DRAFT | SEPT 2023

CONNECTING Oxford 2024

Transportation Master Plan

Oxford County

Growing stronger together

PARSONS

Executive Summary

Introduction

Connecting Oxford 2024, Oxford County's Transportation Master Plan (TMP), is a strategic long-term planning document that outlines and defines policies, programs and infrastructure improvements needed to manage both existing and future transportation demands to the year 2046.

The plan is an update to the 2019 TMP and was developed within the context and builds upon the foundation of several key planning documents including, but not limited to:

- Oxford County Official Plan (1995, as amended)
- Oxford County Phase One Comprehensive Review (2020)
- Oxford County Strategic Plan (2020)
- Provincial Policy Statement (2022)
- Cycling Master Plan (2021)
- Trails Master Plan (2014)
- Renewable Energy Action Plan (2022)
- Asset Management Plan (2022)
- Connecting the Southwest: A Draft Transportation Plan for Southwestern Ontario (2020)
- New Directions – Advancing Southwestern Ontario's Public Transportation Opportunities (2016)
- Empowering Ontario's Short Line Railways (2017)
- Steel Corridors of Opportunity – Maximizing the Benefits of Southwestern Ontario's Freight Railways (2018)
- SouthwestLynx – Integrated High-Performance Public Transportation for Southwestern Ontario (2018)

The multi-modal TMP focuses on supporting different modes of transportation (i.e., public transportation, passenger/freight rail, automobiles, cycling, walking, etc.) with infrastructure and policy provisions to support freight/goods movement, agriculture mobility, corridor access management and low-carbon transportation, to support a safe, effective, and sustainable transportation network.

Vision and Strategic Objectives

Connecting Oxford 2024 is guided by the following **Vision Statement**:

From 2024 to 2046, Oxford County will be supported by a transformative transportation system to lead and achieve sustainable and efficient outcomes and benefits, while promoting a safe, efficient, and sustainable multimodal transportation network to move people and goods into and throughout the County, including access and connections to opportunities and essential services, while improving mobility for all types of road users and communities.

The following **Strategic Objectives** have guided the development of the 2024 TMP and are strongly reflected in its final policies, programs and recommendations:

- Achieve effective integration of transportation planning, growth management and land use planning to develop a Transportation Strategy that accommodates growth and changes to 2046, and that effectively supports land use objectives as defined in County Official Plan Update (currently underway) and other existing and ongoing planning initiatives;
- Develop a practical and financially achievable implementation plan that supports **all modes of travel** within the County's transportation system (i.e., walking, cycling, driving, commuter/freight rail, agricultural machinery, local/intercommunity transit) while promoting economic, social and environmental sustainability;
- Recommend measures for promoting **safer transportation** and **healthy communities**;
- Minimize conflict between non-local and local traffic by defining a hierarchy of roads within the County that moves people and goods throughout the County efficiently;
- Provide a forum for input and awareness with **the public** and **Area Municipalities** for transportation system initiatives; and
- Identify transportation demand management strategies to **reduce single occupant vehicle trips** (transit, active transportation, carpooling, work from home) to achieve the 2046 mode share target shown below in **Figure ES.4**.

Plan Development

Preparation of the 2024 TMP followed the Municipal Class Environmental Assessment (Class EA) Master Plan process. The TMP serves to satisfy Phases 1 (identify the problem) and 2 (identify alternative solutions to the problem) of the five-phase Municipal Class EA planning and design process. Project-specific investigations may be required to satisfy the Municipal Class EA requirements (Phases 3 & 4) before implementation of each project (i.e., Schedule C Class EA Studies).

The projects identified in the TMP are subject to the applicable policies outlined in the Lake Erie and Thames-Sydenham and Region Source Protection Plan. For the project specific Class EA studies that will be completed for any future Schedule B and C projects identified in the TMP, the Project File reports/Environmental Study Reports will have to identify and describe the specific source protection policies that apply to those projects.

In keeping with the principles of environmental assessment, the development of the 2024 TMP included a comprehensive and inclusive consultative process involving the residents, businesses and stakeholders of the County and its Municipalities; representatives of County and Area Municipal staff; agencies of the Provincial and adjacent Municipal governments; Conservation Authorities; Indigenous Communities; and other interest groups.

Existing and Future Conditions

Oxford County has a diverse transportation system which supports residents, commuters and goods movement. The road network consists of several Provincial Highways, County Roads (arterial roads), and Local Roads (under the jurisdiction of the Area Municipalities), all of which provide the foundation for vehicular traffic, active transportation, goods movement and transit operations (Woodstock Transit, T:Go). The County has an established off-road trails system providing further active transportation and recreational opportunities.

Main/Class 1 rail (CP, CN) and Short line rail (OSR, Gio Rail) through the County provides vital freight goods movement. VIA Rail also utilizes the main freight rail lines to offer inter/intra-regional passenger rail transit to local and neighbouring residents. Tillsonburg Regional Airport is a Canada Customs Airport of Entry, welcoming international flights, handling general aviation aircraft up to 15 passengers and serves flight training providers, flying clubs, private and corporate aircraft, Emergency Medical Services (EMS), and Canadian Military aircraft.

The existing County travel patterns were derived through a review of *StreetLight* data and the 2021 Census. Due to the COVID-19 Pandemic, work from home (WFH) within the Transportation Demand Management had notably increased in the 2021 Census mode share data. For use in the future network assessment and to establish a baseline for mode share moving forward, a revised rate was developed which takes into consideration the lifting of COVID-19 restrictions and the partial return to pre-pandemic travel patterns as hybrid work has become the new normal. The updated 2024 mode share is displayed below in **Figure ES.1**.

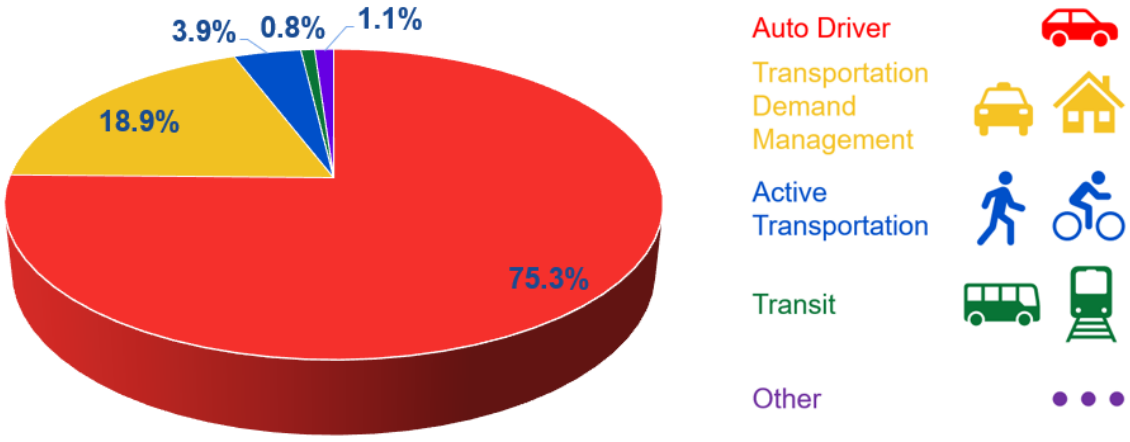

FIGURE ES.1: 2024 TRANSPORTATION MODE SHARE

Future demand on the County's transportation network is expected to increase as the County grows. The County has seen large population growth between 2016-2021, almost doubling its growth rate from 2011-2016. This growth is expected to continue, as recent forecasts project the County to add approximately 33,000 more residents and 15,000 more jobs between 2024 and 2046. Analyses were conducted to review the impact of the projected population and employment growth on Oxford's transportation network.

This anticipated growth was factored into the transportation network based on population and employment growth forecasts, land use and future development patterns, collision data, existing road network and traffic conditions, origin-destination data, and trip generation/travel demand estimation. A capacity analysis was completed to assess the current and future conditions, including the level of service on County Roads and road network capacity constraints.

Figure ES.2 summarizes the trip origins and destinations for Oxford County residents. The charts indicate the largest trip origins and destinations are in/to Woodstock and approximately 90% of resident trips are within the County. The remaining 10% of resident trips are to other municipalities.

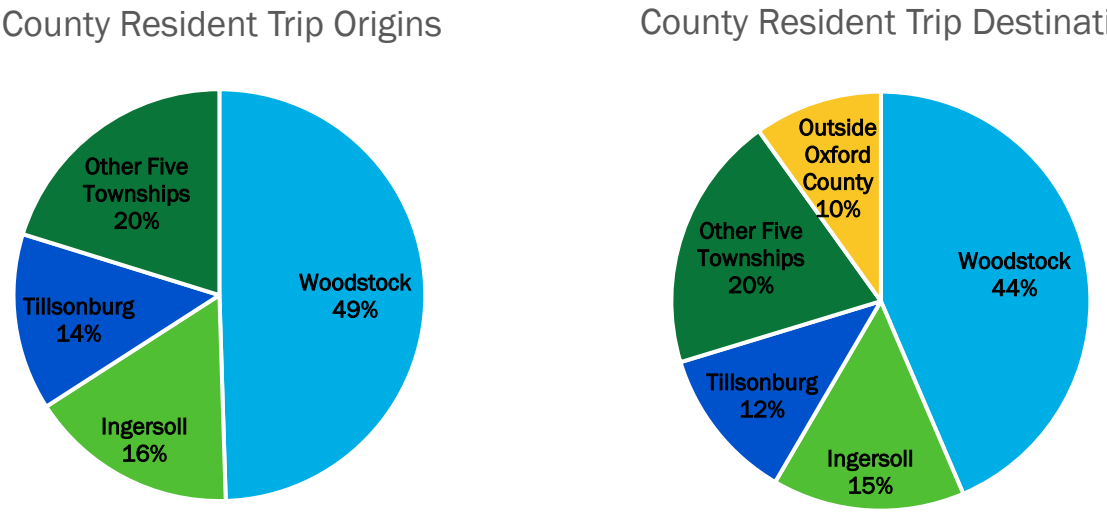

FIGURE ES.2: COUNTY RESIDENT TRIP ORIGINS AND DESTINATIONS

Figure ES.3 details the origins and destinations for trips into Oxford County. Of note, nearly half of the inbound trips from neighbouring jurisdictions are destined for the urban centres of Woodstock, Ingersoll and Tillsonburg. The remaining inbound trips are destined for the five townships within the County.

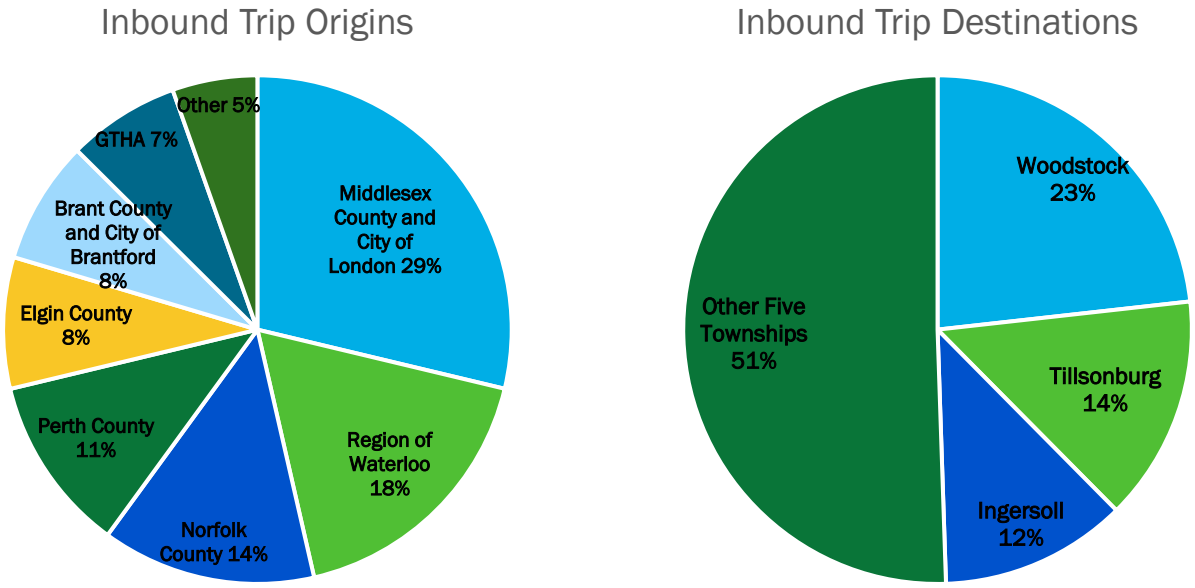

FIGURE ES.3: INBOUND TRIP ORIGINS AND DESTINATIONS

Public Engagement

In keeping with the principles of the Environmental Assessment process, the TMP featured a high degree of public and stakeholder involvement. The following summarizes the public announcements and consultation opportunities for public and agency input and participation in the study:

- Notice of Study Commencement in March 2022;
- News releases, radio ads, and social media posts;
- Two virtual Public Consultation Centres, in September 2022 and March 2023;
- Six in-person consultation events at Canada's Outdoor Farm Show in Woodstock (September 2022), Ribfest in Tillsonburg (September 2022), Ingersoll Town Council Chambers (September 2022, March 2023), Oxford Council Chambers in Woodstock (March 2023), and Tillsonburg Council Chambers (March 2023);
- Updates and references to the study through the Oxford County website and "Speak-Up Oxford";
- Two surveys and interactive maps; and
- Six advisory committee meetings with the Internal Technical Review Committee (InTAC) (March 2022, February 2023), External Technical Review Committee (ExTAC) (March 2022, February 2023), and Economic Development Committee (EcDev) (April 2022, April 2023).

Agencies, stakeholders, and Indigenous Communities were notified at key points in the study process, and they were encouraged to provide any information they felt was necessary for the Project Team to consider during the study. All comments received from agencies, stakeholders and Indigenous Communities were recorded and considered. **Appendix A** provides the complete record of public consultation for the TMP.

Preferred Transportation Strategy to 2046

While previous mode share targets identified in the 2019 TMP have already been achieved, the 2024 TMP preferred transportation strategy continues to focus on increasing the share of sustainable modes of transport. Of note, the 2024 TMP has sought to achieve further increases to the active transportation and transportation demand management mode shares while further reducing reliance on single occupancy vehicle (auto driver) mode share as shown in **Figure ES-4**.

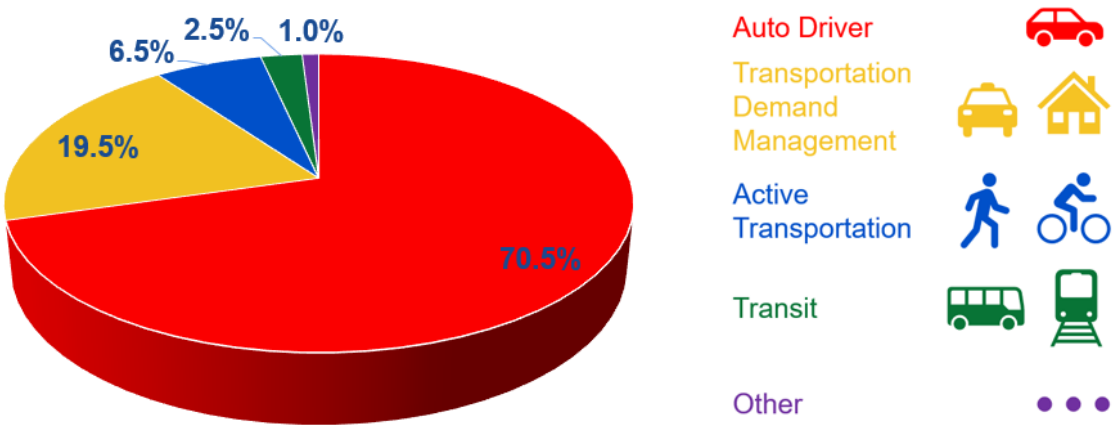

FIGURE ES.4: 2046 MODE SHARE TARGETS

Several alternative solutions to address the future demands on the County's transportation network were evaluated against environmental, social, economic and transportation service criteria. From this analysis, a preferred TMP strategy and implementation plan to 2046 was developed which includes, but is not limited to, the following initiatives:

- **Road Network Strategy**
  - Ongoing implementation of Road Infrastructure Improvements (road widening/urbanization, intersection upgrades, bridge and culvert replacements, railway crossing enhancements, etc.) and Studies (network performance studies, intersection feasibility studies, Class EA studies etc.).
  - Maximizing road safety through continued speed management and traffic calming, collision database monitoring, and community safety zones.
  - Ongoing initiatives to promote Transportation Demand Management (carpooling, telecommuting, flexible work hours, etc.) to reduce future travel demand and the potential need for road widenings/expansions.
  - Continued monitoring of the County Road network to ensure adequate Traffic Control and Levels of Service are provided.

- **Active Transportation Strategy**
  - Expanding cycling infrastructure through implementation of the 2021 Cycling Master Plan (including ongoing provisions for a wider asphalt platform for on-road cycling as part of regular road resurfacing programs).
  - Expanding and focusing on creating enhanced pedestrian infrastructure.
  - Updating the 2014 Trails Master plan.

- **Goods Movement Strategy**
  - Ongoing infrastructure provisions to accommodate transport trucks and agricultural machinery while promoting accessibility and route connectivity.
  - Ongoing advocacy support for regional coordination of freight rail and strategic investments.
  - Developing a Goods Movement Strategy including a goods priority network.

- **People Movement Strategy**
  - Ongoing implementation of County-wide Speed Management, Traffic Calming and Road Safety Program.
  - Ongoing advocacy support for integrated Intra-Regional and Inter-Regional Public Transportation Systems for intercommunity bus networks and enhanced commuter rail service.
  - Enhancing mobility through the planning of mobility hubs and service integration.

- **Transportation System Sustainability and New Technologies Strategy**
  - Ongoing implementation of Low Carbon Transportation alternatives (electric vehicle charging stations, alternative fuel vehicles, autonomous vehicles, etc.).
  - Consideration of Green Infrastructure and Technology practices (roundabout intersection improvements, Warm Mix asphalt, reclaimed concrete and asphalt).

Implementation

The 2024 TMP is the overarching strategic document that provides a framework for how Oxford County will address its transportation needs to the year 2046. It describes, anticipates and plans for the movement of people and goods in a multi-modal, accessible transportation system. The TMP is not a provincially legislated document and therefore has no statutory authority. That authority is provided through the Oxford County Official Plan by incorporating the main policy directions of the TMP.

The primary purpose of the TMP is to guide the County's transportation related decision making and provide direction for its discussions and negotiations with other agencies and governments. In addition, the TMP is not just a plan of infrastructure actions. It provides the policy framework on which to make operational decisions for the County and the respective projects identified in the transportation master plan implementation program will provide a baseline for Oxford County's future capital budgets.

To assist in guiding the County in implementing the road infrastructure improvements, policy and advocacy plans recommended in the TMP, an implementation plan with suggested timing for the various projects and initiatives has been developed. The implementation plan is broken down by major category and can be seen in **Table ES.1** to **Table ES.11.**

A regular review of the TMP is proposed every five years. The County may amend the TMP in the intervening period to incorporate changes resulting from an Official Plan review process or other major initiatives.

TABLE ES.1: IMPLEMENTATION PLAN – ANNUAL CAPITAL PROGRAMS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	Guide Rail Installation	✓	✓	✓
Countywide	Pedestrian Crossings	✓	✓	✓
Countywide	Intersection Illumination	✓	✓	✓
Countywide	Cycling Infrastructure	✓	✓	✓
Countywide	Road Rehabilitation and Resurfacing	✓	✓	✓
Countywide	Bridge Misc. Repairs per Needs Study/OSIM	✓	✓	✓
Countywide	Crack Sealing	✓	✓	✓
Countywide	Urban Storm Sewer	✓	✓	✓
Countywide	Rural Storm Sewer	✓	✓	✓
Countywide	Retaining Walls	✓	✓	✓
Countywide	Traffic Signals	✓	✓	✓
Countywide	Traffic Calming	✓	✓	✓

TABLE ES.2: IMPLEMENTATION PLAN – MAJOR ROAD RECONSTRUCTION / REHABILITATION

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 3 (Road part of Princeton Drainage Project includes Urbanization)	✓		
Woodstock	Oxford Road 9 (Oxford Road 2 to #226 Ingersoll Road) - Phase 2 *	✓		
Zorra	Oxford Road 16 (from 31st Line to Kintore) - Phase 2	✓		
Zorra / Norwich	Oxford Road 19 (Highway 19 to Norfolk County Border)		✓	
Tillsonburg	Oxford Road 53 (Brock Street E to Highway 19)			✓
Woodstock	Oxford Road 59 (Dundas Street to Henry Street)			✓
Woodstock	Oxford Road 35 (Oxford Road 59 to Oxford Road 54) *	✓		
Woodstock	Oxford Road 35 (Oxford Road 54 to Lansdowne Avenue) *		✓	

Note: * - The project will include the implementation of the cycling facility of the Primary Network as identified in the Cycling Master Plan

TABLE ES.3: IMPLEMENTATION PLAN – ROAD URBANIZATION

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Woodstock	Oxford Road 35 (Woodall Way to Oxford Road 4)		✓	
Ingersoll	Oxford Road 9 / King Street (Oxford Road 10 to Town Limits) (1)	✓		
Blandford-Blenheim	Oxford Road 22 / Oxford Road 8 (in the village of Bright)		✓	
Norwich	Oxford Road 59 (within the village of Burgessville)	✓		

Note: (1) - The project should include coordination with an improvement identified in the County's 2024 W/WW MP.

TABLE ES.4: IMPLEMENTATION PLAN – BRIDGE / CULVERT REHABILITATIONS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	2024 Design (2026 Construction)	✓		
Countywide	2025 Design (2027 Construction)	✓		
Countywide	2026 Design (2028 Construction)	✓		
Countywide	2027 Design (2029 Construction)	✓		
Countywide	2028 Structures: 843927, 856645, 816765, 324873, 593175 & 963929	✓		
Countywide	2028 Design (2030 Construction)	✓		
Countywide	2029 Structures: 596279, 596020, 684656, 842608, 376551 & 686115		✓	
Countywide	2029 Design (2031 Construction)		✓	
Countywide	2030 Structures: 816111, 684200, 195840, 885646, 465125 & 975130 (Boundary)		✓	
Countywide	2030 Design (2032 Construction)		✓	
Countywide	2031 Structures: 922773, 927566, 263226, 375488, 886117 & 592540		✓	
Countywide	2031 Design (2033 Construction)		✓	
Countywide	2032 Structures: 884114, 595880, 375739, 565718, 375770, 375806, & 985320 (Boundary)		✓	
Countywide	2032 Design (2034 Construction)		✓	
Blandford-Blenheim	Culvert Rehab. 686444 - OR 2, 1.7km E of 22 (Boundary)	✓		
Blandford-Blenheim	Bridge Rehab. 686843 - OR2, 1.3km W of 3 (Boundary)	✓		
Blandford-Blenheim	Culvert Repl. 687425 - OR 2, 4.35km E of 25 (Boundary)	✓		
Blandford-Blenheim	Culvert Rehab. 715213 - OR 4, 0.75km N of 35	✓		
Blandford-Blenheim	Bridge Rehab. 805907 - OR 29, 0.3km E of 4	✓		
Blandford-Blenheim	Culvert Rehab. 886609 - OR 8, 2.7km E of 22	✓		
Norwich	Bridge Rehab. 774050 - OR 14, 3.2km N of 21	✓		
Norwich	Culvert Rehab. 684802 - OR 2, 0.4km W of 30	✓		
Norwich	Culvert Rehab. 814230 - OR 22, 0.3km N of Gunn's Hill Rd (Boundary)	✓		
Norwich	Bridge Rehab. 225536 - OR 19/Main St, 2.1km W of 59	✓		
Norwich	Bridge Rehab. 773216 - OR 59, 0.15km S of 18	✓		

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Bridge Rehab. 813810 - OR 22, 0.5km N of 21 (Boundary)	✓		
Norwich	Bridge Rehab. 814010 - OR 22, 0.5km S of Substation Rd (Boundary)	✓		
South-West Oxford	Bridge Rehab. 224538 - OR 19, 2.8km E of 19	✓		
South-West Oxford	Culvert Repl. 263548 - OR 27, 0.1km E of 10	✓		
Woodstock	Bridge Rehab. 59755 - OR 59, 0.4km N of 35	✓		
Zorra	Culvert Repl. 194950 - OR 119, 0.5km S of 2	✓		
Zorra	Bridge Rehab. 843613 - OR 16, 0.01km E of 31st Ln, with stream realignment	✓		
Zorra	Bridge Rehab. 682935 - OR 2, 0.15km E of 119	✓		
Zorra	Bridge Rehab. 784064 - OR 33, 0.4 km E of 6	✓		
Zorra	Culvert Repl. 843164 - OR 16, 1.9km E of 119	✓		
Zorra	Bridge Rehab. 374623 - OR 6, 0.1km N of 9	✓		
Zorra	Bridge Rehab. 643977 - OR 16, 0.5km W of 6	✓		
Zorra	Culvert Repl. 682563 - OR 2, 0.13km E of Cobble Hill Road (Boundary)	✓		

TABLE ES.5: IMPLEMENTATION PLAN – CYCLING INFRASTRUCTURE

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Woodstock / East Zorra-Tavistock	Oxford Road 4 from Oxford Road 35 to Oxford Road 29	✓		
Blandford-Blenheim	Oxford Road 29 from Oxford Road 4 to Oxford Road 36	✓		
Blandford-Blenheim	Oxford Road 36 from Oxford Road 29 to Piper St			✓
Norwich	Oxford Road 13 from Oxford Road 59 to Trans Canada Trail		✓	
South-West Oxford	Oxford Road 9 from Woodstock to Ingersoll	✓		
Woodstock / East Zorra-Tavistock	Oxford Road 17 from Hickson Trail to Oxford Road 4		✓	
East Zorra-Tavistock	Oxford Road 59 from Oxford Road 8 to Oxford Road 24		✓	
East Zorra-Tavistock	Oxford Road 24 from Oxford Road 59 to Punkeydoodles Ave	✓		
Woodstock	Oxford Road 59 from Hickson Trail to Oxford Road 35		✓	
Woodstock	Oxford Road 54 / Oxford Road 59 from Oxford Road 35 to Juliana Drive		✓	
Zorra	Oxford Road 6 from Oxford Road 28 to Oxford Road 8			✓
Zorra	Oxford Road 8 from Oxford Road 6 to Hickson Trail			✓
Zorra	Oxford Road 10 from Oxford Road 20 to Oxford Road 119			✓
Norwich	Oxford Road 59 from Oxford Road 54 to Oxford Road 13			✓
Zorra	Oxford Road 119 from Oxford Road 7 to Oxford Road 28			✓

TABLE ES.6: IMPLEMENTATION PLAN – UNDERTAKE INTERSECTION UPGRADES / IMPROVEMENTS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 8 & Oxford Road 36 (Roundabout) – Boundary Waterloo Led	✓		
Woodstock	Oxford Road 15 & Springbank Avenue – North Right Turn Lane	✓		
Norwich	Oxford Road 59 & Palmer, Oxford 59 & Tidey – Turning Radius Improvements	✓		
Zorra	Oxford Road 6 & Oxford Road 16 – Overhead Flashing Lights	✓		
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 28 – Overhead Flashing Lights	✓		
Zorra	Oxford Road 2 & Middleton Street – Signalization and Turning Lanes		✓	
Woodstock	Oxford Road 59 & Pattullo Avenue – Realignment (City of Woodstock Led)	✓		
Woodstock	Oxford Road 12 (Mill St) and Oxford Road 2 (Dundas St.) - Phase 2 – North Right Turn Lane		✓	
Tillsonburg	Oxford Road 20 (North Street) & Oxford Road 53 (Tillson Avenue) – Signalization (1)	✓		
Woodstock	Oxford Road 12 & Juliana Drive – Roundabout		✓	
Woodstock	Oxford Road 12 & Athlone Avenue – Roundabout		✓	
East Zorra-Tavistock	Oxford Road 24 & Oxford Road 5 (Punkeydoodles) – Study to be completed at the end of 2023	✓		
Woodstock	Oxford Road 4 & Oxford Road 2 – Duel Left Turn Lane		✓	
Norwich	Oxford Road 2 & Oxford Road 55 (Township 53) – Roundabout	✓		
Ingersoll	Oxford Road 10 & Thomas Street – Signalization			✓
Ingersoll	Oxford Road 10 & Oxford Road 9 – Signalization			✓
Ingersoll	Oxford Road 10 & Union Road – Signalization			✓

Note: (1) - The project should include coordination with an improvement identified in the County's 2024 W/WW MP.

