2025
APRIL

TRANSPORTATION MASTER PLAN

Municipality of Brighton

Photo Credit: Justin Soule

MUNICIPALITY OF BRIGHTON

RVA

Executive Summary

Introduction

A Transportation Master Plan (TMP) is a long-range planning document that provides direction and prioritization on transportation policy and infrastructure investments within the Municipality. The Municipality of Brighton has initiated the study to develop a long-term road network and active transportation strategy that connects residents and visitors in a diverse and barrier-free manner.

The TMP study seeks to fulfill a variety of transportation-related goals over the next 25 years, with specific focus on policy and infrastructure investments that enable equitable mobility, harness growth, boost tourism, and contribute to an enriched quality of life for residents. The TMP helps facilitate capital expenditures by aggregating the recommendations into different timeframes, which allows the Municipality to address current mobility needs while preparing for future demands that have not been realized yet.

The TMP was developed by R.V. Anderson Associates Limited (RVA) under the direction of the Brighton staff, and was bolstered by the input received from the public, stakeholders, and schools throughout the extensive consultation process. The TMP was conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) Master Plan Approach #1, which is an approved process under the Environmental Assessment Act.

Planning Context

The Municipality of Brighton is a lower-tier municipality located in the southeastern area of Northumberland County (the "County"). As of 2021, a total of 12,108 residents live in the Municipality, distributed throughout the urban area that abuts Lake Ontario and the rural hamlets that extend northerly towards the Municipality of Trent Hills. The population of Brighton can be generally described as an aging population, with a larger proportion of those aged 65 and over compared to the provincial averages.

The economy of Brighton is driven by the plethora of small businesses that are locally owned and operated, including a wide variety of restaurants, retail spaces,

and personal services. Employment throughout the community is also supported by manufacturing, automotive care, food processing, and agriculture industries.

The housing within Brighton is largely low density, with over 88% of dwelling units classified as single-detached. This low density cultivates a dependence on automobiles as a travel mode, as the feasibility of transit is greatly limited and active transportation modes become far less desirable. However, despite the steadfast automobile culture in Brighton, the public consultation process indicates that there is a keen interest in walking and cycling as both a recreational activity and mode of travel for short trips. As such, providing network enhancements for sustainable modes was a key focus area of the TMP.

Problem and Opportunity Statement

As part of Phase 1 of the MCEA process, the TMP project team developed the following Problem and Opportunity statement:

"The Municipality population is forecast to grow from the existing year of 2021 to the future year of 2051, with an approximate residential population increase of 4,800 (40%) and an employment population of 860 (35%).

The Master Plan will outline the direction for developing a balanced transportation system within the Municipality, offering a variety of mode choices to the residents and visitors through a well-connected network, with efficiently operating and easy-to-access transportation infrastructure for the next 25 years.

The Municipal-owned transportation road network including sidewalks, trails, and multi-use paths will provide safe, environmentally responsible, and sustainable operations for all transportation modes including vehicular and non-vehicular."

Evaluation Criteria

Phase 2 of the MCEA process involves the examination of alternatives in their ability to address the problems and opportunities from Phase 1. Four (4) alternative solutions were established during the planning process, including:

Alternative 1: Do Nothing – Represents the existing condition of a roadway with no further enhancement to vehicular capacity or active transportation accommodation. In other words, this alternative evaluates the corridor's ability to adapt to future demands in its current state.

Alternative 2: Auto Capacity – Consists of a roadway upgrade that improves the performance of the corridor for auto modes, which can include metrics such as reduced vehicle delays and/or increased auto capacity (i.e., ability to carry more vehicles without compromising the performance of the roadway).

Alternative 3: Active Transportation and Transit – Supports sustainable travel modes by considering improvements that increase the efficiency, comfortability, accessibility, and/or connectivity of active transportation and transit travel modes.

Alternative 4: Combination of Alternatives 2 and 3 – Fosters multi-modal mobility by acting as a combination of Alternative 2 and Alternative 3. Alternative 4 considers how the solution serves to improve auto capacity and sustainable travel modes alike.

Recommendations

Timelines

The TMP recommendations are organized into various timelines of implementation to balance the fiscal and resource demands that are necessitated by the improvements. Moreover, with some recommendations dependant on future developments, the timelines help ensure that improvements are only implemented when the demand for them exists. The timelines are as follows:

Short-Term (Up to Five Years) – The short-term recommendations are intended to be "quick win" strategies that have an immediate impact on mobility, but are commonly associated with a less complex implementation process.

Medium-Term (Six to Ten Years) – The medium-term recommendations are planned to occur within six (6) to ten (10) years of the TMP. These recommendations may be larger in scale, or may not trigger a need until certain developments or plans come into fruition.

Long-Term (Eleven to Twenty-Five Years) – The long-term recommendations are to occur within eleven to twenty-five years of the TMP. These initiatives are typically devised in response to future needs that have yet to be triggered, or may be substantial in nature which requires a robust planning and budgeting process.

Categories

The TMP presents a wide variety of transported-related initiatives, ranging from policy to roadway construction. As such, the TMP organizes and groups recommendations of similar essence. The TMP recommendation categories include: (1) Policy, Documentation and Guidelines; (2) Active Transportation; (3) New Roadways; and (4) Localized Intersection Improvements.

Policy, Documentation and Guideline Recommendations

The recommendations that fall within the Policy, Documentation and Guideline categories are generally quick to implement with less significant monetary implications. The recommendations in this category are summarized in Table ES-1.

Table ES-1 – Proposed Policy, Documentation and Guideline Recommendations

Code	Proposed Improvement	Description	Cost	Timing
PDG-1	Adopt Community Safety Zone (CSZ) Policy	Adopt Community Safey Zone (CSZ) Policy for use selecting and establishing new CSZs.	-	Short-Term
PDG -2	Establish goods movement network	Implement restrictive truck route signage to facilitate goods movement along designated routes only.	$14k	Short-Term
PDG -3	Adopt Roundabout Implementation Guidelines	Adopt Roundabout Implementation Guidelines to help guide future intersection control studies.	-	Short-Term
PDG -4	Adopt Traffic Calming Policy	Adopt Traffic Calming Policy for use in streamlining the traffic calming request and implementation process.	-	Short-Term
PDG -5	Adopt revised road classifications	Adopt revised road classifications and incorporate them into Schedule 'C' of the Official Plan.	-	Short-Term
PDG -6	Adopt Speed Limit Policy	Adopt the Speed Limit Policy to aid in establishing appropriate speed limits for Municipal roadways.	-	Short-Term
PDG -7	Create Traffic Impact Study (TIS) Guidelines	Formulate Traffic Impact Study (TIS) Guidelines to facilitate preparation of TIS reports for new developments.	$20k	Short-Term

The proposed road classification network for the rural and urban areas are shown in Exhibit ES-1 and Exhibit ES-2, respectively. Furthermore, as part of the TMP, new typical roadway cross sections were formulated for each road classification type. These cross sections represent the desired minimum design characteristics for new roadways, and seek to provide a complete streets approach that accommodates all road users.

Active Transportation

The active transportation recommendations are aggregated into two sub-categories: cycling facilities and sidewalk facilities. The cycling facility recommendations provide varying degrees of separation from vehicular traffic, with the overarching intention to provide a network that meets the needs of all levels of cyclist. The cyclist network recommendations are summarized in Table ES-2 and shown graphically in Exhibit ES-3.

Table ES-2 – Proposed Cycling Recommendations

Code	Corridor	Facility Type	Limits	Cost	Timing	Required EA
AT-1	Applewood Drive	Multi-Use Path	Loyalist Drive to Northerly Limit	$295k	Long-Term	Schedule B
AT-2	Baldwin Street	Paved Shoulder	Harbour Street to Lambton Street/Bay Street East	$120k	Short-Term	Schedule B
AT-3	Butler Street	Multi-Use Path	Ontario Street to Cedar Street	$475k	Long-Term	Schedule B
AT-4	Butler Street West	Multi-Use Path	Westerly Limit to Ontario Street	$295k	Long-Term	Schedule B
AT-5	Cedar Street	Multi-Use Path	Harbour Street to Prince Edward Street	$590k	Short-Term	Schedule B
AT-6	Dundas Street	Multi-Use Path	Prince Edward Street to Urban Boundary	$770k	Short-Term	Schedule B
AT-7	Elizabeth Street	Multi-Use Path	Prince Edward Street to John Street	$710k	Short-Term	Schedule B

Code	Corridor	Facility Type	Limits	Cost	Timing	Required EA
AT-8	Harbour Street	Multi-Use Path	Ontario Street to Prince Edward Street	$1.2m	Short-Term	Schedule B
AT-9	Lakeshore Road	Paved Shoulder	Huff Road to Presqu'ile Parkway	$105k	Long-Term	Schedule B
AT-10	Loyalist Drive	Multi-Use Path	Cedar Street to Easterly Limit	$295k	Long-Term	Schedule B
AT-11	Main Street	Multi-Use Path	Empire Boulevard to Prince Edward Street	$650k	Short-Term	Schedule B
AT-12	Ontario Street	Multi-Use Path	Raglan Street to Main Street	$1.3m	Mid-Term	Schedule B
AT-13	Presquile Parkway	Multi-Use Path (Widened)	Presqu'ile Provincial Park to Ontario Street	$590k	TBD	Schedule B
AT-14	Prince Edward Street	Conventional Bike Lane	Harbour Street to Elizabeth Street	N/A	Short-Term	N/A
AT-15	Prince Edward Street	Conventional Bike Lane	Elizabeth Street to Municipal Boundary	$335k	Long-Term	Schedule B
AT-16	Raglan Street	Multi-Use Path	Westerly Limit to Cedar Street	$885k	Long-Term	Schedule B

N/A = Not Applicable | TBD = To be determined based on road rehabilitation timing

The sidewalk network recommendations are intended to address connectivity gaps within the existing network and connect pedestrians to future areas of development. The sidewalk network recommendations are summarized in Table ES-3 and shown graphically in Exhibit ES-4.

Table ES-3 – Proposed Sidewalk and Trail Facilities

Code	Corridor	Limits	Cost	Timing
AT-17	Anne Street	Brintnell Boulevard to Baldwin Street	$145k	TBD
AT-18	Daniels Drive	Along One (1) Side for Entire Loop	$190k	Long-Term
AT-19	Elizabeth Street	Pinnacle Street South to Urban Boundary	$380k	Short-Term
AT-20	Iroquois Avenue	Ontario Street to Seneca Drive	$95k	Short-Term
AT-21	Kingsley Avenue	Northerly Limit to a Point 15 Metres South of Dean Drive	$145k	Short-Term
AT-22	Lance Street	Raglan Street to Shewman Road	$50k	Long-Term
AT-23	Mills Road	Nesbitt Drive to existing sidewalk opposite 7 Mills Road	$525k	Long-Term
AT-24	Mohawk Avenue	Ontario Street to Iroquois Avenue	$145k	Short-Term
AT-25	Oliphant Street/ Richardson Street	Prince Edward Street to Gross Street	$95k	TBD
AT-26	Pinnacle Street South	Elizabeth Street to Southerly Limit	$145k	Long-Term
AT-27	Presqu'ile Gate	Ontario Street to Mills Road	$95k	TBD
AT-28	New Pedestrian Trail	Cedar Street to Butler Street	$280k	Short-Term
AT-29	New Pedestrian Trail	South of Cortland Way and north of the CN/CP Rail Lines	$190k	Short-Term

TBD = To be determined based on road rehabilitation timing

New Roadways

New roadways have been recommended to enhance the existing network connectivity and enable emerging development in Brighton. A summary of the proposed new roadways is provided in Table ES-4, and a corresponding graphic is shown in Exhibit ES-5.

Table ES-4 – Proposed New Roadway Recommendations

Code*	Proposed Roadway Name	Limits	Cost	Timing	Required EA
Urban Cross Section					
C-1	Castle Ridge Extension	Sarill Lane to New Collector #2	$4.8m	Long-Term	Schedule C
C-2	Dunnet Drive Extension	Existing Easterly Limit to Hardy Lane	$4.8m	Mid-Term	Schedule C
C-3	Meadowcreek Drive	Existing Westerly Limit to Ontario Street	$4.1m	Mid-Term	Schedule C
C-4	Meadowcreek Drive	Ontario Street to Urban Boundary	$3.2m	Long-Term	Schedule C
C-5	New Collector # 1	Simpson Street to Percy Street	$4.1m	Long-Term	Schedule C
C-6	New Collector # 2	New Major Local to Elizabeth Street	$8.9m	Long-Term	Schedule C
C-7	Rundle Lane	Urban Boundary to Presqu'ile Parkway	$2.4m	Long-Term	Schedule C
C-8	Singleton Street Extension	Existing Easterly Limit to Georgine Street	$4.8m	Long-Term	Schedule C
Industrial Cross Section					
C-9	Georgina Street Extension	Smith Street to Elizabeth Street	$4.1m	Short-Term	Schedule C
C-10	John Street Extension	Elizabeth Street to Prince Edward Street	$8.9m	Long-Term	Schedule C
C-11	Loyalist Drive Extension	Applewood Drive to John Street Extension	$5.7m	Long-Term	Schedule C
C-12	Sharp Road Extension	Sharp Street to John Street Extension	$4.8m	Mid-Term	Schedule C
Rural Cross Section					
C-13	Butler Street West	Rundle Lane to Urban Boundary	$1.6m	Long-Term	Schedule C
C-14	Meadowcreek Drive	Huff Road to Urban Boundary	$6.3m	Long-Term	Schedule C
C-15	New Collector # 3	Princess Street to Little Lake Road	$25.2m	Long-Term	Schedule C
C-16	Raglan Street Extension	Municipal Boundary to Existing Westerly Limit	$13.7m	Long-Term	Schedule C
C-17	Rundle Lane	Existing Southerly Limit to Urban Boundary	$11.1m	Long-Term	Schedule C

Code*	Proposed Roadway Name	Limits	Cost	Timing	Required EA
C-18	Sarill Lane Extension	Whites Road to Castle Ridge Drive	$5.3m	Long-Term	Schedule C
C-19	Simpson Street	Little Lake Drive to Existing Northerly Limit	$4.8m	Long-Term	Schedule C

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit ES-5.

Localized Intersection Improvements

The localized intersection improvements include measures that address site-specific concerns such as skewed roadway alignment, general safety concerns, unsuitable intersection mode of control (i.e., traffic signal, all-way stop, etc.), or other. The proposed localized intersection improvements are summarized in Table ES-5, with a corresponding visual shown in Exhibit ES-6.

Table ES-5 – Proposed Localized Intersection Improvement Recommendations

Code*	Intersection	Proposed Improvement	Cost	Timing	Required EA
C-20	George Street and Alice Street	Investigation of sightline issues.	$20k	Short-Term	N/A
C-21	John Street	Provide overpass bypassing the CN/CP rail lines, thereby enabling the John Street arterial road extension.	$75.2m	TBD	Schedule C
C-22	Main Street and Ontario Street	Implement traffic signal and auxiliary turn lanes.	$1.0m	Short-Term	N/A
C-23	Main Street/Elizabeth Street and George Street/Prince Edward Street	Alignment of Main Street and Elizabeth Street.	$4.9m	Long-term	Schedule C
C-24	Ontario Street and Presqu'ile Parkway (Harbour Street)	Re-alignment of Presqu'ile Parkway.	$3.7m	TBD	Schedule C
C-25	Prince Edward Street and Cedar Street	Adjust lane alignment to create a T-intersection with a southbound auxiliary right-turn lane.	County	Short-Term	N/A

Code*	Intersection	Proposed Improvement	Cost	Timing	Required EA
C-26	Raglan Street	Implement pedestrian crossing	$14k	Short-Term	N/A
C-27	Boes Road and CN/CP Rail Line	Implement a traffic signal to facilitate safe operation under the bridge.	$500k	Short-Term	N/A
C-28	County Road 30 and County Road 26/Whites Road	Implement a roundabout	$1.0m	Short-Term	Schedule B
C-29	County Road 30 and Little Lake Road	Complete sightline study to discern whether realignment is required.	$20k	Short-Term	N/A
C-30	County Road 30 and County Road 21	Complete sightline study to discern whether realignment is required.	$20k	Short-Term	N/A
C-31	County Road 30 and Carmen Road/Hansen Road	Complete study to evaluate alternatives for consolidating the closely spaced intersections.	$20k	Short-Term	N/A

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit ES-6.

NA = Not Applicable

Goods Movement Network

A goods movement network—or otherwise known as truck route network—is a designated network of roads that are intended to carry truck traffic to an extent reasonably possible. By establishing a network of truck routes, the needs of the trucking industry can be optimized while limiting the impact that substantial truck traffic could have on sensitive residential communities. The TMP recommends a goods movement network for the urban area, where there was formerly no formally established network. The proposed goods movement network for the Brighton urban area is shown in Exhibit ES-7. Existing Highway 401 emergency detour route (EDR) through the Municipality of Brighton was reviewed and recommendations to upgrade the Telephone Road corridor to Rural Collector was provided to be considered as an alternate EDR in the future.

