and a policy regime that supports the actions identified in this Plan, the County has all the tools it needs to be able to make cycling safer, more convenient and more accessible for residents and visitors alike. The recommendations contained in the CMP are meant to support the County in moving towards a future where the Vision “to create an integrated and connected cycling network that promotes active transportation, tourism, and low carbon travel options as part of a sustainable multi-modal transportation network” has been achieved. A summary of the recommendations contained in the CMP are listed below.

Table 2 provides a summary of all the CMP Actions (both completed and recommended) for Oxford County to promote cycling for all users.

Table 2. Summary of CMP Actions

Environmental Strategy	
Action #1: Detail Existing Conditions 	• Continue to build upon precedent investments made by Oxford County, the area municipalities, local committees and interest groups and other agencies • Ensure that cycling network will include realistic recommendations based on existing conditions • Establish a foundation and inventory of assets to support management • Integrate the previously planned and promoted routes and facilities adopted prior to the development of the CMP
Action #2: Adopt Proposed Cycling Network 	• Primary network will improve connectivity between the County's main urban areas including Woodstock, Ingersoll and Tillsonburg • Secondary connections will provide access to smaller settlement areas, but they should be reviewed for future opportunities and community interests • Route selection and facility identification are based on the criteria of feasibility, connectivity and accessibility • The paved shoulder policy requires 1.0m paved shoulders on County Roads that can accommodate that surface width

Action #3: Apply Associated Facility Design Guidance 	• Oxford County's proposed cycling network and facilities are determined by reviewing trusted references and applicable best practices, including the following documents: ○ OTM Book 18: Cycling Facilities (2021) ○ MTO Bikeways Design Manual (2014) ○ TAC Geometric Design Guide for Canadian Roads (2012) ○ TAC Bikeway Traffic Control Guideline for Canada (2012)
Economic Strategy	
Action #1: Fully Cost All CMP Recommendations 	• Rely on unit prices from the past projects of other municipalities in Southern Ontario • Facility costs assume typical environmental conditions and topography • Should not be prescriptive but offer a preliminary estimate of potential cost impacts • Should serve as the foundation for annual budgetary decisions and updates • Exclude voluntary efforts made by County staff, community members or partners
Action #2: Develop a Reasonable Funding Strategy to Finance Recommendations 	• Internal funding opportunities include Development Charges, Capital Budget, Operating Budget, and Municipal Partnership Fund • External funding sources include federal, provincial and local funding streams • The Province-Wide Cycling Network (41.9km) within the County is eligible to apply for the MTO funding source and the federal Active Transportation Fund

Action #3: Post Implementation Monitoring Scheme 	• Demonstrate the value of cycling projects to the public and elected officials • Accurately track the success of a program or facility post-implementation • Invest through data-driven measures of success • Fulfill requirements for funding from varying levels of government • Yield intended community outcomes, as defined within the RCPU's vision and actionable objectives • Document simple and understandable information for a wide range of audience • Meaningfully implementing decisions going forward
Social Strategy (Future Programming Considerations)	

Action #1: Establish an Inter-Municipal Working Group 	• Establish a local advisory body within the government to support CMP recommendations
	• Include key representatives from the County and local municipal staff members, Tourism Oxford and Southwestern Public Health
	• Benefits of having an inter-municipal working group:
	  ○ Share information related to cycling capital project plans and advocate on continuous cycling routes
	  ○ Pursue available external funding opportunities
	  ○ Develop and deliver cycling encouragement, education and promotion programs
	  ○ Update emerging trends in planning and design of cycling facilities

Action #2: Position the County as a Regional Knowledge Sharing Hub 	• Create a distinctive brand to promote and educate cycling in Oxford County • Develop marketing strategies and campaigns to show that cycling is easy, fun, and normal activity that people can participate in • Provide materials and toolkits to support cycling-related initiatives for key partners • Expand the mandate of the Oxford County's Cycling Advisory Committee to include all Active Transportation initiatives and empower them to play a bigger administrative role
Action #3: Strengthen Key Partnerships in Delivering the CMP 	• Introduce and fund the Cycling into the Future (CITF) program into the County's School Systems • Initiate and facilitate routinely social rides within the community

OXFORD COUNTY

Report No. PW 2022-34
Attachment No. 2

PROPOSED CYCLING NETWORK

PERTH EAST
WILMOT
KITCHENER
STRATFORD
PERTH SOUTH
NORTH DUMFRIES
COUNTY OF BRANT
THAMES CENTRE
MALAHIDE
BAYHAM
NORFOLK COUNTY

TOWNSHIP OF EAST ZORRA - TAVISTOCK
TOWNSHIP OF BLANFORD - BLENHEIM
TOWNSHIP OF ZORRA
CITY OF WOODSTOCK
TOWNSHIP OF NORWICH
TOWN OF INGERSOLL
TOWNSHIP OF SOUTH - WEST OXFORD
TOWN OF TILLSONBURG

INNERKIP
EMBRO
THAMESFORD
MT ELGIN
DEREHAM CENTRE
OTTERVILLE
NORWICH
DELMER

COUNTY RD 24
COUNTY ROAD 5
COUNTY RD 59
COUNTY RD 8
COUNTY RD 36
COUNTY RD 28
COUNTY RD 6
COUNTY RD 29
COUNTY RD 3
COUNTY RD 33
COUNTY RD 119
COUNTY RD 16
COUNTY RD 2
COUNTY RD 4
COUNTY RD 9
COUNTY ROAD 14
COUNTY ROAD 22
COUNTY RD 45
COUNTY RD 12
COUNTY RD 21
COUNTY ROAD 46
COUNTY RD 13
COUNTY RD 18
COUNTY RD 10
COUNTY RD 20
COUNTY ROAD 37

HIGHWAY 401

O P U

0 2.5 5 10 km

Legend

Proposed Cycling Network

- Primary cycling network
- *Dotted lines represent segments of the primary cycling network that are located on the MTO Province-wide Cycling Network*
- Secondary cycling network
- Local connecting link[1]
- Proposed off-road trail

1. These routes form part of the primary network but include segments on local roads (not under the County's jurisdiction) that are part of the MTO Province-wide Cycling Network.

Other Features

- Trans Canada Trail (on-road)
- Off-road trail (trail permits cycling)
- Off-road trail (trail does not permit cycling)
- Provincial Highway
- County Road
- Municipal Road (Paved)
- Municipal Road (Gravel)
- O Overpass crossing of Highway 401
- U Underpass crossing of Highway 401
- P Carpool Parking
- Railway
- Park or County Forest
- Waterbody
- Municipal Boundary
- Interregional Connection Point - Secondary Network
- Interregional Connection Point - Primary Network

MAP 2A

BUFFERED PAVED SHOULDER