TABLE ES.7: IMPLEMENTATION PLAN – UNDERTAKE INTERSECTION CONTROL FEASIBILITY STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Oxford Road 13 & Oxford Road 18		✓	
Blandford-Blenheim	Oxford Road 29 & Oxford Road 36		✓	
South-West Oxford	Oxford Road 6 & Oxford Road 9		✓	
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 24		✓	
Woodstock	Oxford Road 35 & Springbank Avenue	✓		
Woodstock	Oxford Road 54 & Oxford Road 35			✓
Woodstock	Oxford Road 15 & Oxford Road 12		✓	
Zorra	Oxford Road 2 & Oxford Road 6			✓
Zorra	Oxford Road 6 & Oxford Road 33	✓		
Zorra	Oxford Road 28 & Oxford Road 6	✓		
East Zorra-Tavistock	Oxford Road 60 & Oxford Road 33	✓		
South-West Oxford	Oxford Road 6 & Karn Road	✓		
East Zorra-Tavistock	Oxford Road 8 & Oxford Road 60			✓
Zorra	Oxford Road 119 & Oxford Road 2		✓	
Ingersoll	Oxford Road 10 & Thompson Road			✓
Norwich	Oxford Road 13 / Oxford Road 46 / Oxford Road 59	✓		
Woodstock	Oxford Road 9 & Oxford Road 2		✓	

TABLE ES.8: IMPLEMENTATION PLAN – UNDERTAKE OTHER INFRASTRUCTURE PROJECTS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 3 - (Drain part of Princeton Drainage Project by Township of BB)	✓		
Woodstock	Grade Separation - Oxford Road 59 and CNR			✓
Woodstock	Grade Separation - Oxford Road 9 and CNR			✓
Ingersoll	Railway Crossing Upgrades - Oxford Road 10 (at OSR Tracks)	✓		
Ingersoll	Railway Crossing Upgrades - Oxford Road 9 (at OSR Tracks)	✓		

TABLE ES.9: IMPLEMENTATION PLAN – TRANSPORTATION PLANS, CONDITION ASSESSMENTS AND OTHER STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	Transportation Master Plan	✓	✓	✓
Countywide	Transportation Development Charges Technical Study	✓	✓	✓
Countywide	Road Needs Study	✓	✓	✓
Countywide	Cycling Master Plan	✓	✓	✓
Countywide	Trails Master Plan	✓		✓
Countywide	Goods Movement Priority Network Study	✓		
Countywide	Grade Level Crossing Assessment		✓	

TABLE ES.10: IMPLEMENTATION PLAN – UNDERTAKE CLASS EA STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Oxford Road 18 (Oxford Road 13 to Highway 19)	✓		
Tillsonburg / South-West Oxford	Oxford Road 20 (Tillsonburg to Brownsville) *		✓	
Blandford-Blenheim	Oxford Road 22 (Oxford Road 23 to Oxford Road 21/New Durham Road)			✓
Zorra	Oxford Road 28 (Oxford Road 119 to Oxford Road 5) *	✓		
Norwich	Oxford Road 14 (Oxford Road 15 to Oxford Road 59)		✓	
Blandford-Blenheim	Oxford Road 36 (Oxford Road 47 to Oxford-Waterloo Road)			✓
Woodstock	Oxford Road 4 & Oxford Road 15 Intersection	✓		
Tillsonburg	Oxford Road 53 (Brock Street E to Highway 19)		✓	
Tillsonburg	Oxford Road 53 (Oxford Road 20 to Brock Street E)		✓	
Ingersoll	Oxford Road 119 (Clarke Road to Highway 401)	✓		
Woodstock	Oxford Road 59 (Dundas Street to Henry Street)			✓
Woodstock	Oxford Road 17 (Oxford Road 59 to Oxford Road 4), Oxford Road 17 & Oxford Road 4 Intersection	✓		
East Zorra-Tavistock	Oxford Road 60 (Oxford Road 8 to Oxford Road 4), Oxford Road 60 & Oxford Road 4 Intersection	✓		
Tillsonburg	Oxford Road 51 (Highway 19 to Mall Road)			✓
Norwich	Oxford Road 13 / Oxford Road 46 / Oxford Road 59			✓
Woodstock	Grade Separation - Oxford Road 59 and CNR		✓	
Woodstock	Grade Separation - Oxford Road 9 and CNR		✓	

Note: * - The project will include the implementation of the cycling facility of the Primary Network as identified in the Cycling Master Plan

TABLE ES.11: IMPLEMENTATION PLAN – POLICIES AND INITIATIVES

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
Road Network	Maximizing Road Safety	Speed Management & Traffic Calming	Continue Speed Management, Traffic Calming and Road Safety Programs	Ongoing		
			Expand the Program to include Intersection Safety Improvements	✓		
		Collision Database	Continue to update and maintain the Collision Database	Ongoing		
			Perform a Yearly Review to inform the Location Identified for Safety Measure Improvements	Ongoing		
		Roundabout Implementation	Consider roundabout implementation as an alternative to traditional signalization	Ongoing		
		Intersection Control Feasibility Study	Continue monitoring of County intersection functionality through ongoing Intersection Control Feasibility Studies	Ongoing		
		Emergency Detour Routing	Maintain Emergency Detour Routing	Ongoing		
		Automated Speed Enforcement	In partnership with the Area Municipalities, consider the potential implementation of automated speed enforcement in accordance with the Safer School Zones Act	✓		
	Maximizing Road Efficiency	Seasonal Load Restrictions	Consider implementing access management strategies that have reviewed and consider seasonal load restrictions	✓		
			Update the County Road seasonal load restrictions By-law		✓	
		Road Occupancy Permitting	Consider By-law implementation for enforcement of Road Occupancy Permits		✓	
	Railway Crossing Enhancements	Review and Updated Railway Crossings	Review and upgrade railway crossings in accordance with the Transport Canada regulations	Ongoing		
	Accommodating Future Growth	Transportation Demand Management	Continue to promote working from home through engagement with residents and businesses	Ongoing		
			Implement 2024 TMP Active Transportation and People Movement strategies	✓	✓	✓

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
		Ridesharing	Expand education and promotion of carpooling and ridesharing as a mode choice in the County	✓		
			Where applicable, support ridesharing programs			
		Carpooling	Advocate to the Ontario Ministry of Transportation and private landowners for the creation of new carpool lots	Ongoing		
			Consider options to provide active transportation and transit facilities at carpool lots	Ongoing		
Active Transportation	Cycling Infrastructure	Expanding Cycling Infrastructure	Coordinate implementation of the primary cycling network with the planned road rehabilitation program and 2021 Cycling Master Plan (CMP) prioritization strategy	Ongoing		
	Pedestrian Infrastructure	Expanding Pedestrian Infrastructure	Continue review of existing conditions and network	Ongoing		
			Ensure development and redevelopment plans integrate safe pedestrian infrastructure	Ongoing		
			Implement multi-use paths within road allowances (instead of sidewalks where feasible)	Ongoing		
			Ensure new road facilities follow accessible and best practice design guidance	Ongoing		
			Promote direct connections to link communities and important destinations within Oxford County	Ongoing		
			Integrate with other modes	Ongoing		
			Complete safety analysis of existing infrastructure	Ongoing		
		Pedestrian Safety and promotion programs	Establish key partnerships for programs to educate and encourage the public	Ongoing		
			Introduce/expand the use of staggered and/or extended pedestrian phasing at signals	Ongoing		
			Enhance opportunities to deliver information to the public in an accessible and easy-to-understand manner	Ongoing		
	Streetscape Improvements	Support Streetscape Improvements	Advocate and support Area Municipalities in developing streetscape improvements	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
	Trail Infrastructure	Expanding Trail Infrastructure	Facilitate trail development with Area Municipal partners and stakeholders	Ongoing		
			Explore options to develop trails with new developments	Ongoing		
			Complete an update to the 2014 Trails Master Plan	✓		
	Looking Ahead	Micro Mobility & New Technology Strategy	Monitor the need to develop a micro-mobility and new technology strategy	Ongoing		
Goods Movement	Supporting Rail Freight	Regional Coordination Strategy	Continue to engage Transport Canada, the Federal Government and its rail agencies (CN, CP) to undertake necessary freight rail enhancements	✓		
		Strategic Investments into Rail Freight Infrastructure	Engage local and regional governments to advocate for the Provincial and Federal government to provide funding to address freight rail infrastructure bottlenecks or tax credits for expanded rail sidings, transload, warehousing and distribution facilities	Ongoing		
			Advocate for the support of short line railways	Ongoing		
	Supporting Truck Freight	Goods Movement Strategy	Develop a goods movement priority network	✓		
			Construct truck route roadways to arterial road specifications and provide adequate turning radii and turning lane storage to accommodate freight, aggregate and agricultural vehicles	Ongoing		
			Provide adequate height and width under bridges when constructing new roads or undertaking road rehabilitation to facilitate existing rail services and transport trucks	Ongoing		
			Consider the potential for the development of a Freight Multi-modal Facility near the Highway 401/403 corridor, in the Goods Movement Priority Network		✓	
			Review opportunities for truck bypass routes within the Goods Movement Priority Network	✓		
	Supporting Agriculture	Agricultural Vehicle Design Considerations	Implement agricultural vehicle supportive design elements when completing road reconstructions and rehabilitations	Ongoing		
People Movement and	Expanding Intercommunity Transportation	Intercommunity Bus Transit	Ongoing support of intercommunity bus transportation and intermodal connections to commuter rail/mobility hubs	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
Public Transportation		Regional Inter-Community Bus Transit	Advocate for Regional Inter-Community Bus transportation connectivity and integration across Oxford	✓		
		Southwest Community Transit (SCT) Association	Continue to collaborate and promote the coordination and integration of Regional Inter-community bus transportation connectivity amongst SCT Association member municipalities	Ongoing		
	Enhance Commuter Rail	Enhanced Passenger Rail Service	Advocate for enhanced passenger rail service	Ongoing		
			Integrate with local and intercommunity bus transit and ensure adequate first/last mile transportation options	Ongoing		
			Work with Transport Canada, the Federal Government, and its rail agencies (CN, CP) to advocate and support studies which explore Southwestern Ontario passenger rail enhancements	Ongoing		
	Tillsonburg Airport	T:GO Bus Stop	Discuss the potential for a trial T:GO stop at Tillsonburg Airport with the Town of Tillsonburg transit authority	✓		
	Enhancing Mobility	Mobility Hubs	In collaboration with Community Planning and Area Municipalities, consider the designation of the Woodstock and Ingersoll train stations as “Mobility Hubs” to develop specific zoning to create a mixed-use, higher density urban form and increase community connectivity	✓		
			Facilitate integration of existing and future inter-community bus transportation or other modes of local transit at “Mobility Hubs” destinations through coordination with transit authority providers	Ongoing		
	Looking Ahead	Universal Basic Mobility	Promote Universal Basic Mobility through improved active transportation infrastructure, transit oriented development and micro mobility	Ongoing		
Transportation System Sustainability and New Technology Strategy	Electric Vehicles	Electric Charging Infrastructure	The County will support and facilitate initiatives of Area Municipalities in EV charging implementation and supportive policies	Ongoing		
			The County will support policies to develop EV charging infrastructure across the County	Ongoing		
	Autonomous Vehicles	Autonomous Vehicle Network	Implement AV network to facilitate testing of Level 3 to Level 5 AV as part of the Windsor to Ottawa network	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
		Municipal Alliance for Connected and Autonomous Vehicles in Ontario	Continue to work with the Municipal Alliance for Connected and Autonomous Vehicles in Ontario (MACAVO) on the development of a larger AVE road network serving Southwestern Ontario	Ongoing		
	Alternative Fuel Sources	Explore Opportunities to Utilize Alternative Fuel Sources	The County should explore opportunities to utilize and/or expand the use of alternative fuels	Ongoing		
	Alternative Road Construction Materials	Explore Opportunities to Utilize Alternative Construction Materials	The County should explore opportunities to utilize and/or incentivize the use of alternative road construction materials in rehabilitation or new projects	Ongoing		
	Looking Ahead	Connected Vehicles	Support Cooperative Truck Platooning Pilot Program	Ongoing		

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1.0 Introduction

1.1 Oxford County

Located in the heart of Southwestern Ontario, Oxford County is an upper-tier municipality consisting of eight lower-tier municipalities: the City of Woodstock, Town of Ingersoll, Town of Tillsonburg, Township of Zorra, Township of East Zorra-Tavistock, Township of Blandford-Blenheim, Township of South-West Oxford, and the Township of Norwich.

The County is situated at the junction of Highways 401 and 403, between the City of London and the Greater Toronto and Hamilton Area (GTHA). The County's main economic driver has historically been agriculture, however, it has been experiencing continued growth in residential, commercial, and industrial land uses over the last several decades which has led to an increasingly diversifying economy.

According to the 2021 Census, the County had a total population of 125,065 residents; 11,125 more than the 2016 Census. This growth is expected to continue well into the future, as projections have forecasted the County's growth to reach over 160,000 by 2046.

1.2 What is Connecting Oxford 2024?

Connecting Oxford 2024, Oxford County's Transportation Master Plan (TMP), is a strategic long-term planning document that outlines and defines policies, programs and infrastructure improvements needed to manage both existing and future transportation demands to the year 2046. The multi-modal TMP focuses on all modes of transportation (i.e., cycling, walking and private vehicles) with provisions to support freight/goods movement, agriculture mobility, corridor access management and low-carbon transportation, to support a safe, effective, and sustainable transportation network.

Connecting Oxford 2024 is guided by the following **Vision Statement**:

From 2024 to 2046, Oxford County will be supported by a transformative transportation system to lead and achieve sustainable and efficient outcomes and benefits, while promoting a safe, efficient, and sustainable multimodal transportation network to move people and goods into and throughout the County, including access and connections to opportunities and essential services, while improving mobility for all types of road users and communities.

1.3 Time for an Update

Oxford County's last TMP update was completed in 2019 and municipalities are required to update Transportation Master Plans every five years to review the plan status and adapt to changes in transportation trends including commuting and travel patterns, mode share, and economic and population growth trends.

The update to the TMP effectively considers:

- **Community Well Being** – Increased access and mobility through an emphasis on active transportation, people/goods movement, accessibility, sustainability and safety.
- **Balance Needs** - Changing travel patterns (i.e., work from home and needs of residents and businesses in rural and urban areas).

- **Economic Vitality** – The affordability of proposed network improvements and prioritization of capital implementation planning.
- **Increased Connectivity** - Facilitate further integration of inter-community and inter-regional transportation solutions.
- **Continued Focus on Road Safety** - To address ongoing concerns regarding user safety and speed management.

1.4 Master Planning Objectives

The following objectives have guided the development of the 2024 TMP and are strongly reflected in its final policies, programs and recommendations:

- Achieve effective integration of transportation planning, growth management and land use planning to develop a Transportation Strategy that accommodates growth and change to changes and that effectively supports land use objectives as defined in County Official Plan Update (currently underway) and other existing and ongoing planning initiatives;
- Develop a practical and financially achievable implementation plan that supports **all modes of travel** within the County's transportation system (i.e., walking, cycling, driving, commuter/freight rail, agricultural machinery, local/intercommunity transit) while promoting economic, social, and environmental sustainability;
- Recommend measures for promoting **safer transportation** and **healthy communities**;
- Minimize conflict between non-local and local traffic by defining a hierarchy of roads within the County that moves people and goods throughout the County efficiently;
- Provide a forum for input and awareness with **the public** and **Area Municipalities** for transportation system initiatives; and
- Identify transportation demand management strategies to **reduce single occupant vehicle trips** (transit, active transportation, carpooling, work from home) to achieve the 2046 mode share target shown below in **Figure 1**.

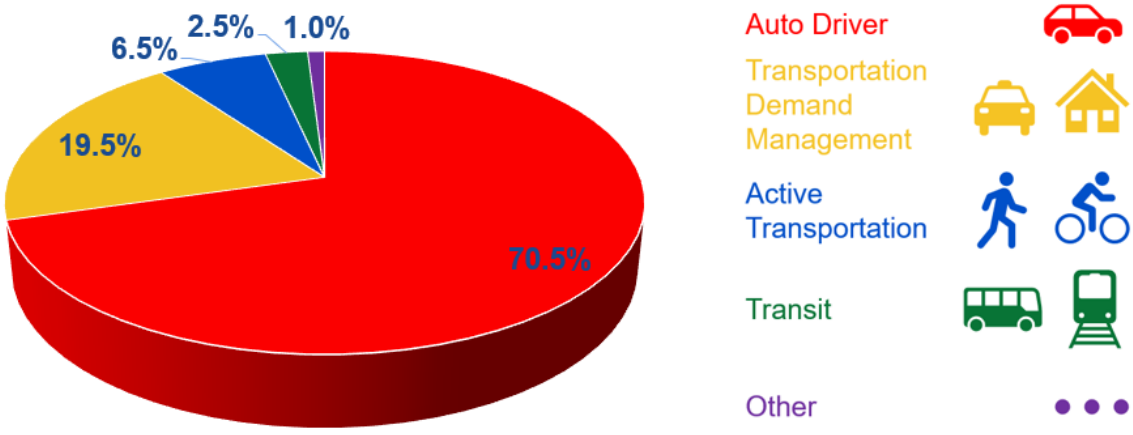

FIGURE 1: 2046 MODE SHARE TARGETS

2.0 Master Planning Process

2.1 Master Planning Status in the Environmental Assessment Process

The Municipal Class Environmental Assessment (Class EA, 2000 as amended in 2007, 2011, 2015 and 2023) process sets out the process that a proponent must follow to meet the requirements of the Ontario Environmental Assessment Act for a class or category of infrastructure projects. Projects are divided into schedules based on the type of projects and activities. Schedules are categorized as Exempt, B and C concerning the magnitude of their anticipated environmental impact. These are described briefly in the following paragraphs.

Exempt projects include various municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities that are limited in scale and have minimal adverse effects on the environment. These projects are exempt from the requirements of the Environmental Assessment Act. Most Exempt projects were formerly classified as Schedule A and A+ projects.

Schedule B projects are those which have a potential for adverse environmental effects. A screening process must be undertaken which includes consultation with directly affected public and relevant review agencies. Projects generally include improvements and minor expansions to existing facilities. The project process must be filed and all documentation prepared for public and agency review.

Schedule C projects have the potential for significant environmental effects and must follow the full planning and documentation procedures specified in the Class EA document. An Environmental Study Report (ESR) must be prepared and filed for review by the public and review agencies. Projects generally include the construction of new facilities and major expansions to existing facilities.

There are five key elements in the Class EA planning process. These include:

1. **Phase 1** – Identification of problem (deficiency) or opportunity;
2. **Phase 2** – Identification of alternative solutions to address the problem or opportunity. Public and review agency contact is mandatory during this phase and input received along with information on the existing environment is used to establish the preferred solution. It is at this point that the appropriate Schedule (B or C) is chosen for the undertaking. If Schedule B is chosen, the process and decisions are then documented in a Project File. Schedule C projects proceed through the following Phases;
3. **Phase 3** – Examination of alternative methods of implementing the preferred solution established in Phase 2. This decision is based on the existing environment, public and review agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects;
4. **Phase 4** – Preparation of an Environmental Study Report summarizing the rationale, planning, design, and consultation process of the project through Phases 1-3. The ESR is then to be made available to agencies and the public for review; and
5. **Phase 5** – Completion of contract drawings and documents. Construction and operation to proceed. Construction is to be monitored for adherence to environmental provisions and commitments. Monitoring during operation may be necessary if there are special conditions.

The overall process is shown in **Figure 2**.

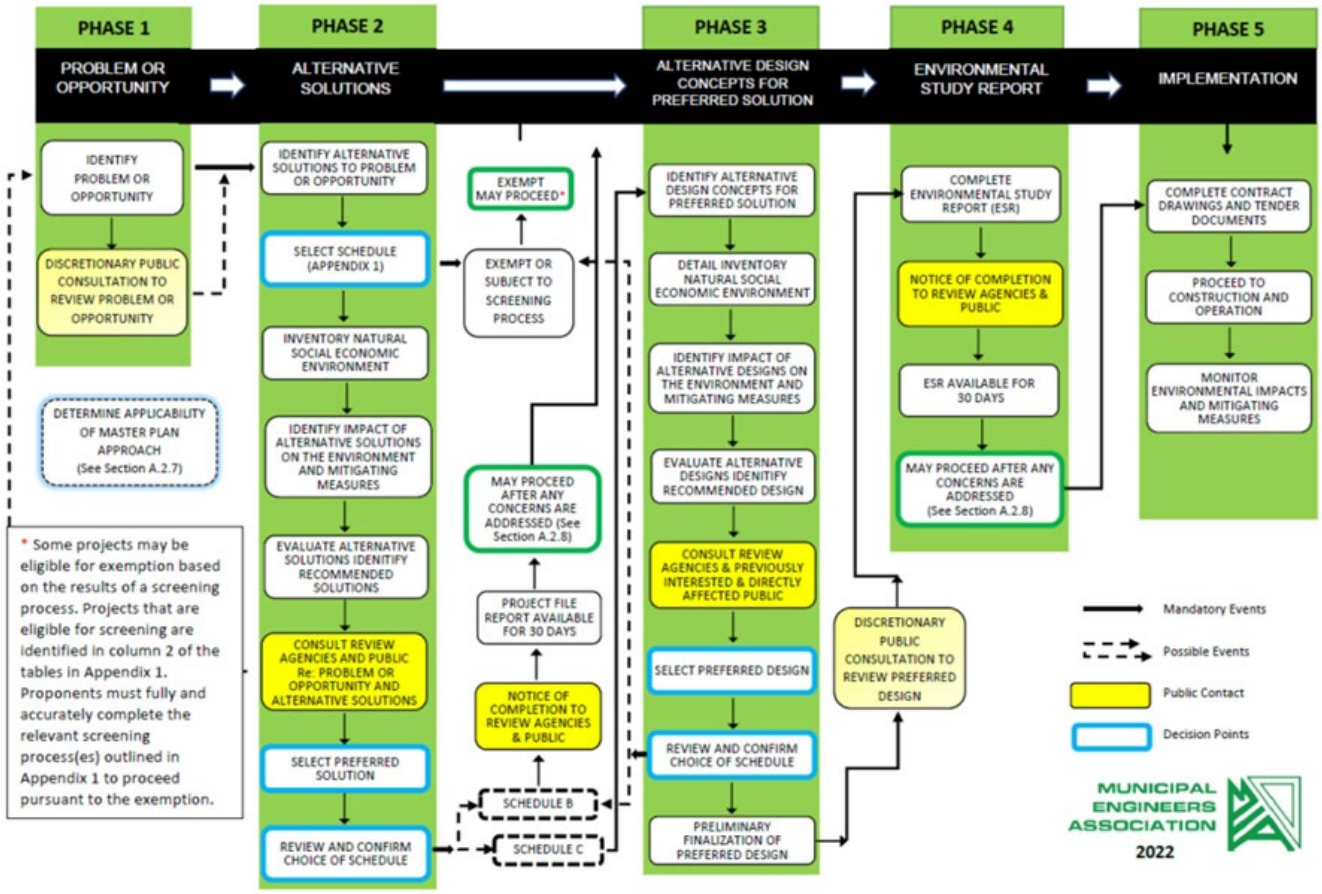

FIGURE 2: MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

2.2 Study Area

2.2.1 General

The plan's study area consists of Oxford County including all eight Area Municipalities. It covers approximately 2,000 km^2 and is comprised of rural areas, settlement clusters and smaller urban centres. It includes the crossroads of Highways 401 and 403, CN, CP, and Short Line Railways, and a mix of farming, industrial, commercial, and institutional sectors. The County's transportation network is displayed in **Figure 3**.

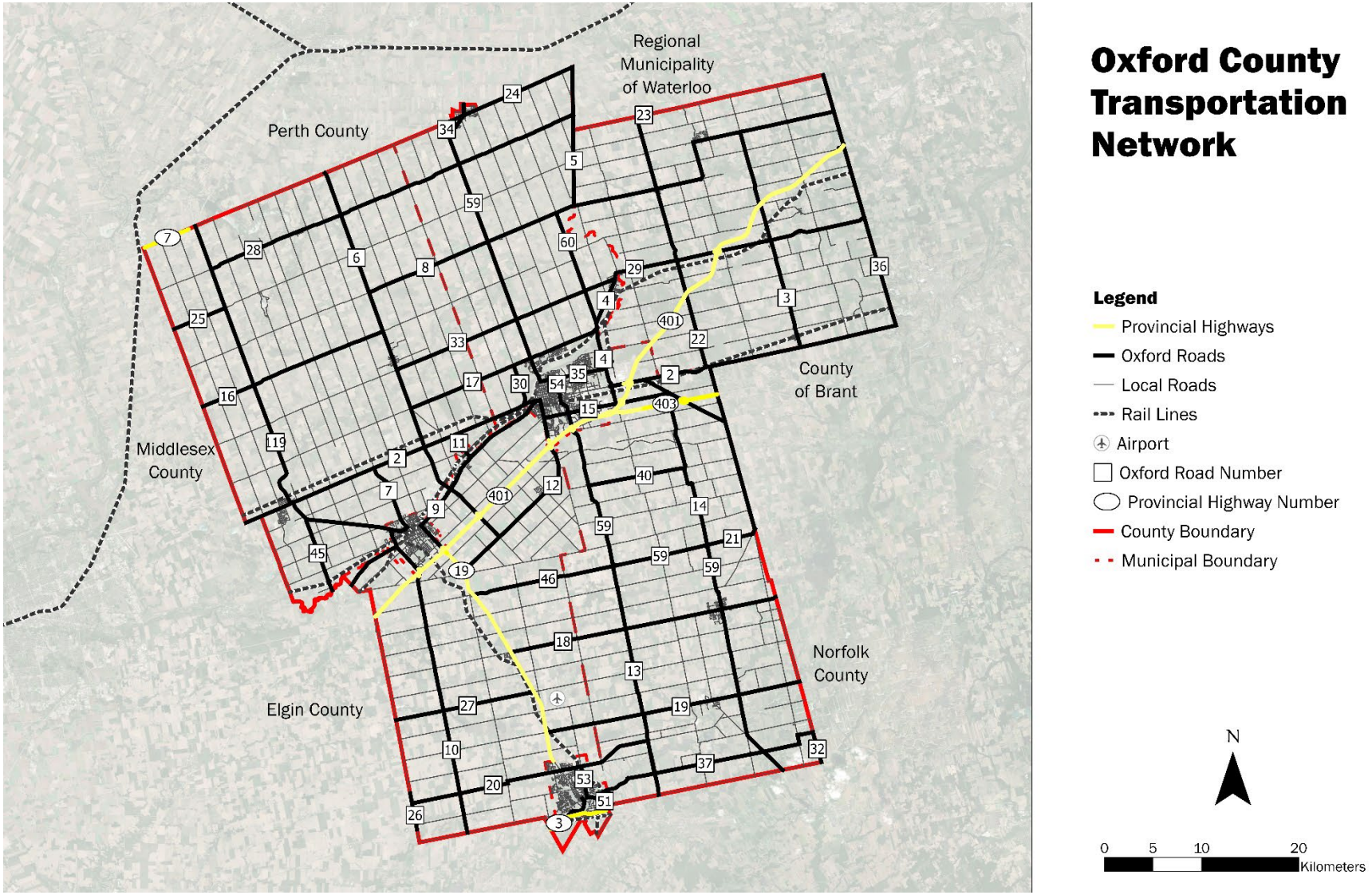

FIGURE 3: OXFORD COUNTY TRANSPORTATION NETWORK

2.3 Natural Environment

A high-level screening of the natural environment within Oxford County was completed for this report. The review highlights the *Conservation Authorities Act*, watershed and well head protection areas and natural environmental features which can be found in Oxford County. More information on each can be found below.

2.3.1 Conservation Authority Jurisdictions

Section 28(1) of the *Conservation Authorities Act* (Government of Ontario 1990b) empowers Conservation Authorities with the ability to make regulations governing development that can have an impact on watercourses and waterbodies, including wetlands. As shown in **Figure 4**, the Study Area is located within the Upper Thames River Conservation Authority (UTRCA), Grand River Conservation Authority (GRCA), Long Point Region Conservation Authority (LPRCA), and Catfish Creek Conservation Authority (CCCA) watersheds, with areas regulated under the Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses, Ontario Regulations (O.Reg.) 157/06, 150/06, 178/06, and 146/06 respectively.

2.3.2 Watersheds and Well Head Protection Areas

Within each of the Conservation Authority watersheds, the locations of County municipal drinking water wells and the vulnerable areas that contribute water to the drinking water system (**Figure 4)**. The vulnerable areas around municipal wells are designated as wellhead protection areas and issue contributing areas. Wellhead protection areas have been given scores and ratings based on their vulnerability and susceptibility to contamination. It is these localized areas that need to be protected and managed to reduce the risk to drinking water. All municipal drinking water systems in Oxford County are groundwater fed resulting in well head protection areas for each of the 61 active wells.

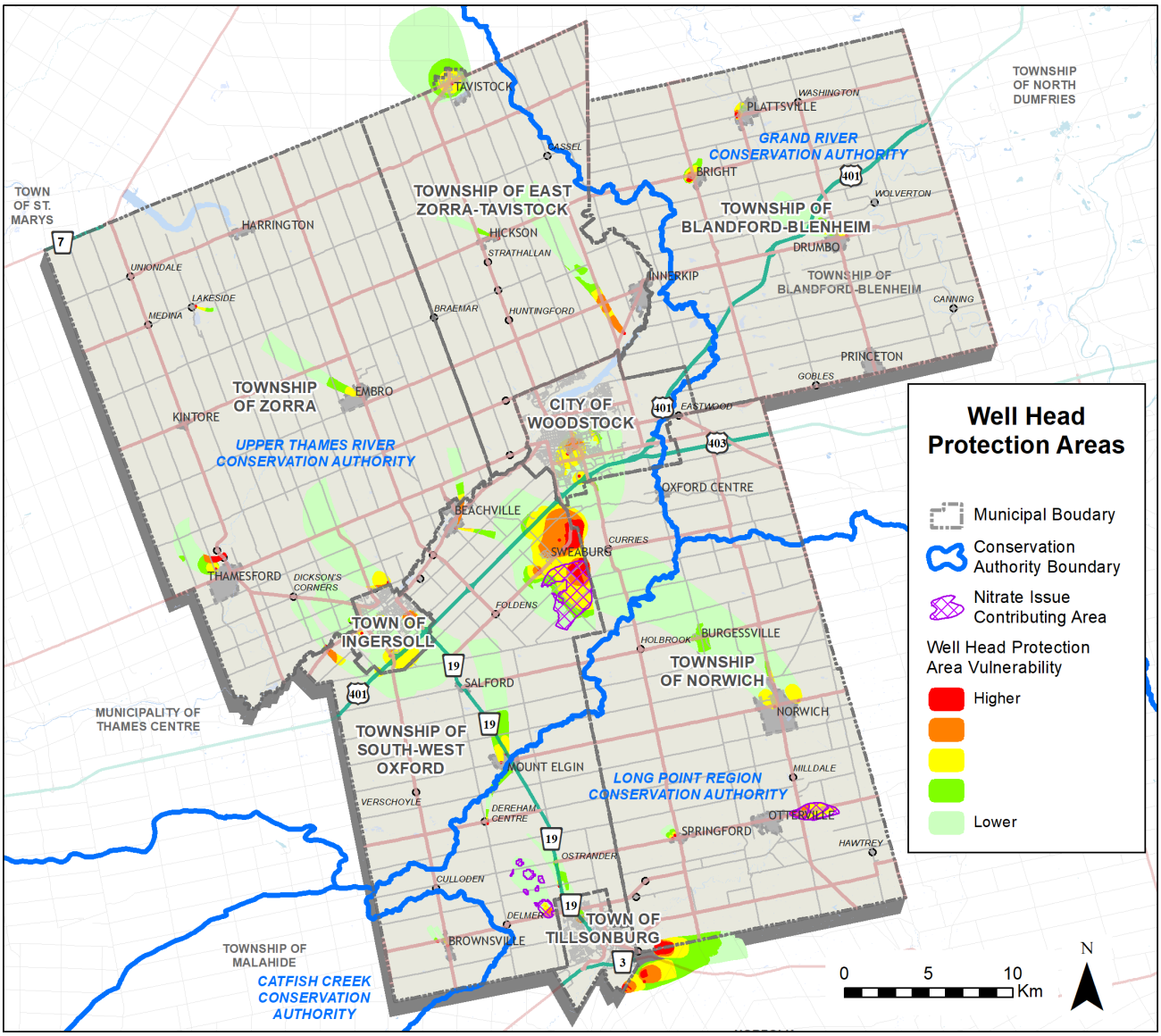

FIGURE 4: OXFORD COUNTY WELL HEAD PROTECTION AREAS AND WATERSHEDS

2.3.3 Natural Environmental Features

The Study Area is located within the Niagara Section of the Great Lakes-St. Lawrence Lowlands Forest Region (Rowe, 1972). Oxford County's natural heritage system includes various features such as woodlands, wetlands, valley lands, meadows and watercourses; all of which provide significant environmental, social, and economic benefits. Oxford County released a draft Oxford Natural Heritage System Study in 2016 which identifies the County's ecologically important natural heritage features and provides recommendations to protect, restore and improve the system's features. A map depicting the natural heritage features is shown in **Figure 5.**

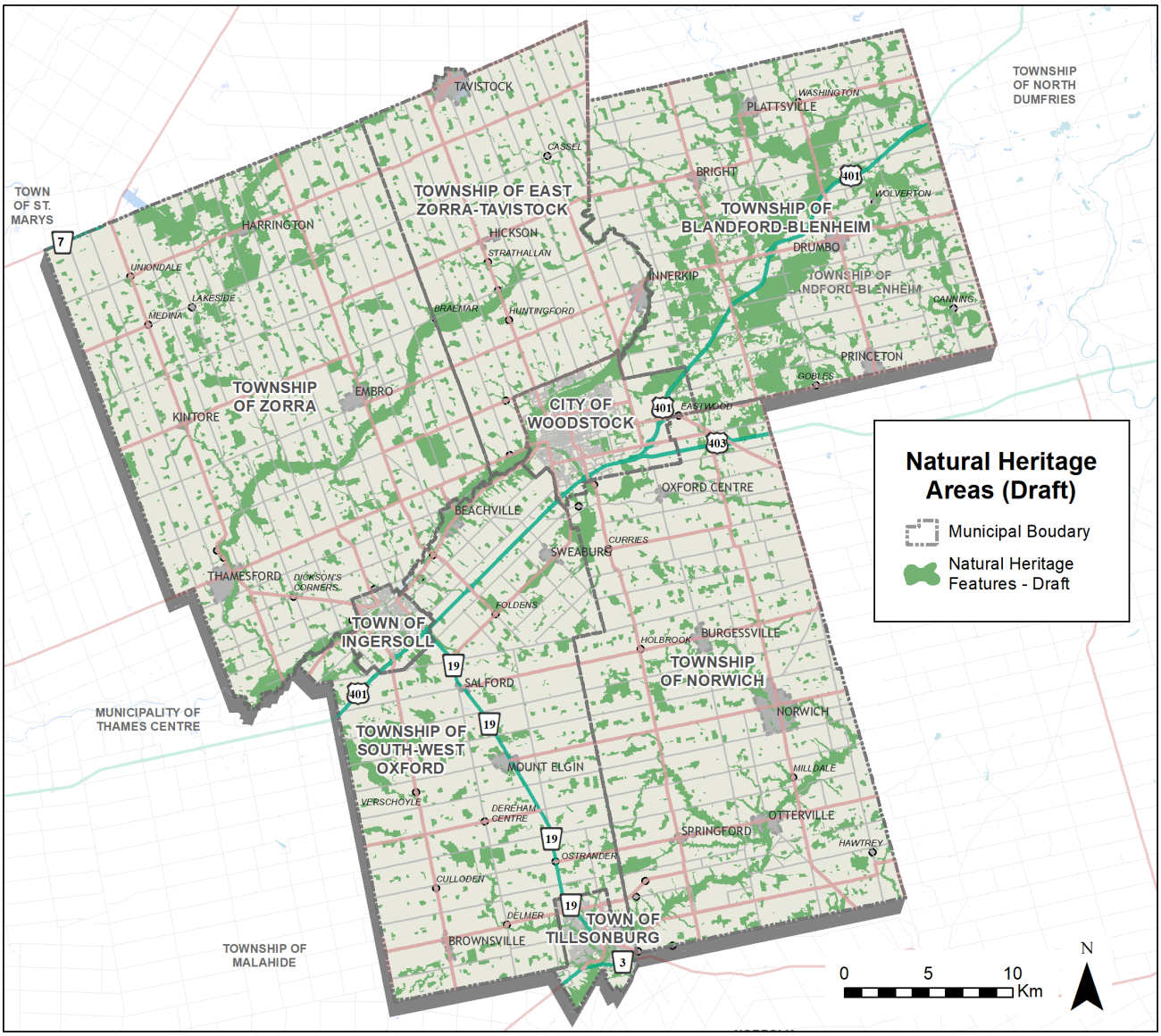

FIGURE 5: OXFORD COUNTY NATURAL HERITAGE FEATURES

2.4 Public Consultation and Engagement

2.4.1 Program Overview

The consultation process is an integral component of the Class EA process for the TMP. At the onset of the Master Plan, a Public Consultation and Communication Plan was developed with the primary goal to carry out meaningful consultation, soliciting community and regulatory input, and ensuring the general public, Councils, Area Municipalities, review agencies, Indigenous Communities and other interested stakeholders have regular opportunities to participate in the Study process.