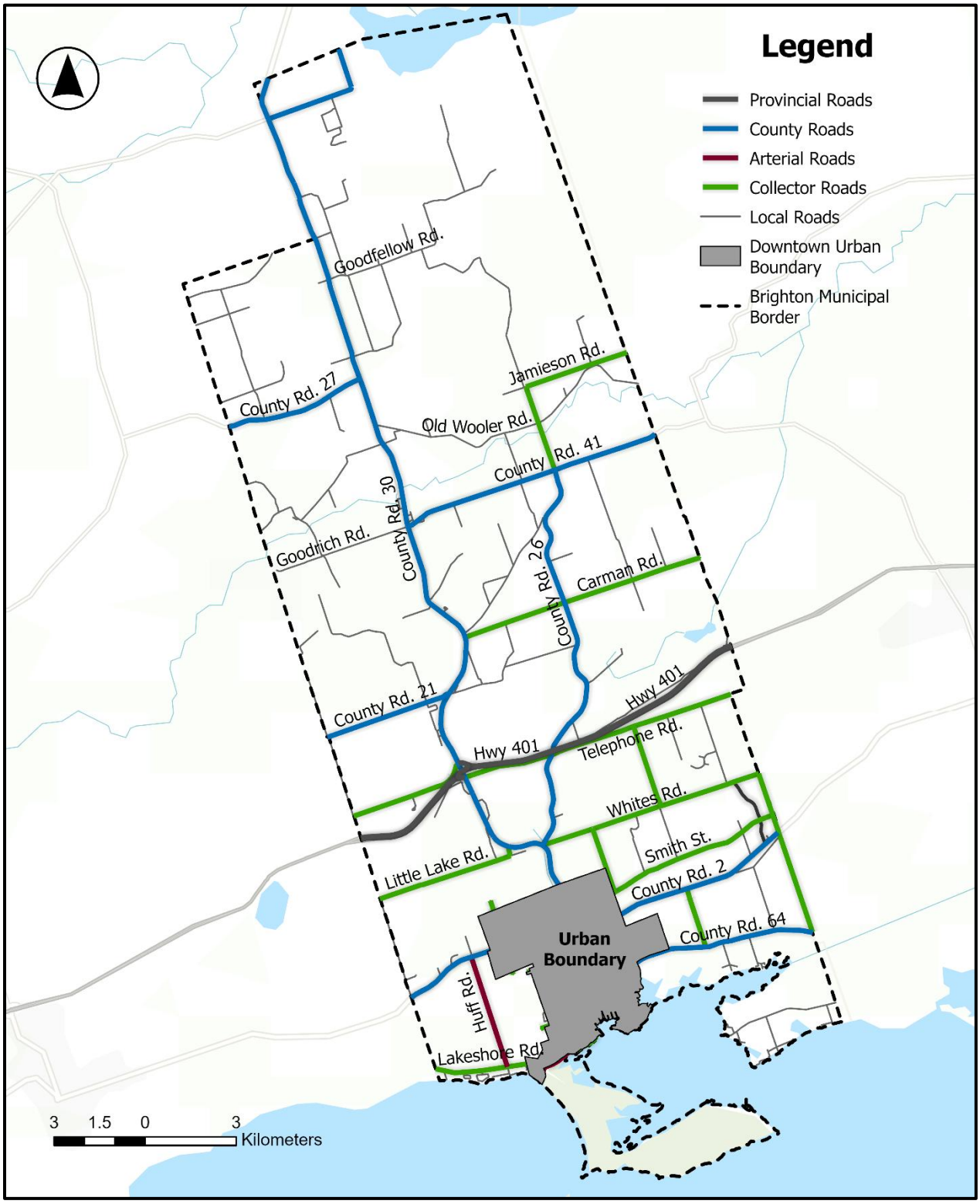

Exhibit ES-1 – Proposed Road Classification Network – Rural Area

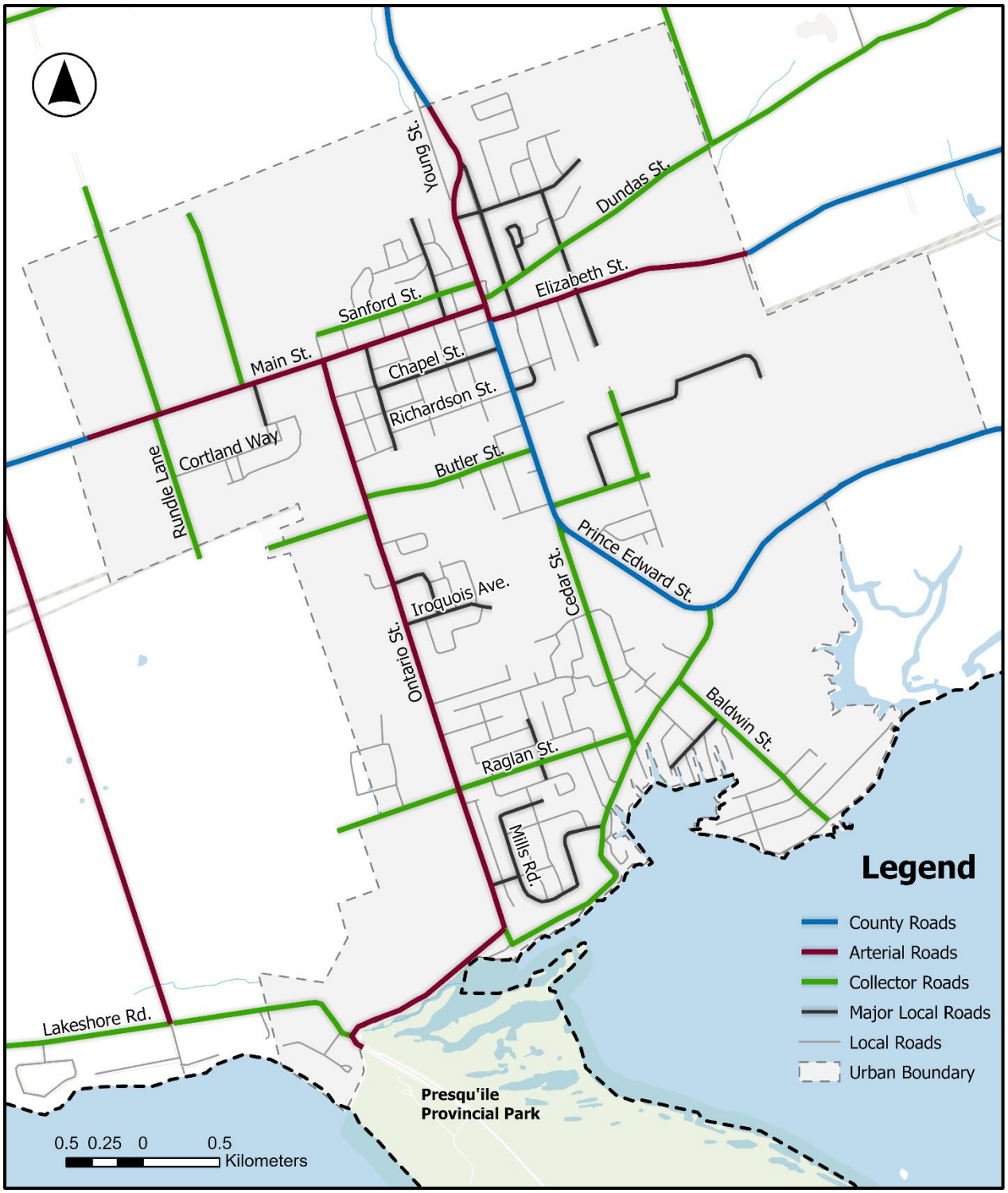

Exhibit ES-2 – Proposed Road Classification Network – Urban Area

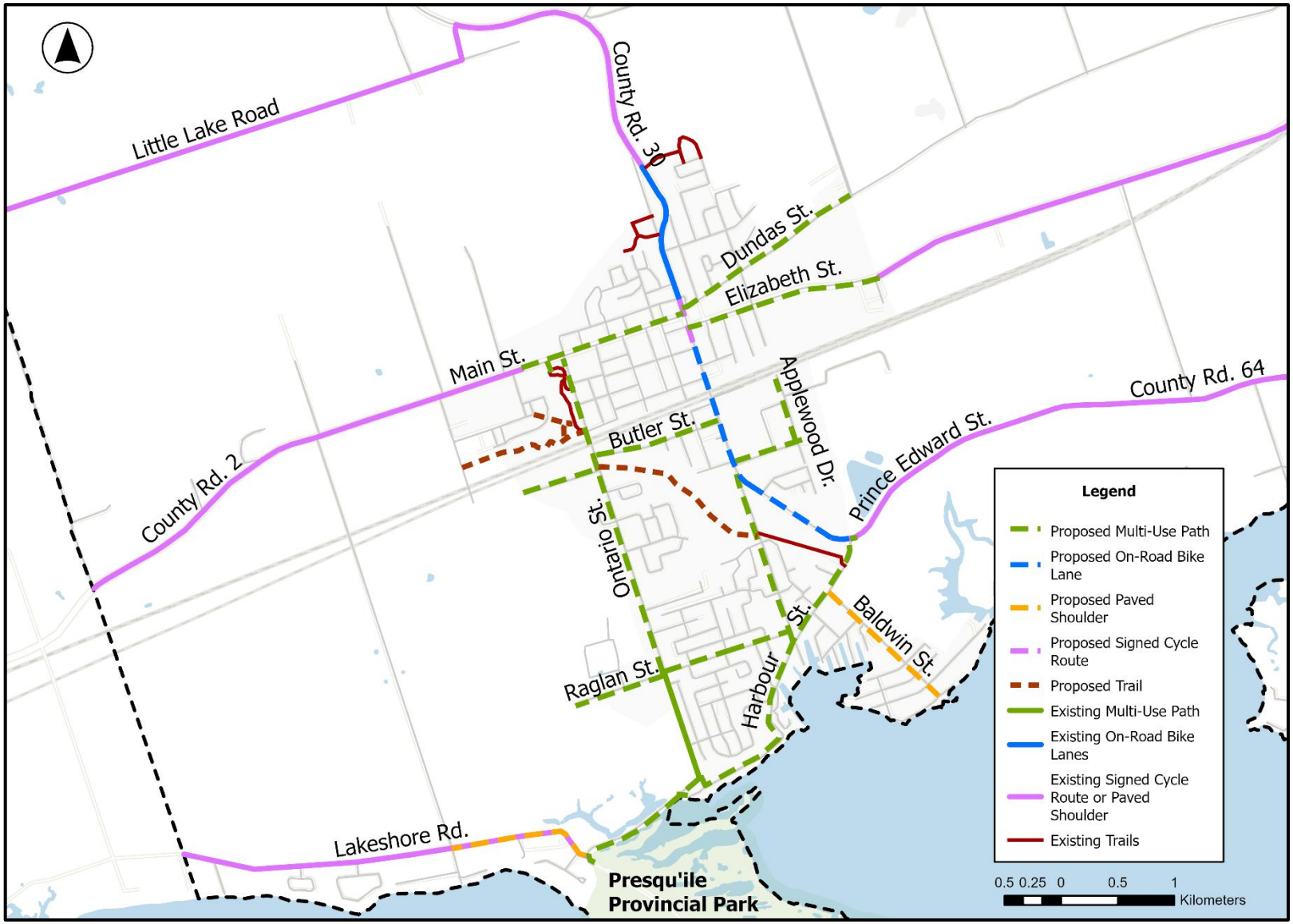

Exhibit ES-3 – Proposed Cycling Network

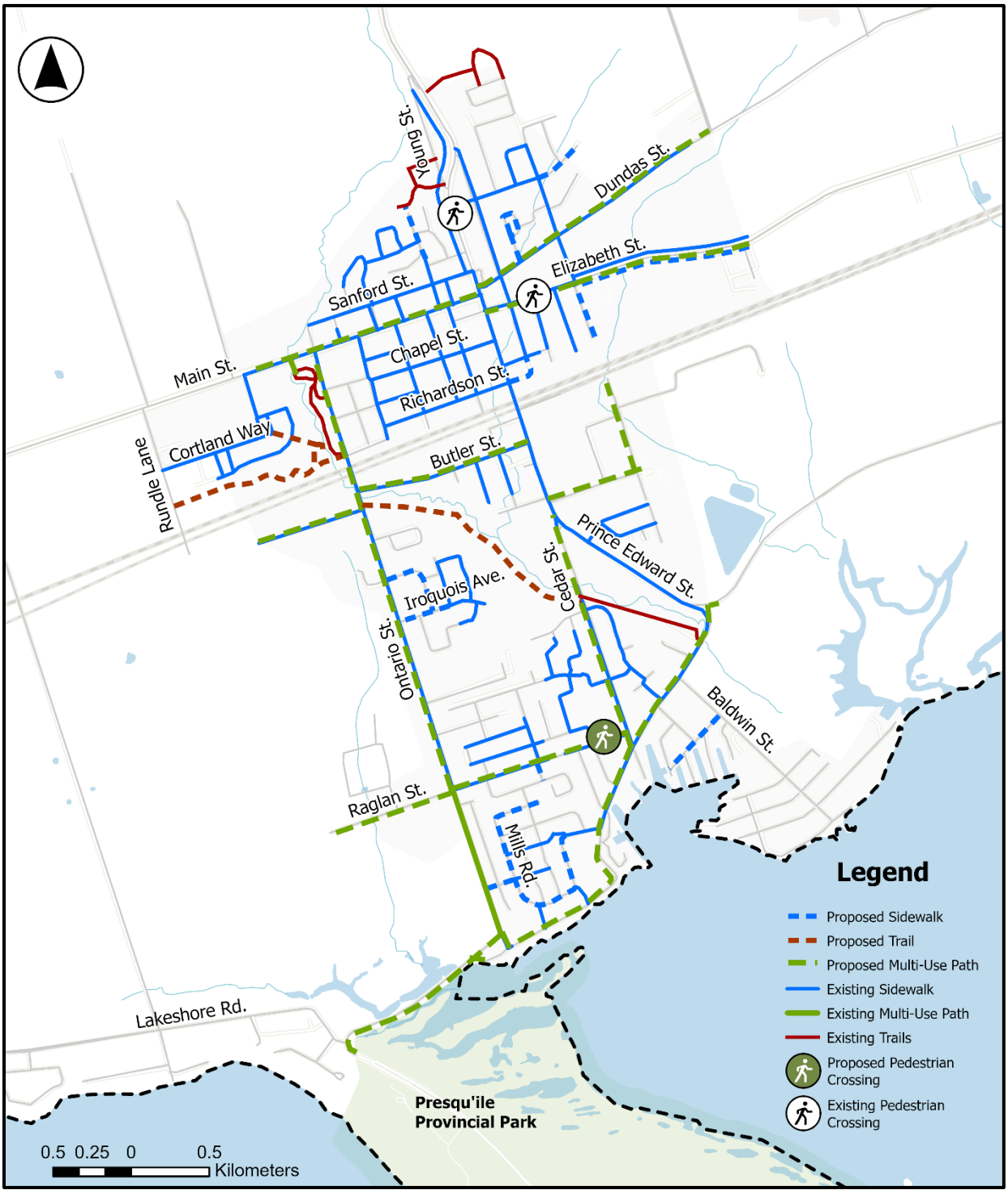

Exhibit ES-4 – Proposed Sidewalk and Trail Network

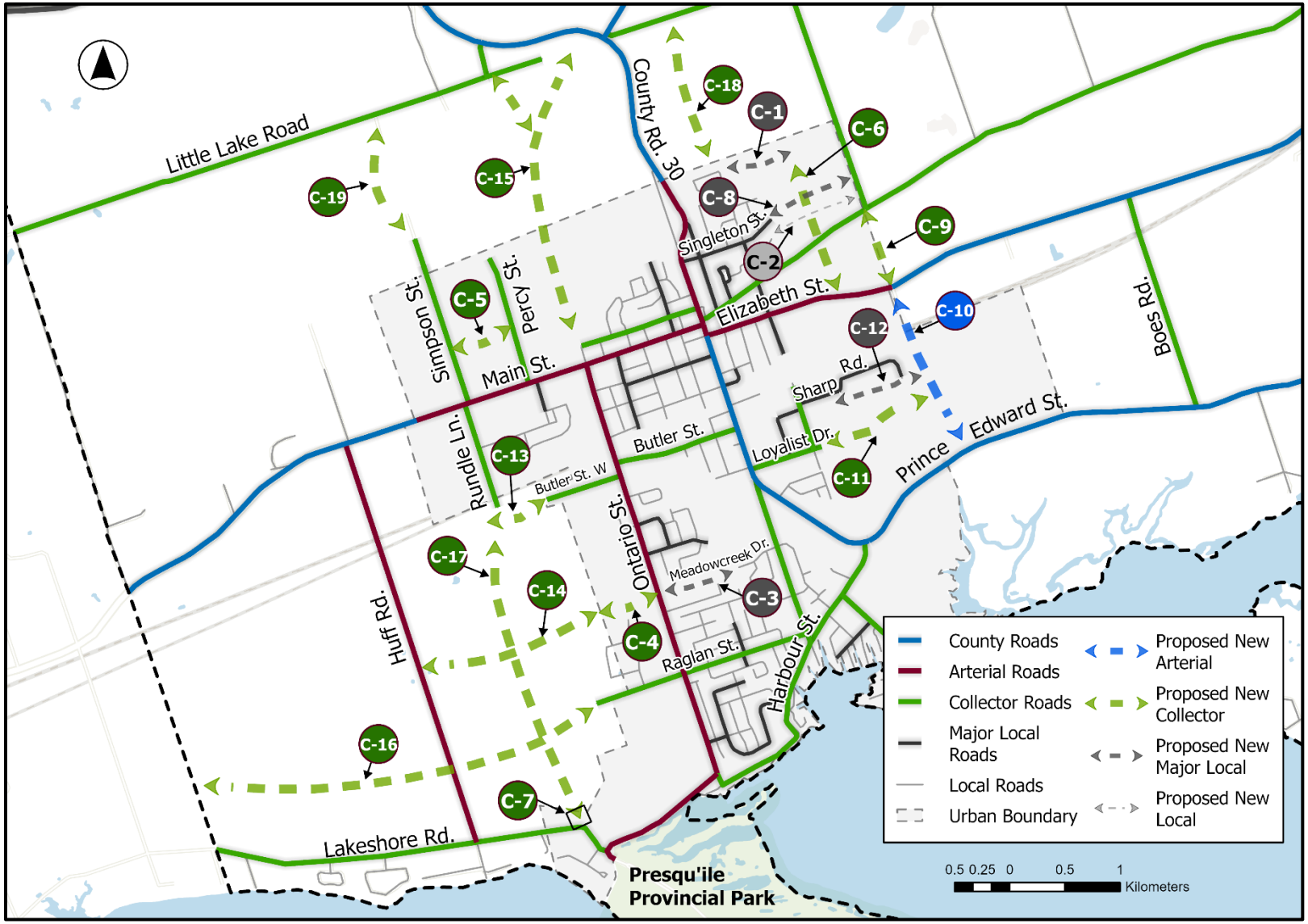

Exhibit ES-5 – Proposed New Roadways

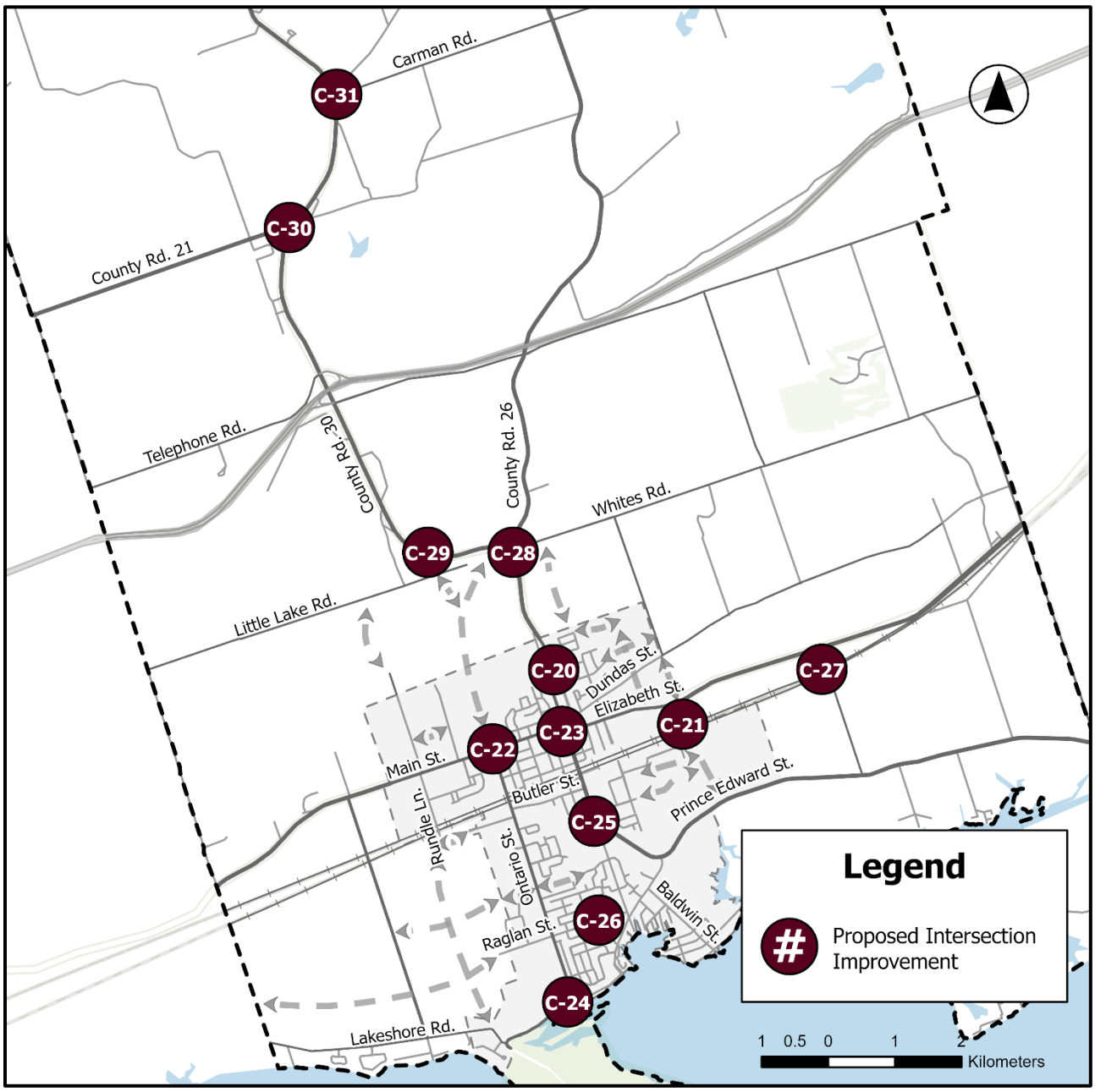

Exhibit ES-6 – Proposed Localized Intersection Improvements

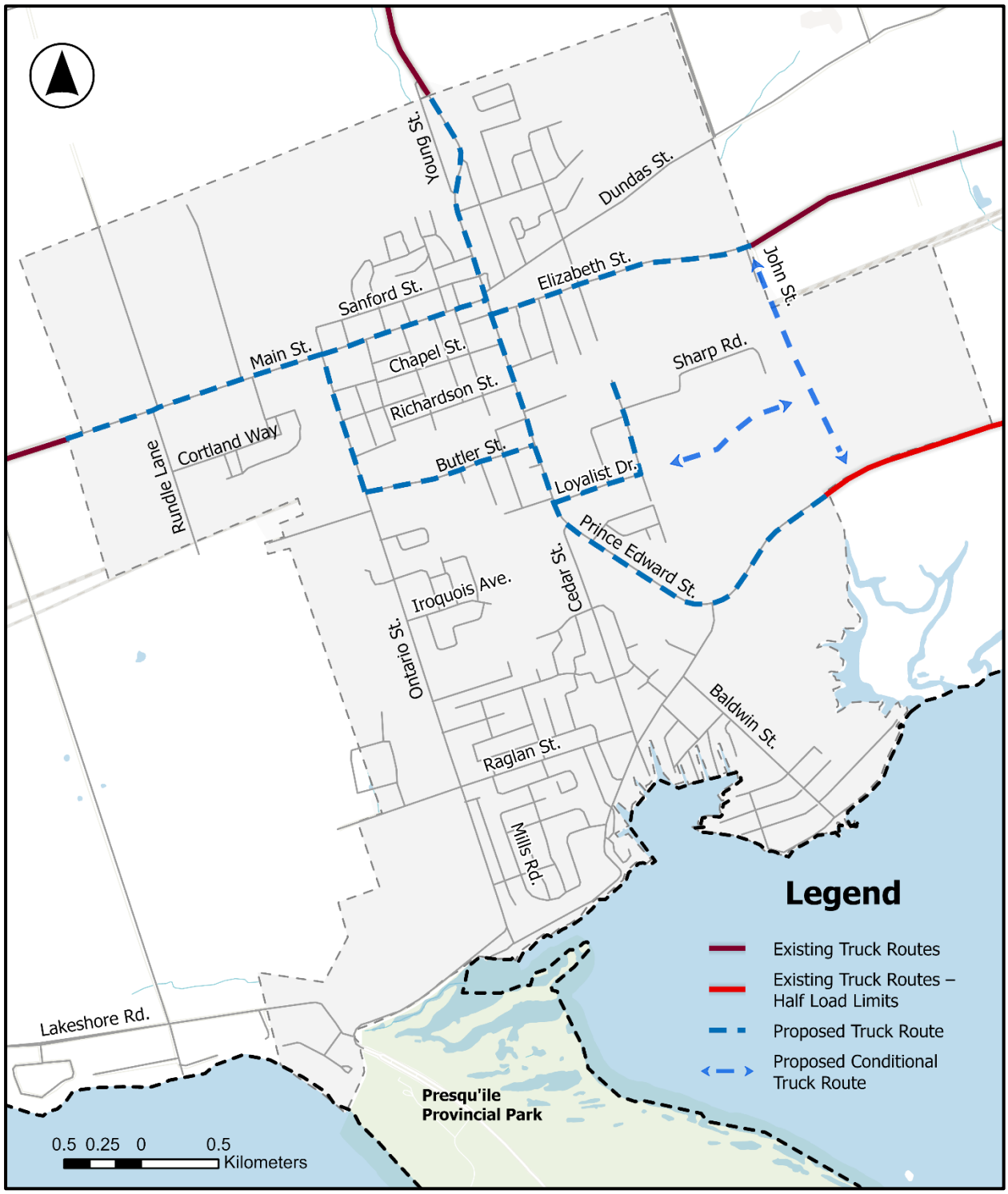

Exhibit ES-7 – Proposed Goods Movement Network

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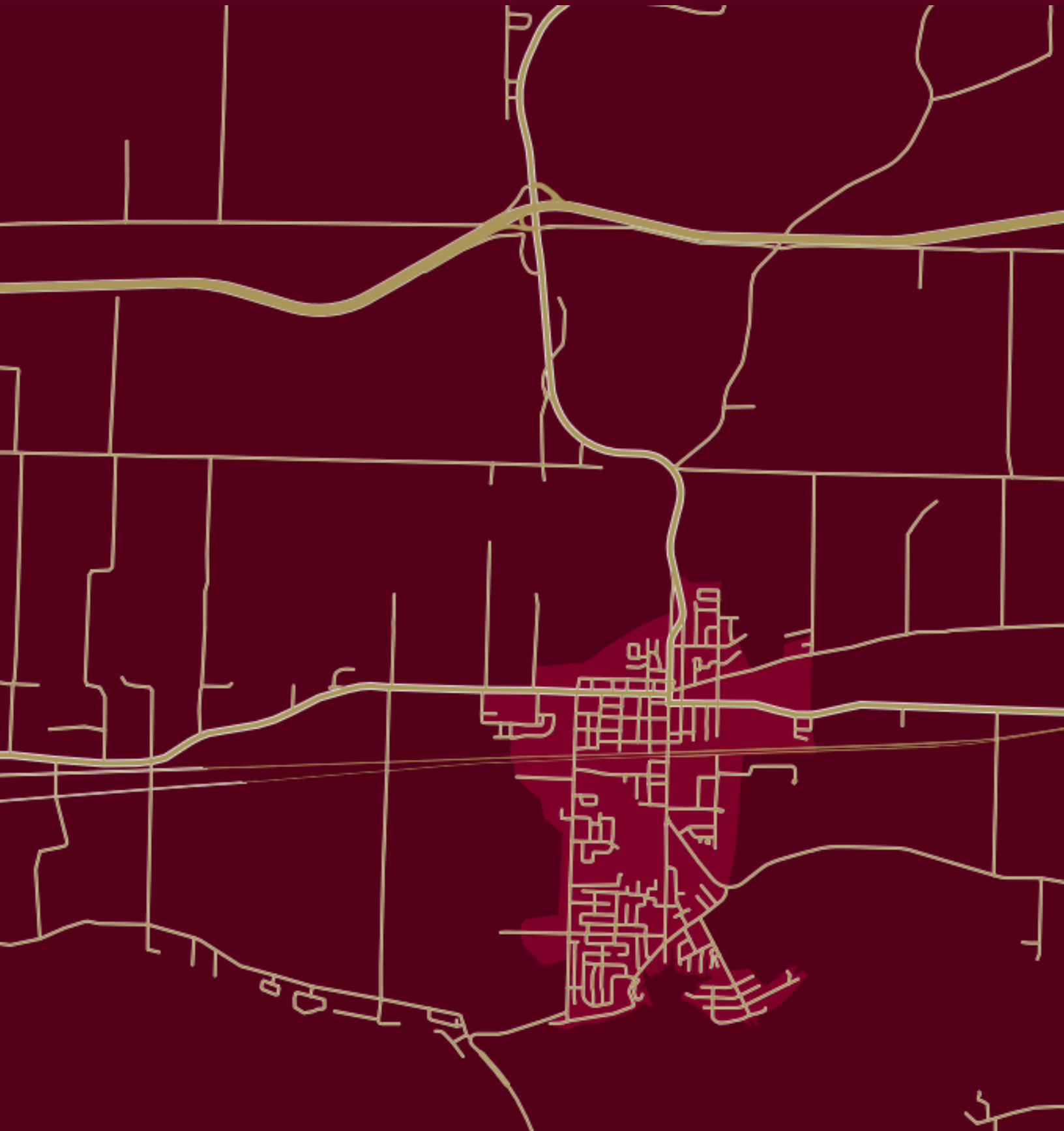


1 Introduction

1.1 What is a Transportation Master Plan (TMP)?

A Transportation Master Plan (TMP) is a long-range planning document that provides direction and prioritization on transportation policy and infrastructure investments within the Municipality. The Municipality of Brighton has initiated the study to develop a long-term road network and active transportation strategy that connects residents and visitors in a diverse and barrier-free manner.

The TMP study seeks to fulfill a variety of transportation-related goals over the next 25 years, with specific focus on policy and infrastructure investments that enable equitable mobility, harness growth, boost tourism, and contribute to an enriched quality of life for residents. The TMP recognizes that the context of mobility is dynamic in nature—and therefore serves as a "living document" that may be adapted as new realities emerge that were not contemplated at the time of this study.

A number of high-level objectives were identified in the early stages of the study to facilitate the TMP process. These objectives were to connect different land use areas; promote sustainable modes of transportation such as cycling and walking; promote safe, environmentally responsible, and accessible mobility; and, update/create transportation policy documents and strategies that steward the desires of the Brighton community. The TMP helps facilitate capital expenditures by aggregating the recommendations into different timeframes, which allows the Municipality to address current mobility needs while preparing for future demands that have not been realized yet.

1.2 How was the TMP Developed?

The TMP was developed by R.V. Anderson Associates Limited (RVA) under the direction of Brighton staff and was supplemented by the significant input received from the public, stakeholders, and schools throughout the extensive consultation process. The study process can be generally broken down into four (4) main stages, as illustrated in Exhibit 1.1 and briefly described as follows:

1. Existing Conditions Assessment

The Existing Conditions Assessment considered the policies, plans, infrastructure, and intersection operations that comprise Brighton's transportation network today.

This stage was a vital step in understanding travel patterns and trends within the municipality and served as a benchmark of the current mobility landscape.

2. Identifying Future Needs and Opportunities

The Identifying Future Needs and Opportunities stage included a fulsome review of population and employment growth projections, in addition to a multi-modal transportation network review. The undertakings in this stage included intersection operational analysis, posted speed determination, intersection mode of controls (i.e., all-way stop, traffic signal, etc.), and pedestrian crossing feasibility.

3. Assessment of Alternatives and Preferred Solutions

Using the findings from the second stage, a detailed analysis of potential alternatives and preferred solutions was completed. In a collaborative process with stakeholders and the public, preference was given to solutions that resonated with the community vision.

4. Formulating and Implementing the Plan

As a culmination of all of the preceding stages, the fourth stage brings everything together into the draft TMP document. This draft document is subject to a 30-day public review and comment period, with the final TMP being presented to Brighton council for adoption thereafter.

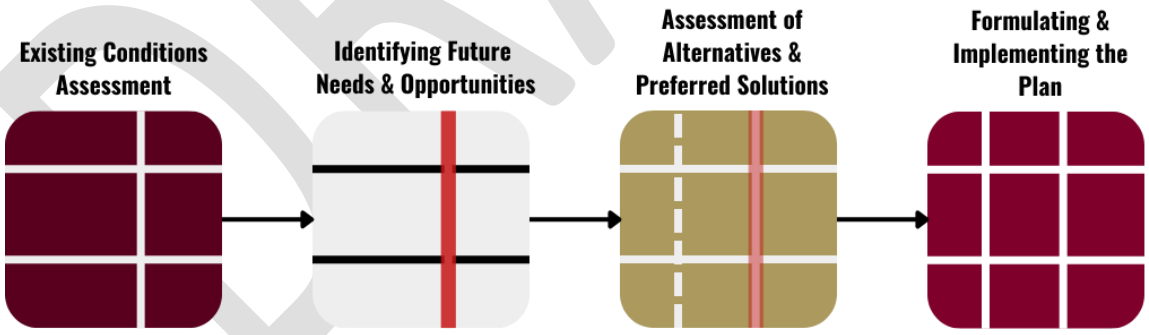


Exhibit 1.1
TMP Process

1.3 MCEA Process for Master Plans

The TMP was conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) Master Plan Approach #1, which is an approved process under the Environmental Assessment Act. The MCEA process is broken down into five (5) phases, as follows:

Phase 1 – Identify problem or opportunity;

Phase 2 – Identify alternative solutions, evaluate, and select the preferred solution;

Phase 3 – Identify alternative design concepts, evaluate, and select the preferred design concepts;

Phase 4 – Complete the Environmental Study Report (ESR) and place it on the public record; and

Phase 5 – Project implementation, which is to undertake the contract drawings and tender documents for the project and proceed to construction and operation of the project.

Master Plans are long range plans which integrate infrastructure requirements for existing and future land uses with EA planning principles. At a minimum, Master Plans must follow the same steps as Phases 1 and 2 of the MCEA process but can also cover other phases. Master Plans following Approach #1 must also allow for integration with the Municipality's Official and Secondary Plans. Exhibit 1.2 illustrates the steps for the MCEA Master Plan Approach #1 process to develop a TMP document.

Approach #1 involves the Master Plan being undertaken with a broad scope and level of assessment. This involves analysis on a systems scale, which enables the Municipality to identify needs and establish broader transportation alternatives and solutions. The inventory of the natural, social and economic environments which are to be considered when assessing the alternative solutions are also broader.

The Master Plan becomes the basis for future investigations for the specific Schedule "B" and "C" projects identified within it. The final deliverable comprises of documentation of the planning process, including public consultation, as provided in the TMP.

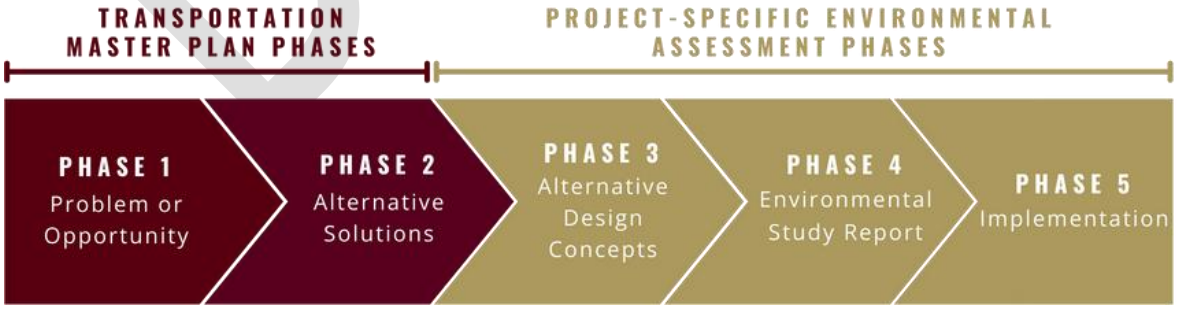


Exhibit 1.2 *Environmental Assessment Process for Master Plans*

1.3.1 Engagement and Communication Plan

Public consultation is a key feature of master planning studies. Input received from the public and stakeholder groups, potentially affected Indigenous Communities, provincial ministries, technical agencies, and authorities help create a mutually beneficial medium between project planners and the public. The Communication Plan containing comprehensive details of engagement including meetings, public information centres, school student engagement, stakeholder working groups, interest groups, and online engagement is provided in Appendix 1.

A Notice of Study Commencement was sent to a complete list of technical agencies, special interest groups and Indigenous Communities on October 26th, 2023.

Public Information Centres and Online Engagement

Public Information Centres (PICs) were held at the conclusion of Phase 1 and 2 of the TMP study. To increase accessibility and exposure for public input, each PIC had two (2) rounds: the first was held at Owen Gibb Community Hall, and the second was held at Codrington Community Centre. The PICs invited residents to learn about the study and share their opinion on the study materials. After each PIC, a Summary Report was prepared highlighting the purpose of the PIC, the format in which they took place, and the feedback received. These Summary Reports are available in Appendix 1.

A total of four (4) PIC rounds were held as part of the TMP study, as listed below:

PIC #1-1 was held on March 5th, 2024, at the Owen Gibb Community Hall. The purpose of this PIC was to introduce the study and garner public feedback on key issues and constraints that should be considered in the development of the TMP.

PIC #1-2 was held on May 2nd, 2024, at the Codrington Community Centre. The purpose of this PIC was to introduce the study and solicit input from those who were unable to attend the first session.

PIC #2-1 was held on October 3rd, 2024, at the Owen Gibb Community Hall. The purpose of this PIC was to present and solicit responses on the preliminary improvement alternatives, evaluation of alternatives, and the preferred set of solutions.

PIC #2-2 was held on November 27th, 2024, at the Codrington Community Centre. The purpose of this PIC was to present and solicit responses on the preliminary

improvement alternatives, evaluation of alternatives, and the preferred set of solutions from those who were unable to attend the third session.

School Student Engagement

As part of the consultation process, a student survey was conducted for school students. The intent of the survey was to gain a deeper understanding of existing student travel patterns, trends, preferences, and concerns. The results of this survey were used in identifying key active transportation and road safety solutions near schools. A summary of results from the school student engagement survey is provided in Appendix 1.

Stakeholder Working Group

At the outset of the TMP, a number of stakeholders and technical agencies were identified and invite to the stakeholder working group (SWG). The primary goal of the SWG is to consult on technical aspects of the TMP—and includes Municipality of Brighton staff, Northumberland County staff, Ministry of Transportation of Ontario (MTO) staff, and CN/CP Rail staff.

Interest Groups

Key interest groups such as student transportations services, the Kawartha Pine Ridge District School Board, the Downtown Business Improvement Area (DBIA), and various indigenous communities, were invited to voice their thoughts and concerns on any transportation-related items that could be included in the scope of the TMP.

Online Engagement

An online avenue was provided using the Municipal website. The webpage provided project updates and materials, as well as the contact information for the project team.