2.4.2 Speak Up, Oxford Project Webpage

Throughout the Study a project specific page was used on the County's website "Speak Up Oxford" (https://speakup.oxfordcounty.ca/2024tmp). This page was used to post all notices, information on the Public Consultation Centres (PCCs), including the PCC presentation slides, recording, and interactive map, and other relevant project information. The website was also used to give updates on the project timeline and provided the contact information for key project staff. All Notices, PCCs and other information on the TMP have been published and advertised in advance on the "Speak Up, Oxford" project page.

2.4.3 Notices

All Notices associated with the TMP Study were shared with Oxford County Council the eight Area municipalities, and published on the 'Speak Up, Oxford' project page.

The Notice of Commencement, Notice of Public Consultation Centers and Notice of Study Completion were sent out to identified agencies and interested parties by mail, email and via local newspapers informing them that the TMP Study was being undertaken. Copies of all study notices are included in **Appendix A.** The notices were sent out on the following dates:

- Notice of Study Commencement: March 21, 2022
- Public Information Centre #1: August 10, 2022
- Public Information Centre #2: February 9, 2023
- Notice of Study Completion: *After County Council adopts draft Report for public review*

2.4.4 Stakeholder Consultation

The Municipal Class EA process requires stakeholder consultation to incorporate input from interested or impacted groups. Potential stakeholders included but were not limited to:

- Public – This includes individual members of the public including property owners who may be affected by the project, individual citizens who may have a general interest in the project, special interest groups, community representatives, and developers;
- Review agencies – This includes government agencies who represent the policy positions of their respective departments, ministries, authorities, or agencies;
- Oxford County Internal staff (Public Works, Corporate Services, Community Planning, and Office of Strategic Initiatives) and Council departments;
- Area Municipality Councils and staff;
- Indigenous Communities; and
- Railways, Transit Agencies, Utilities, etc.

A master contact of all relevant stakeholders was developed for the Master Plan, in which Study Notices and important project information were sent.

2.4.5 Indigenous Consultation

Based on discussions and recommendations provided by the Ministry of the Environment, Conservation and Parks (MECP) regional office, Parsons on behalf of Oxford County, confirmed applicable Indigenous communities within the Study Area and also contacted Aboriginal Affairs and Northern Development Canada (AANDC) and the Ministry of Aboriginal Affairs (MAA) regarding confirmation of the same. The

purpose of the contact was to request which, if any, Indigenous communities may be potentially affected by the TMP. The consultation approach ensured the appropriate Indigenous Communities were included in the contact lists for the duration of the TMP project.

Several meaningful attempts were made to seek input from the appropriate Indigenous Communities, including sending the Notice of Commencement (April 29, 2022), Notice of PCC 1 (September 9, 2022), and Notice of PCC 2 (February 9, 2023). The following Indigenous groups were contacted:

- Aamjiwnaang First Nation;
- Bkejwanong First Nation (Walpole Island);
- Caldwell First Nation;
- Chippewas of the Thames First Nation;
- Delaware Nation at Moraviantown;
- Haudenosaunee Confederacy Chiefs Council;
- Kettle and Stony Point First Nation;
- Mississaugas of the Credit First Nation;
- Munsee-Delaware Nation;
- Oneida Nation of the Thames; and
- Six Nations of the Grand River.

Copies of the communications sent to the Indigenous Communities and any responses reviewed are documented and shown in **Appendix A.**

2.4.6 Public Consultation Centres

As part of the fulfillment of Municipal Class EA consultation requirements, the County undertook two mandatory contact points to inform, engage and consult with all study participants noted above. This section details the consultation process followed during the TMP Study.

A Public Consultation Centre (PCC) is a method to communicate with the public, interested parties and review agencies. For this project, two (2) PCCs were held to present the Problem and Opportunity Statement, background information collected, a review of the servicing strategies being evaluated, present the evaluation criteria, the preliminary preferred solution, and the project timeline.

Public Consultation Centre #1

PCC 1 was held as a virtual (online) event from 5:00 PM – 7:00 PM on Tuesday, September 27, 2022, at which a presentation was made and representatives from the County and its consultants were present to answer questions and discuss the next steps in the study. Representatives took several questions and were available after the presentation. Furthermore, an interactive map seeking input from residents on their opinion of the County transportation network and a survey was developed and posted on the project page on “Speak Up Oxford!” so that residents could provide comments on their own time. In total, 53 comments were received on the interactive map and 53 surveys were at least partially completed for PCC #1.

In addition to PCC #1, members of the County Project Team attended local events to engage directly with members of the community including on Wednesday, September 14: Canada’s Outdoor Farm Show in Woodstock, Tuesday, September 20: Town Council Chambers in Ingersoll, and on Friday, September 23: Ribfest in Tillsonburg. These events were advertised via social media, “Speak Up Oxford!” and local

media before the event. The PCC #1 presentation slides and video recording were available starting on September 29, 2022, and remained available until the completion of the study. Stakeholders were given until October 19, 2022, to provide comments.

Public Consultation Centre #2

PCC #2 was held as a virtual (online) event from 6:00 PM – 7:30 PM on Tuesday, March 21, 2023, at which the preliminary implementation plan and timeline, and recommendations were presented. Representatives from the County and its consultants were present to answer questions and discuss the next steps in the study. Furthermore, an interactive map with preliminary recommendations and a survey was developed and posted on the project page on "Speak Up Oxford!" so that residents could provide comments on their own time. In addition to PCC #2, members of the County Project Team held in person events on Thursday, March 23, 2023, in the Ingersoll Town Council Chambers, on Tuesday, March 28, 2023, in the Oxford Council Chambers in Woodstock, and on Thursday, March 30, 2023 in the Tillsonburg Town Council Chambers. The PCC #2 presentation slides and video recording were posted on "Speak Up Oxford!" following the presentation and remained available until the completion of the study. Stakeholders were given until April 11, 2023, to provide comments.

Copies of both PCCs Boards and Presentation Material are included in **Appendix A**.

2.4.7 Advisory Committees

2.4.7.1 Internal Technical Advisory Committee (InTAC) Meetings

Two (2) Internal Technical Review Committee (InTAC) meetings were held over the course of the project. The Technical Review Committee was made up of staff from the County from all departments and incorporated study of key findings, technical issues, and identification of opportunities or concerns. The meetings allowed the team to narrow down on a commonly preferred approach to meet their interests and requirements. Comments from each of the meetings were addressed. These meetings were held on March 10, 2022 and February 23, 2023.

2.4.7.2 External Technical Advisory Committee (ExTAC) Meetings

An External Technical Advisory Committee (ExTAC) with representatives from external agencies including area municipalities and boundary municipalities, MTO and conservation authorities was established at the onset of the Master Plan project, to provide technical input into existing conditions and proposed opportunities for the project, and to provide input into the alternatives. Two (2) meetings were held on March 24, 2022 and April 3, 2023.

2.4.7.3 Economic Development Forums

An Economic Development Committee (EcDev) was also established for this project. The County reached out to the Rural Oxford Economic Development Corporation for input while developing the stakeholder and invite list for these forums. The group, consisting of representatives from local BIA's, Chambers of Commerce and Development Commissions was established with the objective of this group was to provide economic and development focused input throughout the project. Two (2) meetings with the group were held throughout the project on April 5, 2022 and April 6, 2023

Copies of the presentations made to the InTAC, ExTAC and EcDev Committees are provided in **Appendix A**.

2.4.8 Presentation to Council

Following the completion of PCC #1, County staff completed a staff Report No. PW-2022-46 and presentation to update Council on November 9, 2022. The report and presentation focused on a summary of public feedback from PCC #1 and presented the preliminary data assessment and review of projected growth in the County.

Upon project completion, the Project Team in conjunction with County Staff prepared a staff Report No. PW-2023-32 and presentation which summarized the project and presents the study recommendations, implementation plan, and associate policies. The presentation was given to Oxford County Council on July 12, 2023.

2.4.9 Incorporating Consultation Input

Input and information gathered from the public, agency and Indigenous contacts, the PCCs, InTAC, ExTAC and EcDev meetings and the project webpage were reviewed by the Project Team and considered in the development of the TMP.

Where no unresolved objections arise through the review of this Master Plan, the Class EA requirements for the Exempt projects will be deemed to have been met. The identified projects may then proceed into design and construction without further public consultation.

Public and Agency contact lists, along with comments received and any responses sent are documented in **Appendix A**.

3.0 Master Planning and Policy Context

3.1 Planning and Policy Framework

3.1.1 2020 Provincial Policy Statement

The Provincial Policy Statement (PPS), 2020 (Ministry of Municipal Affairs and Housing [MMAH] 2020) sets out the Provincial policy direction for land use planning in Ontario, including managing growth, using and managing natural resources, protecting the environment, and ensuring public health and safety.

The vision of the policy recognizes that Ontario's long-term prosperity, environmental health and social well-being depend on promoting efficient land use and development patterns. Efficient development patterns also optimize the use of land, resources and public investment in infrastructure, as well as, public service facilities and support sustainability by promoting strong, liveable, healthy and resilient communities, protecting the environment and public health and safety, and facilitating economic growth.

The policies indicate that settlement areas shall be the focus of growth and development settlement areas and that municipalities plan for a full range of and mix of land uses and housing options to meet current and future needs over a 25-year planning horizon. Land use patterns within settlement areas shall be based on densities and a mix of land uses which efficiently use land and resources and are also appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion.

The PPS policies about planning for transportation are generally as follows:

a) Transportation Systems

- Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.
- Efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.
- As part of a multimodal transportation system, connectivity within and among transportation systems and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.
- A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.

b) Transportation and Infrastructure Corridors

- Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.
- Major goods movement facilities and corridors shall be protected for the long term.
- Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.
- New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities.
- The co-location of linear infrastructure should be promoted, where appropriate.
- When planning for corridors and rights-of-way for significant transportation, electricity transmission, and infrastructure facilities, consideration will be given to significant natural resources.

All planning decisions and Official Plan policies (including those related to infrastructure) are required to be ‘consistent with’ the policies of the PPS. As such, the TMP is developed on the premises of the applicable PPS policies.

3.1.2 Oxford County Official Plan

The Oxford County Official Plan was originally adopted in 1995 and has had numerous comprehensive updates since that time. It is a requirement under the 1990 Planning Act (Act) which sets out the rules for land use planning in Ontario to be outlined in an official plan for every municipality. The Act states that Official Plans must ‘contain goals, objectives and policies established primarily to manage and direct physical change and the effects on the social, economic, and natural environment of the municipality’.

In accordance with this requirement, the County’s Official Plan provides policy direction on various land use related matters including, but not limited to, natural resource management, growth management, infrastructure and public services, land use, and implementation measures. The plan directs planned growth and development primarily to settlements serviced by centralized wastewater and water supply

facilities to ensure efficient use of land, protection of natural resources and public health, and the development of complete communities that can support a range and mix of housing, employment and services.

The County's strategic planning principles related to transportation infrastructure will be provided in a manner that: minimizes conflict between non-local and local traffic by defining a hierarchy of roads within the County that moves people and goods throughout the County efficiently; improve the functionality of the County transportation network by identifying and making provisions for necessary improvements over time; provide a safe, convenient and aesthetically pleasing pedestrian environment, where the County Road system forms part of a designated Village, Serviced Village or Large Urban Centre; and improve the integration of transportation facilities within the County with services provided by Area Municipalities, adjacent municipalities, and senior levels of government.

The Official Plan provides a road classification system on both a County-wide and Large Urban Centre basis. County-wide roads are defined as either Provincial Highways, County Roads, or Local Roads, while Large Urban centres have further specification classes including Arterial, Collector, and Local roads. Each class has specified standards and policies for function, right-of-way requirements, property access, curbside parking, and intersection configuration. Additionally, the Official Plan provides policy guiding development adjacent to County Roads, road widening, road network improvements, pedestrian and bicycle networking planning, truck traffic, public transportation, and inter-urban transportation.

3.1.2.1 Secondary Plan Areas

The County's Official Plan outlines a comprehensive secondary planning process to assess areas and recognize opportunities for effective land use planning and arrangements. Secondary planning helps to ensure a 25-year supply of growth land is maintained in each Area Municipality and allows identifying phasing strategies for the implementation of servicing capacity and municipal services required for a 25-year period and, if deemed necessary, beyond.

The County has identified several Area Municipalities that will require additional residential and/or employment land supply to accommodate their forecasted future population and/or employment growth for the current 25-year planning period. To provide the necessary land use planning and servicing basis for the settlement expansions that are required to accommodate this growth, the County and applicable Area Municipalities have recently initiated and/or completed several Secondary Plans.

There are a number of secondary planning processes (secondary plans and studies) that have been recently completed or are currently being undertaken by Area Municipalities (**Figure 6)**. Significant secondary plans include the following:

- South West Ingersoll Secondary Plan (2023)
- East Zorra-Tavistock Secondary Plan (2023)
- Drumbo Secondary Plan (2023)
- South East Woodstock Secondary Plan (2019)
- Woodstock North East Industrial Park (2023)
- Karn Road Secondary Plan (2023)
- Mount Elgin Secondary Plan (2023)

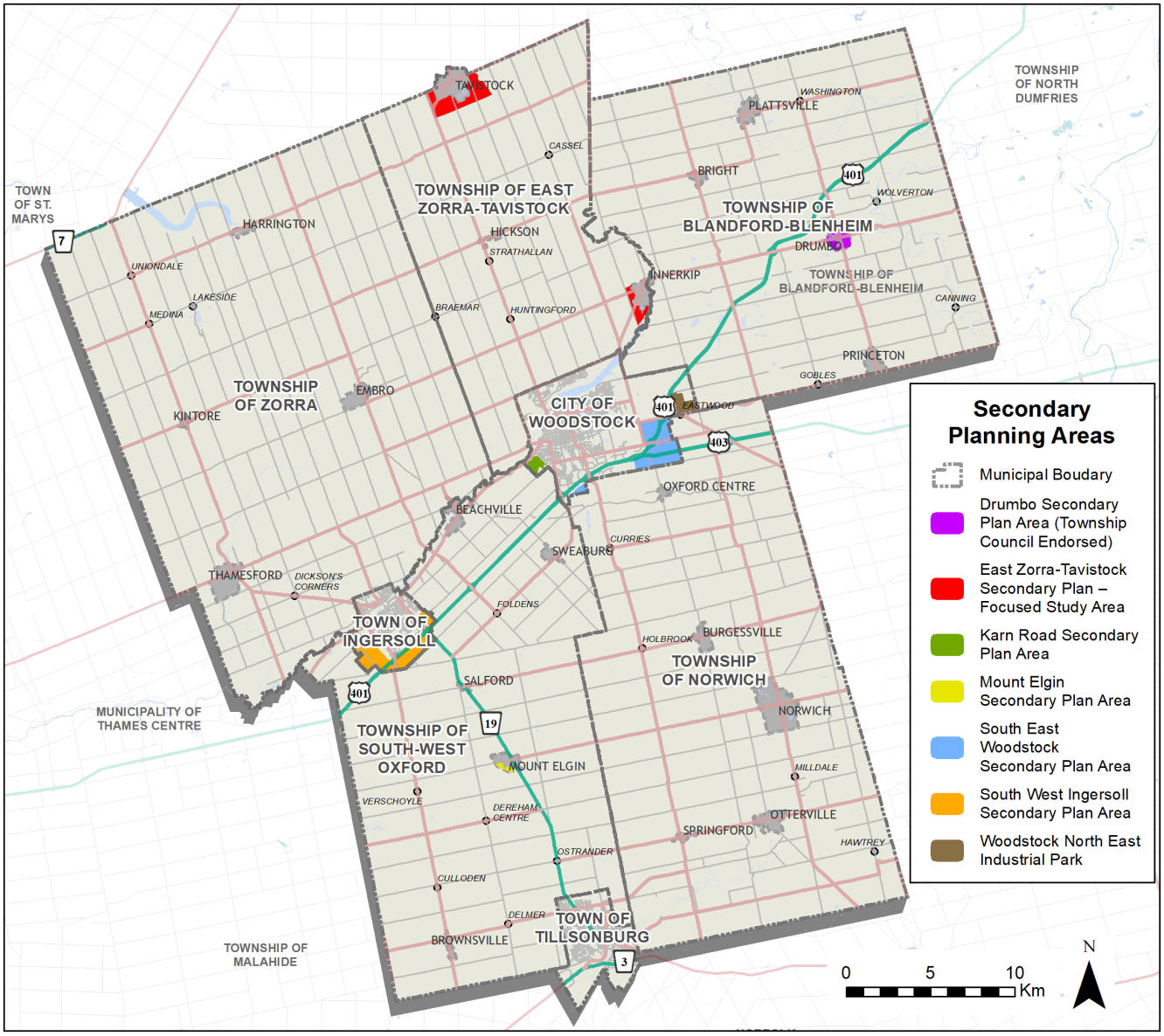

FIGURE 6: AREA MUNICIPALITY SECONDARY PLAN AREAS

3.1.3 Phase 1 Comprehensive Review

The Oxford County Comprehensive Review – Phase 1 prepared by Hemson Consulting and approved by the County in 2020 provides a County-wide and per Area Municipality population, household and employment forecasts, and a land need analysis. Part of the review includes an assessment of the Area Municipality's vacant lands, which allows for identifying the potential to accommodate forecasted growth up to 2046. The Land Needs Assessment was used by Hemson to apply the distribution of the forecasted growth to designated fully serviced communities within the Area Municipalities as per the policy direction in the PPS and County Official Plan.

Per the Review, Oxford County is expected to undergo significant population and economic growth over the next 30 years. By 2046, the County is expected to have a permanent population of 163,000 and an employment population of 78,400.

3.1.4 Population and Employment Projections

The 2021 Canadian Census provided the most recent population and employment figures. The population figures have been adjusted by the County to account for the Census undercount. The County and the Area Municipalities' population and employment statistics are summarized below in **Table 1**.

TABLE 1: OXFORD COUNTY 2021 POPULATION AND EMPLOYMENT SUMMARY

	Population	Employment
Oxford County	125,065	62,080
City of Woodstock	47,965	28,440
Town of Tillsonburg	19,120	9,060
Town of Ingersoll	14,065	9,710
Township of Norwich	11,450	4,200
Township of Zorra	8,860	2,890
Township of East-Zorra Tavistock	8,050	2,950
Township of South-West Oxford	7,785	2,920
Township of Blandford-Blenheim	7,770	1,910

The County has seen large population growth between 2016-2021, almost doubling its growth rate from 2011-2016. This growth has been predominantly driven by the large urban centres of Woodstock, Ingersoll, and Tillsonburg, however, the rural townships have also seen considerable growth. The County's five-year population growth rate since 2001 can be seen below in **Table 2**.

TABLE 2: OXFORD COUNTY POPULATION GROWTH RATE 2001 TO 2021 SUMMARY

	01'-06'	06'-11'	11'-16'	16'-21'
Oxford County	3.4%	2.8%	4.6%	9.8%
City of Woodstock	7.1%	5.1%	8.1%	14.1%
Town of Tillsonburg	5.2%	3.1%	3.6%	17.2%
Town of Ingersoll	6.7%	3.2%	4.8%	7.3%
Township of Norwich	0.0%	2.2%	1.1%	1.2%
Township of Zorra	0.9%	-0.8%	1.0%	6.0%
Township of East-Zorra Tavistock	-3.3%	-2.5%	3.9%	9.8%
Township of Blandford-Blenheim	-3.8%	2.9%	0.5%	2.2%
Township of South-West Oxford	-2.5%	-0.6%	1.2%	-1.2%

The 2020 Oxford County Comprehensive Review – Phase 1 projected population, households, employment, and land needs within the County to 2046, allowing the County to plan for future infrastructure needs. These projections have been further adjusted by the County's Planning Department to reflect the population from the 2021 Census (note: these adjustments did not change the forecasted growth for the planning period). Based on the County's current growth forecasts, the County is expected to continue to see strong population and employment growth, adding approximately 33,000 more residents and 15,000 more jobs between 2024 and 2046. As such, the County will need to ensure they plan for the necessary improvements and investments in transportation infrastructure that will be required to accommodate that expected growth. The revised population, household, and employment projections are summarized in **Table 3**, **Table 4**, and **Table 5**, respectively.

TABLE 3: POPULATION PROJECTIONS TO 2046, BY AREA MUNICIPALITY

	Oxford County	Woodstock	Tillsonburg	Ingersoll	Blandford-Blenheim	East-Zorra Tavistock	Norwich	South-West Oxford	Zorra
2021	125,065	47,965	19,120	14,065	7,770	8,050	11,450	7,785	8,860
2024	129,511	50,281	19,660	14,599	7,962	8,338	11,732	7,929	9,010
2026	132,475	51,825	20,020	14,955	8,090	8,530	11,920	8,025	9,110
2028	135,595	53,421	20,404	15,339	8,230	8,734	12,120	8,133	9,214
2031	140,275	55,815	20,980	15,915	8,440	9,040	12,420	8,295	9,370
2033	143,459	57,419	21,380	16,307	8,588	9,248	12,636	8,399	9,482
2036	148,235	59,825	21,980	16,895	8,810	9,560	12,960	8,555	9,650
2041	155,855	63,595	22,960	17,855	9,190	10,050	13,490	8,765	9,950
2046	163,235	67,295	23,890	18,785	9,550	10,510	13,990	8,975	10,240

TABLE 4: HOUSEHOLD PROJECTIONS TO 2046, BY AREA MUNICIPALITY

	Oxford County	Woodstock	Tillsonburg	Ingersoll	Blandford-Blenheim	East-Zorra Tavistock	Norwich	South-West Oxford	Zorra
2021	47,876	18,886	8,229	5,467	2,779	2,976	3,761	2,616	3,162
2024	49,730	19,852	8,475	5,689	2,851	3,108	3,869	2,670	3,222
2026	50,966	20,496	8,639	5,837	2,899	3,196	3,941	2,706	3,262
2028	52,198	21,128	8,799	5,985	2,951	3,288	4,013	2,742	3,302
2031	54,046	22,076	9,039	6,207	3,029	3,426	4,121	2,796	3,362
2033	55,254	22,692	9,199	6,355	3,081	3,514	4,193	2,832	3,398
2036	57,066	23,616	9,439	6,577	3,159	3,646	4,301	2,886	3,452
2041	59,706	24,966	9,789	6,907	3,269	3,826	4,461	2,956	3,542
2046	62,236	26,256	10,129	7,217	3,379	4,006	4,601	3,026	3,632

TABLE 5: EMPLOYMENT PROJECTIONS TO 2046, BY AREA MUNICIPALITY

	Oxford County	Woodstock	Tillsonburg	Ingersoll	Blandford-Blenheim	East-Zorra Tavistock	Norwich	South-West Oxford	Zorra
2021	62,080	28,440	9,060	9,710	1,910	2,950	4,200	2,920	2,890
2024	63,574	29,400	9,216	9,932	1,934	2,992	4,248	2,944	2,908
2026	64,570	30,040	9,320	10,080	1,950	3,020	4,280	2,960	2,920
2028	65,606	30,700	9,432	10,236	1,966	3,052	4,312	2,972	2,936
2031	67,160	31,690	9,600	10,470	1,990	3,100	4,360	2,990	2,960
2033	68,452	32,502	9,740	10,662	2,014	3,140	4,404	3,010	2,980
2036	70,390	33,720	9,950	10,950	2,050	3,200	4,470	3,040	3,010
2041	74,130	36050	10,360	11,510	2,120	3,320	4,600	3,090	3,080
2046	78,390	38,730	10,810	12,150	2,210	3,450	4,740	3,150	3,150

3.2 Problem and Opportunity Statement

As part of the Master Planning process, a problem or opportunity statement has been developed to describe the purpose of *Connecting Oxford 2024* clearly and succinctly:

> ***As Oxford County continues to grow and establish itself as a thriving community in southwestern Ontario, it is imperative that transportation policies and the multi-modal transportation network align with the County's goals and visions. The Transportation Master Plan (TMP) provides the opportunity for the County to plan and forecast network changes and improvements to support continued growth all while enhancing County policies around transportation demand management, freight movements, agricultural mobility, and low-carbon transportation solutions.***

3.3 Master Planning Principles

To review the issues and opportunities in the County with regards to transportation infrastructure to 2046, the following principles shown in **Table 6** were developed by the County.

TABLE 6: TRANSPORTATION MASTER PLANNING PRINCIPLES

Oxford County Transportation Master Plan
Integrate growth management planning and infrastructure servicing in a manner which ensures alignment with County's Official Plan and Strategic Initiatives
Offer infrastructure solutions that recognize the potential for growth beyond current planning horizons
Develop infrastructure systems which meet the County's established asset level of service framework and MECP legislative requirements
Maximize the use of available existing capacity in infrastructure, while considering sustainable infrastructure expansions
Provide reliability, redundancy, and security in the infrastructure systems, including consideration of reserve capacity
Recommend proven, reliable, financially, and sustainable technologies that meet long-term transportation needs
Support the use of sustainable transportation modes and new technologies to support environmental sustainability
Consider infrastructure operating and maintenance costs, including full lifecycle costing, to evaluate overall long-term financial implications and sustainability

3.4 Legislative and Further Planning Context

The TMP has been developed within the context of several Federal and Provincial government ministries and agencies' plans, studies, and acts, including:

Provincial and Federal Policy and Plans:

- Connecting the Southwest – Draft Transportation Plan for Southwestern Ontario (2022)
- Federal Study of Southwestern Ontario Passenger Rail Enhancement (in progress)
- Asset Management Planning for Municipal Infrastructure (O REG 588/17)
- Environmental Assessment Act (EAA)
- Species at Risk Act
- Endangered Species Act
- Federal Fisheries Act

3.5 Cultural Heritage

A high-level review of cultural heritage features was conducted for three corridors identified in the future network assessment as requiring improvements, as well as the Oxford Road 4 corridor (Appendix G). The review identified built heritage resources (BHRs) and cultural heritage landscapes (CHLs) within a 50-metre buffer of each corridor. A summary of the review is provided below:

- 41 BHRs and CHL in the Oxford Road 59 – from Dundas Street to Wilson Street, Woodstock study area
- One potential BHR in the Oxford Road 4 – from Oxford Road 33 to Parkinson Road, City of Woodstock study area
- One commemorative feature in the Oxford Road 119 – Clarke Road to Highway 401, Town of Ingersoll study area
- One BHR in the Oxford Road 53 – from Highway 19 to Brock Street East, Town of Tillsonburg study area

3.6 County Policy Review

The TMP has been developed within the context of previous and ongoing land use and transportation planning initiatives undertaken by Oxford County, including:

- Oxford County Transportation Master Plan (2019)
- Oxford County Official Plan (1995, as amended)
- Oxford County Phase One Comprehensive Review (2020)
- Oxford County Strategic Plan (2020)
- Oxford County Cycling Master Plan (2021)
- Oxford County Trails Master Plan (2014)
- Renewable Energy Action Plan (2022)
- Asset Management Plan (2022)
- New Directions – Advancing Southwestern Ontario's Public Transportation Opportunities (2016)
- Empowering Ontario's Short Line Railways (2017)
- Steel Corridors of Opportunity – Maximizing the Benefits of Southwestern Ontario's Freight Railways (2018)
- SouthwestLynx – Integrated High-Performance Public Transportation for Southwestern Ontario (2018)

3.7 Transportation Master Plan Methodology

3.7.1 Sensitivity Analysis

As part of the future network assessment, a sensitivity analysis was undertaken to evaluate the potential infrastructure impacts of higher than forecasted growth in all eight Area Municipalities on the County's transportation infrastructure needs. The purpose of this analysis was to provide the County with additional information and direction necessary to adjust the infrastructure improvement plans to accommodate higher than forecasted growth if necessary, should such growth be identified through upcoming forecast updates, or otherwise materialize over the planning period.

3.7.2 Risk Factors

There are potential risk factors that will influence the County's ability to leverage multi-modal transportation options with its current network which will have to be considered in planning. The current transportation network provides strong vehicle infrastructure but as demographics and travel patterns

evolve, the County will have to ensure the necessary infrastructure is in place to serve users of all modes.

There are potential risks that are outside of the planning and design of transportation infrastructure and services that can impact the level of service and have consequences for the County, as summarized below:

- Higher than expected population and employment growth.
- Changes to Inter-community and local Transit Services operated by Area and other Municipalities.
- Passenger and Freight Rail transportation levels of service.
- Rapid adoption of Autonomous Vehicles or other new technologies.

4.0 Existing Transportation Conditions

4.1 Existing Road Network

The Oxford County Road network is divided into three functional and jurisdictional categories; Provincial Highways maintained by the Government of Ontario, County Roads maintained by Oxford County, and Local Roads maintained by the eight Area Municipalities. The full County Road network is illustrated in **Figure 7**.

4.1.1 Provincial Highways

Provincial highways are major roads that form a network of high-speed, long-distance and inter-urban connections, crucial to maintaining a high volume of people and goods movement to and from the County. The provincial roads of Highway 401, Highway 403, Highway 19, Highway 3 and Highway 7 are all located within Oxford County.

The Highway 401 and 403 corridors provide major east-west connections, facilitating access to Southwestern Ontario to the west and the Greater Toronto and Hamilton Area (GTHA) to the east. Highway 401 travels directly east to the Waterloo Region, providing access to the cities of Kitchener, Waterloo, and Cambridge, while in the west it connects to Middlesex County and the City of London. Highway 403 travels east to Brant County, providing a connection to the City of Brantford. There is a major interchange between the two highways in the southeast of the City of Woodstock. The County Road network has eight interchanges with Highway 401 and one interchange with Highway 403.

Highway 19 is a significant corridor within the County as it provides a north-south connection between the Towns of Ingersoll and Tillsonburg, and travels through multiple settlement areas. There is an interchange between Highway 19 and Highway 401 southeast of the Town of Ingersoll.

Highway 3 and Highway 7 have small segments within the County: Highway 3 in the Town of Tillsonburg and Highway 7 along the northern border of the Township of Zorra.

4.1.2 County Roads

County roads provide major inter-municipal connections and access to the provincial highway network. Comprised of both urban and rural roads, the network serves moderate to high traffic volumes and its primarily distinct grid pattern provides strong connectivity throughout the County. At-grade connections provide access to Highway 3, Highway 7 and Highway 19, while interchanges provide access to Highway 401 and Highway 403. The major north-south County roads are Oxford Road 59, Oxford Road 119, Oxford Road 36, Oxford Road 6 and Oxford Road 4, while important east-west roads are Oxford Road 2, Oxford Road 16 and Oxford Road 9.

4.1.3 County Roads – Large Urban Centres

County Roads located within the three Large Urban Centres of Woodstock, Ingersoll and Tillsonburg are subject to specific policies under the County's Official Plan and are classified as Arterial Roads within each Area Municipalities Road classification system. As Arterial Roads within the Large Urban Centres, these roads' primary function is moderate to high intra-urban traffic and are subject to different road standards. Major County Arterial Roads include Oxford Road 35, Oxford Road 15, Oxford Road 59, Oxford Road 54, Oxford Road 2, Oxford Road 4 and Oxford Road 9 in Woodstock, Oxford Road 53,

Oxford Road 20 and Oxford Road 51 in Tillsonburg and Oxford Road 10, Oxford Road 9, Oxford Road 7 and Oxford Road 119 in Ingersoll.

4.1.4 Local Roads

Local roads are owned by and under the jurisdiction of Area Municipalities. Comprised of both urban and rural roads, they serve light to moderate traffic volumes and provide access to County roads.

4.1.5 2021 Road Rationalization

The 2021 Road Rationalization Update analyzed roads identified in the 2009 and 2019 TMPs as marginally meeting the thresholds for transfer between the County and Area Municipalities and requiring further review. The update resulted in the net transfer of 43.2 lane kms to the County through the acquisition by the County of Maplewood Sideroad (Oxford Road 28), New Durham Road (Oxford Road 22) and 16th Line (Oxford Road 60), and the downloading of access roads on Oxford Road 4 and Oxford Road 2 to the respective Area Municipality.

4.1.6 Summary of Projects Completed Since 2019

Since approving the current TMP, the County has invested heavily in the transportation system and completed improvements which were identified in the implementation plan. Since 2019, the County has:

- Invested annually in twelve (12) capital programs which provide a benefit to the transportation system;
- Completed major reconstruction/rehabilitation of seven (7) County Roads;
- Completed ten (10) bridge and culvert replacements;
- Completed nine (9) intersection upgrades/improvements;
- Undertook eight (8) intersection control feasibility studies;
- Completed or initiated seven (7) transportation plans, condition assessments and other studies; and
- Completed two (2) Class EA Studies.