1.4 Guiding Documents

The TMP decision-making process was heavily influenced by a variety of local, regional, and provincial plans that are concerned with transportation, land-use planning, and environmental protection. The objectives of the TMP study to enhance or support the overarching strategies or visions of these plans as they relate to mobility within Brighton.

1.4.1 Provincial Plans and Policies

Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) came into effect on May 1st, 2020, under Section 3 of the Planning Act. The PPS provides guidance on a number of community planning interests, including land use planning, management of natural resources, health and safety, transportation, and more. The guidance related to transportation is largely encompassed in Policy 1.6.7.3, Policy 1.6.7.4, and Policy 1.2.1 (d), with the overarching vision being to minimize reliance on automobile trips and promote current and future widespread adoption of active transportation and transit.

A Place to Grow (2020)

The A Place to Grow Plan builds on the PPS to provide a growth structure for the Greater Golden Horseshoe area of southern Ontario and support intensification through strategic planning and infrastructure investments.

With respect to transportation, the Plan is primarily focused on encouraging active transportation and transit through the implementation of complete streets and transportation demand management (TDM) initiatives.

1.4.2 County Plans and Policies

Northumberland County Transportation Master Plan (2017)

The Northumberland County TMP provides a roadmap for multi-modal transportation strategy, policy, and infrastructure initiatives across County-owned facilities in the near, medium, and long-term planning horizons.

Northumberland County Cycling Master Plan (2014)

The Northumberland County Cycling Master Plan evaluates and outlines future cycling infrastructure improvements within the County. The recommendations within this Plan encompass cycling links and signage strategies within Brighton.

Northumberland County Official Plan (2016)

The Northumberland County OP provides a planning framework for matters at the regional and provincial level—including growth projections, land use planning, transportation, sustainability, economic strategies, and more.

1.4.3 Municipal Plans and Policies

Municipality of Brighton Zoning By-Law #140-2002 (2020)

The Municipality of Brighton Zoning By-Law controls specific land use characteristics such as building height, parking, and more. The primary goal of the zoning by-law is to regulate how land is developed to make sure that new developments are adequately integrated with the adjacent community.

Municipality of Brighton Official Plan (2020)

The Municipality of Brighton Official Plan (OP) provides a long-term vision for how Brighton will grow. It provides a framework for items such as land use, transportation, and more, and helps guide the decision-making process regarding zoning, development, and infrastructure. The OP also includes population trends and forecasting, which was referenced when planning future mobility needs.

Municipality of Brighton Road Needs Assessment (2018 and 2023)

A Road Needs Assessment was completed in 2018 and 2023, highlighting the needs of the roadway network based on their existing condition, road classification, and life cycle assumptions. The plans also propose reconstruction or rehabilitation strategies.

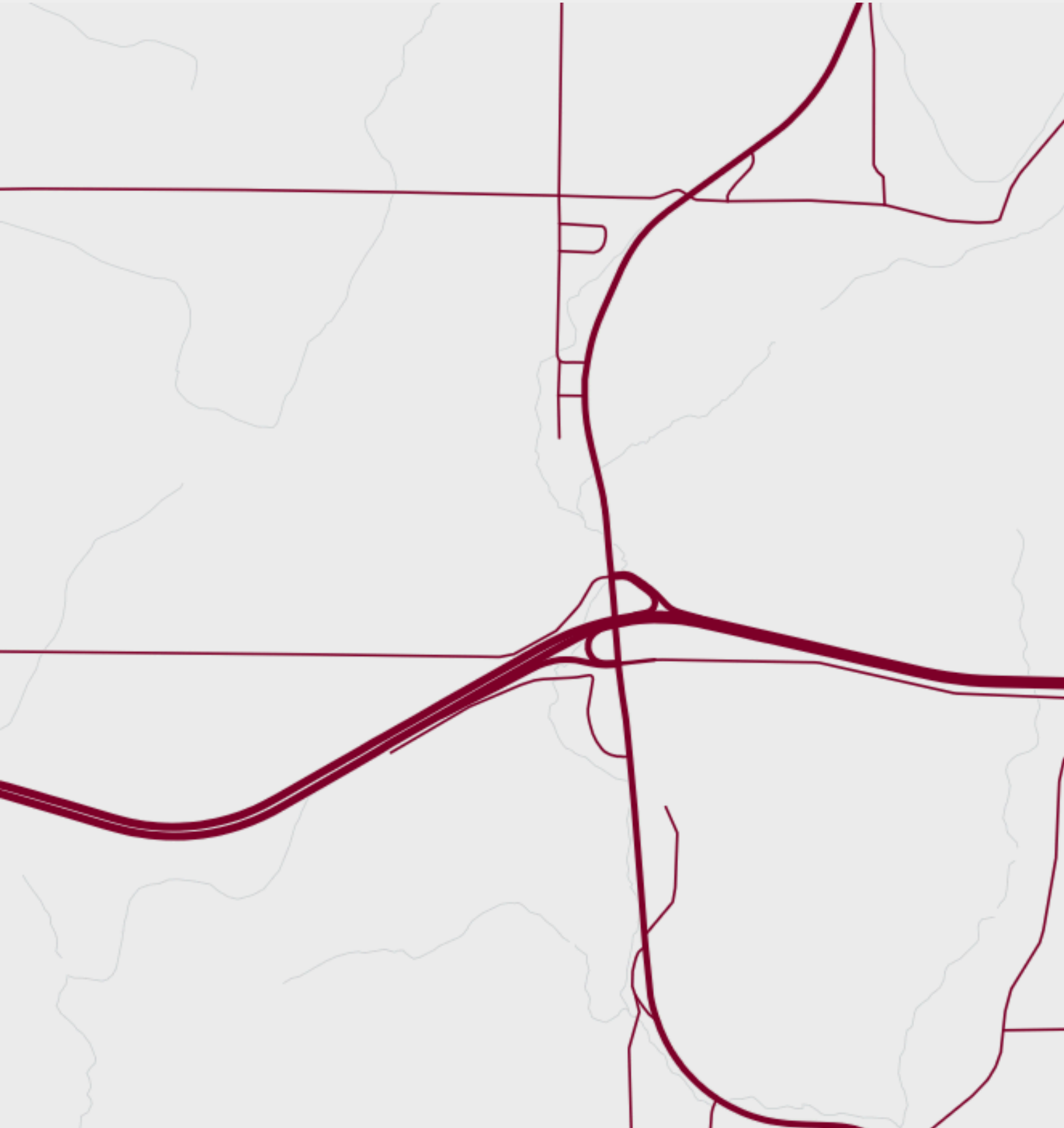
Municipality of Brighton Corporate Asset Management Plan (2022)

The Corporate Asset Management Plan describes and tracks Municipal Assets. The TMP referenced this study to compile a robust inventory on existing transportation assets such as roadways, sidewalks, and trails.

Municipality of Brighton Secondary Plan Background Report (2022)

The Secondary Plan Background Report provides direction for land use and development given the natural physical characteristics of the greenfield areas situated between the existing urban boundary and the extremities of the Brighton settlement area.

2 Brighton Today



2 Brighton Today

2.1 The Community

The Municipality of Brighton is a lower-tier municipality located in the southeastern area of Northumberland County (the "County"). As of 2021, a total of 12,108 residents live in the Municipality, distributed throughout the urban area that abuts Lake Ontario and the rural hamlets that extend northerly towards the Municipality of Trent Hills. The Provincial Highway 401 corridor traverses the Municipality in parallel with the shoreline of Lake Ontario, connecting Brighton to its east and west neighbours of the City of Quinte West and the Municipality of Cramahe, respectively.

2.1.1 The People

Based on the 2021 Census, the Municipality of Brighton generally reflects an older population, with a large proportion of residents (33.1%) in the 65 and over age category. Moreover, there is a larger proportion of those aged 55 to 59 and 60 to 64 compared to the other age categories, indicating that this trend is likely to continue as these groups enter the 65 and over category over the coming years. The distribution of age categories for Brighton residents is graphically illustrated in Exhibit 2.1.

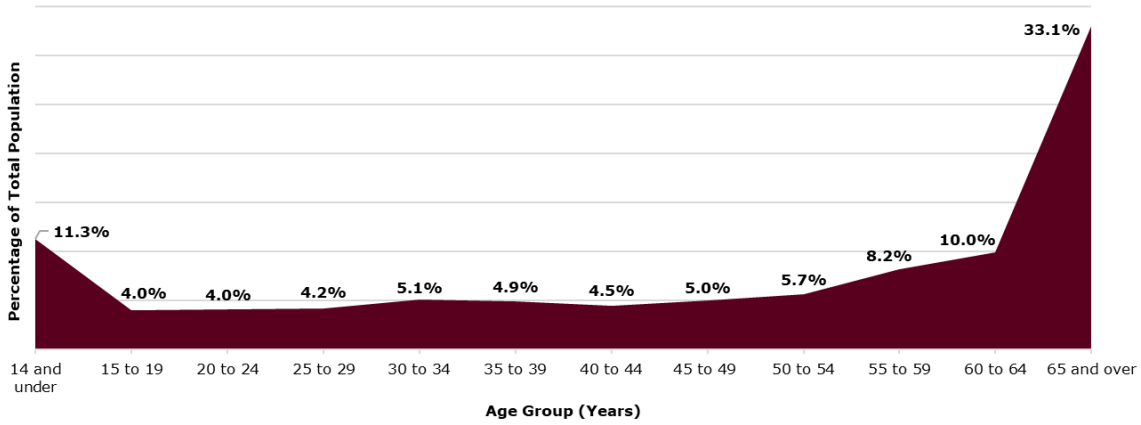


Exhibit 2.1
Age Distribution for Bright on Residents (2021 Census)

2.1.2 The Economy

One of the primary engines for Brighton's local economy is the several small businesses that are owned and operated within the Municipality, which comprise a wide variety of restaurants, retail spaces, and personal services. Local employment is also supplemented by other sectors such as manufacturing, automotive care, food processing, and agriculture.

2.1.3 The Housing

The housing in Brighton is largely low density housing, with over 88% of total dwelling units classified as single-detached. The remaining portion of the housing is split between a relatively even mix of low-rise apartments, semi-detached homes, townhomes, accessory dwelling units, and other (i.e., movable units).

2.2 Mobility Planning Context

An integral part of the planning process is to demonstrate a holistic understanding of the current mobility landscape within Brighton. This section summarizes key insights on how, why, and where people are moving within Brighton and the broader area, and will provide the necessary framework to prescribe unique and effective mobility solutions for the community.

2.2.1 Travel Mode Share

The travel mode share provides insight on the "how" within the existing mobility context. The term "travel mode share" refers to the method in which people complete their trips—whether it be by car, bus, bike, foot, personal device, or other.

The travel mode share was determined utilizing the results of the Transportation Tomorrow Survey (TTS). TTS is a cooperate program run by local and provincial government agencies to collect, compile, and disseminate information about travel characteristics in southern Ontario. The survey has been undertaken in five-year intervals since it first launched in 1986, with variations being made over time to make the results more beneficial for city planning practitioners. As of the most recent survey year of 2022, the Municipality of Brighton has been included in the survey for the first time.

Based on the TTS results, approximately 81% of trips are completed as an automobile driver and 13% are completed as an automobile passenger. For more sustainable modes, transit is used for less than 2% of trips, walking is used for approximately 3% of trips, and cycling is used for less than 0.5% of trips. The survey also recorded that less than 0.5% of trips were made by alternative modes such as e-scooters. Based on these results, it can be concluded that Brighton demonstrates a significant reliance on automobiles as a travel mode. This conclusion aligns with what is commonly realized in largely rural areas, as low density land uses tend to

counteract the viability and/or attractiveness of active transportation modes and transit.

2.2.2 Commuter Trip Characteristics

Based on the 2022 TTS results shown in Table 2.1 and graphically illustrated in Exhibit 2.2, approximately 39% of Brighton residents commute to a place of work within the Municipality. The next most prominent commuter destination for Brighton residents is Hastings County and its associated lower-tier municipalities. The intracounty municipalities of Cramahe, Cobourg, Alnwick/Haldimand, and Trent Hills exhibit a relatively even reception of Brighton commuters. The remaining distribution of commuters travel west along the shoreline of Lake Ontario towards the Greater Toronto Area (GTA), with the most prominent GTA locations including Toronto, Whitby, Ajax, Markham, and Oshawa.

Table 2.1 – Distribution of Commuting Destinations for Residents of Brighton (TTS 2022)

Commuter Destination	Distribution of Commuters
Brighton	39%
Hastings County	31%
Toronto	5%
Cobourg	4%
Cramahe	4%
Trent Hills	4%
Whitby	3%
Alnwick/Haldimand	3%
Ajax	2%
Markham	2%
Oshawa	2%
Mississauga	<1%
Clarington	<1%
Burlington	<1%
Milton	<1%

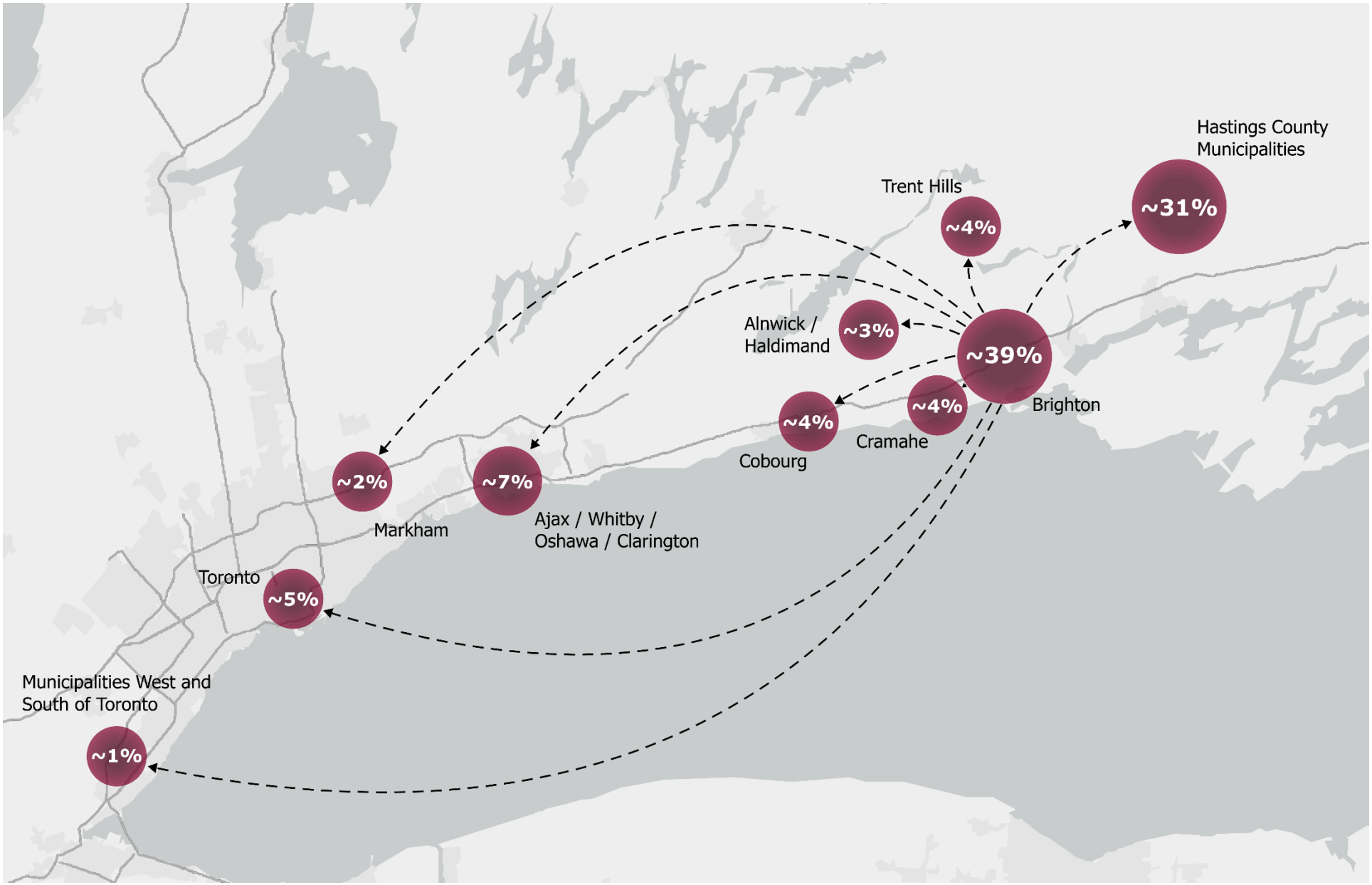


Exhibit 2.2 – Distribution of Commuting Destinations for Residents of Brighton (TTS 2022)

2.3 Road Network

2.3.1 Road Classification Definitions

In essence, the purpose of any transportation system is to move people and goods. However, a transportation system can achieve its optimal operations, safety, and urban design when the roads comprising it are serving their intended purpose. For example, the primary function of Highway 401 is to move people and goods across potentially vast distances, with consistent land access being a secondary consideration in its planning and design. In contrast, for local residential roads, the intended purpose of the street is to provide access to land in a safe and multi-modal manner. In many cases, these intended functions conflict with one another, which is why a designated road hierarchy is an integral structuring technique in planning an effective transportation system.

The Municipality of Brighton is home to a variety of roadways. The roadway classifications that exist in Brighton today, along with their intended purpose, are briefly described as follows:

Freeways are roadways of the highest order, usually consisting of multi-lane (more than four total through lanes including two through lanes in each direction), high-speed highways that generally accommodate long-distance travels between different municipalities, regions/counties, and provinces. Freeways are defined as highways limited to through traffic with access to the corridor only being provided by interchanges. Highway 401 serves as Brighton's sole freeway.

Arterial Roads are higher-order corridors that are intended to accommodate relatively high volumes of traffic and provide efficient, uninterrupted movement for through volumes (barring interruptions from traffic signals along the corridor). Resultantly, majority of trips will utilize an arterial roadway at some point in their route. In Brighton today, County roads make up for majority of the arterial roadway collection.

Collector Roads are intended to carry moderate traffic volumes, with traffic movement and land access having a similar level of importance. In the ideal road system, collector roads will accumulate traffic from local streets and eventually connect to the foregoing higher-order roadways to accommodate the greater portion of travel. There are a number of collector roadways in Brighton today, many of which are situated in the downtown.

Local Roads are intended to provide access to their adjacent land uses. These roadways generally carry much lower volumes than the other roadways, as they are only intended to service trip ends (either origin or destination of a trip). All local roadways within the municipal boundary are under the jurisdiction of Brighton.

2.3.2 Existing Road Network

The existing road network was extracted from Schedule C of the Official Plan (2020) and is aggregated by jurisdiction and road classification. This road network is shown in Exhibit 2.3 for the rural area and Exhibit 2.4 for the urban area.

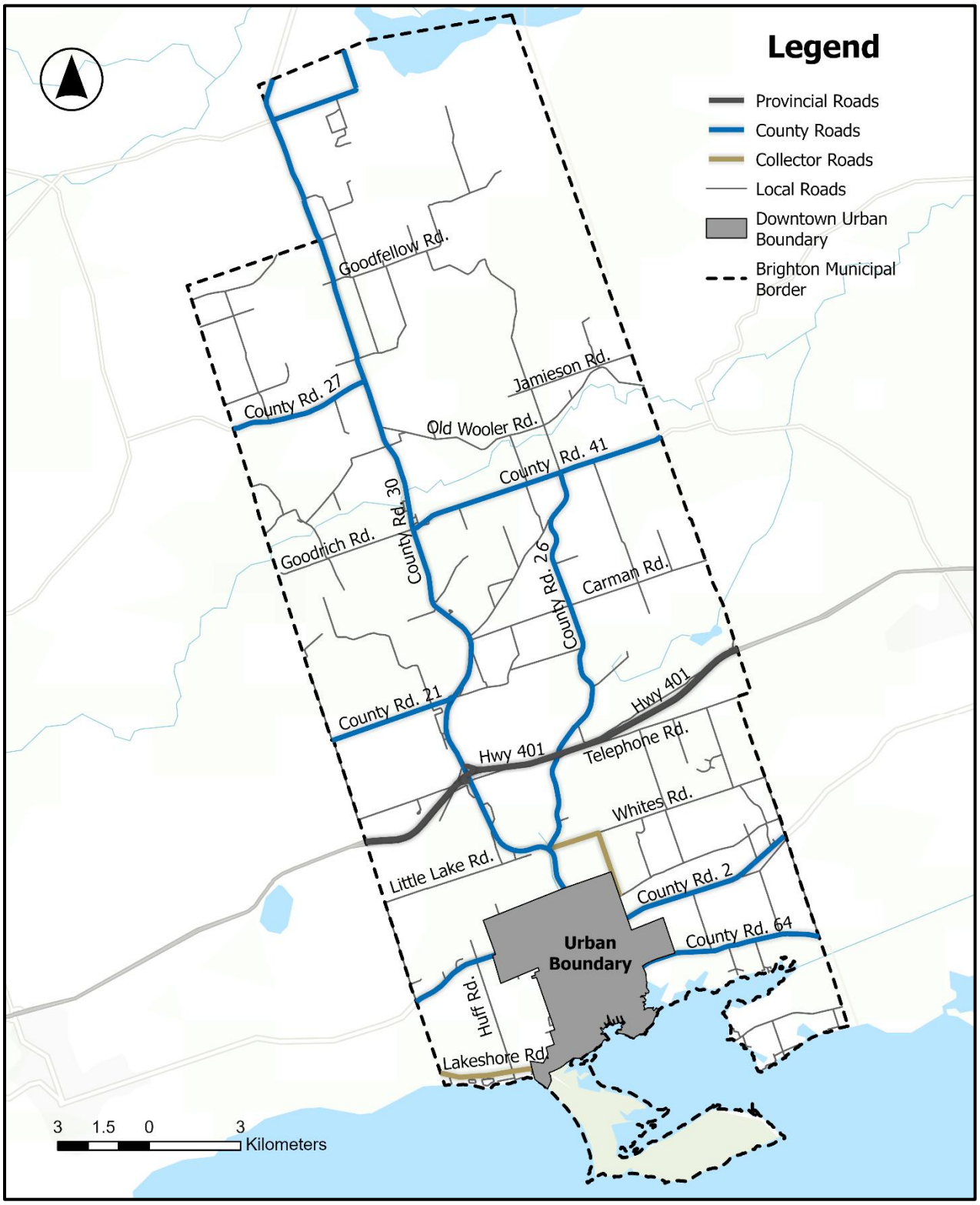


Exhibit 2.3 – Existing Road Classification Network (Rural Area)

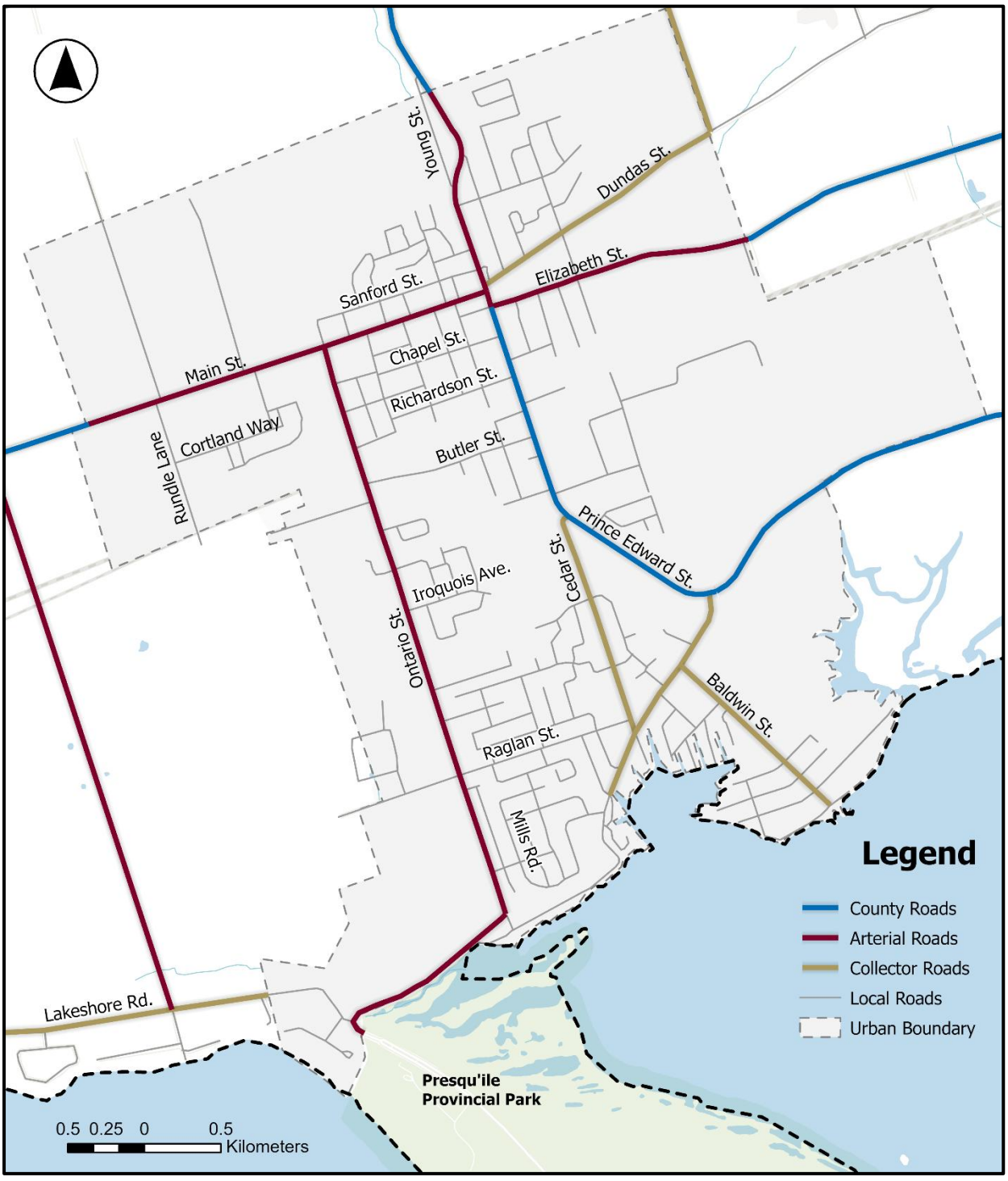


Exhibit 2.4 – Existing Road Classification Network (Urban Area)

2.3.3 Goods Movement

A "truck route" is a corridor that is formally designated for use by certain types of trucks, as to optimize the efficiency of the route while mitigating impacts to sensitive areas such as residential communities. The network of these corridors is commonly referred to as the "truck route network" or "goods movement network". It is understood that the movement of goods can also be achieved through other means, such as the existing rail lines or by water, but the TMP herein is focused on the roadway component of the goods movement network.

There are numerous factors that should be considered when planning a truck route including adjacent land uses, water crossings/bridges, road classification, number of lanes, traffic operations, active transportation activity, and noise. Moreover, geotechnical investigation should be undertaken to ensure that certain roadways can accommodate the increased load. An optimal goods movement network will facilitate truck volumes along corridors that are adequately designed for large vehicles and have sufficient reserve capacity to mobilize commerce within Brighton, all while limiting undesirable noise in residential areas or hindering the comfortability and/or safety of active transportation users. The intent of the goods movement network is to carry truck volumes for majority of their trip, with the understanding that minor deviations may need to be made on occasion to complete the trip (i.e., a delivery vehicle exiting the goods movement network to complete their drop-off in a residential area).

While there is no formal goods movement network in Brighton today, truck mobility is largely facilitated by Highway 401 and the County roads. However, a number of County roads have a half load limit, which seeks to protect the road base after the "spring thaw" period where its load bearing capacity is greatly reduced. The half-load limits are generally signed between March 1st and April 30th, and are removed when the integrity of the road base has been restored to an acceptable level. The roadways in Brighton that have half-load limits include County Road 21, County Road 26, County Road 41, County Road 64, County Road 27, and County Road 29.

The existing goods movement network for the rural area is graphically illustrated in Exhibit 2.5. Currently, there is no established goods movement route within the urban area of the Municipality.

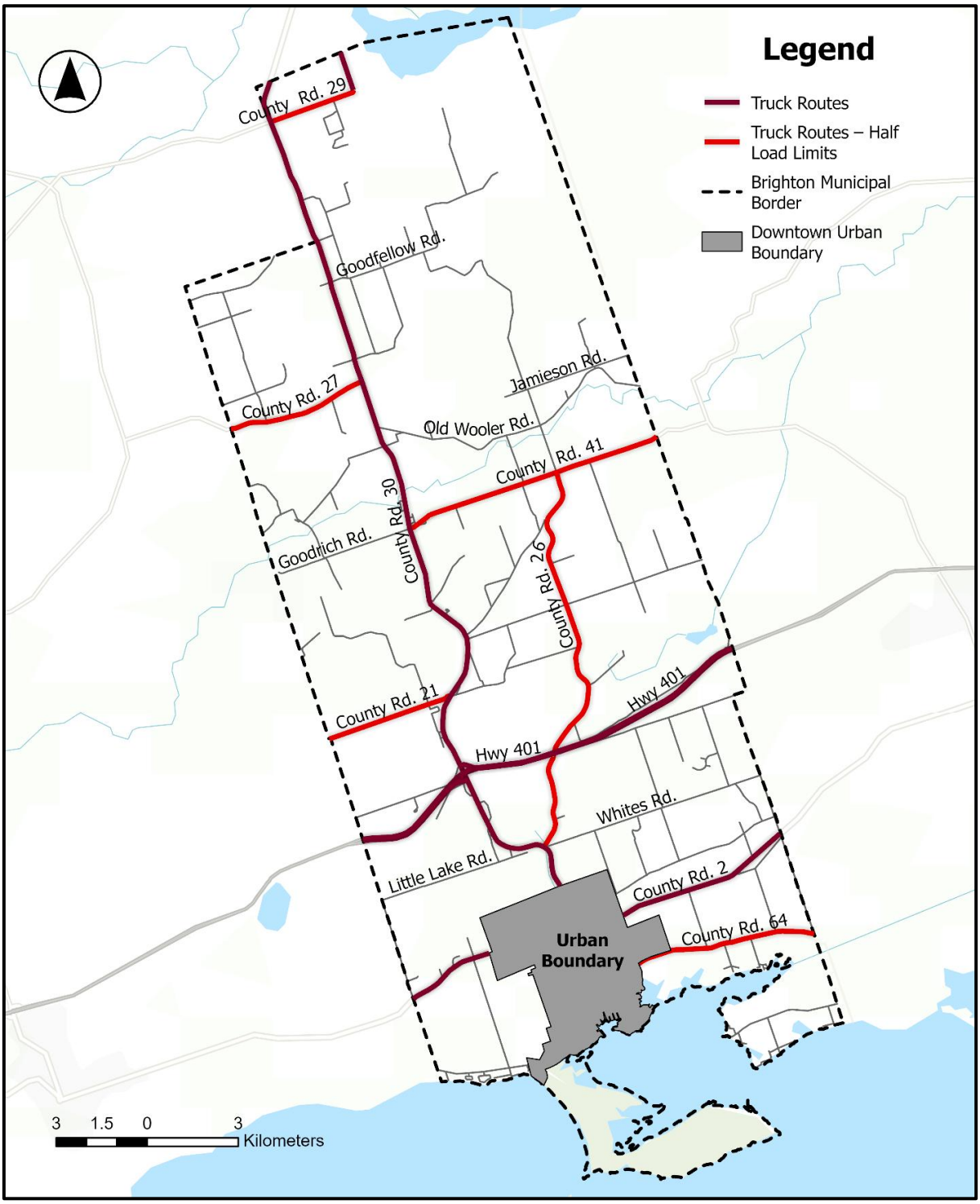


Exhibit 2.5 – Existing Goods Movement Network (Rural Area)

2.3.4 Public Parking Facilities

There are six (6) public parking lots in the urban area. Through these lots, a total of 494 parking spaces are provided, barring any losses due to special events that could consume portions of the parking supply. The public parking lots are illustrated in Exhibit 2.6.

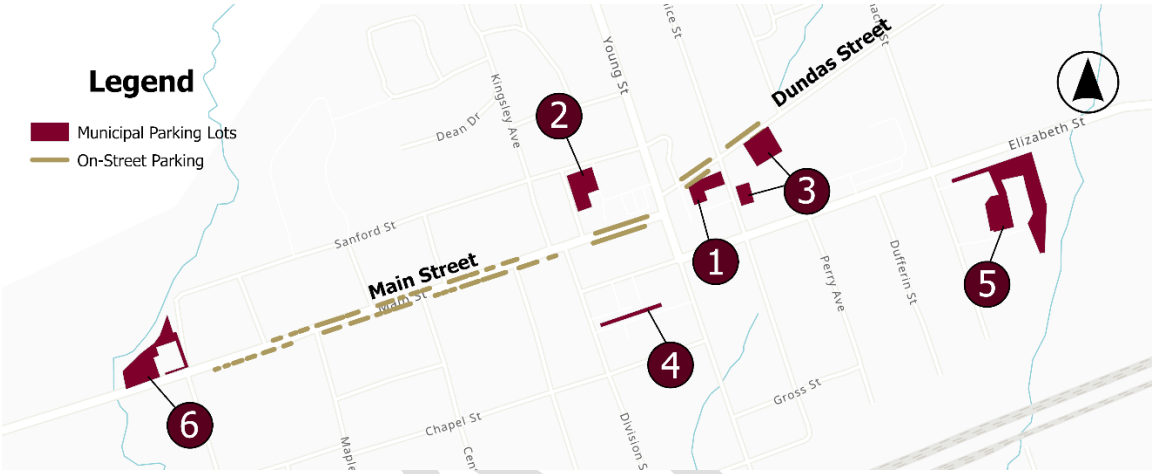


Exhibit 2.6 – Existing Parking Supply

The parking provision associated with each of these municipal lots is summarized in Table 2.2. The largest lot is the 75 Elizabeth Street lot with 186 spaces, followed by the 170 Main Street lot with 85 spaces and the 14 Main Street lot with 75 spaces. The remaining lots provide a smaller parking provision but can still accommodate 35 to 40 vehicles each.

Table 2.2 – Existing Municipal Parking Lots

Parking Lot ID	Parking Lot Address	Available Parking Supply
1	11 Dundas Street	35 spaces
2	14 Main Street	75 spaces
3	20 Elizabeth Street	39 spaces
4	42 Prince Edward Street	35 spaces
5	75 Elizabeth Street	186 spaces
6	170 Main Street	85 spaces
	TOTAL	**455 spaces**

To assess the existing parking demand, surveys were completed on weekday and weekends including Thursday, Saturday and Sunday, with parking utilization being recorded at 30-minute intervals from 11:00am to 7:00pm. Parking surveys were conducted on Thursday, September 7th, 2023, and Saturday, September 9th, 2023. A parking survey was also conducted on the Sunday of the 2023 Labour Day long weekend—a period that has historically generated increased visitation and parking demands in the Brighton urban area.

It was found through these surveys that the highest parking demands were observed during the Thursday survey, which is likely attributed to the large population of retirees in Brighton. However, even at the busiest times, none of the public parking lots exceeded 80% of their available capacity, with 224 open parking spaces available across all lots at the time of the maximum observed demand. The maximum observed parking demands for each lot is summarized in Table 2.3.

Table 2.3 – Maximum Observed Parking Survey Results

Lot ID	Parking Lot Address	Available Parking Supply	Peak Parking Demand	Peak Utilization	Parking Surplus/ Deficit
1	11 Dundas Street	35 spaces	24 spaces	69%	+11 spaces
2	14 Main Street	75 spaces	44 spaces	59%	+31 spaces
3	20 Elizabeth Street	39 spaces	22 spaces	56%	+17 spaces
4	42 Prince Edward Street	35 spaces	28 spaces	80%	+7 spaces
5	75 Elizabeth Street	186 spaces	73 spaces	39%	+113 spaces
6	170 Main Street	85 spaces	40 spaces	47%	+45 spaces
TOTAL		**455 spaces**	**231 spaces**	**51%**	**+224 spaces**

As part of the survey, parking turnover (i.e., how long patrons were parked in a specific space) was also recorded. It is noted that parking turnover is largely a product of the surrounding land uses. For example, the 20 Elizabeth Street lot is in close proximity to various employment generators, which would require employees to park for the entire length of their shift, whereas the 42 Prince Edward Street lot is in close proximity to various commercial land uses which lends itself to quick shopping or leisure trips. Despite these general trends, the analysis of parking turnover concluded that majority of trips to urban area spend less than one (1) hour parked at their location before leaving.

2.3.5 Transit Services

The Municipality does not have their own commuter transit system, however there are a few alternative options for residents or tourists who do need transit options. The Municipality offers 'The Brighton Bus', that operates two (2) days a week from downtown Brighton to Presqu'ile Park.

Northumberland County provides a shuttle service called "Commuter Connect" that travels to the Oshawa Go Station. Northumberland County also provides Community Care on-demand service for adults with disabilities or adults who do not have the ability to drive.

The Quinte West transit system has a scheduled bus from Brighton to Trenton on Tuesday, Wednesday, and Thursday during peak hours. Quinte West also has a special service within Brighton and Quinte West for adults with disabilities or adults who do not have the ability to drive.

2.3.6 Active Transportation Network

Brighton has a number of commuting and recreational active transportation facilities including sidewalks, multi-use paths (MUPs), multi-use trails (MUTs), and paved shoulders. There are currently two (2) active transportation linkages in each of the east and west directions with connections to adjacent municipalities as shown in Exhibit 2.7. To the east, County Road 64 (Great Lakes Waterfront Trail) and County Road 2 have paved shoulders connecting to the Quinte West. To the west, Lakeshore Road (Great Lakes Waterfront Trail and Presqu'ile Promise) and County Road 2 (part of Presqu'ile Promise) are a signed route and paved shoulder route, respectively. Little Lake Road (Presqu'ile Promise) is also a signed route.