The complete list of these improvements can be seen in **Tables 7** to **12**.

FIGURE 7: OXFORD COUNTY ROAD NETWORK

TABLE 7: RECENT INVESTMENTS WITHIN COUNTY TRANSPORTATION NETWORK

Location	Action / Extent	Notes	Investment since the last TMP
Countywide	Guide Rail Installation	The County completes annual guide rail improvements based on the needs	$1,754,635
Countywide	Pedestrian Crossings (PXO)	The County has completed 13 PXOs since the beginning of 2020 with an additional three (3) planned for 2023/24	$833,778
Countywide	Intersection Illumination	The County completes intersection illumination of intersections at various locations	$571,460
Countywide	Cycling Infrastructure	The County is proceeding with the design of cycling infrastructure based on the CMP Implementation Plan	$50,000
Countywide	Road Rehabilitation and Resurfacing	The County has completed approximately 20 specific road rehabilitations, as well as annual asphalt padding/patching and other annual miscellaneous road repairs since 2020	$11,812,700
Countywide	Miscellaneous Bridge Repairs	Various bridge repairs based on needs study/OSIM since 2020	$1,922,081
Countywide	Crack Sealing	The County completes annual crack sealing on various County Roads and other joint projects with area municipalities	$642,926
Countywide	Urban Storm Sewer	Storm sewer components from road projects in urban areas	$2,899,832
Countywide	Rural Storm Sewer	Storm sewer components for road projects in rural areas	$5,667,747
Countywide	Retaining Walls	The County completes annual retaining wall repairs and replacements based on needs	$319,503
Countywide	Traffic signal	Since 2020, the County has replaced/repaired more than 10 traffic signals and completed the design/installations of one (1) new traffic signal	$3,160,700
Countywide	Traffic Calming	Over 20 Speed Management and Road Safety Reviews have been completed since 2020, with an additional six (6) planned in 2023	$559,663

TABLE 8: MAJOR ROAD RECONSTRUCTION / REHABILITATION / URBANIZATION RECENTLY COMPLETED

Location	Road	Extent	Investment since last TMP
Woodstock	Oxford Road 9	Oxford Road 2 to #226 Ingersoll Road (Phase 1)	$741,638
Zorra	Oxford Road 16	31st Line to Kintore (Phase 1)	$1,724,837
Woodstock	Oxford Road 54	Dundas Street to Devonshire Avenue	$5,921,730
Woodstock	Oxford Road 59	Dundas Street to Cedar Street	$6,100,000
Ingersoll	Oxford Road 119	Oxford Road 10 to Oxford Road 7	$2,113,869
Blandford-Blenheim	Oxford Road 36	Oxford Road 29 to Township Road 5	$1,800,940
Woodstock	Oxford Road 35	Lansdowne Avenue to Woodall Way	$3,100,226

TABLE 9: BRIDGE / CULVERT REPLACEMENTS RECENTLY COMPLETED

Location	Extent	Investment since last TMP
Countywide	2020 Bridge /Culverts - 927045, 856645, 842954, 807313	$6,887,658
Countywide	2020 Design (2022 Construction) - 292070, 584355, 334301, 592229	$210,000
Countywide	2021 Bridge/Culverts - 314704, 816166, 597068, 385199	$2,496,395
Countywide	2021 Design (2023 Construction) - 174259, 20115, 12362	$261,700
Countywide	2022 Bridge/Culverts - 292070, 584355, 334301, 592229	$883,830
Countywide	2022 Design (2024 Construction) 59755, 843164, 886609, 784064, 263548	$250,000
Zorra	Bridge Rehab. 174259 - OR 45, 5.7km S of 119 (Boundary)	$1,500,000
Tillsonburg	Bridge 20115 OSR at TCT corridor	$2,500,000
Woodstock	Bridge 12362 OR 12/Mill St	$1,300,000
Countywide	2023 Design (2025 Construction) 843613, 814230, 774050, 684802, 374623, 225536	$250,000

TABLE 10: INTERSECTION UPGRADES / IMPROVEMENTS RECENTLY COMPLETED

Location	Intersection	Upgrade / Improvement	Investment since last TMP
Ingersoll	Oxford Road 10 & Thomas Street	Signalization	$85,281
Woodstock	Oxford Road 15 & Springbank Avenue	Signalization	$124,671
Woodstock	Oxford Road 15 & Ferguson Drive	Pedestrian Crossing	$974,171
Blandford-Blenheim	Oxford Road 29 & Blenheim Road	Horizontal and Vertical Realignment	$2,000,000
Woodstock	Oxford Road 59 & Juliana Drive	Signalization	$1,602,864
Woodstock	Oxford Road 59 (intersections between OR 35 & OR 17)	Left turn lane construction	$1,532,198
East Zorra-Tavistock	Oxford Road 59 & Oxford School	Left turn lane construction 2020 and 2022	$240,717
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 33	All-way stop, speed limit reduction, additional safety features	$75,000
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 8	All-way Stop	$10,000
Woodstock	Oxford Road 59 & Oxford Road 15	Signalization and turning lanes	$850,000

TABLE 11: INTERSECTION CONTROL FEASIBILITY STUDIES RECENTLY COMPLETED

Location	Intersection	Investment since 2020
East Zorra-Tavistock	Oxford Rod 59 and Oxford Road 28	$11,633
Woodstock	Oxford Road 4 and Oxford Road 15	$11,633
East Zorra-Tavistock	Oxford Road 59 and Oxford Road 33	$11,633
East Zorra-Tavistock	Oxford Road 59 and Oxford Road 8	$11,633
Zorra	Oxford Road 6 and Oxford Road 16	$11,633
Woodstock	Oxford Road 12 and Juliana Drive	$11,633
Woodstock	Oxford Road 12 and Athlone Avenue	$11,633
East Zorra-Tavistock	Oxford Road 24 and Oxford Road 5	$120,000

TABLE 12: STUDIES AND ENVIRONMENTAL ASSESSMENTS RECENTLY COMPLETED

Location	Study / Environmental Assessment	Investment since last TMP
Countywide	2019 Transportation Master Plan	$370,000
Countywide	2020 Road Needs Study	$56,668
Woodstock / East Zorra-Tavistock	Oxford Road 4 Corridor Study	$154,000
Countywide	2021 Cycling Master Plan	$132,289
Countywide	Technical Study on Transportation Network for 2024 DC Background Study	$75,000
Countywide	2020 and 2022 Bridge Needs Study	$211,987
Countywide	Grade Level Crossing Safety Assessment	$20,000
Norwich	Oxford Road 19 Class EA Study – Provincial Highway 19 to Norfolk County Limits	$200,000
Tillsonburg	Trans Canada Trail Bridge Class EA Study - over Ontario Southland Railway	$80,000

4.2 Active Transportation

Oxford County has responded to the growing need for active transportation through several initiatives, most notably the 2014 Trails Master Plan and the 2021 Cycling Master Plan. These plans provide the framework for implementing pedestrian and cycling facilities and promoting further use of active transportation within the County.

4.2.1 Pedestrian

The County has several established trail systems which have largely been developed and maintained by Area Municipalities, the Oxford County Trails Council and local Conservation Authorities. In 2013, the Oxford County Trails Master Plan was initiated to create a County-wide trails strategy. The plan proposed to build from the existing trail system, creating additional routes and connections through a set of multi-use trails, signed routes, paved shoulders and bike lanes. Since the plan's adoption, the Trans Canada Trail, a 17 km linear multi-use trail has been completed.

4.2.2 Cycling

The 2021 Oxford County Cycling Master Plan (CMP) was formally adopted by Council in July 2022. The CMP provides a series of strategies, frameworks and policies to improve the County's cycling network, promote cycling commuting and enhance tourism opportunities. The backbone of the CMP is the proposed cycling network which provides a system of linkages throughout the County.

The County has a range of existing cycling facilities, including both on and off-road facilities. On-road facilities range from dedicated bike lanes to paved shoulders, while off-road facilities consist of trails. **Table 13** below provides a breakdown of the County's current cycling facilities and shoulder conditions, as described in the 2021 CMP. The 2021 CMP proposes a cycling network which can be seen in **Figure 8**. The recommendation consists of a tiered network:

- **Primary Network (189 km)** – critical corridors connecting urban centres and settlements
- **Secondary Network (181 km)** – corridors connecting smaller settlement areas to the Primary Network
- **Local Connecting Links (20 km)** – local roads, not under the County's jurisdiction, that form part of MTO's Province-wide Cycling Network
- **Proposed Off-Road Trail (15 km)** – abandoned rail corridor from Tillsonburg to Norwich

Additionally, the Cycling Master Plan proposes separation levels for the primary network which delineates the type of cycling infrastructure to be implemented. The separation level of the primary network can be seen in **Figure 9**.

TABLE 13: SUMMARY OF EXISTING CYCLING AND ROAD SHOULDER CONDITIONS

On-Road Facilities	
Urban Shoulders	23.5 km
Bike Lanes	3.7 km
Off-Road Facilities	
Off-Road Trails	32.3 km

Rural Shoulder Conditions	
No Shoulders	56.7 km
Narrow Gravel Shoulders	154.1 km
Full Gravel Shoulders	234.2 km
Partial Paved/Gravel Shoulders	202.2 km
Paved Shoulders	6.3 km

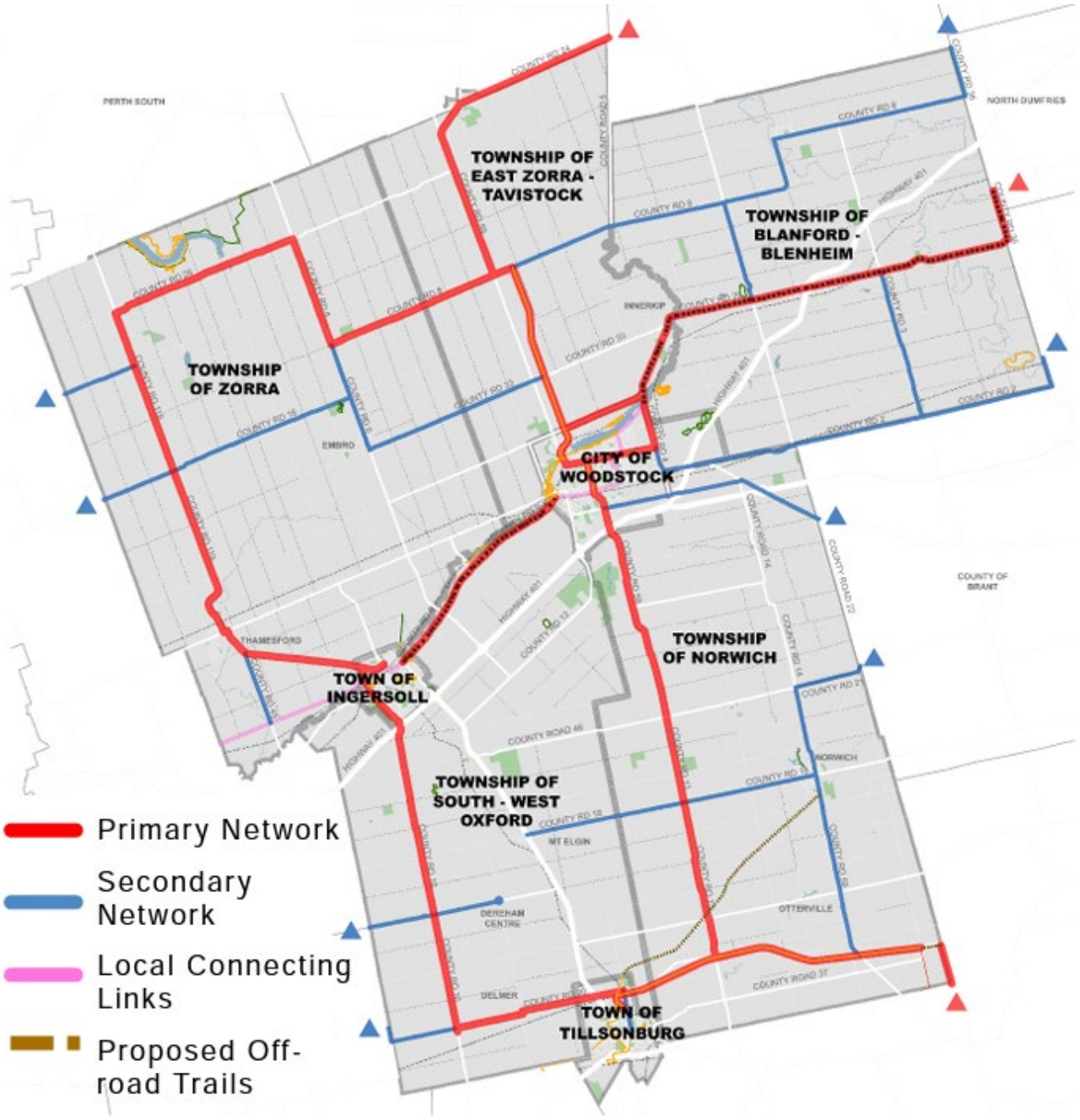

FIGURE 8: OXFORD COUNTY CYCLING NETWORK (2021 CYCLING MASTER PLAN)

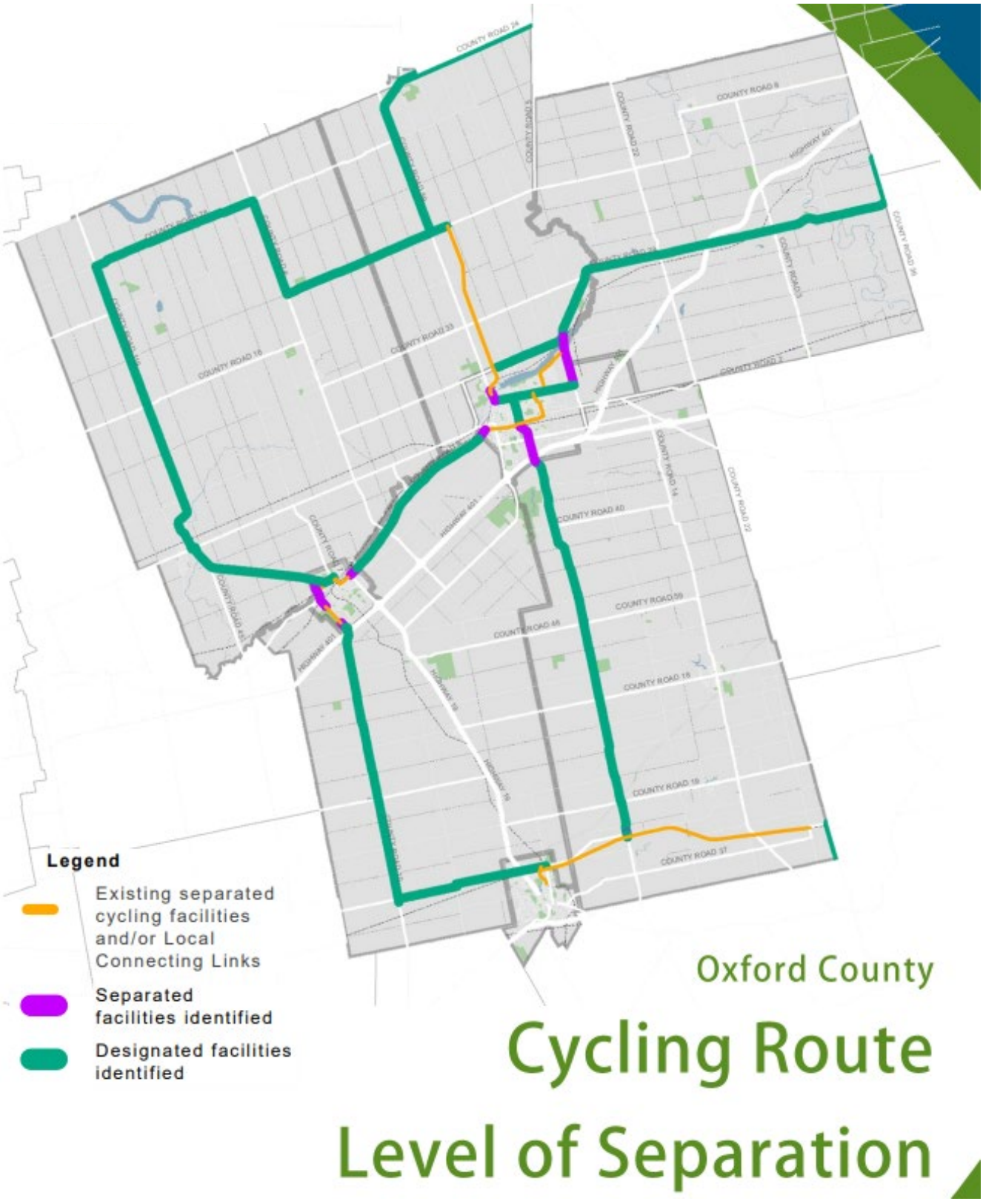

FIGURE 9: CYCLING NETWORK LEVEL OF SEPARATION (2021 CYCLING MASTER PLAN)

4.3 Public Transportation

The City of Woodstock offers bus transit and para-transit services within the City, while the Town of Tillsonburg's transit authority, T:GO, provides both in-town bus transit and intercommunity bus service, the latter of which provides connections between Ingersoll, Woodstock, Tillsonburg, the community of Norwich, the City of London, and several communities within Elgin and Norfolk County.

The Township of East Zorra-Tavistock transit authority has proposed a north Oxford County intercommunity bus route for future implementation across Zorra, East Zorra-Tavistock, Blandford Blenheim, Woodstock and New Hamburg.

Transit connections from surrounding municipalities that serve Oxford County include Norfolk County intercommunity bus, with service to Tillsonburg, and Middlesex County intercommunity bus, with service to Ingersoll, Thamesford and Woodstock.

VIA Rail provides service to Woodstock and Ingersoll, which are both on the Windsor-London-Toronto route. At the time of publication of this report (July 2023) Woodstock is served by three eastbound and four westbound trains on both weekdays and weekends, while the Ingersoll station is served by three eastbound trains and three westbound trains on both weekdays and weekends. The T:GO intercommunity bus route has a stop at the Woodstock VIA station, providing service integration.

Oxford County is not serviced by GO Transit, however, St. Mary's, Stratford, Cambridge, Brantford, Waterloo and Kitchener are serviced by GO bus routes, while Kitchener additionally has GO train service.

Figure 10 below displays the County's and surrounding regional transit networks as of 2021.

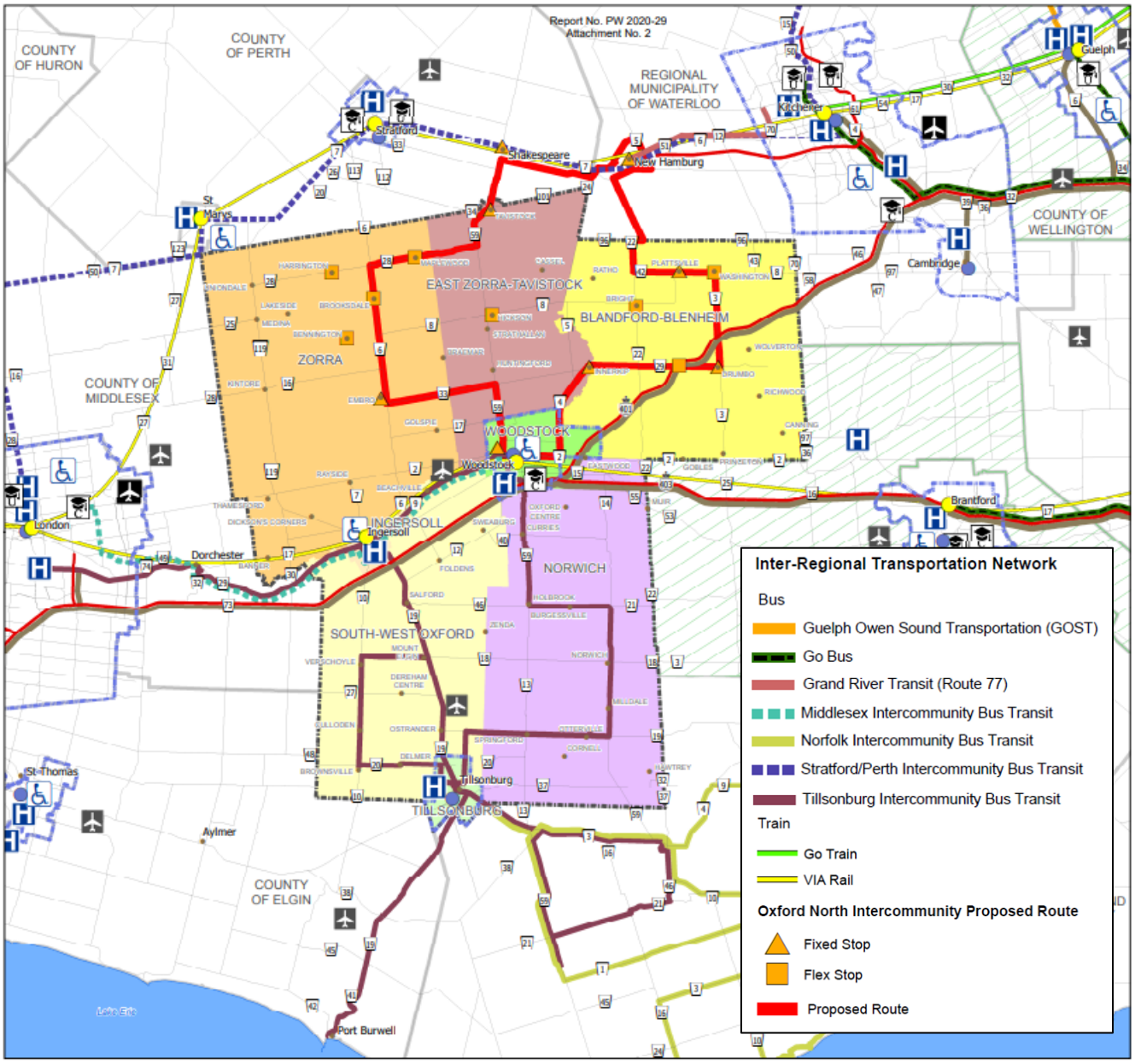

FIGURE 10: INTER-COMMUNITY TRANSPORTATION NETWORK (2021)

4.4 Carpool Lots

There is currently one official carpool lot in operation within the County, located at Highway 401 and Highway 19, however, several informal locations were identified in the 2019 TMP, including the Quality Inn and Suites (580 Bruin Blvd), Highway 401 and Oxford Road 29, Highway 401 and Oxford Road 15, and Highway 401 and Oxford Road 10. Furthermore, two other locations were identified as having the potential to become formal lots: Oxford Road 15 and Oxford Road 55, and the Sobeys Plaza (678 Broadway Street, Tillsonburg. The 2019 TMP recommended the advocating and support of converting the informal and selected lots to formal lots, however at the time of writing this report, none had been converted. The official carpool lot and lots selected for conversion are displayed in **Figure 11** below.

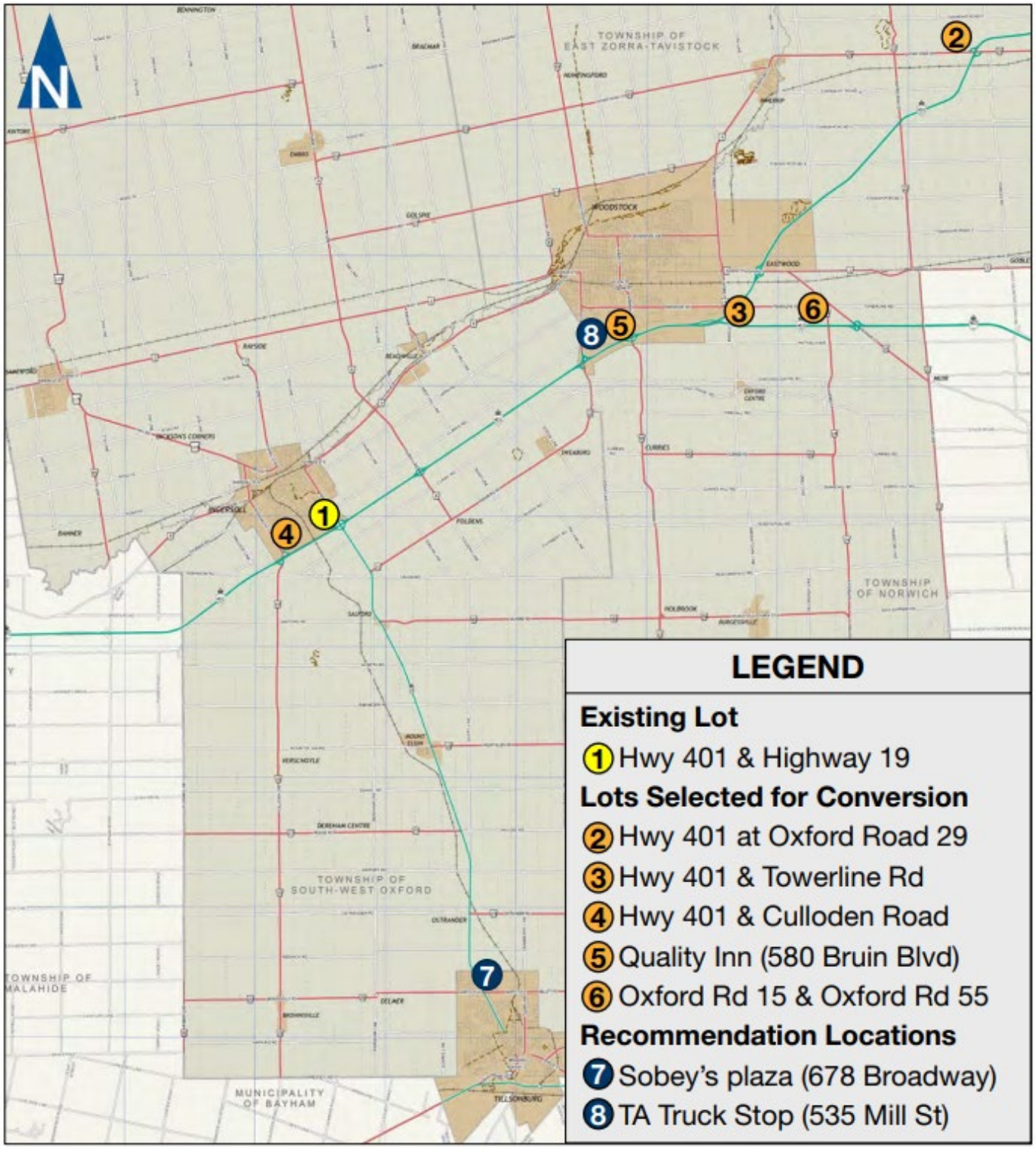

FIGURE 11: EXISTING CONVERSION CANDIDATES AND RECOMMENDED CARPOOL LOTS (2021)

4.5 Goods Movement

Goods movement within Oxford County primarily utilizes the provincial highway, county road network and rail.

4.5.1 Provincial Highways

The Highway 401 (six lane cross section) and Highway 403 (four lane cross section) noted in Section 4.1.1 are key freight vehicle routes that connect the major economic centres of the County to markets in Southwestern Ontario, the Greater Toronto and Hamilton Area (GTHA) and cross-border areas within the United States.

4.5.2 County Roads

County Roads facilitate the movement of goods between the provincial highways and rail, and their local destinations or roads. County of Oxford By-law No 6191-2020, enacted January 22, 2020, placed load limits on County Roads. Specifically, the By-law applied Section 122, Subsections (1), (2), (3) and (4) of the *Highway Traffic Act* to the roads summarized in **Table 14**. These seasonal load restrictions protect County roads when they are most susceptible to potential damage, however, they limit truck goods movement. MTO has developed the Reduced Load Periods Onset and Removal Model Tool (RLPORM) to determine the optimal time to implement and remove reduced load periods based on local weather conditions. The County is in the process of implementing the tool which will improve risk management, prevent damage to road infrastructure and help businesses such as Ontario's trucking and agri-food sector.

TABLE 14: COUNTY ROADS SUBJECT TO LOAD LIMITS

Subject Oxford Road	Segment
Oxford Road 5	Oxford Road 8 to Oxford Road 24
Oxford Road 14	Oxford Road 22 to Oxford Road 15
Oxford Road 16	Oxford Road 119 to Oxford Road 6
Oxford Road 18	Kings Highway 19, Mount Elgin to Oxford Road 13
Oxford Road 18	Oxford Road 59 to County of Brant Boundary
Oxford Road 19	Kings Highway 19 to James St., Otterville
Oxford Road 19	Oxford Road 59 to County of Norfolk Boundary
Oxford Road 20	Oxford Road 26 to Quarter Town Line Road, Tillsonburg
Oxford Road 22	Oxford Road 22 to Oxford Road 2
Oxford Road 22	Oxford Road 2 to Oxford-Waterloo Road
Oxford Road 23	Oxford Road 22 to Regional Road 3, Regional Municipality of Waterloo
Oxford Road 25	County of Middlesex Boundary to Oxford Road 119
Oxford Road 26	Oxford Road 20 to Elgin County Road between Concession X and XI, South Dorchester Township

Oxford Road 27	Pigram Line to Kings Highway 19
Oxford Road 29	Oxford Road 3 to Oxford Road 36
Oxford Road 32	Oxford Road 37 to LaSalette Road
Oxford Road 33	Oxford Road 6 to Oxford Road 59
Oxford Road 40	Oxford Road 59 Oxford Road 14
Oxford Road 47	Oxford Road 2 to Oxford Road 36
Oxford Road 28*	Oxford Road 59 to Oxford Road 5
Oxford Road 60*	Oxford Road 4 to Oxford Road 8
Oxford Road 21*	Oxford Road 59 to Oxford Road 22

Note: * - These roads were uploaded as part of the 2021 Road Rationalization Study and should be added to the current load limit by-law

4.5.3 Rail

Rail is a vital component of the County's transportation network and economy, providing essential infrastructure for both people and goods movement. Trade corridor freight railway systems are comprised of both mainline or Class 1 railways, as well as, regional / Short Line Rail (SLR) that often provides the "first and last mile" feeder connections at either end of the mainline freight trips.

Canadian Pacific Rail (CP Rail) and Canadian National Rail (CN Rail) operate east-west Class I rail lines through the Woodstock and Ingersoll which provide vital freight movement through the Quebec City to Chicago corridor.

The Ontario Southland Railway (OSR) and GIO Rail operate short line rail that provides shorter freight connections within the County to the main Class 1 lines noted above, vital to local demand. Specifically, the OSR leases the CP Rail corridor from Ingersoll to Tillsonburg and the CN Rail corridor from St. Thomas to Tillsonburg and operates between Ingersoll, Tillsonburg, Aylmer and St. Thomas. GIO Rail leases the CN Cayuga Subdivision line corridor between St. Thomas and Tillsonburg.

The County's rail line network is displayed in **Figure 12**.

4.6 Rail Crossings

There are 22 grade and 10 grade separated crossings within the County. In response to updated Transport Canada regulations, a review of at-grade crossings was undertaken in 2020 to identify safety deficiencies and recommend improvements to ensure the County's level crossings comply with the applicable standards. The recommended improvements are discussed in **Section 5.5**. At-grade crossings are summarized in **Table 15**.