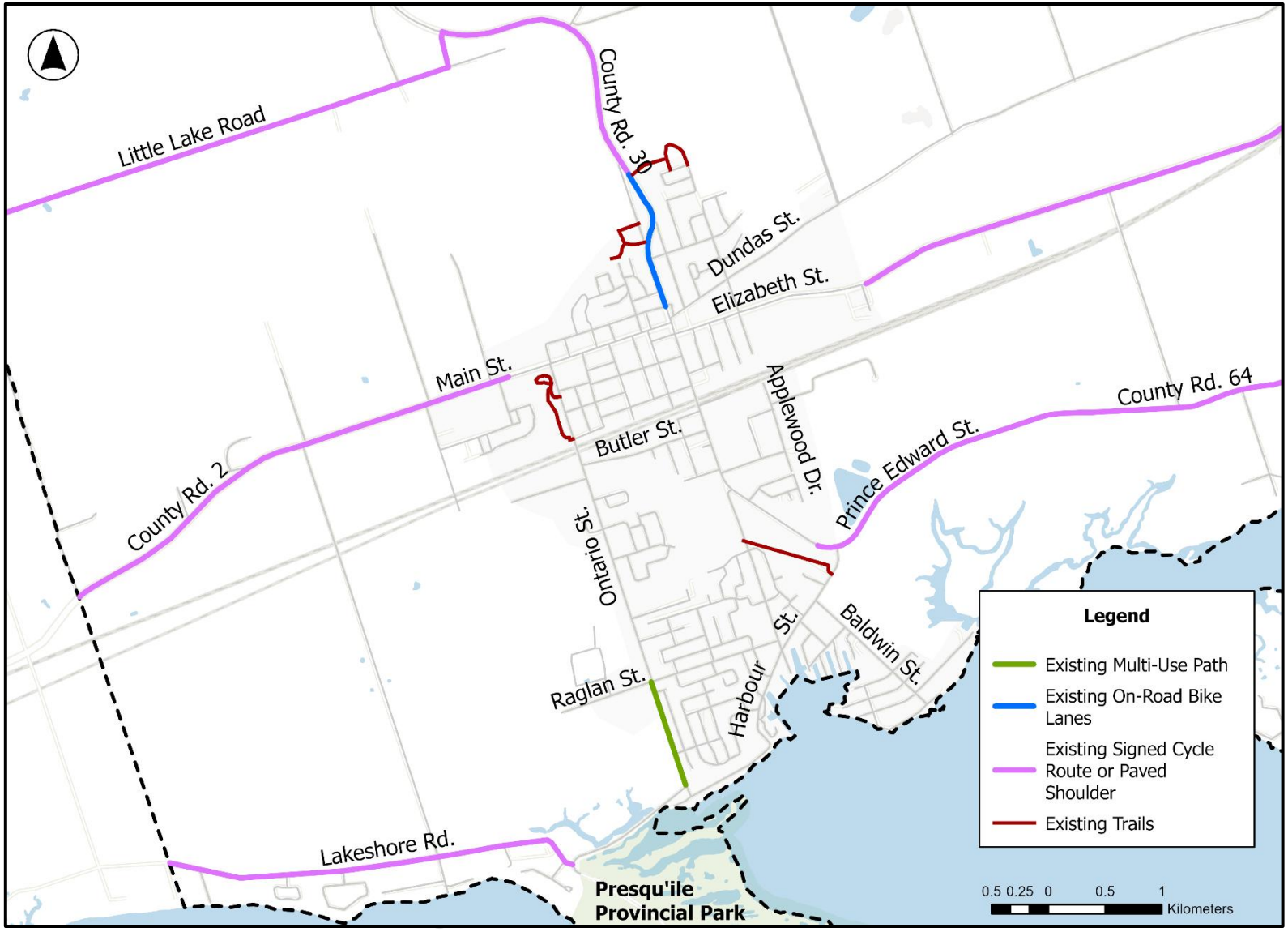


Exhibit 2.7 – Existing Cycling Network

For those on foot, Brighton provides over 31 kilometres of sidewalk, largely concentrated in the downtown area. There is also a multi-use path along Ontario Street, in addition to the Tobey Trail Link and Stalwood Trail which each extend approximately 900 metres in length and are situated close to the downtown.

The Municipality of Brighton has a number of recreational facilities within proximity of the urban centre. The most popular trails are part of the Presqui'ile Provincial Park, which are connected by the Presqu'ile Promise and the Great Lakes Waterfront Trail. This trail system provides recreational and tourism access to the beaches and campgrounds within the peninsula as shown in Exhibit 2.8. Additional recreational walking trails can also be found at King Edward Park and Codrington Park.

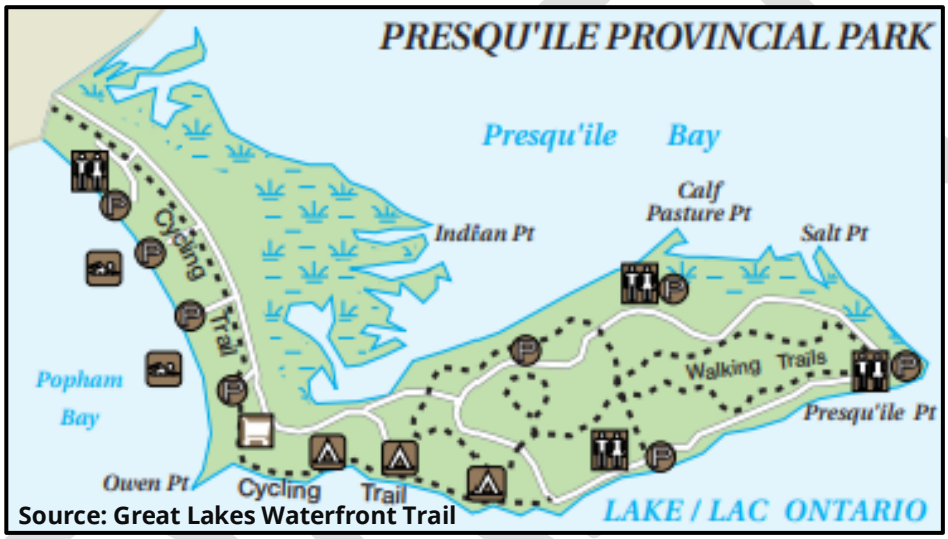


Exhibit 2.8
Presqu'ile Provincial Park Trails

Source: Great Lakes Waterfront Trail

2.3.7 Rail Crossings

Rail crossings are an important passage in the transportation network. As such, it is vital to regularly monitor their operation and ensure that their design accommodates the needs of both the rail industry and the local community.

Currently, there are two (2) rail lines that traverse Brighton from east-west. These rail lines are under the jurisdiction of CN/CP Rail and generally travel in tandem—oftentimes resulting in two (2) closely spaced rail crossings whenever they intersect with a roadway. The corridors that intersect with the rail lines include Huff Road, Ontario Street (County Road 66), Prince Edward Street, Lawson Settlement Road, and Boes Road.

Majority of the aforementioned crossings are configured as at-grade crossings (i.e., rail and roadway are at the same elevation, meaning only one can move at any single time). The only exception to this configuration is Boes Road, which consists of rail travelling over top of vehicular traffic through the use of an overpass. While this configuration is usually ideal for both trains and vehicles, the current structure provides a narrow passage which can only accommodate one (1) vehicle at a time. This requires southbound traffic to yield, which can cause confusion and potential safety concerns due to sight lines issues. An image of the Boes Road underpass is shown in Exhibit 2.9.

Exhibit 2.9
Boes Road Rail Underpass

2.4 What We Have Heard

Respondents throughout the engagement process highlighted a number of consistent themes. The key action items outlined by the public include:

Public Information Centres

- Provide enhanced active transportation infrastructure, particularly for corridors with no sidewalks. Identified corridors include Presqu'ile Parkway, Ontario Street, Harbour Street West, County Road 2, Cedar Street, Lakeshore Road, and Main Street.
- Provide active transportation connectivity to the natural areas north of Highway 401.
- Mitigate speeding issues through the use of traffic calming measures.
- Review the need for an all-way stop and/or traffic signal at certain locations.
- Evaluate the feasibility of removing the "jog" (misaligned roadways) at Elizabeth Street and Main Street.
- Support emergency service response times to communities south of the existing CN/CP rail line, as the at-grade crossings can cause significant delays during train events.

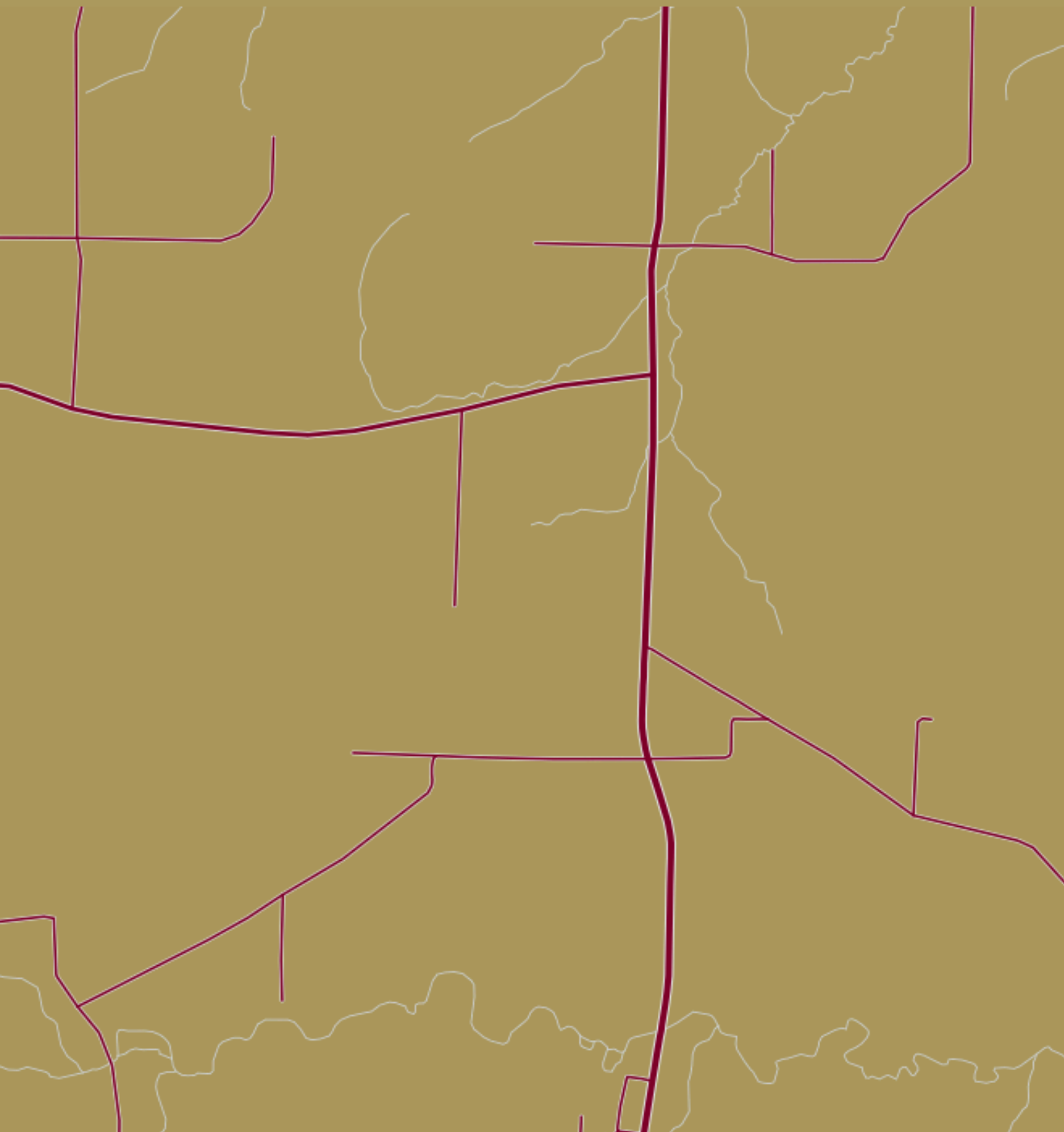
Interest Groups

- Address resident concerns regarding the walkability to and from schools, or to and from bus stop locations, by enhancing safety for pedestrians.
- Review the need for additional pedestrian crossing locations.
- Explore improvements to wayfinding for students.

Student Surveys

- Implement sidewalk infills where gaps exist near schools and in general.
- Provide additional pedestrian crossing points so that students can cross more comfortably.
- Mitigate speeding near schools.
- Provide more bike lanes and bike-friendly trails across the Municipality.
- Provide secure bicycle storage at schools.

3 Brighton Tomorrow



3 Brighton Tomorrow

3.1 Planning Groundwork

This section provides the framework and foundations for which all recommendations in the TMP have been made.

3.1.1 Complete Streets

The Complete Streets approach is a design philosophy that seeks to accommodate all road users regardless of age, ability or selected mode of transportation. The primary goal of a Complete Street is to create a balanced, multi-modal transportation network that serves to improve road safety and enhance the urban landscape simultaneously. Complete Streets bely the traditional auto-centric approach to road design and provide all road users with access to transportation equity.

In general, designing streets that provide a plethora of diverse and welcoming transportation options will:

- Alleviate and manage congestion on the transportation network by supporting other modes such as walking, cycling, transit, and more.
- Reduce greenhouse gas emissions by shifting road users out of their cars.
- Help foster safe and livable communities.
- Create an accessible and navigable roadside environment for those with mobility impairments and needs.
- Promote thriving businesses through enhanced roadside walkability and activity.

Based on the feedback received throughout the consultation process, the Complete Streets approach resonates with the community vision for more a more multi-modal approach to mobility, with a heavier focus on walking and cycling compared to auto modes.

3.1.2 Problem and Opportunity

As part of Phase 1 of the MCEA process, the TMP project team developed the following Problem and Opportunity statement:

"The Municipality population is forecast to grow from the existing year of 2021 to the future year of 2051, with an approximate residential population increase of 4,800 (40%) and an employment population of 860 (35%).

The Master Plan will outline the direction for developing a balanced transportation system within the Municipality, offering a variety of mode choices to the residents and visitors through a well-connected network, with efficiently operating and easy-to-access transportation infrastructure for the next 25 years.

The Municipal-owned transportation road network including sidewalks, trails, and multi-use paths will provide safe, environmentally responsible, and sustainable operations for all transportation modes including vehicular and non-vehicular."

3.1.3 Evaluation Criteria

As part of Phase 2 of the MCEA process, the TMP utilized an evaluation criteria for each improvement alternative, inclusive of the following:

Integration – Is the alternative consistent with the goals and objectives of the Official Plan (OP)?

Multi-Modal – Does the alternative provide various travel mode choices?

Connectivity – Does the alternative provide network connectivity?

Sustainability – Does the alternative provide access to active transportation and/or local transit?

Operations – Does the alternative address the projected travel demand?

Growth – Will the alternative support population and employment growth?

The process utilized in identifying the preferred solution from a list of possible solutions is shown in Table 3.1.

Table 3.1 – Evaluation Matrix to Assess Alternative Improvement Solutions

Criteria	Alternative 1: Do Nothing	Alternative 2: Auto Capacity	Alternative 3: Active Transportation and Transit	Alternative 4: Combination 2 + 3
Integration	○	◔	◔	●
Multi-Modal	○	◔	◔	●
Connectivity	○	◔	◔	●
Sustainability	◔	◔	●	●
Operations	○	●	◔	●
Growth	○	◔	◔	●

○ Does Not Satisfy Criteria ◔ Partially Satisfies Criteria ● Satisfies Criteria ▭ Preferred Solution

3.1.4 Emerging Trends

Emerging trends and technology advancements are a lurking factor to consider when planning a strategic transportation network. In many cases, emerging trends in transportation have the potential to significantly alter the way people and goods are transported. The emerging trends that are most relevant to Brighton are briefly described below:

Connected and Autonomous Vehicles (CAVs)

Connected and Autonomous Vehicles (CAVs) are vehicles that, to a certain level, can autonomously perform driving tasks on behalf of the actual driver. The level of autonomy for vehicles is classified from Level 0 to Level 5, with Level 0 referring to a vehicle where the driver is fully responsible for all driving tasks, and Level 5 referring to vehicles that are able to functionally perform all driving tasks on behalf of the driver. The vast majority of vehicles on the roadway in Brighton today would be classified under Level 1 or Level 2 automation, which includes vehicles that provide

some degree of driving assistance such as cruise control, lane assist, and/or safety features (i.e., automatic braking).

There is currently extensive research being undertaken by transportation professionals, the automotive industry, public health agencies, and more, regarding the feasibility and timelines of more widespread CAV adoption. Regardless of timelines however, a certainty is that CAVs will play an integral role in the future of mobility and will impact the way road systems are designed, planned, and used.

Smartphone Applications

Smartphone applications are becoming an increasingly customary medium between travellers and the transportation system. Applications on mobile devices connect users to various mobility avenues which allows them to efficiently plan trips.

Electric Vehicles (EVs)

Electric Vehicles (EVs) and plug-in hybrids are becoming much more prevalent, with Transport Canada forming the Zero-Emission Vehicle (ZEV) Council in March 2023 in hopes of hastening the switch to zero-emission vehicles in Canada. In fact, Transport Canada intends to decarbonize the transportation sector by committing to achieving 100% zero-emission vehicle sales by 2035 for all new light-duty vehicles. The influx of EVs will require substantial investment in new infrastructure to support it.