TABLE 15: COUNTY ROAD AT-GRADE RAIL CROSSINGS

County ID	Crossing Location	Railway Authority	Subdivision / Spur	Mileage	Average Annual Daily Trains
895087	Oxford Road 3	CN	Dundas	37.77	30
895929	Oxford Road 3	CP	GALT	73.75	N/A
806956	Oxford Road 29	CP	GALT	74.61	13
RX815776	Oxford Road 22	CP	GALT	78.5	12
815006	Oxford Road 22	CN	Dundas	42.27	30
715447	Oxford Road 4	CP	GALT	83.52	12
59247	Oxford Road 59	CN	Dundas	49.26	30
2042	Oxford Road 2	CP/OSR	St. Thomas	0.42	1
684567	Oxford Road 2	CP	GALT	90.47	N/A
375067	Oxford Road 6	CP	GALT	93.97	10
434838	Oxford Road 11	CN	Dundas	54.41	30
434801	Oxford Road 11	CP/OSR	St. Thomas	4.38	2
374622	Oxford Road 6	CP/OSR	St. Thomas	6.2	2
51325	Oxford Road 51	CP/OSR	Port Burwell/Tillsonburg Spur	16.93	0
37057	Oxford Road 37	CP/OSR		16.48	0
53117	Oxford Road 53	CP/OSR		15.37	1
20215	Oxford Road 20	CP/OSR		14.45	1
224284	Oxford Road 19	CP/OSR		12.27	1
264210	Oxford Road 27	CP/OSR		10.19	1
9293	Oxford Road 9	CN	Dundas	50.67	30
10287	Oxford Road 10	CP/OSR	St. Thomas	9.91	10
976194	Oxford Road 37	CP	GALT	68.82	13

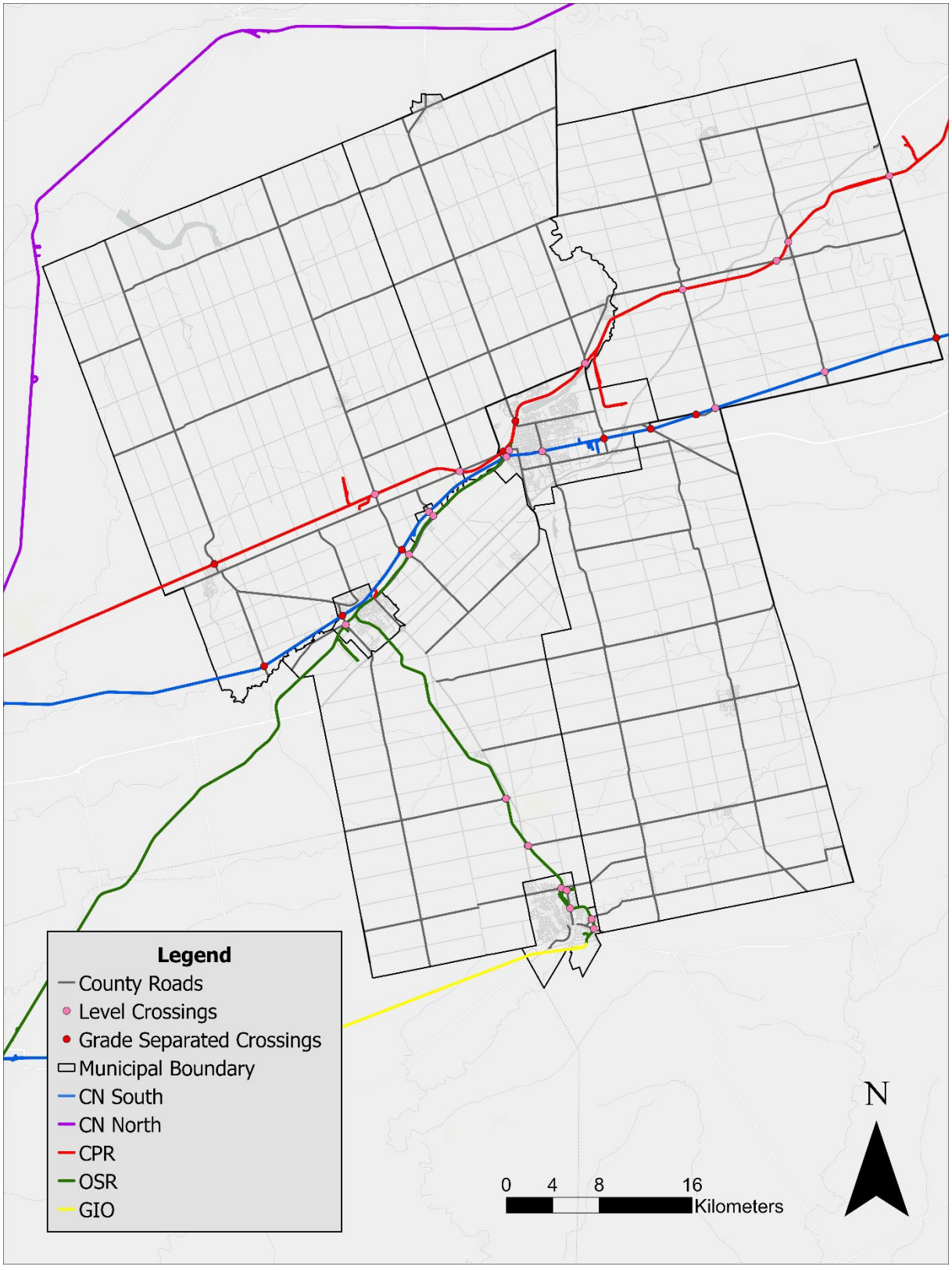

FIGURE 12: OPERATIONAL RAIL LINES AND RAIL CROSSINGS WITHIN OXFORD COUNTY

4.7 Airports

There are two airports operating within Oxford County: Tillsonburg Regional Airport and Woodstock Airport. Tillsonburg Regional Airport, located north of Tillsonburg, is comprised of one paved runway and two turf runways and is a Canada Customs Airport of Entry, welcoming international flights handling general aviation aircraft up to 15 passengers. Owned by the Town of Tillsonburg, the airport serves flight training providers (i.e., Tillsonburg Flying School), flying clubs, private and corporate aircraft, charters, aerial work activities and gliders, Emergency Medical Services (EMS), and Canadian Military aircraft.

The Woodstock airport, located west of Woodstock, is owned and operated by the Woodstock Ontario Flying Club and operates as a private flying club.

4.8 Oxford County Travel Patterns

4.8.1 Streetlight Data

The predominant data source for assessing County travel patterns was *StreetLight* data. *StreetLight* allows users to select geographic regions or "zones", in which a wide range of metrics can be derived from any trip that originates in, has destinations in, or passes through. The metrics utilized were origin-destination patterns between geographic regions and vehicle volumes through zones. The difference is exemplified in **Figure 13**, where the red boundaries represent different geographic areas in which the number of trips between the two areas can be calculated and the blue zone where the volume of vehicles passing through the zone, hence travelling on that specific road, can be determined.

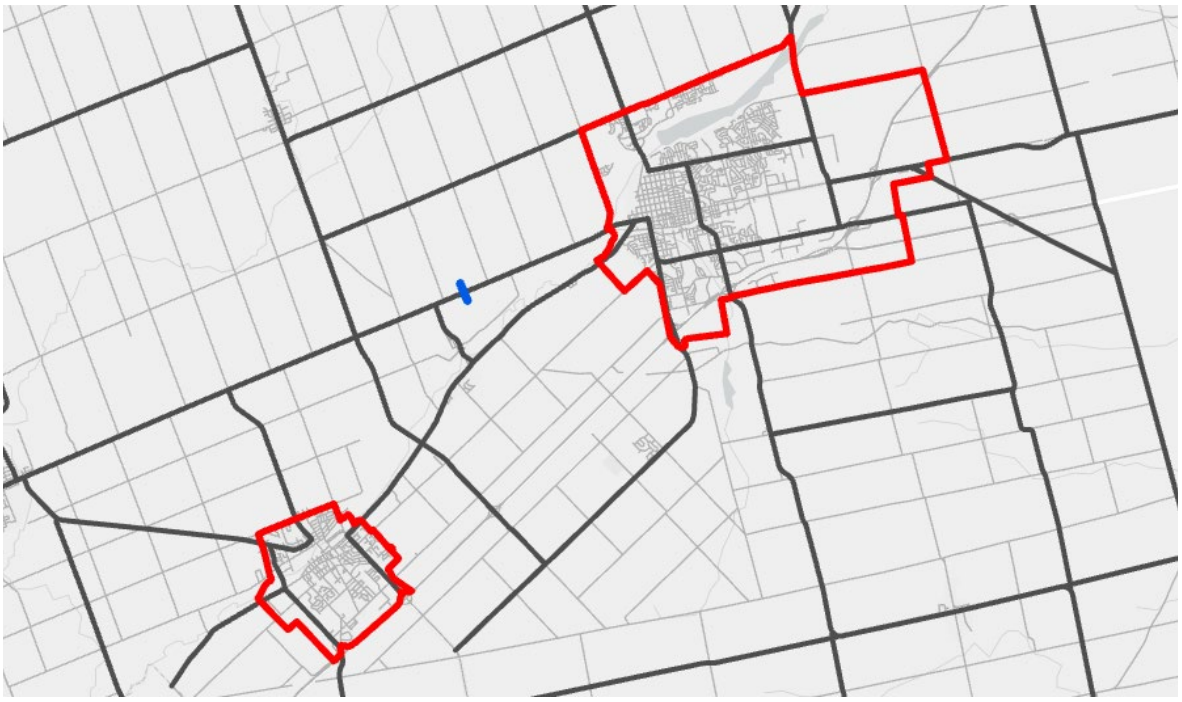

FIGURE 13: ILLUSTRATION OF GEOGRAPHIC AREAS AND GATE ZONES

Origin-destination patterns provide a high-level assessment of general travel patterns throughout the County, while the vehicle volumes provide an assessment of the network on a road link basis, providing a more fine-grained analysis of specific roads.

It should be noted that *StreetLight* uses several data sources to develop a vehicle traffic model in which vehicle volumes are derived, hence, volumes are an estimation. Data sources used in the model include mobility data from location-based service trips, connected vehicles, navigation GPS trips, telecommunications data and contextual data such as demographic data, weather data, road network data and traffic data.

4.8.2 Origin Destination Patterns

Origin destination data has been obtained from *StreetLight*, allowing for an analysis of trips to, from and within Oxford County. Consistent with the 2019 base year used for the road network model, 2019 data is presented below.

Most trips that originate in Oxford County end within Oxford County, with the most frequent destinations being the large urban centres of Woodstock, Ingersoll and Tillsonburg. The most frequent destinations for trips originating in Oxford County that are destined outside the County are Middlesex County, the Region of Waterloo and Norfolk County.

The same pattern is observed when reviewing the trip patterns where Oxford County is the destination. The most frequent origin of trips destined for Oxford County from within the County starts in the urban centres. For trips destined for Oxford County which begin outside the County, the same surrounding municipalities of Middlesex County, the Region of Waterloo and Norfolk Counties have the highest number of trips originating from them. **Figure 14** shows the external travel trends for trips between Oxford County and the surrounding municipalities. **Table 16** summarizes the travel patterns for trips within Oxford County. Further origin destination summary and maps can be found in **Appendix B**.

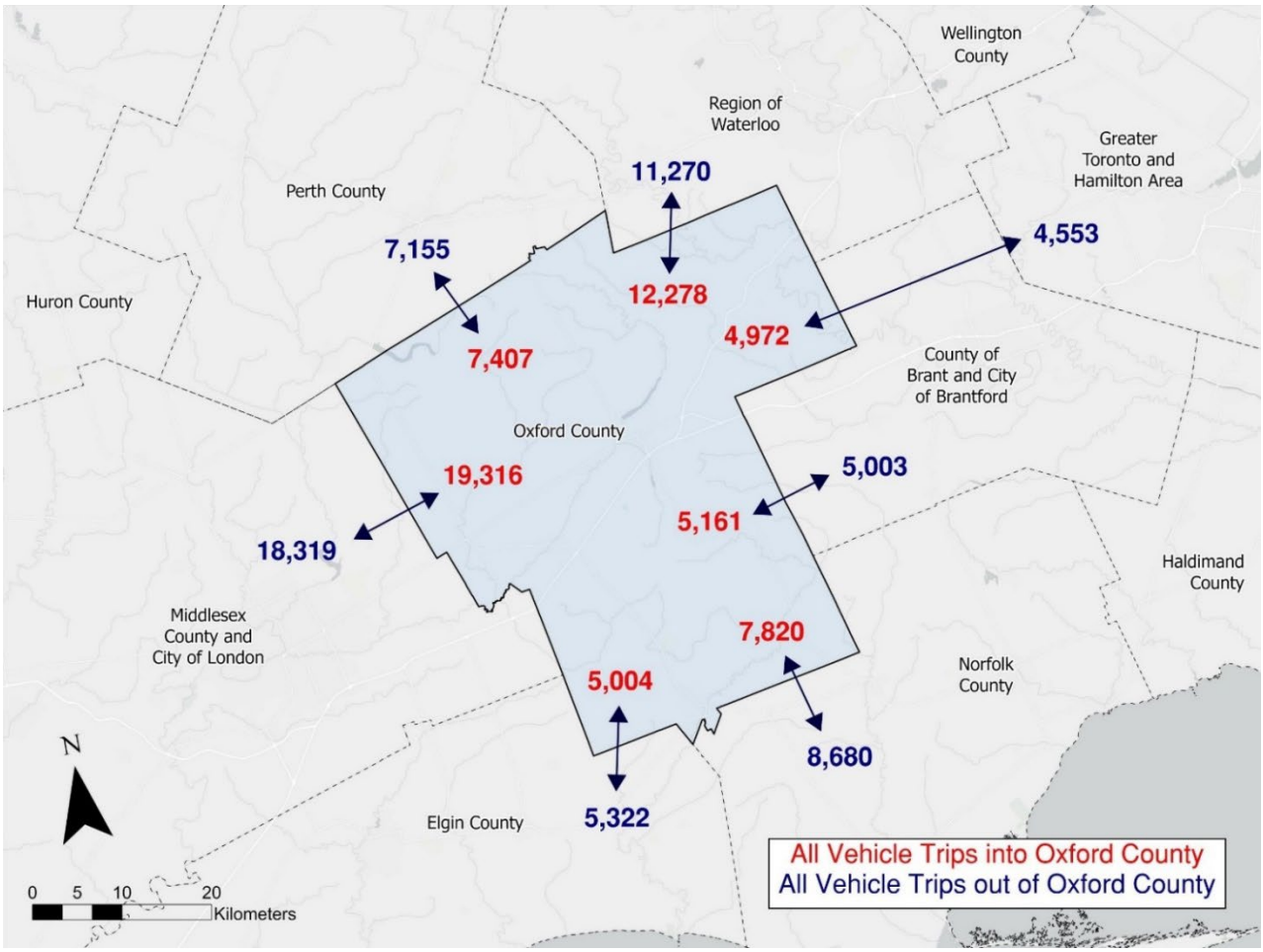

FIGURE 14: INTER-REGIONAL ORIGIN AND DESTINATION TRAVEL TRENDS

TABLE 16: INTER-REGIONAL (COUNTY) ORIGIN AND DESTINATION TRAVEL TRENDS

		Origin							
		Woodstock	Tillsonburg	Ingersoll	Norwich	Zorra	East Zorra-Tavistock	South-West Oxford	Blandford-Blenheim
Destination	Woodstock	243,333	1,842	8,143	6,157	3,087	8,554	6,416	2,881
	Tillsonburg	1,965	69,054	1,593	3,205	237	68	3,701	21
	Ingersoll	9,139	1,455	71,991	443	4,214	376	6,685	120
	Norwich	7,321	3,456	507	20,050	244	274	1,245	210
	Zorra	3,591	397	4,681	234	15,421	671	808	102
	East Zorra-Tavistock	9,628	54	422	190	710	16,652	340	1,144
	South-West Oxford	8,149	4,194	7,419	1,291	743	370	6,931	122
	Blandford-Blenheim	3,593	23	161	224	117	1,235	95	7,445

4.8.3 Road Volume Patterns

To further understand travel patterns, Peak PM vehicle volumes from the network assessment have been analyzed, and the results are shown below in **Figure 15**. The results reveal several prominent corridors which experience high vehicle volumes, including but not limited to:

- **Oxford Road 2:** Predominant County Road for East-West travel between Woodstock, Ingersoll, and London
- **Oxford Road 59:** North-South travel from Woodstock and the Highway 401/403 corridor to Tavistock and North East-Zorra Tavistock, Tillsonburg, and Norwich.
- **Oxford Road 4/Oxford Road 60/Oxford Road 5:** North-South travel from Woodstock and the Highway 401/403 corridor to Innerkip and North East-Zorra Tavistock/Blandford Blenheim
- **Oxford Road 54/Oxford Road 59:** North-South travel within Woodstock and from Woodstock and the Highway 401/403 corridor to Norwich
- **Oxford Road 36:** North-South travel in Blandford Blenheim and connection to the Regional Municipality of Waterloo
- **Oxford Road 51:** Major Arterial Road within Tillsonburg, providing a connection to Provincial Highway 3

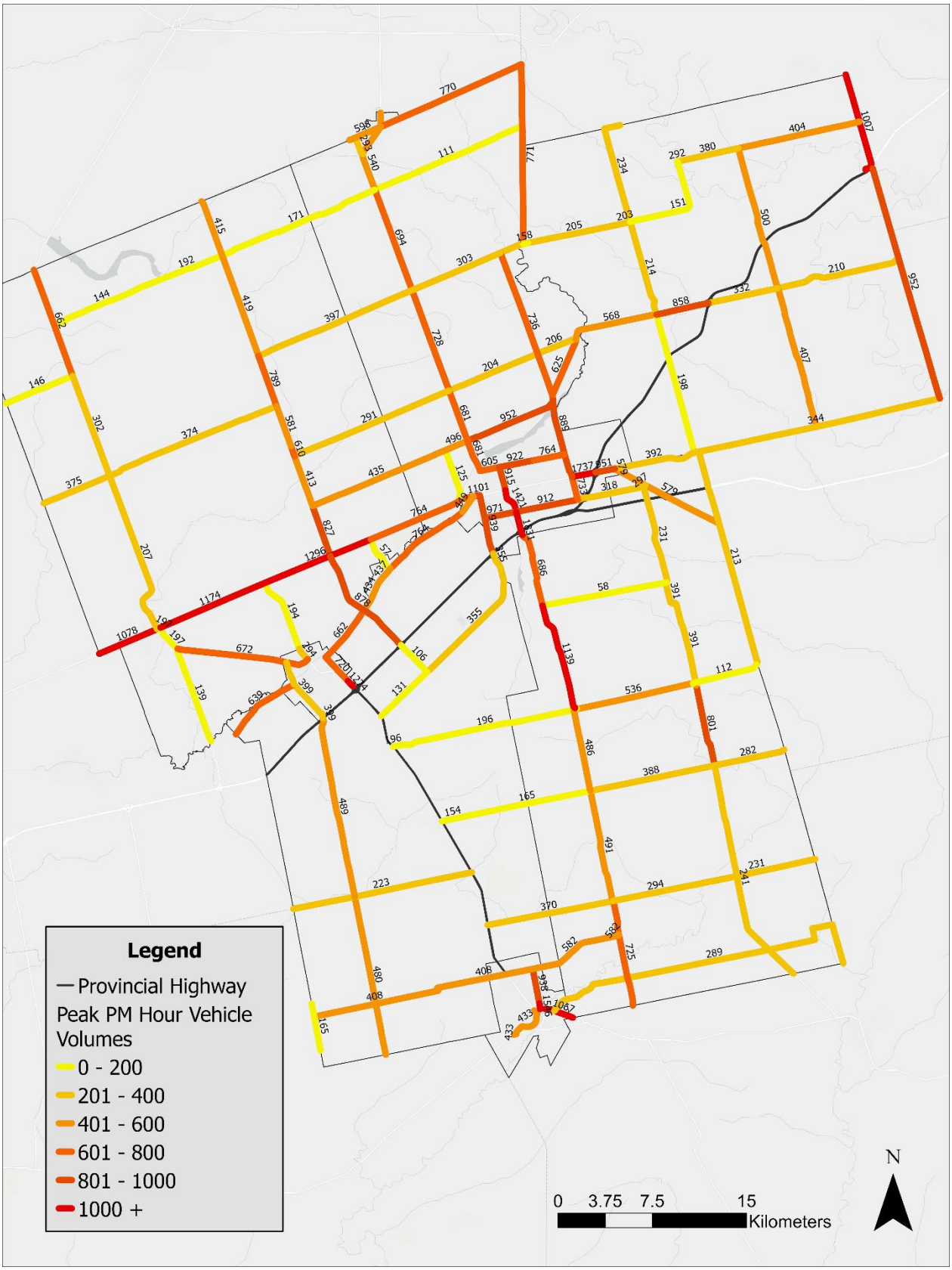

FIGURE 15: BASE YEAR (2019) PEAK PM VEHICLE VOLUMES

4.8.4 Existing Mode Share

The 2021 Census provided the most recent mode share figures, however, given the impacts of the COVID-19 pandemic and ongoing stay at home restrictions, the share of work from home (WFH) has notably increased. For use in the future network assessment and to establish a baseline for mode share moving forward, a revised rate has been developed which takes into consideration the lifting of COVID-19 restrictions and the partial return to pre-pandemic travel patterns with more people returning to the office while also reflecting the new normal of an increase in hybrid work. The 2016 and 2021 Census mode shares and the revised mode share rates are summarized below in **Table 17.**

TABLE 17: CENSUS MODE SHARES AND SUGGESTED MODE SHARES.

	2016 Census	2021 Census	2024 TMP Revised Rates
Percent Auto Driver	78.3%	70.2%	**75.3%**
Percent TDM (Carpool and WFH)	15.1%	24.3%	**18.9%**
Percent Transit	0.8%	0.5%	**0.8%**
Percent Active Transportation	5.1%	3.6%	**3.9%**
Percent Other	0.7%	1.3%	**1.1%**

Given the uncertainty surrounding current and future work and travel patterns, the suggested rates were developed using several assumptions. The number of residents who worked from home in 2021 was 10,305, compared to 4,805 in 2016; it has been assumed this difference is primarily a result of COVID-19, as no other mode experienced a comparable change. With the restrictions associated with COVID-19 being lifted and working conditions returning to a more pre-pandemic style, it was assumed a majority of those who reported working from home will return to working from an office, however, it was recognized that there will be a portion of the workforce which will remain at home. For the purpose of this plan, it was assumed 40% will remain working from home. Furthermore, in consultation with local and regional transit providers and an assessment of ridership, it was determined transit has been returning to pre-pandemic levels. The revised mode share is further displayed below in **Figure 16**.

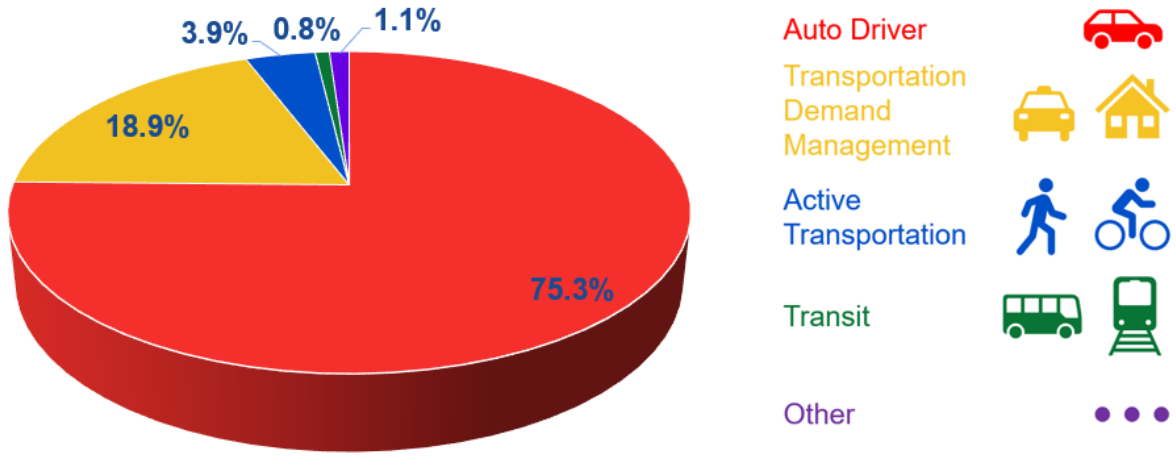

FIGURE 16: 2024 REVISED MODE SHARES

4.9 Existing Road Network Operations Assessment

4.9.1 Existing Conditions Development

The County's Road network existing conditions were developed through an assessment of volume to capacity on major road links. Volume to capacity (V/C) is a measure of the vehicular demand relative to the carrying capacity of the roadway, based on known relationships with geometry, traffic control, and driver behaviour. The V/C value ranges from 0 to < 1.0, with 1.0 indicating the segment is operating at its carrying capacity. As the V/C becomes larger, traffic becomes less stable, and the free flow of vehicles is disrupted. **Table 18** below provides a summary of V/C to Level of Service (LOS) correlation and traffic description.

TABLE 18: LEVEL OF SERVICE DESCRIPTIONS AND ACTIONS

V/C	LOS	Traffic Description
< 0.6	A	Free-flowing traffic with no delays. No action is required.
0.6 – 0.7	B	Stable flow with little delays. No action is required.
0.7 – 0.8	C	Some restricted flow with minimal delays. This triggers internal monitoring, in order to provide time to assess and plan accordingly.
> 0.8	D	Restricted flow and decline in comfort and convenience. Capacity improvements are required and Class Environmental Assessment is to be undertaken, if necessary

Major links were established by sectioning the road network into links between County intersections, municipal boundaries and provincial highway access. The highest bi-directional Peak PM vehicle volume between the *StreetLight* Data and 2019 Transportation Master Plan Turning Movement Counts (TMC) was then assigned to each major link. Where there was no data available for a major link, volume from an adjacent road or Annual Average Daily Traffic (AADT) adjusted for peak hours was assigned.

The locations of *StreetLight* zones and the 2019 Transportation Master Plan TMC locations are displayed in **Figure 17**. Several parameters were used for both the *StreetLight* and TMC data:

- *StreetLight* data
  - Year – 2019
  - Days of Week – Monday to Friday
  - Peak PM Volume – Maximum between 4-5 PM and 5-6 PM
- 2019 Transportation Master Plan Turning Movement Counts
  - 2019 volumes determined by linear interpolation between 2018 and 2023 projections
- AADT Data
  - Year – 2019
  - Peak Hour Factor of 0.1

The base year of 2019 was utilized to avoid the travel patterns changes caused by the COVID-19 Pandemic. Current travel trends are seeing a gradual return to pre-pandemic patterns, hence for the long-term travel demand projections in the future network assessment, a base year with non-pandemic patterns was utilized.

Following the assignment of volumes, a capacity of 900 vehicles per lane per hour (vpl/h) was assigned to both urban and rural roads, allowing for the determination of the volume to capacity ratio for the road network. Three lane roads with a shared center left-turn lane were assigned a capacity of 450 vpl/h. These lane capacities are reflective of the characteristics of the County Road network system and are consistent with the lane capacity from the analysis completed in the previous TMP.

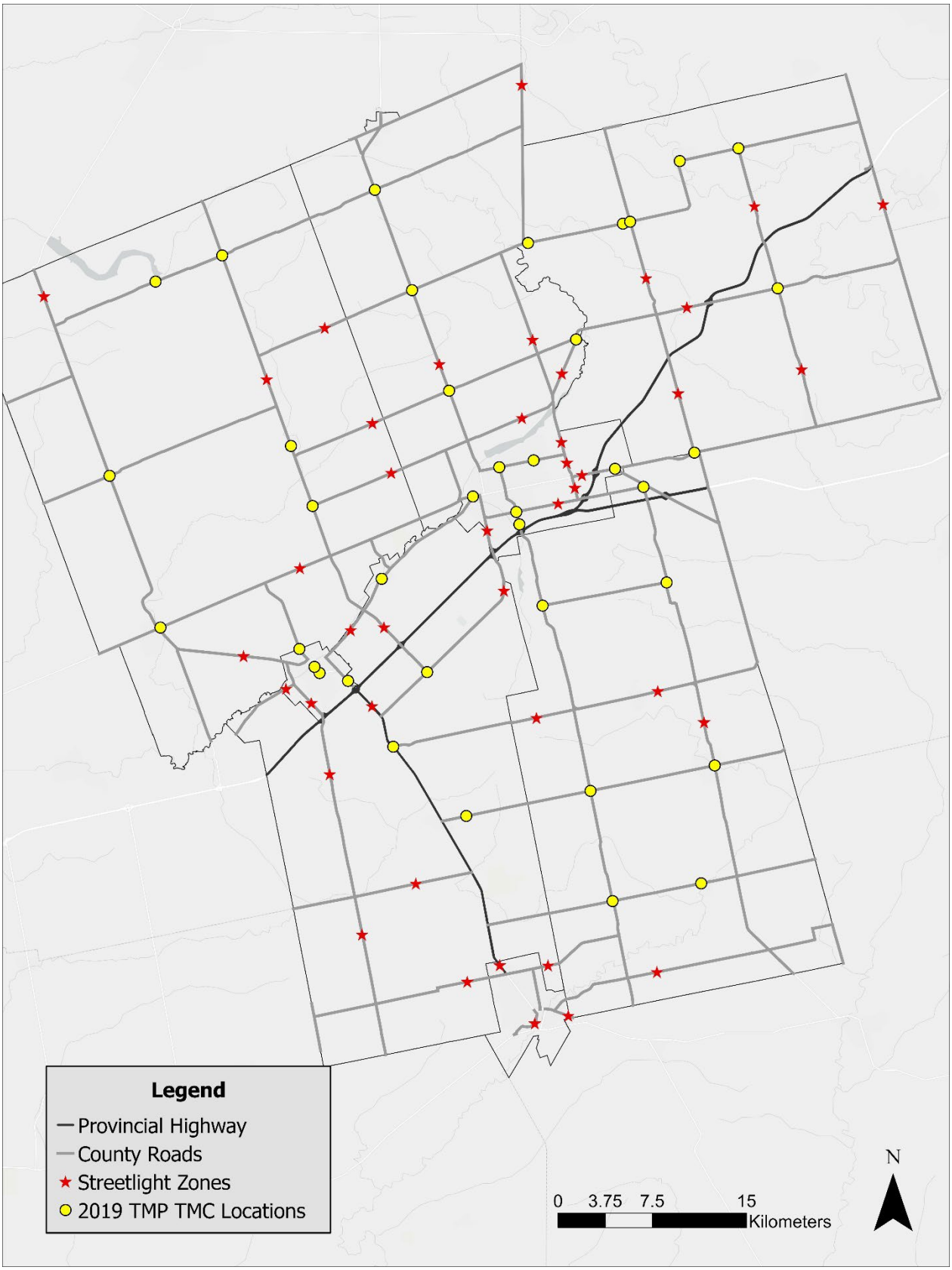

FIGURE 17: STREETLIGHT ZONES AND 2019 TMP TMC LOCATIONS

4.9.2 Existing Conditions

The current road network operates well and has significant capacity available; only six links have a V/C over 0.6. **Table 19** below summarizes the roads with a V/C over 0.6 (Less than an LOS of A) and the road network model can be seen in **Figure 18**.

TABLE 19: EXISTING CONDITIONS - ROAD LINKS WITH A V/C OVER 0.6

Municipality	Road	Segment	Base Year V/C
Zorra	Oxford Road 2	Oxford Road 11 to Oxford Road 7	**0.72**
Ingersoll	Oxford Road 119	Clark Rd to Hwy 401	**0.71**
Tillsonburg	Oxford Road 53	Oxford St to Brock St E	**0.69**
Zorra	Oxford Road 2	Oxford Road 119 to Oxford Road 7	**0.65**
Norwich	Oxford Road 59	Oxford Road 40 to Oxford Road 46	**0.63**
Woodstock	Oxford Road 59	Dundas St to Henry St	**0.63**

Two roads, Oxford Road 2 from Oxford Road 11 to Oxford Road 7 and Oxford Road 119 from Clark Rd to Hwy 401 are exhibiting early signs of LOS issues, which are addressed in the future network assessment.

4.10 Road Safety

Collision history on County roads from the past five years (2018 - September 2022) was analyzed to identify the ten most frequent locations for both rural and urban collisions. The data was obtained from MTO and consisted of all reported motor vehicle collisions within Oxford County. Urban locations were comprised of the three urban centres of Woodstock, Tillsonburg and Ingersoll, while all remaining locations qualified as rural. A heat map of all collisions on Oxford County Roads (OR) is displayed in **Figure 19.** A summary of the top urban and rural collision locations can be found in **Table 20** and **Table 21**. These locations have been identified as requiring consideration for further evaluation to identify any potential safety measures or improvements. Included in the summary is the total number of collisions, severity (injuries and fatalities), and an indication of any completed or ongoing improvements. Further collision statistics and Area Municipality heat maps are contained in **Appendix C**.

FIGURE 18: BASE YEAR V/C ROAD NETWORK MODEL

FIGURE 19: COLLISIONS ON COUNTY ROADS HEAT MAP

TABLE 20: SUMMARY OF TEN MOST FREQUENT URBAN COLLISION LOCATIONS (2018-2022)

Rank	Location	Municipality	Number of Collisions	Injuries / Fatalities	Completed / Ongoing Improvements
1	OR59 and Julianna	Woodstock	44	4 / 0	Upgrades Completed in 2021
2	OR59 and Dundas	Woodstock	42	6 / 0	Ongoing Reconstruction
3	OR59 and OR15	Woodstock	40	0 / 0	
4	OR59 and Peel	Woodstock	38	10 / 0	Ongoing Reconstruction
5	OR35 and Springbank	Woodstock	33	5 / 0	
6	OR59 and Hounsfield/Main	Woodstock	33	7 / 0	Ongoing Reconstruction
7	OR4 and OR2	Woodstock	26	7 / 0	
8	OR2 and OR12	Woodstock	22	6 / 0	
9	OR54 and OR35	Woodstock	21	4 / 0	Reconstructed in 2021
10	OR15 and OR12	Woodstock	21	2 / 0	

TABLE 21: SUMMARY OF TEN MOST FREQUENT RURAL COLLISION LOCATIONS (2018-2022)

Rank	Location	Municipality	Number of Collisions	Injuries / Fatalities	Completed / Ongoing Improvements
1	OR2 and OR6 (Existing Roundabout)	Zorra	25	5 / 0	
2	OR59 and OR33	East-Zorra Tavistock	19	5 / 1	Upgrades Completed in 2023
3	OR59, OR13 and OR46	Norwich	16	5 / 0	
4	OR6 and OR33	Zorra	13	6 / 0	Illumination added in 2021
5	OR59 and OR8	East-Zorra Tavistock	13	5 / 0	All Way Stop implemented in 2021
6	OR9 and OR6	South-West Oxford	11	3 / 0	
7	OR28 and OR6	Zorra	11	3 / 1	Upgrades planned for 2024
8	OR60 and OR33	East-Zorra Tavistock	11	4 / 0	
9	OR6 and Karn Road	South-West Oxford	11	5 / 2	Illumination added in 2021
10	OR8 and OR60	East-Zorra Tavistock	10	2 / 0	

5.0 Future Transportation Needs

5.1 Land Needs Assessment

The County's Phase 1 Comprehensive Review Study, 2020 also includes a land needs assessment that identifies the land supply required to accommodate the above noted population and employment forecasts, based on various factors and assumptions. The various secondary plans identified in 2.2.1 were largely intended to address the identified land supply deficiencies in each of those communities. However, there are some remaining land supply shortfalls in the County that have yet to be addressed.