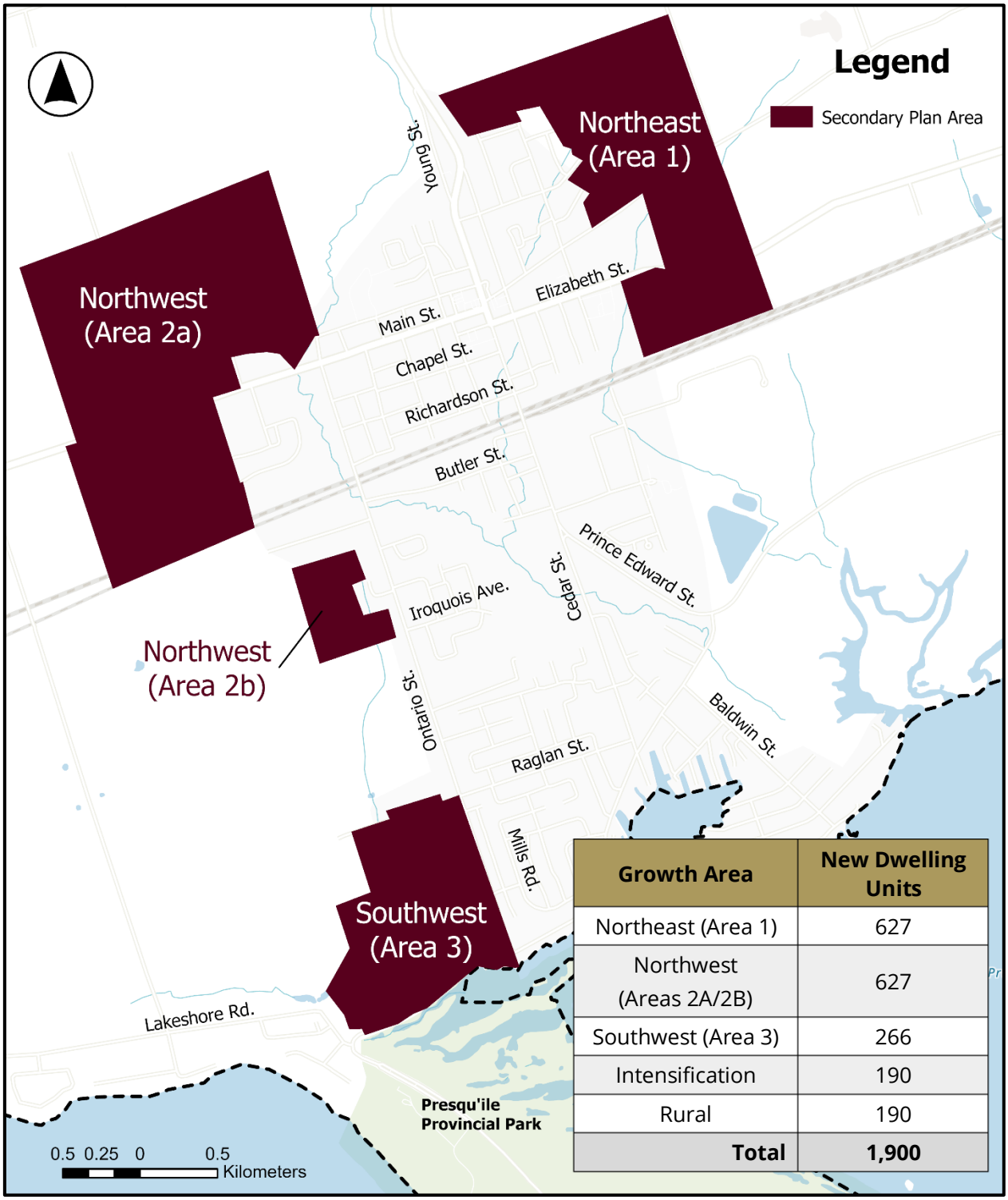
3.2 Future Mobility Needs

This section considers existing and future transportation demands to identify future mobility needs within Brighton.

3.2.1 Future Growth Projections

Residential Growth

As part of the Brighton Secondary Plan (June 2024), growth scenarios for the Municipality were formulated for the 2051 horizon year. The “high growth” scenario considers approximately 5,225 additional persons which triggers the need for approximately 1,900 new dwelling units Municipality-wide. These new units have been allocated throughout the Secondary Plan areas, as shown in Exhibit 3.1.



Growth Area	New Dwelling Units
Northeast (Area 1)	627
Northwest (Areas 2A/2B)	627
Southwest (Area 3)	266
Intensification	190
Rural	190
Total	**1,900**

Exhibit 3.1 – Secondary Plan Areas and Residential Growth

Employment Growth

Brighton's Economic Development department has proposed an industrial park to be located south of the CN/CP rail corridor, between Sharp Road and John Street. This new industrial park will span across 1,500 square metres of land and bring new industry to Brighton.

3.2.2 Focus Corridors

A number of corridors were identified through the consultation process and an evaluation of the alternative roadway network improvements. These focus corridors are as follows:

Raglan Street

Raglan Street is an existing two-lane local roadway located in the urban area of Brighton. Throughout its entirety, Raglan Street is surrounded by single family detached land dwellings. The corridor displays a rural cross section west of Ontario Street and an urban cross section east of Ontario Street. There is a sidewalk provided along the north side of the street, and access to a park/green space area is available along the south side of the street, between residences 103 Raglan Street and 105 Raglan Street.

Throughout the consultation process, respondents noted speeding concerns along Raglan Street. This has caused complications for those attempting to cross the street to access the park/green space area.

Boes Road

Boes Road is a rural two-lane road that travels between County Road 2 and County Road 64. Towards the northerly terminus of Boes Road, a narrow underpass is provided which can only accommodate one (1) vehicle at a time. To mitigate the concerns associated with this, the southbound direction is required to yield for northbound traffic.

The primary focus for this corridor is to explore alternatives for the underpass or another improvement option that will more effectively facilitate traffic for opposing directions. It was pointed out by CN/CP rail that there are no plans to improve this crossing in the near future.

Main Street

Main Street is an arterial roadway that serves as one of the primary downtown corridors. The roadway is one (1) lane in each direction with on-street parking available on both sides. Main Street has been identified as a focus corridor due to its prominence as a downtown vessel, in addition to its importance as an east-west corridor.

Prince Edward Street

Similar to Main Street, Prince Edward Street serves as one of the pillar north-south corridors for the downtown realm. In the downtown area, the corridor consists of two (2) lanes in each direction between Main Street and Elizbeth Street, but transitions to one (1) lane in each direction south of Elizabeth Street. Prince Edward Street has been identified as a focus corridor due to its role as a connecting link between the downtown and major east-west corridors.

Ontario Street

Ontario Street is a two-lane roadway that is surrounded by predominantly residential land uses. It has been selected as a focus corridor because it transitions into Presqu'ile Parkway at its southerly terminus and also serves as one of the few significant north-south corridors in the urban area.

3.2.3 Transportation Modal Split Targets

The selection of travel mode is largely a function of convenience, comfortability, accessibility, available infrastructure, and safety. The TMP seeks to foster a multi-modal network to improve sustainability and promote healthy lifestyles for Brighton residents. Defining modal split targets is an effective method of quantifying the degree to which alternative modes are being adopted, which in turn allows the Municipality to prioritize infrastructure investments.

It is understood that due to the rural nature of Brighton, dependence on automobiles as a commuting method is steadfast. However, Brighton residents noted throughout the consultation process that there is a general interest in active transportation as a recreational activity and for short trips, and this is further supported by the Northumberland County Cycling Master Plan which found that 62% of County residents are interested in cycling but uncomfortable in traffic.

This finding aligns with the low distribution of residents that commute via bike, as utilizing cycling as a commuting mode often requires a high degree of comfortability and skill. In response, the intention of the TMP is to facilitate community adoption of cycling as a recreational activity rather than a commuting mode, as this is the necessary first step in more widespread cycling adoption.

The TMP utilizes short-term (up to five years), medium-term (six to ten years), and long-term (eleven to twenty-five years) horizons for transportation analysis and solutions. For modal split targets, desired splits have been defined for the short-term and medium-term, with the understanding that future TMP updates will benchmark current progress and define suitable and achievable long-term targets thereafter. The commuter modal split targets for short trips (i.e., less than one kilometre) are shown in Table 3.2.

Table 3.2 – Modal Split Targets for Short Trips (Less Than One Kilometre)

Travel Mode	2022 TTS	Short-Term Target	Medium-Term Target
Automobile Driver	64%	60%	55%
Automobile Passenger	7%	7%	6%
Walking	28%	30%	34%
Cycling	1%	3%	5%
Public Transit	<1%	<1%	<1%
Other	<1%	<1%	<1%

As shown in Table 2.3, the short-term targets indicate a gradual increase in the adoption of active transportation modes, and will be primarily driven by short-term infrastructure investments and incorporation of dedicated facilities. As for the medium-term, the increase in active transportation adoption is more aggressive, resulting from overall network connectivity and an overall shift in community attitude towards sustainable modes.

3.2.4 Previously Planned Improvements

Northumberland County, in collaboration with the Municipality of Brighton, is currently in the process of upgrading County Road 64 (Prince Edward Street) from Elizabeth Street to Stoney Point Road. The project is being completed in two (2) different phases: Phase 1 is completed as of 2024, covering the rural road section from Harbour Street to Stoney Point Road, and consisting of a road resurfacing, culvert replacement, and the addition of paved shoulders; phase 2 is scheduled for completion in 2025/2026, covering the urban road section between Elizabeth Street and Harbour Street, with design considerations including upgraded sidewalks, cycling facilities, traffic calming features, rehabilitation/replacement of sewers and watermains, grading improvements, and intersection upgrades including re-configuration of the Cedar Street/ Prince Edward Street intersection.

3.2.5 Needs and Opportunities

The following needs and opportunities were derived through a consolidation of existing conditions, public feedback, stakeholder consultation and anticipated changes.

Needs

Roadway Safety – One of the most consistent themes through the engagement process was the desire for safer roads. The biggest concerns are related to speeding and discontinuous sidewalks.

Active Transportation – There is a general community interest in active transportation modes—specifically cycling. However, with most members of the public being relatively inexperienced with cycling, there are concerns regarding safety due to the limited number of dedicated cycling facilities.

Adoption of Alternative Transportation Modes – As can be expected given the rural nature of Brighton, there is a very high dependence on automobiles compared to other modes. While this reliance is difficult to break, increasing adoption of sustainable modes for recreational use and short trips is the first step in more widespread adoption.

Accessibility – Brighton has an aging population, with this trend expected to continue in the coming years. As such, it is vital that all persons, regardless of age or

ability, are able to travel comfortably and safely in their communities. Creating barrier-free transportation options is a current and future need for Brighton.

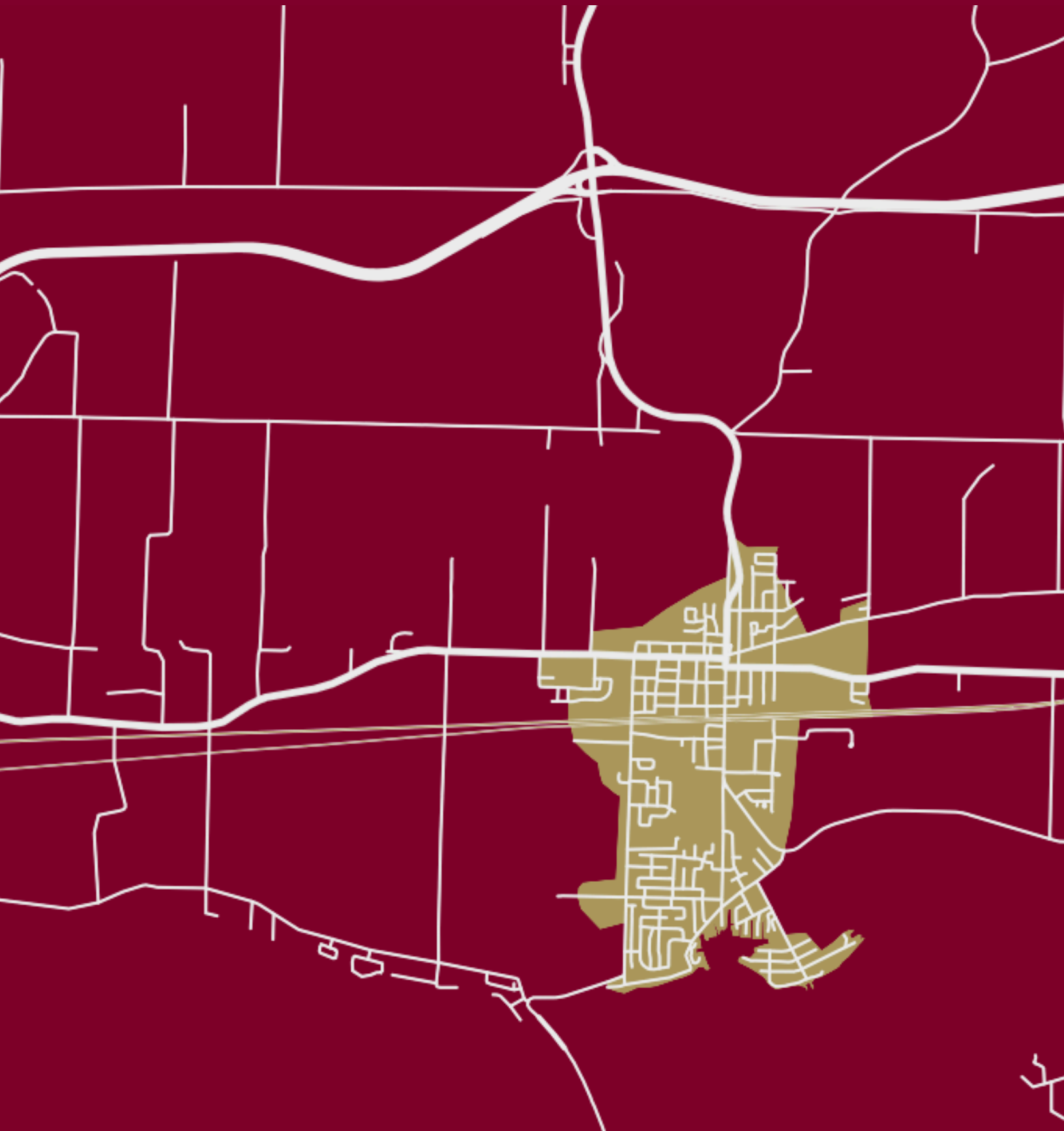
Opportunities

Desire for Traffic Calming – Traffic calming is oftentimes a contentious topic. However, respondents throughout the engagement process have noted support for traffic calming measures in their communities.

Recreational Cycling – Without desire or interest for cycling, it becomes more difficult to allocate space and resources for dedicated cycling facilities. Luckily, residents of Brighton have exclaimed interest in cycling as both a recreational activity and mode of transport.

Road Design – In conjunction with the TMP, Brighton developed new cross sections for each of the different road classes. This provided a unique opportunity to cater the design to the identified safety, multi-modal, and accessibility needs.

4 The Road Ahead



4 The Road Ahead

4.1 Road Re-Classification

There are times where roadways bely their intended service function—whether it be a local road serving as a thoroughfare or an arterial road that fails to efficiently move people and goods. For this reason, it is good practice to intermittently review the existing roadway hierarchy in conjunction with its actual operation in addition to its planned operation as known developments start to materialize.

As part of the TMP, a road reclassification exercise was completed for the entire road network. The process involved the application of an objective roadway criteria including characteristics such as intended service function, typical traffic volumes, posted speeds, active transportation needs, parking provision, traffic calming feasibility, and more. The process also considered the role that each roadway may serve in the future with known developments already in the pipeline.

Moreover, with the existing roadway network consisting of Provincial highways, County roads, arterial roads, collector roads, and local roads. In consultation with the Municipality, the re-classification exercise aggregated the local road type into two (2) sub-types: the local roadway and the major local roadway. This change was made due to the large number of local roadways within Brighton that exhibit varying roadway characteristics and feel.

The resulting proposed roadway hierarchy is shown in Exhibit 4.1 for rural Brighton and Exhibit 4.2 for the urban area of Brighton, respectively. The technical memorandum outlining the criteria for road re-classification and typical roadway cross sections is provided in Appendix 2.

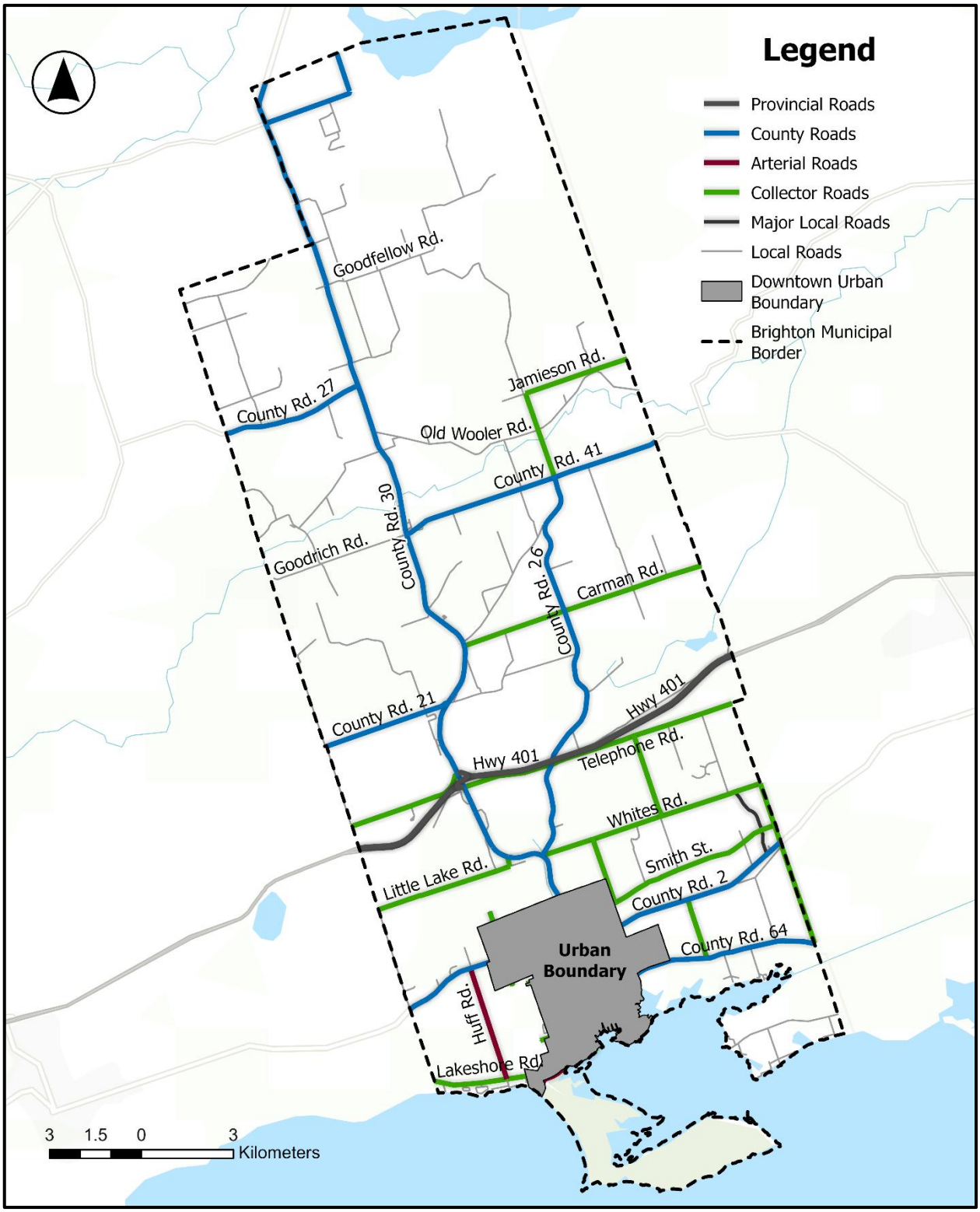


Exhibit 4.1 – Proposed Road Classification Network (Rural Area)