5.2 Development Applications

The County's most recent development activity maps were reviewed to identify and locate the residential and industrial development parcels specific to each area municipality within the County. The maps also provided the status of each parcel:

- Nearly built plan or phase
- Draft approved plan
- Registered plan
- Circulated or submitted plan

The maps were reviewed in comparison to the population and employment projections used in the future analysis to get a better understanding of expected development patterns.

5.3 Future Mode Share

Due to large changes in travel patterns as a result of COVID-19, the County has already reached its mode share targets set out in the 2019 TMP. However, the County continues to make efforts to increase the share of sustainable modes of transport, specifically active transportation and transportation demand management and should aim to achieve a 5% increase in the sustainable mode share by 2046. The 2019 TMP and new horizon year mode share targets are summarized in **Table 22,** and the 2046 target mode shares are displayed in **Figure 20**.

TABLE 22: MODE SHARE TARGET OVER HORIZON YEARS

	2019 TMP		2024 TMP	
	Vehicular (Single Auto Driver)	**Sustainable (All other modes)**	**Vehicular (Single Auto Driver)**	**Sustainable (All other modes)**
2024	**N/A**	**N/A**	**75.3%**	**24.7%**
2028	**76%**	**24%**	**74.3%**	**25.7%**
2033	**75%**	**25%**	**73.3%**	**26.7%**
2038	**74%**	**26%**	**72.2%**	**27.8%**
2046	**N/A**	**N/A**	**70.5%**	**29.5%**

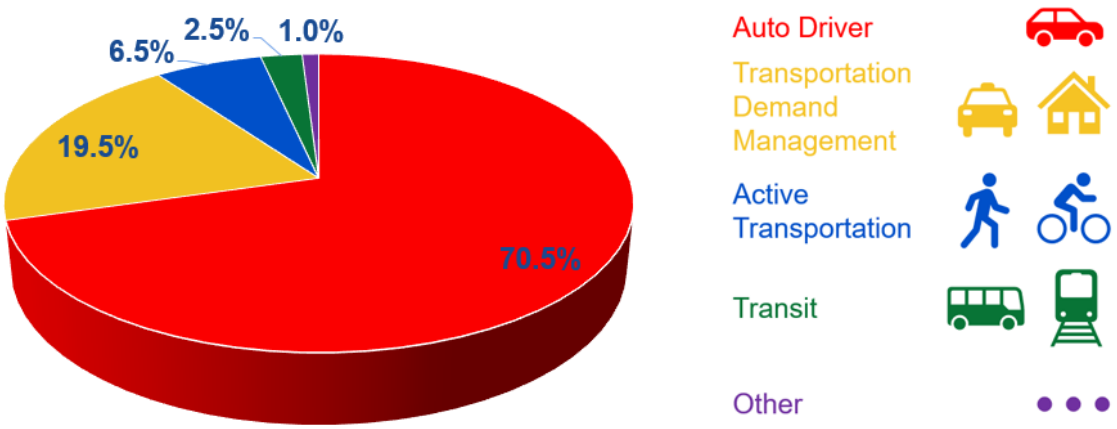

FIGURE 20: 2046 TARGET MODE SHARES

5.4 Future Network Operations Assessment

5.4.1 Trip Generation

To assess the road network's future operations, additional vehicle traffic associated with demographic growth was calculated for each horizon period. To calculate the increase in traffic, County household and employment projections were used to determine the total trips generated for each area municipality. Institute of Transportation Engineers (ITE) trip rates from the Trip Generation Manual (10th Edition) were utilized to convert growth in households and employment into trips. ITE Land Use Code (LUC) 210 – Single Detached Housing and LUC 710 – General Office Building were used for households and employment, respectively.

Using the average rate from the ITE trip rates, the number of new gross trips was calculated for future scenarios. From there, the future mode share of each horizon was applied to account for a reduction in vehicle trips as sustainable modes increase. After accounting for the mode share, the net new trips for both dwellings and jobs are then added together to represent Net Total Trips. The Net Total Trips were then added to each road segment for each horizon year based on the base year travel patterns.

5.4.2 Assessment Results

With additional trips added to each road segment, a new volume for each road was calculated and consequentially a new V/C was determined for each horizon year. **Table 23** summarizes road links with a V/C over 0.6 for each horizon period. Figures of the future road network models and the complete future network assessment table can be found in **Appendix D.** As discussed earlier a V/C over 0.7 triggers internal monitoring, while a V/C over 0.8 will require capacity improvements.

TABLE 23: FUTURE NETWORK ASSESSMENT - ROADS WITH A V/C OVER 0.6

Municipality	Road	Segment	2024	2028	2033	2046
Ingersoll	Oxford Road 119	Clark Road to Hwy 401	0.78	0.83	0.89	1.06
Tillsonburg	Oxford Road 53	Oxford Street to Brock Street E	0.79	0.83	0.89	1.04
Woodstock	Oxford Road 59	Dundas Street to Henry Street	0.69	0.72	0.76	0.87
Tillsonburg	Oxford Road 53	Brock Street E to Oxford Road 20		0.63	0.67	0.80
Zorra	Oxford Road 2	Oxford Road 11 to Oxford Road 7	0.73	0.73	0.73	0.75
Woodstock	Oxford Road 15	Oxford Road 59 and Oxford Road 12		0.61	0.65	0.75
Woodstock	Oxford Road 17	Oxford Road 59 to Oxford Road 4		0.60	0.64	0.73
Woodstock	Oxford Road 12	Pember's Pass to Hwy 401			0.63	0.72
Tillsonburg	Oxford Road 51	Mall Road to Hwy 19			0.61	0.72
Woodstock	Oxford Road 35	Oxford Road 54 to Brompton Avenue			0.62	0.71
Woodstock	Oxford Road 15	Oxford Road 59 to Oxford Road 4			0.61	0.70
Woodstock	Oxford Road 59	Juliana Drive to Patullo Avenue			0.61	0.70
Zorra	Oxford Road 2	Oxford Road 119 to Oxford Road 7	0.66	0.66	0.67	0.68
Norwich	Oxford Road 59	Oxford Road 40 to Oxford Road 46	0.64	0.65	0.66	0.68
Woodstock	Oxford Road 4	Oxford Road 17 to Oxford Road 35				0.68
Woodstock	Oxford Road 2	Oxford Road 4 to Hwy 401				0.67
Woodstock	Oxford Road 59	Oxford Road 15 to Juliana Drive				0.64
Zorra	Oxford Road 2	Cobble Hills Rd to Oxford Road 119	0.60	0.61	0.61	0.62
Blandford-Blenheim	Oxford Road 36	Oxford Waterloo Road to Township Road 11				0.61
Ingersoll	Oxford Road 119	Oxford Road 9 to Clark Road E				0.60

Several roads are projected to experience LOS issues within the 5 year and 20+ year horizon periods:

- 5 year period
  - Oxford Road 119/Harris Street from Clark Road to Hwy 401 (Ingersoll)
  - Oxford Road 53/Tillson Avenue from Oxford Street to Bock Street E (Tillsonburg)
- 20+ year period
  - Oxford Road 59/Wilson Street from Dundas Street to Henry Street (Woodstock)
  - Oxford Road 53/Tillson Avenue from Brock Street E to Oxford Road 20/North Street E (Tillsonburg)

These roads will require additional capacity to improve the LOS and thus are recommended to undertake a Class Environmental Assessment (EA) to evaluate improvement options.

Additionally, several roads are projected to be approaching capacity issues by the 20+ year horizon period:

- Oxford Road 2 from Oxford Road 11 to Oxford Road 7 (Zorra Twp)
- Oxford Road 15/Parkinson Road from Oxford Road 59/Norwich Avenue and Oxford Road 12/Mill Street (Woodstock)
- Oxford Road 17 from Oxford Road 59 to Oxford Road 4 (Woodstock)
- Oxford Road 12/Mill Street from Pember's Pass to Hwy 401 (Woodstock)
- Oxford Road 51/Simcoe Street from Mall Road to Hwy 19 (Tillsonburg)
- Oxford Road 35/Devonshire Avenue from Oxford Road 54/Huron Street to Brompton Avenue (Woodstock)
- Oxford Road 15/Parkinson Road from Oxford Road 59/Norwich Avenue to Oxford Road 4 (Woodstock)
- Oxford Road 59/Norwich Avenue from Juliana Drive to Patullo Avenue (Woodstock)

These roads will require internal monitoring to ensure traffic flow does not deteriorate and a Class EA is required at a sooner timeline.

In addition to the roads listed above for monitoring, the following intersections have been identified to monitor for possible improvements/studies based on the collision analysis results:

- OR59 and Julianna
- OR59 and Dundas
- OR59 and OR15
- OR59 and Peel
- OR35 and Springbank
- OR59 and Hounsfield/Main
- OR4 and OR2
- OR2 and OR12
- OR54 and OR35
- OR15 and OR12
- OR2 and OR6 (Existing Roundabout)
- OR59 and OR33
- OR59, OR13 and OR46
- OR6 and OR33
- OR59 and OR8
- OR9 and OR6
- OR28 and OR6
- OR60 and OR33
- OR6 and Karn Road
- OR8 and OR60

5.5 Railway Crossing Future Analysis

5.5.1 Railway Crossing Improvements

In 2014, Transport Canada updated Grade Crossing Regulations requiring the County to ensure conformity with the new applicable standards. This prompted the County to undergo a comprehensive review of all grade level crossings to determine conformity and identify compliance deficiencies, remedial measures and develop an implementation plan.

The compliance review was conducted using the following regulations, standards and guidelines:

- Transport Canada Grade Crossing Regulations
- Transport Canada Grade Crossing Standards
- Transport Canada Grade Crossing Handbook
- Transport Association of Canada Manual of Uniform Traffic Control Devices for Canada
- Ministry of Transportation of Ontario Traffic Manual Book 6: Warning Signs
- Transport Canada Pedestrian Safety at Grade Crossing Guide
- Minimum Maintenance Standards for Municipal Roadways, O. Reg. 239
- Standard Practice for Safe Walking Surfaces ASTM F1637-95
- Transport Canada Guide for Determining Minimum Sightlines at Grade Crossing

A summary of the remedial measures to be undertaken to ensure conformity with the applicable regulations is provided below in **Table 24**.

TABLE 24: REMEDIAL ACTIONS FOR GRADE LEVEL CROSSINGS

Crossing ID	County Road	Remedial Measures	Cost	Status
806956	Oxford Road 29	Improve the roadway surface conditions on the eastbound approach	Low ($500)	Complete
		Install 30 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs and remove the 'BUMP AHEAD' signs	Low ($500)	Complete
RX815776	Oxford Road 22	Ensure the trees that have the potential to obstruct visibility on the southwest corner are trimmed on a regular basis	Low ($500)	Complete
		Install 30 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs and remove the 'BUMP' and 'BUMP AHEAD' signs	Low ($500)	Complete
375067	Oxford Road 6	Install 40 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs and remove the 'BUMP' and 'BUMP AHEAD' signs	Low ($500)	Complete

895087	Oxford Road 3	Prohibit on-street parking on the southeast corner of the crossing between Railway Street and the railway corridor	Low ($500)	Outstanding
		Install 20 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs and remove the 'BUMP' and 'BUMP AHEAD' signs	Low ($500)	Complete
815006	Oxford Road 22	Install 30 km/h Advisory Speed Tab signs on the same post as the RAILWAY CROSSING AHEAD signs	Low ($500)	Complete
59247	Oxford Road 59	Remove commercial signs to provide clear visibility of the crossing warning system throughout the northbound stopping sight distance	Low to medium ($500 to $5,000)	Outstanding
434838	Oxford Road 11	Install a Prepare to Stop at Railway Crossing sign on the northbound approach	The approximate cost for the installation of a Prepare to Stop at Railway Crossing with flashing beacons is $60,000.	Additional review completed, determined sign was not warranted
9293	Oxford Road 9	Install 30 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs, remove the 'BUMP' signs and the custom signs indicating 'PLEASE REDUCE SPEED'	Low ($500)	Outstanding
37057	Oxford Road 37	Trim the vegetation obstructing the warning system installed on the westbound approach	Low ($500)	Complete
264210	Oxford Road 27	Relocate the STOP AHEAD sign obstructing the view within the stopping sight distance past the crossing	Low ($500)	Complete
434801	Oxford Road 11	Prohibit on-street parking on the southeast corner of the crossing between Beachville Road and the railway corridor	Low ($500)	Further review completed, determined there were no other parking options, hence parking is not prohibited

		Install 30 km/h 'Speed Advisory Tab' signs below the Railway Crossing Ahead signs	Low ($500)	Complete
374622	Oxford Road 6	Install 30 km/h 'Speed Advisory Tab' signs below the existing Railway Crossing Ahead signs	Low ($500)	Complete

In addition to the remedial measures, the review also developed a monitoring program to ensure compliance in the future. A high-level summary of the monitoring action items are as follows:

- Perform periodic (every year) visual conformance checks
- Perform periodic (every five years) safety audits of the crossings
- Establish clear lines of communication with the railway agencies
- Determine an internal process that ensures the railway agencies are notified when substantial changes to the road are undertaken
- Update the County railway crossing database
- Establish internal communications

5.5.2 Grade Separation

The 2015 Road Needs Study inventoried and assessed the physical condition of all County grade level crossings. Of the various upgrades identified, two grade separations were found to be warranted at crossings on Oxford Road 59 Crossing (ID 59247) and Oxford Road 9 (Crossing ID 9293).

The analysis utilized a cross product of daily rail traffic multiplied by AADT, which was found to exceed the threshold of 200,000 used by Transport Canada and the transportation industry for grade separation, in the now timeframe.

The Canadian Road/Railway Grade Crossing Detailed Safety Assessment Field Guide (Transport Canada, 2005), identifies various factors that may be taken into account in making a decision to implement grade separation crossings. These factors include, but are not limited to, the following:

- Vehicular traffic volumes over the crossing
- Frequency of train movements over the crossing
- Public transportation using the crossing (bus, street cars, LRT, etc.)
- School bus usage
- Interconnectivity of the current and future road networks
- Physical site constraints (i.e., restricted sightlines, curved or angled approach, or nearby intersections that distract the motorist or impede the view of approaching trains)
- Collision history
- Number of tracks through the crossing
- Number of road lanes over the crossing
- Maximum permissible speed on the road and the tracks
- Existing levels of safety
- Other physical characteristics such as gradient and curvature
- Recurrent or frequent weather conditions

The provision of a more detailed safety assessment or operational assessment of the railway crossings was beyond the scope of the 2020 Road Needs Study. However, it was expected that further consideration of implementing grade separations should be completed through a future Class EA study, where required.

5.6 Road Rationalization Future Analysis

County Roads are a part of the overall transportation network within the County, facilitating inter-community travel and connection to the Provincial highway system. Road rationalization ensures jurisdiction over roads within Oxford County is appropriate for the individual and network-wide function of the road system. As such, roads are occasionally transferred between the County and Area Municipalities, which offers several benefits, as a low priority road for the County may be of higher priority for the respective Area Municipality, and vice versa, providing the opportunity for more investment over time.

The County will continue to monitor roads for consideration of upload/download based on the criteria summarized in **Appendix E**. The criteria were utilized in the 2009 TMP prepared by AECOM, and the 2019 TMP prepared by Paradigm Transportation Solutions Ltd. Roads uploaded to the County will undergo a review for any potential need to study or initiate intersection/corridor upgrades or improvements and will be considered in the future Goods Movement Priority Network.

6.0 Transportation Vision and Alternative Planning Strategies

6.1 Transportation Vision and Goals

At the onset of the project, a vision was established to guide the development of the plan:

> ***Through 2024 to 2046, Oxford County will be supported by a transformative transportation system to lead and achieve sustainable and efficient outcomes and benefits, while promoting a safe, efficient, and sustainable multimodal transportation network to move people and goods into and throughout the County, including access and connections to opportunities and essential services, while improving mobility for all types of road users and communities.***

The following objectives have supported the guiding vision and are strongly reflected in the final policies, programs and recommendations:

- Identify infrastructure to **support growth**, as identified in the Oxford County Official Plan Update (currently underway) and other existing and ongoing planning initiatives;
- Develop a plan for **all modes of travel** within the County's transportation system (i.e., walking, cycling, driving, goods movement);
- Identify strategies to **reduce single occupant vehicle trips** (transit, active transportation, carpooling, work from home);
- Recommend measures for managing and implementing **safer transportation** and developing **healthy communities**; and

- Provide a forum for input and awareness with **the public** and **Area Municipalities** for transportation system initiatives.

6.2 Alternative Planning Strategies

Phase 2 of the Environmental Assessment process requires documentation and examination of all reasonable alternatives to address the problems and opportunities and achieve the transportation vision, referred to as alternative solutions. Accordingly, several alternative solutions to address future demands on the County's transportation network were evaluated against environmental, social, economic and transportation service criteria.

The alternative solutions were defined as follows:

- **Alternative 1: "Do Nothing"** – With this alternative the current condition of the roadway network remains unchanged through the 2046 horizon year. There are no further investments to increase its capacity. Population and employment numbers would grow, but no further transportation projects would be constructed.
- **Alternative 2: "Road Improvements Only"** – This alternative is focused on building the road improvements and completing the lifecycle needs recommended in the previous TMP, the 2015 and 2020 Road Needs Studies, as well as the recommendations from this study to accommodate growth to the year 2046.
- **Alternative 3 "Alternative Transportation Improvements"** – This alternative assumes the current road network remains unchanged and is focused on aggressive investment in active transportation, TDM and transit improvements. These improvements include implementing the proposed cycling network from the 2022 Cycling Master Plan, implementing new TDM initiatives and new technologies, and enhancing transit service.
- **Alternative 4 "Combination of Alternatives 2 and 3"** – With this alternative, there is a combination and balance in investments between Alternatives 2 and 3. This allows for some increased roadway capacity where it is needed most, but this investment is also supplemented by additional investments in active transportation, TDM and transit.

6.3 Evaluation of Alternative Solutions

A multiple account evaluation (MAE) framework was developed to compare the four alternative solutions within the 2024 TMP. Selection of the preferred Alternative was based on detailed evaluation criteria that includes the consideration of transportation, natural, social and policy environments, and financial implications. **Table 25** summarizes the five evaluation criteria and their applicable measures considered for the TMP.

TABLE 25: EVALUATION CRITERIA AND MEASURES

Evaluation Criteria	Measures
Transportation	• Efficiently moves people and goods • Provides connectivity and continuity • Supports multi-modal transportation, including active transportation and transit
Natural Environment	• Protects the natural environmental areas, local streams, aquatic resources, environmentally sensitive areas and air quality
Social Environment	• Improves network connectivity • Appropriateness for the changing demographic • Support for a healthier community • Mobility for all users
Policy	• Compatible with the Provincial Policy Statement and Area Municipality objectives • Meets the County's Official Plan, Strategic Plan, Cycling Master Plan and other planning policy objectives
Financial Implications	• Minimizes capital and maintenance costs • Reduces cost of congestion

For each alternative solution, the evaluation criteria were given a score from 0 to 4 based on how well it meets the criterion described in the evaluation criteria measures; 0 representing XYZ, and 4 representing XYZ. The alternatives were then ranked in terms of the overall score. **Table 26** displays the MAE matrix for the selection of the preferred alternative strategy.

TABLE 26: TMP OPTIONS SCORING SUMMARY

	Transportation	Natural Environment	Social Environment	Policy	Financial Implications	Score Total	Rank
Alternative 1 - "Do Nothing"	0	4	0	0	4	**8**	**4**
Alternative 2 – "Road Improvements Only"	2	1	2	2	2	**9**	**3**
Alternative 3 – "Alternative Transportation Improvements"	2	3	3	3	3	**14**	**2**
Alternative 4 – "Combination of Alternatives 2 and 3"	4	2	4	4	2	**16**	**1**

Alternative 1 – "Do Nothing": while minimizing the impact on the natural environment and with little to no financial implications, does not meet the transportation, social or policy environment objectives, and was therefore screened out.

Alternative 2 – "Road Improvements Only": provides improvements to the road network but does not support the County's sustainability and multi-modal objectives. Additionally, this car-centric alternative has a large impact on the natural environment and does not encourage sustainable travel choices.

Alternative 3 – "Alternative Transportation Improvements": provides strong alternative transportation options but does not improve the County road network. Vehicle travel is the most used mode in Oxford County and cannot be overlooked.

Alternative 4 – "Combination of Alternatives 2 and 3": builds on Alternatives 2 and 3 by providing both roadway improvements and alternative transportation options. This is reflected in the high rankings for transportation, social and policy objectives. While the financial implications are higher, the overall benefits are aligned with the County's goals. **It is recommended that Alternative 4 be carried forward.**

6.4 Preferred Transportation Strategy to 2046

As a result of the MAE framework and evaluation process, Alternative 4 – "Combination of Alternatives 2 and 3" has been chosen. The following chapters provide more detail on the specific strategy elements of this TMP. A high-level summary of these strategies includes:

- **Road Network Strategy**
  - Ongoing implementation of Road Infrastructure Improvements (road widening/urbanization, intersection upgrades, bridge and culvert replacements, railway crossing enhancements, etc.) and Studies (network performance studies, intersection feasibility studies, Class EA studies etc.)
  - Maximizing road safety through continued speed management and traffic calming, collision database monitoring, and community safety zones
  - Ongoing initiatives to promote Transportation Demand Management (carpooling, telecommuting, flexible work hours, etc.) to reduce future travel demand and the potential need for road widenings/expansions
  - Continued monitoring of the County road network to ensure adequate Traffic Control and Levels of Service are provided

- **Active Transportation Strategy**
  - Expanding cycling infrastructure through implementation of the 2021 Cycling Master Plan (including ongoing provisions for wider asphalt platform for on-road cycling as part of regular road resurfacing programs)
  - Expanding and focusing on creating enhanced pedestrian infrastructure
  - Updating the 2014 Trails Master plan

- **Goods Movement Strategy**
  - Ongoing infrastructure provisions to accommodate transport trucks and agricultural machinery while promoting accessibility and route connectivity
  - Ongoing advocacy support for regional coordination of freight rail and strategic investments
  - Developing a Goods Movement Strategy including a goods priority network

- **People Movement Strategy**
  - Ongoing implementation of County-wide Speed Management, Traffic Calming and Road Safety Program
  - Ongoing advocacy support for integrated Intra-Regional and Inter-Regional Public Transportation System for intercommunity bus network and enhanced commuter rail service
  - Enhancing mobility through planning of mobility hubs and service integration

- **Transportation System Sustainability and New Technologies Strategy**
  - Ongoing implementation of Low Carbon Transportation alternatives (electric vehicle charging stations, alternative fuel vehicles, autonomous vehicles, etc.)
  - Consideration of Green Infrastructure and Technology practices (roundabout intersection improvements, Warm Mix asphalt, reclaimed concrete and asphalt)

7.0 Road Network Strategy

The **Road Network Strategy** to 2046 serves to support the strategic goals of the 2024 TMP and focuses on the ongoing implementation of road infrastructure improvements, corridor management policies and traffic control and railway crossing enhancements.

The road network strategy includes ongoing monitoring of the County Road network to ensure adequate traffic control and levels of service are afforded throughout the transportation system network.

7.1 Infrastructure Improvements

Project and initiatives to maintain and enhance the efficiency, physical condition and safety of the County's Road network and to achieve the County's long-term transportation goals have been identified. The major projects and initiatives include:

- **Annual road capital infrastructure enhancements** to maintain the overall system adequacy as an absolute minimum requirement;
- **Major road reconstruction** projects to replace road infrastructure nearing the end of its useful service life in order to keep the transportation system in a good state of overall condition;
- **Road urbanization** projects which are implemented in built up areas as the need warrants (urbanization will continue to be required as the County's built-up areas expand);
- **Bridge / Culvert Rehabilitation** projects to replace bridge and culvert infrastructure nearing the end of its useful life in order to keep the transportation system in a good state of overall condition;
- **Road intersection improvements/upgrades** will continue to be undertaken as traffic volumes/patterns and levels of service change over time;
- **Other Major Infrastructure** projects including grade separation and bridge/culvert projects;
- **Plans, Condition Assessments and Other Studies**; and
- **Class EA Studies**.

The Road Network infrastructure improvements are discussed in further detail and summarized in **Chapter 12 - Implementation and Monitoring the Plan** of this report.

7.2 Corridor Management Policies and Initiatives

The County's Road network is one of the major components of the transportation system and is vital to the movement of people and goods. The following section focuses on policies to maximize road safety and accommodate future growth to ensure the safe and efficient function of the County's roadways. Furthermore, focus has been given to the County's goal of reducing reliance on single person vehicular trips and promoting more sustainable means of travel.

7.3.1 Maximizing Road Safety

Implementing road safety measures is crucial in providing safety and security for all road users. Actions to improve road safety within the County include utilizing preventative measures to reduce the potential of collisions, monitoring and maintaining a database of collisions to better inform safety program decision making and designing all transportation infrastructure with safety in mind.

- **Speed Management, Traffic Calming and Road Safety** – Following the 2019 TMP, The County established key principles as part of a consistent and evidence based County-wide approach to speed management and traffic calming. This approach has led to the implementation of various safety and traffic calming measures in the County such as electronic speed feedback signs, pavement markings, gateway features (street lighting community entrance signs), and adjustment of posted speeds and speed zone limits to align with the driving environment. These measures continue to be implemented along the County Road network within urban municipalities, villages, and hamlets. However, building on the success of the program, it should be continued and expanded to include the investigation of intersection safety improvements. Collisions occur more frequently at intersections, an area the program currently lacks.
    - Continue the Speed Management, Traffic Calming and Road Safety Program.
    - Expand the program to include intersection safety improvements.
- **Collision Database** – The County currently maintains a database of all collisions which is crucial in identifying collision patterns within the County. Having up-to-date and accurate collision data allows the County to understand where and why collisions are occurring and inform strategic road safety measures. The database should continue to be maintained and a yearly review should be undertaken to identify any changing collision patterns. Furthermore, the County can use the data to develop a data-based program for identifying locations for safety measures.
    - Continue to update and maintain the collision database.
    - Perform a yearly review to inform the locations identified for safety measure improvements.
- **Roundabout Implementation** – Roundabouts can offer several traffic operations and safety benefits. When compared to traditional signalized intersections, collision severity has been found to drastically decrease due to several factors, most notably the reduced speeds and conflict points. Furthermore, traffic operations have been seen to improve at roundabouts, as a reduction of both queues and congestion has been observed. Despite the benefits, roundabouts can also pose several challenges, including providing accommodations for vulnerable pedestrians (persons with disabilities, children, and seniors), cyclists, transport trucks, and large agricultural equipment. This necessitates the need to properly assess whether an intersection is suitable for a roundabout.

The 2019 Oxford County TMP recommended the consideration of roundabouts for all intersection improvements; however, the County currently lacks a formal roundabout screening and feasibility tool that has been developed as part of the 2024 TMP update. Through research of similar tools and methods implemented by other municipalities, a roundabout feasibility and screening tool has been developed which can be found in **Appendix F**.

This tool should be applied to all intersection projects where traffic signals exist or are warranted based on Ontario Traffic Manual (OTM) criteria, including the construction of new intersections and retrofits.

  - Consider roundabout implementation as an alternative to traditional signalization.

- **Intersection Control Feasibility Study** - Intersection Control Feasibility Studies (ICFS) are undertaken to consider future intersection enhancements to certain existing two-way or all-way stop control devices to enhance traffic flow. As intersection capacities are met and/or other intersection/roadway construction is completed, intersection control feasibility studies (i.e. signalization, roundabouts, etc.) should be conducted.
  - Continue monitoring of County intersection functionality through ongoing Intersection Control Feasibility Studies.
- **Emergency Detour Routing** – Emergency Detour Routes (EDR) provide alternative routes for motorists when there are unscheduled closures of a provincial highway or the Ontario Provincial Police (OPP) detour traffic off a highway. These routes facilitate the safe and efficient movement of people and goods in emergencies and should be maintained.
  - Maintain Emergency Detour Routing.
- **Automated Speed Enforcement** – Automated Speed Enforcement (ASE) uses a camera and speed measurement device to capture images of vehicles exceeding posted speed limits which are then reviewed by provincial offences officers. In 2017, Ontario permitted the use of ASE systems in school zones and community safety zones.
  - In partnership with the Area Municipalities, consider the potential implementation of automated speed enforcement in accordance with the Safer School Zones Act.
- **Road Occupancy Permitting** – The County currently has a process in place for Road Occupancy Permitting, however, there is no By-Law in place for enforcement.
  - Consider By-law implementation for enforcement of Road Occupancy Permits.

7.3.2 Maximizing Road Efficiency

- **Seasonal Load Restrictions –** the County's seasonal load restrictions impacts goods movement restrictions, especially in the South and Northeast parts of the County. The MTO Reduced Load Periods Onset and Removal Model Tool (RLPORM) determines the optimal time to implement and remove reduced load periods on their roads since RLPORM is responsive to local weather conditions and helps improve risk management, reduces liability, prevents damage to road infrastructure and helps businesses such as Ontario's trucking and agri-food sector.
  - Consider implementing access management strategies that have reviewed and considered seasonal load restrictions.
  - Update the County Road seasonal load restrictions By-law.
- **Road Occupancy Permitting** – The County currently has a process in place for Road Occupancy Permitting, however, there is no By-Law in place for enforcement.
  - Consider By-law implementation for enforcement of Road Occupancy Permits.

7.3.3 Railway Crossing Enhancements

The County assesses the conditions of grade level crossings and grade separated crossings through the Roads Needs Study and Bridges Needs Study, respectively. The County coordinates the sharing of information, maintenance, repair and upgrades of level crossings with the appropriate rail authority. This joint responsibility requires proper planning and coordination among both parties, which the County must continue to do.

- **Review and Upgrade Railway Crossings –** The County should continue to review the physical conditions of railway crossings based on the requirements set out by Transport Canada and perform the necessary upgrades in conformity with the appropriate regulations.
    - Review and Upgrade railway crossing in accordance with Transport Canada regulations.

7.3.4 Accommodating Future Growth

With the County's high projected employment and population growth, it is imperative that the County maintain an efficient road network that can accommodate future travel demand. This will be of high priority for County roads providing direct links to the major urban areas and roads already experiencing early signs of capacity constraints. Accommodating this growth can be achieved by physical modifications to roadways, as well as mitigating the demand for vehicle use. As part of the TMP update, a road network model and future assessment have been developed. The model has projected potential capacity issues on County's Road network to the year 2046, giving the County the ability to respond more effectively to potential roadway issues. In addition to anticipating the need for future roadway retrofits, the County will continue to promote Transportation Demand Management (TDM)

- **Transportation Demand Management** - The COVID-19 pandemic has had significant and lasting impacts on how people work, drastically increasing the availability of working from home (WFH) and flexible working options, providing an opportunity for the County to reduce peak hour vehicle demand. The 2019 TMP outlined strategies to promote WFH, which should continue to be promoted, with a focus on utilizing the opportunity afforded by the COVID-19 pandemic. Furthermore, expanding the use of active transportation and public transit decreases the need for vehicle travel, supporting demand management which the County has outlined as a long-term goal. As part of the 2024 TMP, strategies to promote Active Transportation and People Movement have been developed.
    - Continue to promote working from home through engagement with residents and businesses.
    - Implement the 2024 TMP Active Transportation and People Movement strategies.
- **Ridesharing –** Ridesharing refers to the sharing of a ride in a motor vehicle, commonly among commuters. Ridesharing is an effective way to reduce the use of single occupant vehicles, as a trip that would normally be completed by at least two or more vehicles, is reduced to one. With emerging and established technologies, ridesharing platforms and services have become much more accessible to users. At the time of writing this report, several online platforms are available to residents in Woodstock, including but not limited to the following:
    - **Ridesharing.com (https://www.ridesharing.com/en-ca/)**
    - **Share Your Ride (https://www.shareyourride.net/)**
    - **CarpoolWorld (https://www.carpoolworld.com/carpool_search.html)**
    - **POPARIDE (https://www.poparide.com/)**
    - **Kijij (https://www.kijiji.ca/b-rideshare-carpool/ontario/c5l9004)**

These platforms provide both riders and drivers the opportunity to rideshare for both daily commutes and long-distance rides. Not only does ridesharing have the ability to limit single occupant vehicle rides, but it provides an additional mobility option for residents who do not own a vehicle. The County should support and promote ridesharing, where applicable.

- Expand education and promotion of ridesharing as a mode of choice in the County.
- Where applicable, support ridesharing programs

- **Carpool Lots** – As described in **Section 4.4**, the County has one formal carpool lot but has identified several informal locations used as carpool lots and locations that have the potential to become carpool lots, including:
  - Highway 401 at Oxford Road 29 (interchange 250);
  - Highway 401 at Towerline Road (interchange 236);
  - Highway 401 at Culloden Road (interchange 216);
  - Quality Inn (580 Bruin Boulevard, Woodstock);
  - Oxford Road 15 at Oxford Road 55; and
  - Sobeys Plaza (678 Broadway Street, Tillsonburg).

  The County should advocate for the development and maintenance of carpool lots at these locations. Furthermore, these carpool lots should be connected within the County's active transportation and transit network where available, providing residents with stronger access to carpool lots. This can include the provision of bicycle parking or lockers, sidewalk or trail access, and transit bus stops.
  - Advocate to the Ontario Ministry of Transportation and private landowners for the creation of new carpool lots.
  - Consider options to provide active transportation and transit facilities at carpool lots.

8.0 Active Transportation Strategy

8.1 Active Transportation Plan

The increase in demand for active transportation methods, especially in cycling and pedestrian infrastructures, stems from the County's vision to have a sustainable and efficient multi-modal transportation network. The feedback collected from PCC#1 events and online engagement tools has also indicated a growing desire to have more active transportation methods integrated into the transportation network. Building off that, the 2024 TMP continues to monitor and update active transportation policies outlined in the 2019 TMP, as well as recommend new strategies that will help support active transportation as a growing mode share.

8.1.1 Cycling Infrastructure

As identified in the 2019 TMP, Oxford County developed the 2021 Cycling Master Plan (CMP) to support and improve cycling for the residents and visitors of Oxford County. Since Southern Ontario is quickly gaining popularity as a cycling destination, the CMP developed tools and recommendations to achieve the vision of creating a cycling network that aligns with the goals of the TMP to promote active transportation, tourism and low carbon travel options as part of a multi-modal transportation network.

Within the CMP, is the implementation of a primary cycling network and the coordination of these efforts with road network improvements to realize cost efficiencies. The 2024 TMP recognizes the projects identified in the 2021 CMP implementation plan and recommends that they be implemented as outlined and in conjunction with other road network improvements, where appropriate.

In addition to the implementation plan, the 2021 CMP provides a toolkit for the promotion, advocacy and stakeholder collaboration as it relates to cycling infrastructure. A champion in the County for this promotion and advocacy is the Active Transportation Advisory Committee (formally the Cycling Advisory Committee). This committee has a broad focus on all active transportation and low carbon modes, with a mandate to promote collaboration with Area Municipalities and other stakeholders.

Finally, as is recommended with the TMP, it is recommended the CMP be updated every 5 years to monitor progress and revise network and implementation priorities, as applicable.

8.1.2 Pedestrian Infrastructure

Improving and expanding the pedestrian infrastructure plays a vital role as Oxford County aims to create a more connected, safe, and sustainable transportation network. Due to the demand for a more accessible pedestrian network combined with the County's active transportation goals, the TMP suggests recommendations to help achieve efficient pedestrian infrastructure.

- **Expanding pedestrian infrastructure –** After reviewing the County's existing by-laws and policies for pedestrians, the following is recommended to aid the expansion of pedestrian infrastructure:
    - Review Existing Conditions and Network **–** The existing network and conditions must be thoroughly assessed and detailed, and any proposed changes or expansion of the network should be built upon the existing network conditions. The pedestrian facilities should be designed according to current industry accepted standards. Sidewalks should be provided on both sides of County roads within designated Villages, Serviced Villages or Large Urban Centres except roads within a Traditional Industrial Area. The County should ensure that sidewalks associated with the County Road network are, where possible, sufficiently set back from adjacent roadways to allow for snow storage, adequate drainage, and safety for pedestrians.
    - New construction development and redevelopment plans should integrate safe pedestrian infrastructure into the plan.
    - Multi-use paths – implementation of multi-use paths within the road allowance in lieu of sidewalks should be considered where feasible and as part of CMP implementation to accommodate various Active Transportation (AT) modes and improve safety for vulnerable road users.
    - Accessible and best practice design guidance – As the existing conditions are analyzed and the pedestrian infrastructure is expanded, it is important to make sure the pedestrian routes are made accessible for the elderly, disabled, and persons pushing a stroller or cart, as well as pedestrians of all abilities. The associated pedestrian facilities must be designed in accordance with the appropriate guidelines. These guidelines include Ontario Traffic Manual Book 15, Ontario Provincial Standards Documents (OPSD), the Geometric Design Guide for Canadian Roads (TAC) and the Municipal Engineers Association Municipal Works Design Manual.

- Direct connections to link communities and important destinations within Oxford County – Improving pedestrian links to commercial, employment and residential areas, community centres, leisure, recreation and tourist destinations, parks, schools, trails, etc. The pedestrian network should also provide crossings across major barriers wherever appropriate and in accordance with OTM Book 15 guidelines.
- Integration with other modes – It is vital to ensure that the expansion of the pedestrian infrastructure is well integrated with other modes of transportation especially public, inter-community transportation, and rail to provide an overall well-connected transportation network.
- Safety analysis of existing infrastructure – The County must consider the infrastructure that supports pedestrian safety. Ongoing review of pedestrian safety through warrant analysis for pedestrian cross-overs should remain part of the County's traffic calming, speed management and overall road safety program. Generally, high activity areas in downtown and village core areas should consider potential enhancements, such as cross-overs, to promote user safety.

- **Pedestrian safety and promotion programs**
  - Key Partnerships for programs to educate and encourage the public – The Active Transportation Advisory Committee could help incorporate a few educational and engagement programs for pedestrians into school systems, local social clubs, police service, interest groups, etc. to create awareness of the benefits of a more walkable environment and the safety measures the public can adopt in their local communities. The Active Transportation Advisory Committee should partner with key representatives to help deliver these safety and encouragement programs.
  - Introduction/More Use of Staggered and/or Extended Pedestrian Phasing at Signals – Programs should also be implemented that have the pedestrian interest at its core, for example, staggered and/or extended pedestrian signal timings to avoid conflicts and increasing crossing times at signalized intersections in areas with high pedestrian activities.
  - Enhance opportunities to deliver information to the public easily and in an accessible manner – The information and projects should also be presented to the public in an easy-to-understand manner and modified in a way that allows the information to reach a wide-range of audiences located all over the County.

8.1.3 Streetscape Improvement

Although County roads are primarily intended to provide inter-municipal travel, they travel directly through the core of the County's many rural settlement areas, functioning essentially as the 'main street' of these villages. In this role, these roads function differently from the remaining rural network as they provide more commercial access and see higher pedestrian volumes. In alignment with the County's objective of maintaining and promoting the vitality and vibrancy of the rural settlements, the County Road streetscapes in these areas should be improved to improve pedestrian safety and comfort.

- **Support Streetscape Improvements** – The County should work closely with Area Municipalities to identify the need for and develop streetscape improvements in select locations to provide stronger provisions for pedestrians, cyclists and local businesses. Consideration can be given to

vegetation, street trees, pedestrian comfort, permitted patio encroachments, and on-street parking.
    - Advocate and support Area Municipalities in developing streetscape improvements.

8.1.4 Trails Infrastructure

- **Trails Master Plan –** The 2014 Trails Master Plan was developed to respond to the growing demands for active transportation infrastructure in the County and outlines recommendations that are necessary for the development of trail facilities. The County should continue to facilitate trail development through an update to the 2014 Trails Master Plan.
    - Facilitate trail development with Area Municipal partners and stakeholders.
    - Explore options to develop trails with new development.
    - Complete update to the 2014 Trails Master Plan.

8.1.5 Looking Ahead

- **Micro mobility and New Technology Strategy –** Micro mobility refers to any small, low-speed, human or electric-powered transportation devices which are commonly intended for short trips or "first- and last-mile" trips connecting trips made by other modes. Micro mobility includes bicycles, e-bicycles, scooters and e-scooters, and is commonly provided by public or privately owned share fleets, providing users with on-demand access to vehicles. The County should monitor the need to develop a comprehensive micro-mobility and new technology strategy. The strategy should review opportunities to allow the safe and easy integration of new technology opportunities in the transportation network and how the County will consider new technology pilots and the associated funding strategy to finance the recommendations. The micro-mobility strategy should also explore incentive programs that encourage and educate the public on all modes of Active Transportation (e-bikes, e-scooters, etc.).
    - Monitor the need to develop a micro-mobility and new technology strategy.

9.0 Goods Movement Strategy

Oxford County is located along Southwestern Ontario's major rail and truck freight routes, making it vital to international and regional goods movement. Supporting the railways is essential to the County's economic health, as well as maintaining the existing multi-modal transportation system. Trucking is the predominant means of goods movement within the County and is crucial to the County's agricultural and industrial base. This section is focused on enhancing rail and truck freight and improving the integration of both systems.

9.1 Policies and Initiatives

9.1.1 Supporting Rail Freight

Rail freight is vital to Southwestern Ontario's economy, and Oxford County is a key player as several of the region's major rail corridors travel through the County. Ensuring these rail lines are supported and enhancing their integration within the County's multi-modal transportation system is essential to the regional and local economic health. The Steel Corridors of Opportunity report outlined key initiatives that can improve Southwestern Ontario rail service and lead to higher performance rail and revenue.

The County should develop a regional coordination rail enhancement strategy with Transport Canada, the Federal Government, and its rail agencies (CN, CP) and other local and regional municipalities. Furthermore, stronger physical infrastructure is required to increase the performance of the existing main line (Class 1) and short line railways.

- **Regional Coordination Strategy** – Includes participation in the creation of the Province's stakeholder engagement regarding the enhancement of rail service across Southwestern Ontario, including discussion around the current state and future direction of both freight and passenger rail.
    - Develop a strategy to engage Transport Canada, the Federal Government and its rail agencies (CN, CP) to coordinate discussions around rail freight.
- **Strategic Investments into Rail Freight Infrastructure** – There are several infrastructure improvements that could create significant positive impacts on the rail freight industry's operational efficiency and recommended that the County advocate for their implementation (refer to the County's 2018 SouthwestLynx Plan). Shipper sidings and carpools, transloading, warehousing, distribution, regional intermodal, and inland port facilities are all essential to a better connected and more efficient railway system. Furthermore, the County should explore opportunities to provide support to shortline rail lines and the development of unused rail spurs.
    - Engage local and regional governments to advocate the Provincial and Federal government to provide funding to address rail infrastructure bottlenecks or tax credits for expanded rail siding, transload, warehousing and distribution facilities.
    - Advocate for the support of shortline railways.

9.1.2 Supporting Truck Freight

Trucking is a principal means of goods transport in Southern Ontario with highways linking to all major manufacturing centres and international border crossings. The demand for truck transport remains a competitive mode of goods distribution. Trucking provides inter-modal goods transport connectivity between rail, air and marine transport facilities and market destination.
In order to better accommodate trucking and minimize its impact on the community, the County should develop a goods movement priority network which designates specific trucking routes.

- **Goods Movement Priority Network** – A goods movement priority network will allow for designated truck routes to avoid residential areas and optimize connectivity to agricultural, aggregate and industrial areas. This will minimize the negative impact trucks can have on the community while improving the flow of trucks through the County. These routes should have specific design provisions for large vehicles, ensuring stronger accommodation of truck freight. Additionally, providing intermodal connections between truck and rail freight is integral to maximizing the benefits of both modes. With the location of the Highway 401/403 corridor, Oxford County has the opportunity to provide an intermodal facility with strong connections to the existing rail network, County Road network and the Provincial Highway system. Options for a Freight Village, a purpose built facility to connect, reload, compile and prepare different modes, and possible funding sources should be explored in the Goods Movement Priority Network analysis to ensure the County takes advantage of its unique opportunity at the 401/403 corridor.
    - Develop a Goods Movement Priority Network.

- Construct truck route roadways to arterial road specifications and provide adequate turning radii and turning lane storage to accommodate freight, aggregate and agricultural vehicles.
- Provide adequate height and width under bridges when constructing new roads or undertaking road rehabilitation to facilitate existing rail services and transport trucks.
- Consider the potential for development of a Freight Multi-modal Facility near the Highway 401/403 corridor, in the Goods Movement Priority Network.
- Review opportunities for truck bypass routes within the Goods Movement Priority Network.

9.1.3 Supporting Agriculture

Agricultural vehicles and their movement on the County Road network is also a crucial component of the County's agricultural industry and should be supported the same as the movements of trucks supporting that industry. Unlike trucking, however, the movement of agricultural vehicles is far less consistent, frequent, and involves many different sizes of vehicles. Agricultural vehicles need to access the County's Road network to travel between fields predominately during planting and harvesting periods. These vehicles are often very wide and move much slower than the other vehicles using the network. In order to better accommodate these movements and minimize the impact on the other vehicles using the road network during this time, the County should consider design measures for their road network which will help minimize the impact of agricultural vehicles.

- **Agricultural Vehicle Design Considerations –** when completing road reconstructions and rehabilitations on County Road which are typically travelled by agricultural vehicles, the County should ensure that the movement of agricultural vehicles is considered in the roadways design. Consideration should be given to the width of the shoulders and the design of field entrances along that section of the road.
  - Implement agricultural vehicle supportive design elements when completing road reconstructions and rehabilitations.

10.0 People Movement Strategy

As an important component of the County's mode share, public transportation is vital to providing mobility to residents and its expansion will have an important role in decreasing vehicular mode share and increasing sustainable modes. The following policies and initiatives are aimed at facilitating the integration of local transit, intercommunity bus service, commuter rail, and mobility for users in the County.

10.1 Policies and Initiatives

10.1.1 Expanding Inter-Community Transportation

The development of a public transportation system that addresses small urban-rural mobility and connectivity within Oxford County and across the Southwestern Ontario region is vital to our economic vitality and community well-being. Further, transportation connections are vital to the quality of life and help to remove barriers that make it difficult for some Ontarians to reach jobs, participate in local community activities and access healthcare and specialized medical services, education and training, social services and programs, urban transit and intercity rail, air and bus services. Oxford County should perform ongoing advocacy to facilitate the integration of intra-County and inter-regional transportation connections.

- **Tillsonburg Inter-community Bus Transit** - The Tillsonburg transit authority operates an inter-community bus transit system as part of the T:GO service. The bus system serves several communities in south Oxford and outside the County's boundaries, including Middlesex, Elgin, and Norfolk Counties, providing important regional mobility for residents. Furthermore, the service provides intermodal access to passenger rail stations in Woodstock and Ingersoll.
    - Support the continuation of the T:GO intercommunity bus transit and the intermodal connections to commuter rail and local transit facilities.
- **North Oxford Inter-community Bus Transit** – The Township of East Zorra-Tavistock (EZT) transit authority is planning to implement an inter-community bus transit system across which will service communities in north Oxford with larger urban centre transit hubs (i.e., Woodstock Transit, Grand River Transit - New Hamburg). The proposed system would provide a similar service to that of the Tillsonburg Inter-community Bus Transit by providing improved mobility and access for the communities of north Oxford. The County should continue to advocate for this service and its implementation and service integration into the existing and future public transit options.
    - Advocate for the implementation of the EZT Intercommunity Bus Transit service across north Oxford.
- **Southwest Community Transit (SCT) Association** – Oxford County maintains active membership within the SCT Association which coordinates the integrated delivery of inter-community bus transportation services in Southwest Ontario, shares information, innovation and develop best practices, identifies economies of scale through shared purchasing and operating agreements, and act as a common voice to support long-term sustainable intercommunity bus transit
    - Continue to collaborate and promote the coordination and integration of regional intercommunity bus transit connectivity amongst SCT Association member municipalities.

10.1.2 Enhancing Commuter Rail

High performance passenger rail forms part of a fully integrated public transportation solution that is complemented by inter-community bus transit networks. The County should focus on advocating for higher performance passenger rail and inter-community bus transit integration.

- **Enhanced Passenger Rail Service** - The 2018 Southwest Lynx Report outlined several recommendations for enhancing passenger rail service in Oxford County.
    - Advocate for enhanced passenger rail service on the north and south CN rail line corridors which offers increased train performance, frequency and reliability.
    - Integrate with local and intercommunity bus transit and ensure adequate first/last mile transportation options.
    - Work with Transport Canada, the Federal Government and its rail agencies (CN, CP) to advocate and support studies which explore Southwestern Ontario passenger rail enhancements.

10.1.3 Tillsonburg Airport

Tillsonburg airport provides a unique component within Oxford's transportation system, however non-vehicular access to the airport could be improved. Currently, the airport benefits from strong road access, given its location along Highway 19, however, there is no public transit or alternative access. The T:Go inter-community bus service provides an opportunity to expand access to the airport by integrating it with the current public transit system.

- **T: GO Bus Stop** – The T:GO intercommunity bus Route 1 (Monday to Friday) travels in close vicinity to the airport while Route 4 (Monday and Wednesday), travels directly past the Tillsonburg airport along Highway 19. Neither of these routes have a dedicated or flexible stop (on demand) for the airport.
    - Discuss the potential for a trial T:GO stop at Tillsonburg Airport with the Town of Tillsonburg transit authority.

10.1.4 Enhancing Mobility

With the recent progress, the County has made on providing intercommunity bus service, and the proposed north Oxford bus service, an opportunity exists to create “Mobility Hubs”, multi-modal transit connections, to support public transit and transit oriented- development. These hubs can also be strategic locations for micro-mobility pilot programs.

- **Mobility Hubs** - As outlined in the Southwest Lynx Report, multi-modal facilities can enhance transit service by providing barrier-free integration among different modes/providers. The Tillsonburg intercommunity bus and proposed north Oxford route both have stops at the Woodstock and Ingersoll train stations, providing service integration and the opportunity to transform the locations into “Mobility Hubs”. Through directed land-use policies guiding the development of the surrounding area, these areas can become integral nodes in Oxford’s transportation and transit network, providing simple, fast and efficient connections between different modes of travel.
    - In collaboration with Community Planning and Area Municipalities, consider the designation of the Woodstock and Ingersoll train stations as “Mobility Hubs” to develop specific zoning to create a mixed-use, higher density urban form and increase community connectivity.
    - Facilitate integration of existing and future intercommunity bus transportation or other modes of local transit at “Mobility Hubs” destinations through coordination with transit authority providers.

10.1.5 Looking Ahead

A long-term goal of the County should be Universal Basic Mobility (UBM), the concept that everyone should have access to safe, affordable and reliable transportation. UBM strives to fill the gaps in the existing transportation system, providing mobility for demographics who may struggle to access transportation, specifically, groups of lower socioeconomic status, people with disabilities, youth and seniors. Access to mobility has a significant impact on people’s wellbeing, as it is essential to accessing employment, education, healthcare and essential services. Furthermore, UBM promotes the use of sustainable modes including AT and public transportation providing environmental benefits and relieving the reliance on personal vehicles. UBM is largely supported by expanding and improving access to alternative forms of travel, primarily active transportation and public transportation.

- **Universal Basic Mobility** – Looking ahead to the long-term, the County should strive for “Universal Basic Mobility” – the concept that everyone can have access to safe, affordable and reliable mobility.
    - Promote Universal Basic Mobility through improved active transportation infrastructure, transit oriented development and micro mobility.

11.0 Transportation System Sustainability and New Technology Strategy

Oxford County has responded to the growing demand to address climate change, and in 2015, Council endorsed the goal of achieving 100% renewable energy by 2050. This led to the Renewable Energy Plan (2018), which provides the groundwork for the County's strategy to reduce greenhouse gas emissions. Subsequent plans include the Energy Management Plan (2019 – second version), the Green Fleet Plan (2021 – second version) and the Renewable Energy Action Plan (2022), all of which work in conjunction to achieve the goals set out in the Renewable Energy Plan. The Renewable Energy Action Plan aims to outline a plan for how the County, will contribute to the 100% renewable energy community goal within its own facilities portfolio, as it aims to reduce energy dependence and greenhouse gas (GHG) emission sources, as well as increase renewable energy generation on County owned and operated property. The County's 2024 TMP policies align with the goal of reducing emissions, through the promotion of active transportation, public transit, and the reduction of motor vehicle use. The following new policies and initiatives align with the County's sustainability goals.

11.1 Policies and Initiatives

11.1.1 Autonomous Vehicles

Autonomous vehicles (AV) have seen a surge in their demand due to their potential to reduce travel time, improve traffic flow and improve road safety. Autonomous vehicles help achieve the County's goals of providing a convenient transportation system which is accessible and efficient for its users.

- **Autonomous Vehicle Network –** In alignment with the 2019 TMP, the proposed AV network should be implemented to allow the manufacturers to use more designated routes that will help the testing and validation of the technology.
    - Implement AV network to facilitate testing of Level 3 to Level 5 AV as part of the Windsor to Ottawa network.
- **Municipal Alliance for Connected and Autonomous Vehicles in Ontario** - By continuing to work with the Municipal Alliance for Connected and Autonomous Vehicles in Ontario (MACAVO), the County can gather more opportunities to influence AV testing and implementation.
    - Continue to work with the Municipal Alliance for Connected and Autonomous Vehicles in Ontario (MACAVO) on the development of a larger AVE road network serving Southwestern Ontario.

11.1.2 Electric Vehicles

The demand for electric vehicles and other low emission vehicles is increasing rapidly and, in response, the County has completed several initiatives to improve the availability of Electric Vehicle Service Equipment (EVSE) within the County. In 2016, the County participated in the Electric Vehicle Chargers Ontario Program (EVCO) to obtain funding and support for the development of various charging stations across Oxford County. This funding was approved in June 2016, with the provision of additional charging stations to be located at the Quality Inn Hotel and Suites (500 Bruin Blvd. Woodstock), and the Ingersoll Town Centre (16 King Street, Ingersoll). This resulted in the County receiving four level 2 charging stations and two level 3 charging stations at a total grant cost of $350,760.

In 2018, the County completed the Oxford County Feasibility Study: EVSE Data Mapping & Analysis in Support of Oxford County's Electric Vehicle Accessibility Plan (EVAP) to map strategic locations for

additional EVSE installations across the region, concluding that a total of 163 Level 1, 54 Level 2 and 12 Level 3 chargers were needed to be placed in suitable parking locations to serve Oxford residents who adopt EVs. The current privately owned and managed charging station locations can be seen in **Figure 21**.

The County currently owns and manages 11 EV charging station locations as seen in **Figure 22**. As part of the County's 2019 TMP, 16 locations for new charging stations were proposed, of which seven have been built. Additionally, 12 new locations have been proposed, and are summarized below in **Table 27**.

TABLE 27: PROPOSED ELECTRIC VEHICLE CHARGING STATIONS

Site Location	Quantity	EVC Type
Southside Water Treatment Facility, 221 Victoria St., Woodstock	1	L3 EVC
Southside Water Treatment Facility, 221 Victoria St., Woodstock	6	L2 EVC
Highland Patrol Yard, 884135 Road 88, Embro	1	L3 EVC
Highland Patrol Yard, 884135 Road 88, Embro	2	L2 EVC
Springford Patrol Yard, 432594 Zenda Line, Otterville	1	L3 EVC
Springford Patrol Yard, 432594 Zenda Line, Otterville	2	L2 EVC
Drumbo Patrol Yard, 895939 Oxford Road 3, Drumbo	1	L3 EVC
Drumbo Patrol Yard, 895939 Oxford Road 3, Drumbo	2	L2 EVC
Woodstock Patrol Yard, 515165 11th Line County Road 30, Woodstock	4	L2 EVC
Water Operations Centre, 59 George Johnson Blvd, Ingersoll	4	L2 EVC
Oxford County Waste Management Facility, 384060 Salford Road, Salford	2	L2 EVC
Ingersoll WWTP, 56 McKeand St, Ingersoll	1	L3 EVC

- **Electric Vehicle Charging Infrastructure –** The expanded provision of EV charging infrastructure supports the sustainability goals of the County and the County should assist in initiatives implementing the EV charging network and EV charging infrastructure in general.
    - The County will support initiatives of Area Municipalities in EV charging implementation and supportive policies.
    - The County will support policies to develop EV charging infrastructure in new and reconstructed development across the County.

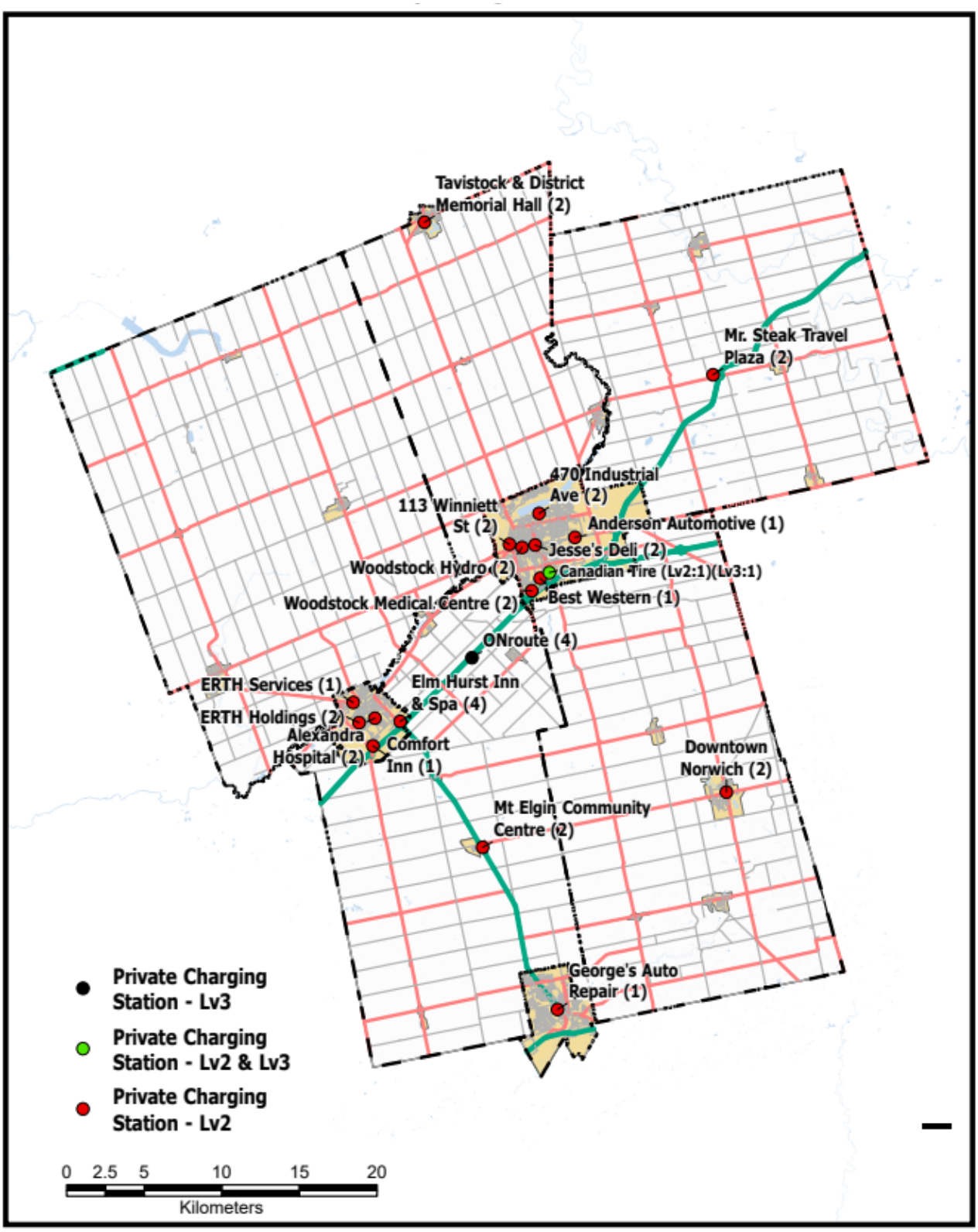

FIGURE 21: PUBLICLY AVAILABLE CHARGING STATIONS IN OXFORD COUNTY PRIVATELY MANAGED AND OWNED

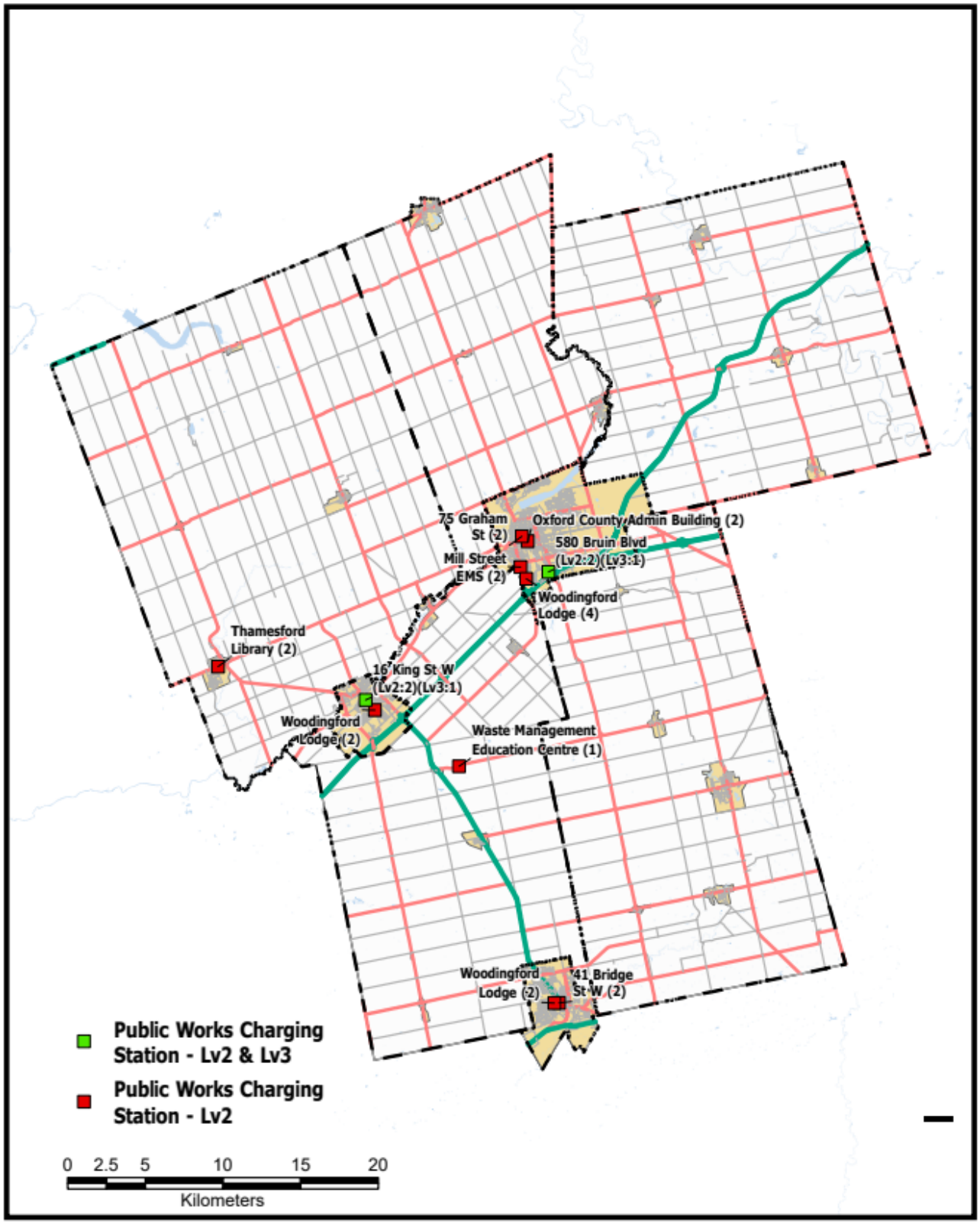

FIGURE 22: PUBLICLY AVAILABLE CHARGING STATIONS IN OXFORD COUNTY MANAGED AND OWNED BY PUBLIC WORKS

11.1.3 Alternative Fuel Sources

- **Explore Opportunities to Utilize Alternative Fuel Sources** – As identified in the County's 100% Renewable Energy Plan (2018), 44% of the County's GHG emissions are from the transportation sector and gasoline and diesel account for 99% of the County's transportation sector's fuel source. Besides the use the EVs within the County's vehicle fleet, further alternative fuel sources need to be adopted to achieve the County's sustainability goals. The following alternative fuel sources provide opportunities to assist Oxford County in obtaining the 100% Renewable Energy Goal:
    - **Solar Photovoltaic (PV) –** Oxford County has already implemented the use of solar photovoltaic (PV) systems such as in Hydro One's established White Lanes microGRID project where 33 KW of PV panels support a 100 KVA 240-volt single phase transformer.
    - **Compressed Natural Gas –** CNG produces the least amount of Green House Gas (GHG) emissions in the transportation fuel market compared to other alternatives due to being non-toxic and the cleanest. The County has already purchased CNG snowplows, 18 of which are hybrid Unleaded Gasoline/Compressed Natural Gas and 2 are Compressed Natural Gas only.
    - **Hydrogen –** Hydrogen is considered a future clean energy source but it's not a viable alternative fuel source now due to its lack of availability and high production cost. With further research and improvements, Hydrogen will be able to overcome the obstacles and the County can incorporate it in the long-term future transportation plans rather than now.
    - **Biofuel –** Biofuel is a liquid fuel produced from biomass and known to be carbon neutral because the energy it creates is carbon based. Oxford County has a large rural area that generates substantial amounts of biomasses that can be utilized as a source of biofuel.

  The County has been an early adopter of several alternative fuel sources and should continue to explore options to utilize other emerging technologies.

    - The County should explore opportunities to utilize and/or expand the use of alternative fuels within its vehicle fleet.

11.1.4 Alternative Road Construction Materials

- **Explore Opportunities to Utilize Alternative Construction Materials** - The construction industry is seeing emerging advances in road construction green technology, providing more cost efficient, durable and sustainable technologies. The following are building materials which the County should consider as alternative approaches to current materials:
    - **Reclaimed Concrete (RCM)** – RCM or "recycled" concrete is a processed aggregate commonly made from demolished Portland cement concrete. It can be used as an aggregate substitute in various concrete applications, pavement, base and engineered fill, certain surface treatments, and some Hot Mix Asphalt (HMA).
    - **Reclaimed Asphalt (RAP)** – RAP, much like RCM is recycled asphalt that has been processed following its removal. RAP contains valuable binder and aggregate and can use as a substitute for both intermediate and surface layers of flexible asphalt.
    - **Warm Mix Asphalt (WMA)** – WMA is a variety of asphalt products that require less heat when being paved compared to HMA. Due to the lower temperatures, less fuel can be

consumed, and the asphalt cools slower, reducing costs, extending the paving season and improving construction processes.

These technologies provide a range of environmental, cost, and life-cycle advantages, and should be utilized where available.

- The County should explore opportunities to utilize and/or incentivize the use of alternative road construction materials in rehabilitation or new projects.

11.1.5 Looking Ahead

New technology alternatives to reduce congestion and GHG emissions that the County could consider in their 100% Renewable Energy Goals are:

- **Connected vehicles –** The County could consider connected vehicles. These vehicles can share information with other devices/systems to make driving more safe, efficient and convenient. Unlike automated vehicles, connected vehicles use technology that does not control the vehicle's operation – this technology is designed to receive and share information with drivers.
  - Cooperative Truck Platooning Pilot Program – On January 1, 2019, the Government of Ontario launched the Cooperative Truck Platooning program. Cooperative platooning is when two or three vehicles equipped with driving support systems and vehicle-to-vehicle communications are driven together as a group. The benefits of truck platooning include the potential to improve traffic flow, move goods more efficiently, reduce fuel consumption, and drive economic growth and investment. This program is separate from the AV program, also established by the Government of Ontario.

11.2 Summary of Climate Change Adaptation and Mitigation

Through the direct actions taken over the past few years, the County has proven their commitment to transitioning away from fossil fuels and to promoting low carbon transportation and supporting sustainable modes of travel. With the implementation of the strategies and actions outlined within the TMP, the County is supporting a shift away from single-occupant auto trips and an increase in sustainable modes of travel and transportation systems including:

- Transportation Demand Management (carpooling and working from home);
- Active transportation (walking and cycling);
- Local/Intercommunity bus transit and passenger rail;
- Expanding the EV charging network;
- Autonomous vehicle testing (through the implementation of the AV network);
- Enhanced people and goods movement (through support and participation in the various initiatives outlined in the SouthwestLynx. Steel Corridors of Opportunity and Empowering Ontario's Short Line Railways reports;
- Low carbon intersection control improvements (i.e. roundabouts); and
- Use of alternative fuel sources and construction materials.

12.0 Implementation and Monitoring the Plan

The 2024 TMP is the overarching strategic document that provides a framework for how Oxford County will address its transportation needs to the year 2046. It describes, anticipates and plans for the movement of people and goods in a multi-modal, accessible transportation system. The TMP is not a provincially legislated document and, therefore has no statutory authority. That authority is provided through the Oxford County Official Plan by incorporating the main policy directions of the TMP.

The primary purpose of the TMP is to guide the County's transportation related decision making and provide direction for its discussions and negotiations with other agencies and governments. In addition, the TMP is not just a plan of infrastructure actions. It provides the policy framework on which to make operational decisions for the County and the respective projects identified in the transportation master plan implementation program will provide a baseline for Oxford County's future capital budgets.

12.1 Implementation Plan

12.1.1 Timing and Priorities

To assist in guiding the County in implementing the road infrastructure improvements, policy and advocacy plans recommended in the TMP, an implementation plan with suggested timing for the various projects, policies and initiatives has been developed. The implementation plan is broken down by major category and can be seen in **Table 28** to **Table 38**.

12.1.2 Potential Funding Sources

Given the growth-related nature of the servicing strategies, the 2024 TMP capital implementation program will also form the foundation for the transportation system components of Oxford County's Development Charges (DC) By-law as part of the County's Integrated Growth Management process. Along with the Transportation Development Charges Technical Report, the 2024 TMP provides recommendations, provides supporting information and identifies the capital requirements for the Oxford County DC By-Law which will be updated in 2024.

The Government of Canada offers infrastructure funding through the Investing in Canada Infrastructure Program. The program, delivered through bilateral agreements between Infrastructure Canada and each of the provinces and territories, provides funding through one of several streams:

- Public Transit
- Green Infrastructure
- Community, Culture and Recreation Infrastructure
- Rural and Northern Communities Infrastructure

For projects funded through these streams, the Government of Canada will invest up to 40% for municipal and not-for-profit projects in the provinces.

Additionally, the Government of Ontario offers the Ontario Community Infrastructure Fund (OCIF), which provides grants for small, rural, and northern communities. The eligibility of the County to qualify as a rural community will need to be confirmed.

TABLE 28: IMPLEMENTATION PLAN – ANNUAL CAPITAL PROGRAMS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	Guide Rail Installation	✓	✓	✓
Countywide	Pedestrian Crossings	✓	✓	✓
Countywide	Intersection Illumination	✓	✓	✓
Countywide	Cycling Infrastructure	✓	✓	✓
Countywide	Road Rehabilitation and Resurfacing	✓	✓	✓
Countywide	Bridge Misc. Repairs per Needs Study/OSIM	✓	✓	✓
Countywide	Crack Sealing	✓	✓	✓
Countywide	Urban Storm Sewer	✓	✓	✓
Countywide	Rural Storm Sewer	✓	✓	✓
Countywide	Retaining Walls	✓	✓	✓
Countywide	Traffic Signals	✓	✓	✓
Countywide	Traffic Calming	✓	✓	✓

TABLE 29: IMPLEMENTATION PLAN – MAJOR ROAD RECONSTRUCTION / REHABILITATION

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 3 (Road part of Princeton Drainage Project includes Urbanization)	✓		
Woodstock	Oxford Road 9 (Oxford Road 2 to #226 Ingersoll Road) - Phase 2 *	✓		
Zorra	Oxford Road 16 (from 31st Line to Kintore) - Phase 2	✓		
Zorra / Norwich	Oxford Road 19 (Highway 19 to Norfolk County Border)		✓	
Tillsonburg	Oxford Road 53 (Brock Street E to Highway 19)			✓
Woodstock	Oxford Road 59 (Dundas Street to Henry Street)			✓
Woodstock	Oxford Road 35 (Oxford Road 59 to Oxford Road 54) *	✓		
Woodstock	Oxford Road 35 (Oxford Road 54 to Lansdowne Avenue) *		✓	

Note: * - The project will include the implementation of the cycling facility of the Primary Network as identified in the Cycling Master Plan

TABLE 30: IMPLEMENTATION PLAN – ROAD URBANIZATION

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Woodstock	Oxford Road 35 (Woodall Way to Oxford Road 4)		✓	
Ingersoll	Oxford Road 9 / King Street (Oxford Road 10 to Town Limits) (1)	✓		
Blandford-Blenheim	Oxford Road 22 / Oxford Road 8 (in the village of Bright)		✓	
Norwich	Oxford Road 59 (within the village of Burgessville)	✓		

Note: (1) - The project should include coordination with an improvement identified in the County's 2024 W/WW MP.

TABLE 31: IMPLEMENTATION PLAN – BRIDGE / CULVERT REHABILITATIONS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	2024 Design (2026 Construction)	✓		
Countywide	2025 Design (2027 Construction)	✓		
Countywide	2026 Design (2028 Construction)	✓		
Countywide	2027 Design (2029 Construction)	✓		
Countywide	2028 Structures: 843927, 856645, 816765, 324873, 593175 & 963929	✓		
Countywide	2028 Design (2030 Construction)	✓		
Countywide	2029 Structures: 596279, 596020, 684656, 842608, 376551 & 686115		✓	
Countywide	2029 Design (2031 Construction)		✓	
Countywide	2030 Structures: 816111, 684200, 195840, 885646, 465125 & 975130 (Boundary)		✓	
Countywide	2030 Design (2032 Construction)		✓	
Countywide	2031 Structures: 922773, 927566, 263226, 375488, 886117 & 592540		✓	
Countywide	2031 Design (2033 Construction)		✓	
Countywide	2032 Structures: 884114, 595880, 375739, 565718, 375770, 375806, & 985320 (Boundary)		✓	
Countywide	2032 Design (2034 Construction)		✓	
Blandford-Blenheim	Culvert Rehab. 686444 - OR 2, 1.7km E of 22 (Boundary)	✓		
Blandford-Blenheim	Bridge Rehab. 686843 - OR2, 1.3km W of 3 (Boundary)	✓		
Blandford-Blenheim	Culvert Repl. 687425 - OR 2, 4.35km E of 25 (Boundary)	✓		
Blandford-Blenheim	Culvert Rehab. 715213 - OR 4, 0.75km N of 35	✓		
Blandford-Blenheim	Bridge Rehab. 805907 - OR 29, 0.3km E of 4	✓		
Blandford-Blenheim	Culvert Rehab. 886609 - OR 8, 2.7km E of 22	✓		
Norwich	Bridge Rehab. 774050 - OR 14, 3.2km N of 21	✓		
Norwich	Culvert Rehab. 684802 - OR 2, 0.4km W of 30	✓		
Norwich	Culvert Rehab. 814230 - OR 22, 0.3km N of Gunn's Hill Rd (Boundary)	✓		
Norwich	Bridge Rehab. 225536 - OR 19/Main St, 2.1km W of 59	✓		
Norwich	Bridge Rehab. 773216 - OR 59, 0.15km S of 18	✓		

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Bridge Rehab. 813810 - OR 22, 0.5km N of 21 (Boundary)	✓		
Norwich	Bridge Rehab. 814010 - OR 22, 0.5km S of Substation Rd (Boundary)	✓		
South-West Oxford	Bridge Rehab. 224538 - OR 19, 2.8km E of 19	✓		
South-West Oxford	Culvert Repl. 263548 - OR 27, 0.1km E of 10	✓		
Woodstock	Bridge Rehab. 59755 - OR 59, 0.4km N of 35	✓		
Zorra	Culvert Repl. 194950 - OR 119, 0.5km S of 2	✓		
Zorra	Bridge Rehab. 843613 - OR 16, 0.01km E of 31st Ln, with stream realignment	✓		
Zorra	Bridge Rehab. 682935 - OR 2, 0.15km E of 119	✓		
Zorra	Bridge Rehab. 784064 - OR 33, 0.4 km E of 6	✓		
Zorra	Culvert Repl. 843164 - OR 16, 1.9km E of 119	✓		
Zorra	Bridge Rehab. 374623 - OR 6, 0.1km N of 9	✓		
Zorra	Bridge Rehab. 643977 - OR 16, 0.5km W of 6	✓		
Zorra	Culvert Repl. 682563 - OR 2, 0.13km E of Cobble Hill Road (Boundary)	✓		

TABLE 32: IMPLEMENTATION PLAN – CYCLING INFRASTRUCTURE

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Woodstock / East Zorra-Tavistock	Oxford Road 4 from Oxford Road 35 to Oxford Road 29	✓		
Blandford-Blenheim	Oxford Road 29 from Oxford Road 4 to Oxford Road 36	✓		
Blandford-Blenheim	Oxford Road 36 from Oxford Road 29 to Piper St			✓
Norwich	Oxford Road 13 from Oxford Road 59 to Trans Canada Trail		✓	
South-West Oxford	Oxford Road 9 from Woodstock to Ingersoll	✓		
Woodstock / East Zorra-Tavistock	Oxford Road 17 from Hickson Trail to Oxford Road 4		✓	
East Zorra-Tavistock	Oxford Road 59 from Oxford Road 8 to Oxford Road 24		✓	
East Zorra-Tavistock	Oxford Road 24 from Oxford Road 59 to Punkeydoodles Ave	✓		
Woodstock	Oxford Road 59 from Hickson Trail to Oxford Road 35		✓	
Woodstock	Oxford Road 54 / Oxford Road 59 from Oxford Road 35 to Juliana Drive		✓	
Zorra	Oxford Road 6 from Oxford Road 28 to Oxford Road 8			✓
Zorra	Oxford Road 8 from Oxford Road 6 to Hickson Trail			✓
Zorra	Oxford Road 10 from Oxford Road 20 to Oxford Road 119			✓
Norwich	Oxford Road 59 from Oxford Road 54 to Oxford Road 13			✓
Zorra	Oxford Road 119 from Oxford Road 7 to Oxford Road 28			✓

TABLE 33: IMPLEMENTATION PLAN – UNDERTAKE INTERSECTION UPGRADES / IMPROVEMENTS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 8 & Oxford Road 36 (Roundabout) – Boundary Waterloo Led	✓		
Woodstock	Oxford Road 15 & Springbank Avenue – North Right Turn Lane	✓		
Norwich	Oxford Road 59 & Palmer, Oxford 59 & Tidey – Turning Radius Improvements	✓		
Zorra	Oxford Road 6 & Oxford Road 16 – Overhead Flashing Lights	✓		
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 28 – Overhead Flashing Lights	✓		
Zorra	Oxford Road 2 & Middleton Street – Signalization and Turning Lanes		✓	
Woodstock	Oxford Road 59 & Pattullo Avenue – Realignment (City of Woodstock Led)	✓		
Woodstock	Oxford Road 12 (Mill St) and Oxford Road 2 (Dundas St.) - Phase 2 – North Right Turn Lane		✓	
Tillsonburg	Oxford Road 20 (North Street) & Oxford Road 53 (Tillson Avenue) – Signalization (1)	✓		
Woodstock	Oxford Road 12 & Juliana Drive – Roundabout		✓	
Woodstock	Oxford Road 12 & Athlone Avenue – Roundabout		✓	
East Zorra-Tavistock	Oxford Road 24 & Oxford Road 5 (Punkeydoodles) – Study to be completed at the end of 2023	✓		
Woodstock	Oxford Road 4 & Oxford Road 2 – Duel Left Turn Lane		✓	
Norwich	Oxford Road 2 & Oxford Road 55 (Township 53) – Roundabout	✓		
Ingersoll	Oxford Road 10 & Thomas Street – Signalization			✓
Ingersoll	Oxford Road 10 & Oxford Road 9 – Signalization			✓
Ingersoll	Oxford Road 10 & Union Road – Signalization			✓

Note: (1) - The project should include coordination with an improvement identified in the County's 2024 W/WW MP.

TABLE 34: IMPLEMENTATION PLAN – UNDERTAKE INTERSECTION CONTROL FEASIBILITY STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Oxford Road 13 & Oxford Road 18		✓	
Blandford-Blenheim	Oxford Road 29 & Oxford Road 36		✓	
South-West Oxford	Oxford Road 6 & Oxford Road 9		✓	
East Zorra-Tavistock	Oxford Road 59 & Oxford Road 24		✓	
Woodstock	Oxford Road 35 & Springbank Avenue	✓		
Woodstock	Oxford Road 54 & Oxford Road 35			✓
Woodstock	Oxford Road 15 & Oxford Road 12		✓	
Zorra	Oxford Road 2 & Oxford Road 6			✓
Zorra	Oxford Road 6 & Oxford Road 33	✓		
Zorra	Oxford Road 28 & Oxford Road 6	✓		
East Zorra-Tavistock	Oxford Road 60 & Oxford Road 33	✓		
South-West Oxford	Oxford Road 6 & Karn Road	✓		
East Zorra-Tavistock	Oxford Road 8 & Oxford Road 60			✓
Zorra	Oxford Road 119 & Oxford Road 2		✓	
Ingersoll	Oxford Road 10 & Thompson Road			✓
Norwich	Oxford Road 13 / Oxford Road 46 / Oxford Road 59	✓		
Woodstock	Oxford Road 9 & Oxford Road 2		✓	

TABLE 35: IMPLEMENTATION PLAN – UNDERTAKE OTHER INFRASTRUCTURE PROJECTS

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Blandford-Blenheim	Oxford Road 3 - (Drain part of Princeton Drainage Project by Township of BB)	✓		
Woodstock	Grade Separation - Oxford Road 59 and CNR			✓
Woodstock	Grade Separation - Oxford Road 9 and CNR			✓
Ingersoll	Railway Crossing Upgrades - Oxford Road 10 (at OSR Tracks)	✓		
Ingersoll	Railway Crossing Upgrades - Oxford Road 9 (at OSR Tracks)	✓		

TABLE 36: IMPLEMENTATION PLAN – TRANSPORTATION PLANS, CONDITION ASSESSMENTS AND OTHER STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Countywide	Transportation Master Plan	✓	✓	✓
Countywide	Transportation Development Charges Technical Study	✓	✓	✓
Countywide	Road Needs Study	✓	✓	✓
Countywide	Cycling Master Plan	✓	✓	✓
Countywide	Trails Master Plan	✓		✓
Countywide	Goods Movement Priority Network Study	✓		
Countywide	Grade Level Crossing Assessment		✓	

TABLE 37: IMPLEMENTATION PLAN – UNDERTAKE CLASS EA STUDIES

Location	Action / Extent	Implementation Horizon		
		2024-28	2029-33.	2034-46
Norwich	Oxford Road 18 (Oxford Road 13 to Highway 19)	✓		
Tillsonburg / South-West Oxford	Oxford Road 20 (Tillsonburg to Brownsville) *		✓	
Blandford-Blenheim	Oxford Road 22 (Oxford Road 23 to Oxford Road 21/New Durham Road)			✓
Zorra	Oxford Road 28 (Oxford Road 119 to Oxford Road 5) *	✓		
Norwich	Oxford Road 14 (Oxford Road 15 to Oxford Road 59)		✓	
Blandford-Blenheim	Oxford Road 36 (Oxford Road 47 to Oxford-Waterloo Road)			✓
Woodstock	Oxford Road 4 & Oxford Road 15 Intersection	✓		
Tillsonburg	Oxford Road 53 (Brock Street E to Highway 19)		✓	
Tillsonburg	Oxford Road 53 (Oxford Road 20 to Brock Street E)		✓	
Ingersoll	Oxford Road 119 (Clarke Road to Highway 401)	✓		
Woodstock	Oxford Road 59 (Dundas Street to Henry Street)			✓
Woodstock	Oxford Road 17 (Oxford Road 59 to Oxford Road 4), Oxford Road 17 & Oxford Road 4 Intersection	✓		
East Zorra-Tavistock	Oxford Road 60 (Oxford Road 8 to Oxford Road 4), Oxford Road 60 & Oxford Road 4 Intersection	✓		
Tillsonburg	Oxford Road 51 (Highway 19 to Mall Road)			✓
Norwich	Oxford Road 13 / Oxford Road 46 / Oxford Road 59			✓
Woodstock	Grade Separation - Oxford Road 59 and CNR		✓	
Woodstock	Grade Separation - Oxford Road 9 and CNR		✓	

Note: * - The project will include the implementation of the cycling facility of the Primary Network as identified in the Cycling Master Plan

TABLE 38: IMPLEMENTATION PLAN – POLICIES AND INITIATIVES

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
Road Network	Maximizing Road Safety	Speed Management & Traffic Calming	Continue Speed Management, Traffic Calming and Road Safety Programs	Ongoing		
			Expand Program to include Intersection Safety Improvements	✓		
		Collision Database	Continue to update and maintain the Collision Database	Ongoing		
			Perform a Yearly Review to inform the Location Identified for Safety Measure Improvements	Ongoing		
		Roundabout Implementation	Consider roundabout implementation as an alternative to traditional signalization	Ongoing		
		Intersection Control Feasibility Study	Continue monitoring of County intersection functionality through ongoing Intersection Control Feasibility Studies	Ongoing		
		Emergency Detour Routing	Maintain Emergency Detour Routing	Ongoing		
		Automated Speed Enforcement	In partnership with the Area Municipalities, consider the potential implementation of automated speed enforcement in accordance with the Safer School Zones Act	✓		
	Maximizing Road Efficiency	Seasonal Load Restrictions	Consider implementing access management strategies that have reviewed and consider seasonal load restrictions	✓		
			Update the County Road seasonal load restrictions By-law		✓	
		Road Occupancy Permitting	Consider By-law implementation for enforcement of Road Occupancy Permits		✓	
	Railway Crossing Enhancements	Review and Updated Railway Crossings	Review and upgrade railway crossings in accordance with the Transport Canada regulations	Ongoing		
	Accommodating Future Growth	Transportation Demand Management	Continue to promote working from home through engagement with residents and businesses	Ongoing		
			Implement 2024 TMP Active Transportation and People Movement strategies	✓	✓	✓

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
		Ridesharing	Expand education and promotion of carpooling and ridesharing as a mode choice in the County	✓		
			Where applicable, support ridesharing programs			
		Carpooling	Advocate to the Ontario Ministry of Transportation and private landowners for the creation of new carpool lots	Ongoing		
			Consider options to provide active transportation and transit facilities at carpool lots	Ongoing		
Active Transportation	Cycling Infrastructure	Expanding Cycling Infrastructure	Coordinate implementation of primary cycling network with planned road rehabilitation program and 2021 CMP prioritization strategy	Ongoing		
	Pedestrian Infrastructure	Expanding Pedestrian Infrastructure	Continue review of existing conditions and network	Ongoing		
			Ensure development and redevelopment plans integrated safe pedestrian infrastructure into their plan	Ongoing		
			Implement multi-use paths within road allowances in lieu of sidewalks where feasible	Ongoing		
			Ensure new road facilities follow accessible and best practice design guidance	Ongoing		
			Promote direct connections to link communities and important destinations within Oxford County	Ongoing		
			Integrate with other modes	Ongoing		
			Complete safety analysis of existing infrastructure	Ongoing		
		Pedestrian Safety and promotion programs	Establish key partnerships for programs to educate and encourage the public	Ongoing		
			Introduce/ expand the use of staggered and/or extended pedestrian phasing at signals	Ongoing		
			Enhance opportunities to deliver information to the public in an accessible and easy-to-understand manner	Ongoing		
	Streetscape Improvements	Support Streetscape Improvements	Advocate and support Area Municipalities in developing streetscape improvements	Ongoing		
	Trail Infrastructure	Expanding Trail Infrastructure	Facilitate trail development with Area Municipal partners and stakeholders	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
			Explore options to develop trails with new developments	Ongoing		
			Complete an update to 2014 Trails Master Plan	✓		
	Looking Ahead	Micro Mobility & New Technology Strategy	Monitor the need to develop a micro-mobility and new technology strategy	Ongoing		
Goods Movement	Supporting Rail Freight	Regional Coordination Strategy	Continue to engage Transport Canada, the Federal Government and its rail agencies (CN, CP) to undertake necessary freight rail enhancements.	✓		
		Strategic Investments into Rail Freight Infrastructure	Engage local and regional governments to advocate the Provincial and Federal government to provide funding to address freight rail infrastructure bottlenecks or tax credits for expanded rail sidings, transload, warehousing and distribution facilities.	Ongoing		
			Advocate for the support of short line railways	Ongoing		
	Supporting Truck Freight	Goods Movement Strategy	Develop a goods movement priority network	✓		
			Construct truck route roadways to arterial road specifications and provide adequate turning radii and turning lane storage to accommodate freight, aggregate and agricultural vehicles	Ongoing		
			Provide adequate height and width under bridges when constructing new roads or undertaking road rehabilitation to facilitate existing rail services and transport trucks	Ongoing		
			Consider the potential for the development of a Freight Multi-modal Facility near the Highway 401/403 corridor, in the Goods Movement Priority Network		✓	
			Review opportunities for truck bypass routes within the Goods Movement Priority Network	✓		
	Supporting Agriculture	Agricultural Vehicle Design Considerations	Implement agricultural vehicle supportive design elements when completing road reconstructions and rehabilitations	Ongoing		
People Movement and	Expanding Intercommunity Transportation	Intercommunity Bus Transit	Ongoing support of intercommunity bus transportation and intermodal connections to commuter rail/mobility hubs	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
Public Transportation		North Oxford Inter-Community Bus Transit	Advocate for Regional Inter-Community Bus transportation connectivity and integration across Oxford	✓		
		Southwest Community Transit (SCT) Association	Continue to collaborate and promote the coordination and integration of Regional Inter-community bus transportation connectivity amongst SCT Association member municipalities	Ongoing		
	Enhance Commuter Rail	Enhanced Passenger Rail Service	Advocate for enhanced passenger rail service	Ongoing		
			Integrate with local and intercommunity bus transit and ensure adequate first/last mile transportation options	Ongoing		
			Work with Transport Canada, the Federal Government, and its rail agencies (CN, CP) to advocate and support studies which explore Southwestern Ontario passenger rail enhancements	Ongoing		
	Tillsonburg Airport	T:GO Bus Stop	Discuss the potential for a trial T:GO stop at Tillsonburg Airport with the Town of Tillsonburg transit authority	✓		
	Enhancing Mobility	Mobility Hubs	In collaboration with Community Planning and Area Municipalities, consider the designation of the Woodstock and Ingersoll train stations as “Mobility Hubs” to develop specific zoning to create a mixed-use, higher density urban form and increase community connectivity	✓		
			Facilitate integration of existing and future inter-community bus transportation or other modes of local transit at “Mobility Hubs” destinations through coordination with transit authority providers.	Ongoing		
	Looking Ahead	Universal Basic Mobility	Promote Universal Basic Mobility through improved active transportation infrastructure, expanded transit service, transit oriented development and micro mobility.	Ongoing		
Transportation System Sustainability and New	Electric Vehicles	Electric Charging Infrastructure	The County will support and facilitate initiatives of Area Municipalities in EV charging implementation and supportive policies	Ongoing		
			The County will support policies to develop EV charging infrastructure across the County	Ongoing		

Theme	Policy or Initiative	Focus Area	Recommendation / Action	Implementation Horizon		
				2024-28	2029-33.	2034-46
Technology Strategy	Autonomous Vehicles	Autonomous Vehicle Network	Implement AV network to facilitate testing of Level 3 to Level 5 AV as part of the Windsor to Ottawa network	Ongoing		
		Municipal Alliance for Connected and Autonomous Vehicles in Ontario	Continue to work with the Municipal Alliance for Connected and Autonomous Vehicles in Ontario (MACAVO) on the development of a larger AVE road network serving Southwestern Ontario	Ongoing		
	Alternative Fuel Sources	Explore Opportunities to Utilize Alternative Fuel Sources	The County should explore opportunities to utilize and/or expand the use of alternative fuels	Ongoing		
	Alternative Road Construction Materials	Explore Opportunities to Utilize Alternative Construction Materials	The County should explore opportunities to utilize and/or incentivize the use of alternative road construction materials in rehabilitation or new projects	Ongoing		
	Looking Ahead	Connected Vehicles	Support Cooperative Truck Platooning Pilot Program	Ongoing		

12.2 Future Environmental Assessment Requirements

The strategies will be implemented in accordance with each project's respective Class EA schedule. Moving forward, all Schedule B and C Class EAs identified in this TMP must follow MEA Class EA (2000, as amended in 2007, 2011, 2015, and 2023). The Schedule B projects identified will proceed through separate stand-alone studies, or as part of an integrated planning process under the Planning Act in order to satisfy Class EA requirements. The Schedule C projects identified will continue to Phases 3 and 4 of the Class EA process and have an Environmental Study Report (ESR) completed for public filing. It is anticipated that these Schedule C projects will review and update Phases 1 and 2 of the Class EA process as part of the project scope.

During the subsequent steps of project implementation, primarily during detailed design, the following requirements will be considered:

- Finalization of property requirements;
- Refinement of infrastructure alignment, sizing, facility siting and costing;
- Refinement of construction methodologies;
- Completion of additional supporting investigations as required such as geotechnical, hydro-geotechnical and site specific environmental studies;
- Review and mitigation of potential construction related impacts;
- Completion of all approval requirements including, but not limited to, provincial approvals (MECP, MNRF), local municipality approvals (site plans, building permits), and conservation authority approvals, etc.; and
- Source water protection.

12.3 Monitoring

The TMP is not intended to be a static document, rather it must be flexible and adapt to changes in travel characteristics, user behaviour, development trends, growth patterns and other unforeseen events over time. Initiatives planned or underway by other agencies may also have an effect on the recommendations of the TMP as they unfold.

The impact of policy changes and the implementation of proposed improvements is best assessed through a monitoring program. A comprehensive program allows progress to be tracked and performance to be measured and reported. Monitoring progress helps to inform future decision making and resource allocations based on key indicators, needs and measurable outcomes.

A multi-modal data collection framework should be developed to serve as the blueprint for monitoring progress. A key aspect in developing a monitoring plan is to have a clear list of indicators for different aspects of multi-modal facilities, services, and their respective performance. Tracking these indicators on set internals would allow the County to track the progress of the plan. Following the approval of this Master Plan, County staff should establish the list of indicators to be tracked and complete an initial data collection to set a baseline for comparison moving forward.

12.4 Future Data Management

Effective data collection and management will be key to monitoring the performance of the plan and preparing for the next one. Future data management can be broken down into two categories. The first being traffic data and the second being performance indicators, as listed above in the monitoring plan.

Currently, the County invests annually in traffic data collection in the form of mid-block AADT counts along County Roads and intersection counts at County Road intersections. The County should continue to collect this data and should do so in a systematic way to ensure that they have current and up to date data (no older than three years) for all County Roads when the next Transportation Master Plan update comes around. Intersection counts can be used to help augment the AADT data collection and give the County a deeper understanding of traffic movements at key County Road intersections.

As technology progresses and newer third-party data becomes available, the County should continue to use this data to complement, such as how *StreetLight* data was utilized in the 2024 TMP, and eventually replace the traditional data collection methods. Given the uncertainty surrounding the capabilities of future and emerging technologies and their applicability to assessing the County's Road network, a clear direction of specific technologies cannot be provided. However, as advancements in connected vehicles and traveller data, mobile device data and autonomous vehicles are being seen, the County should take an active approach in reviewing emerging technologies and their potential to assess traffic patterns on the County Road network.

Data should be stored in a centralized location to allow for easier review of the data. Storing and assessing the monitoring data in a centralized location will allow for easier identification of trends, allow the County to keep an inventory of what data has been collected and what is missing, and provide an easy platform for transferring data.

12.5 Review and Updates

Regular reviews and updates of the TMP allow for the ongoing assessment of its effectiveness and relevance. Establishing this stable transportation planning cycle ensures the plan strategies remain flexible to respond to unforeseen developments and imprecise assumptions. The performance of the plan in achieving the transportation vision and goals can also be reviewed and necessary adjustments in strategy made.

The Planning Act requires the County to assess the need for an update to its Official Plan every five years. That review process provides a timely opportunity to revisit the assumptions of the TMP and consider the need for an update. The monitoring program discussed in Section 12.3 will also provide an indication of the need for a review.

Over the period preceding the formal review, County and Area Municipal Council decisions on transportation issues will have the inevitable effect of amending, deleting, replacing, or complementing some of the policies in the TMP. For this reason, individuals must consider this plan in conjunction with the record of subsequent Council decisions to obtain a complete understanding of current policy and plans. The County may amend the TMP in the intervening period to reflect changes to the Official Plan and/or resulting from the development review process or other major initiatives.

Action: Review the TMP every five years, in conjunction with a review of the Oxford County Official Plan and Development Charges Background Studies.