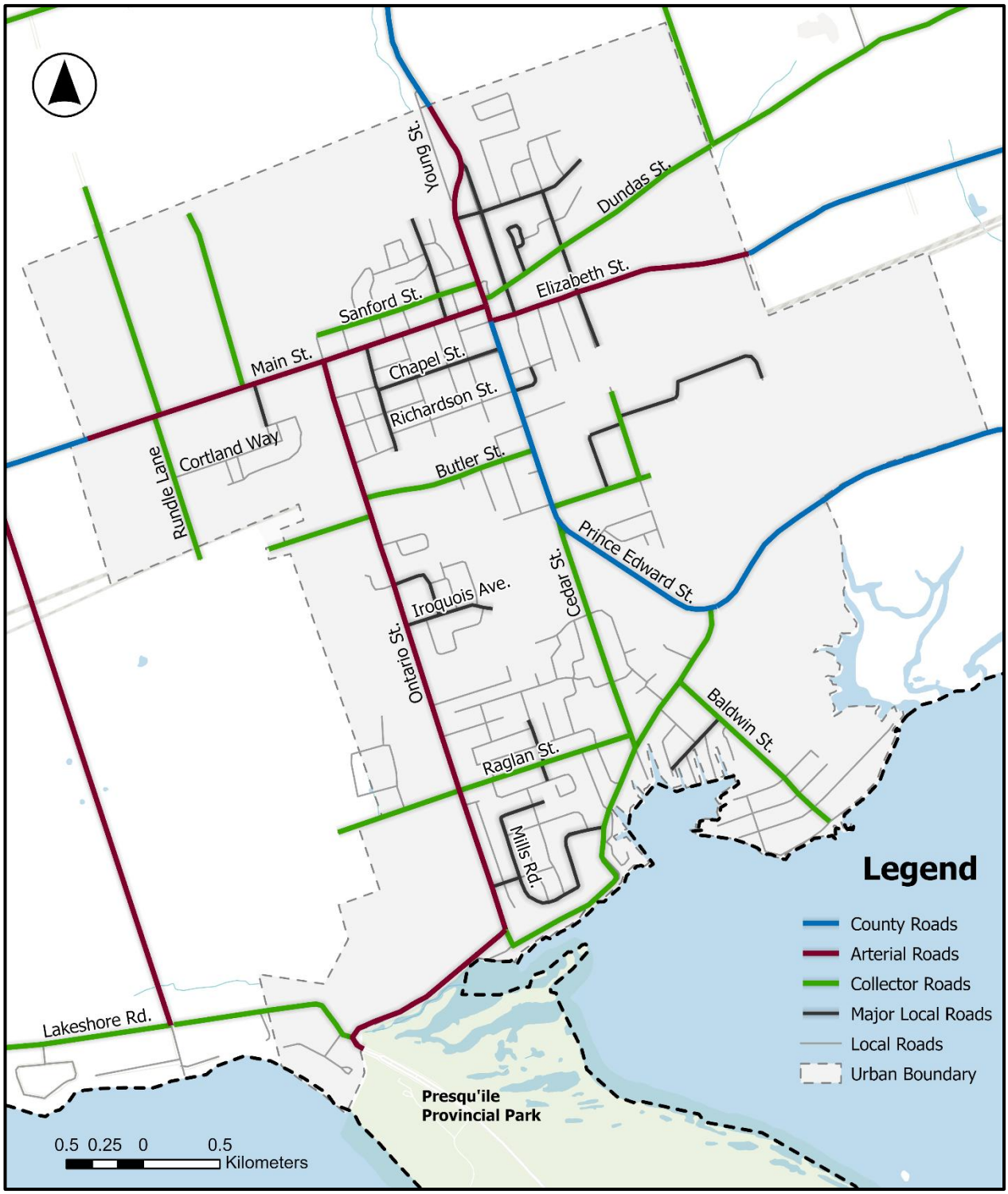


Exhibit 4.2 – Proposed Road Classification Network (Urban Area)

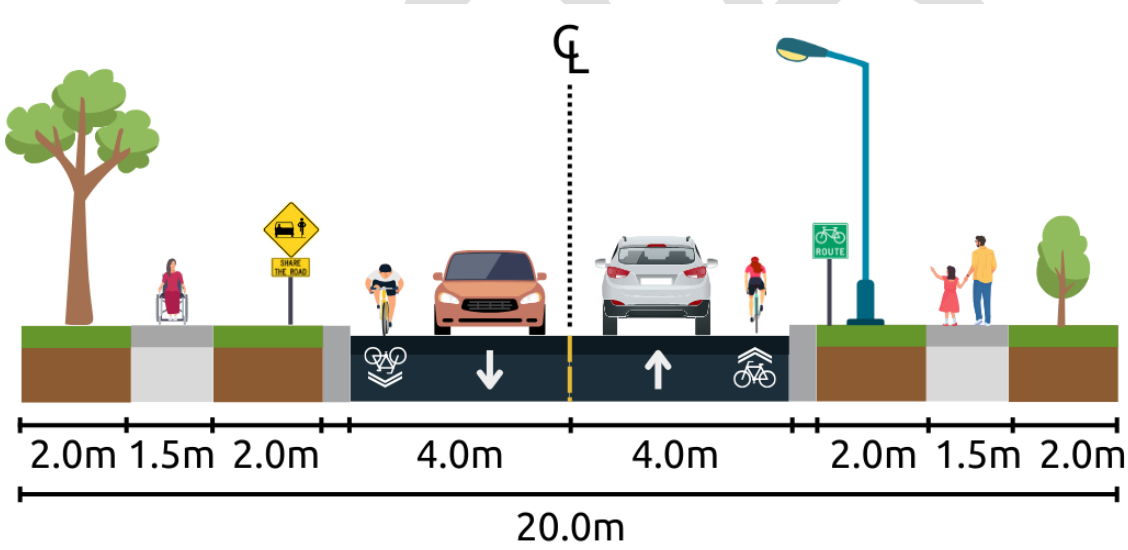
4.2 Complete Streets

To support the Complete Streets approach, new typical cross sections were formulated as part of the TMP. These road cross sections represent the intended design for new roads. Where existing roadways do not meet the minimum typical design, the expectation is that upgrades will be made at the time of road rehabilitation.

4.2.1 Local Road Cross Section

The local road cross section is intended to provide access to land use and provide multi-modal options for connection to higher order roadways. The local road cross section consists of a four-metre-wide lane in each direction, a minimum of one (1) sidewalk with two (2) being ideal, and cyclists sharing the roadway with vehicles. The total right-of-way width for the local road cross section is 20 metres.

Exhibit 4.3 represents an exemplary local road cross section that supplements shared cycling facilities through the use of various Ontario Traffic Manual (OTM) signage and pavement marking attributes.



M511 (OTM)
45 x 45 cm

Wc-19 (OTM)
60 x 60 cm

Wc-19t (OTM)
30 x 60 cm

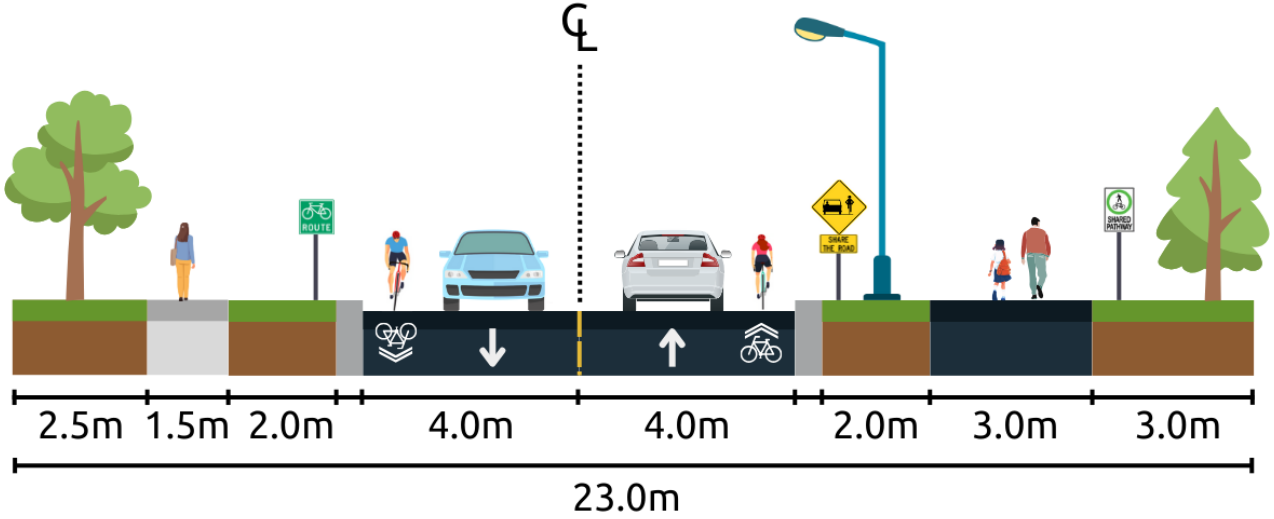
Bicycle Sharrow
(OTM)

Exhibit 4.3 – Local Road Cross Section Example (with Cycling Enhancements)

4.2.2 Major Local Road Cross Section

The major local road cross section is similar to the local road cross section but offers a multi-use path on one (1) side and enhanced green space on the extremity of the right-of-way. The multi-use path provides a dedicated facility for cyclists that are not comfortable sharing the road with vehicles, with more experienced and comfortable cyclists still afforded the opportunity to travel alongside vehicles. The total right-of-way requirement for the major local road cross section is 23 metres.

Exhibit 4.4 shows a typical major local road cross section with cycling enhancements. Similar to the local road cross section, dedicated cycling facilities are not provided on the roadway itself, with vehicles and cyclists expected to share the roadway. However, if warranted by a study, dedicated cycling facilities (i.e., bike lanes) could be considered. For the multi-use path, OTM signage (Rb-71) is provided to indicate that the facility is travelled by various modes.



Rb-71 (OTM)
30 x 45 cm

Exhibit 4.4 – Major Local Road Cross Section Example (with Cycling Enhancements)

4.2.3 Collector Road Cross Section

In an ideal road network, the collector road cross section will transfer road users from local feeder roads to the higher order corridors to complete the larger portion of their travels. The collector road typical cross section consists of a sidewalk on one (1) side and either another sidewalk or a multi-use path on the other side. There are 4.5-metre-wide vehicular travel lane in each direction providing a shared space for vehicles and cyclists. The total right-of-way width for the collector road cross section is 23 metres.

Exhibit 4.5 shows a typical collector road cross section with cycling enhancements (i.e., signed route and sharrows). The collector road typical cross section is similar to the major local road cross section, except with greater asphalt width for the roadway travel lanes.

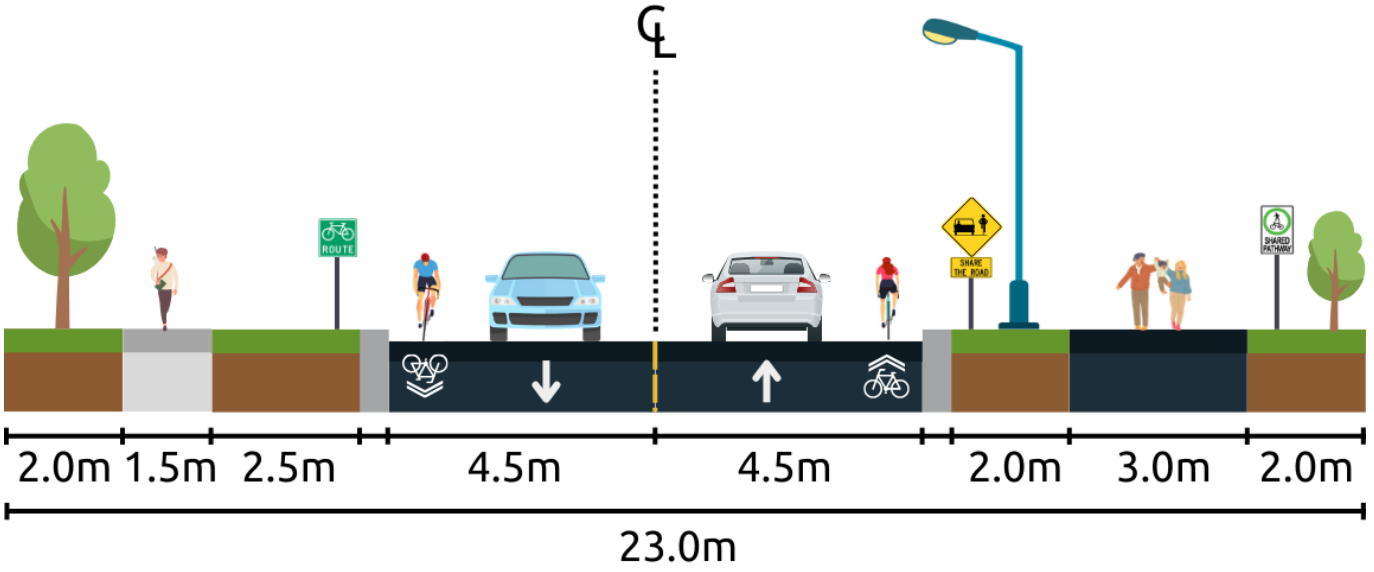
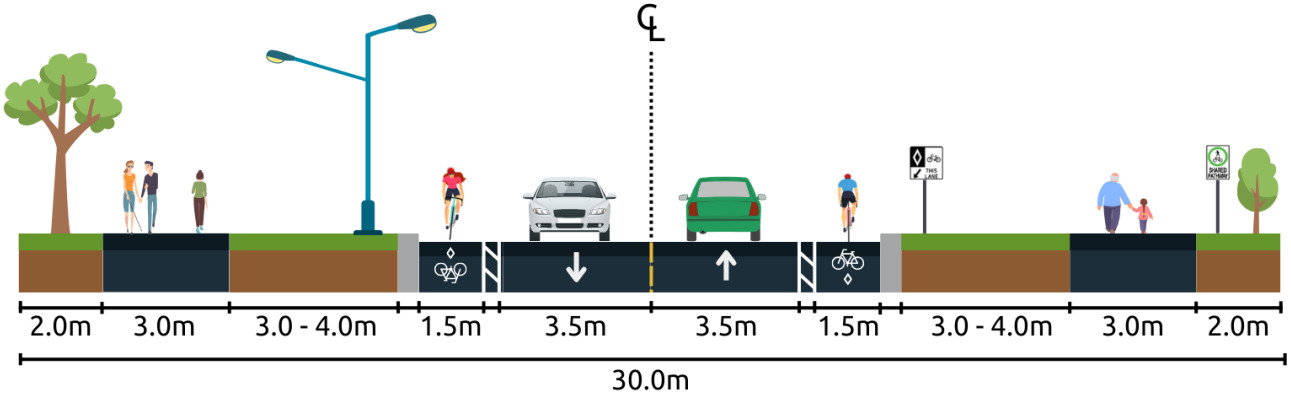


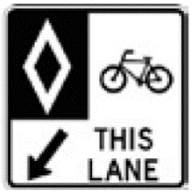
Exhibit 4.5 – Collector Road Cross Section Example (with Cycling Enhancements)

4.2.4 Parkway Cross Section

The parkway typical cross section is a multi-modal corridor that provides a multi-use path on either side with a large boulevard separating its users from vehicular traffic. The total asphalt width is 11 metres which can be allocated to various roadway amenities as needed. If desired, dedicated cycling facilities can be provided based on the methodology in OTM Book 18. The typical right-of-way width for parkways is 28 to 30 metres depending on boulevard width.

Exhibit 4.6 shows an example of a parkway corridor with buffered bicycle lanes that are supported by Reserved Bicycle Lane signage (Rb-84A OTM). The design below is an example of a parkway corridor that is focused on optimal active transportation accommodation; the design of each corridor will be subject to corridor-specific needs including illumination as per streetlighting assessment.





Rb-84 (OTM)
60 x 60 cm

Exhibit 4.6 – Parkway Cross Section Example (with Cycling Enhancements)

4.2.5 Urban and Industrial Arterial Road Cross Section

The urban arterial road typical cross section is meant to facilitate people and goods by providing largely unimpeded travel over longer distances. The arterial road typical cross section provides 14 metres of asphalt width which can be allocated based on corridor-specific needs. Each side provides a three-metre-wide multi-use path separated by two (2) metres of boulevard space. Cycling facilities should be provided based on OTM Book 18. On-street parking is generally prohibited along arterial roadways to maintain safe and efficient flow of vehicles and bikes. The typical right-of-way width for arterial roadways is 28 metres.

Exhibit 4.7 shows an example of an arterial road with a cycling focus and a two-way left-turn lane (TWLTL). The bicycle lanes shown in the example are buffered bicycle lanes that are supported by Reserved Bicycle Lane signage (Rb-84A OTM). However, the cross section for arterials is not a "one-size-fits-all" solution. In many cases, the cross section will need to be adapted to property constraints and corridor-specific needs.

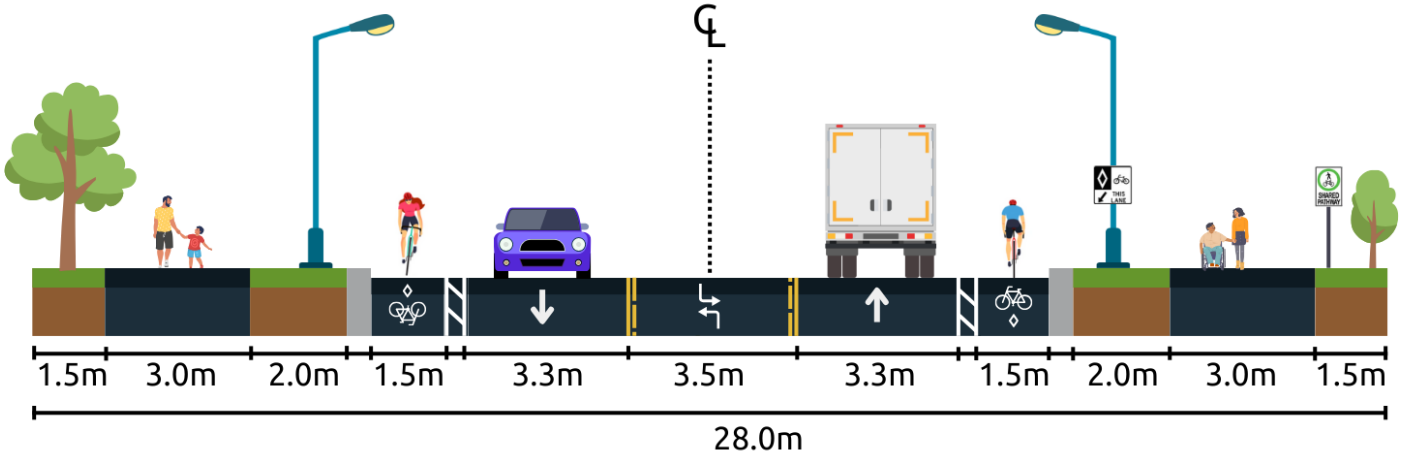


Exhibit 4.7 – Urban Arterial Cross Section Example (with Cycling Enhancements)

The industrial arterial road cross section consists of the same right-of-way width (28 metres) and asphalt width (14 metres) as the urban arterial cross section but re-allocates the space as needed to provide enhanced accommodation for goods movement. Active transportation users are still accommodated by a three-metre-wide multi-use path on both sides, but vehicular modes are now accommodated by two (2) lanes in each direction. Another important aspect of the industrial arterial cross section is that it must be equipped with enhanced load bearing capacity, as it is intended to carry more substantial traffic volumes and heavier vehicles.

The industrial arterial road cross section is shown in Exhibit 4.8.

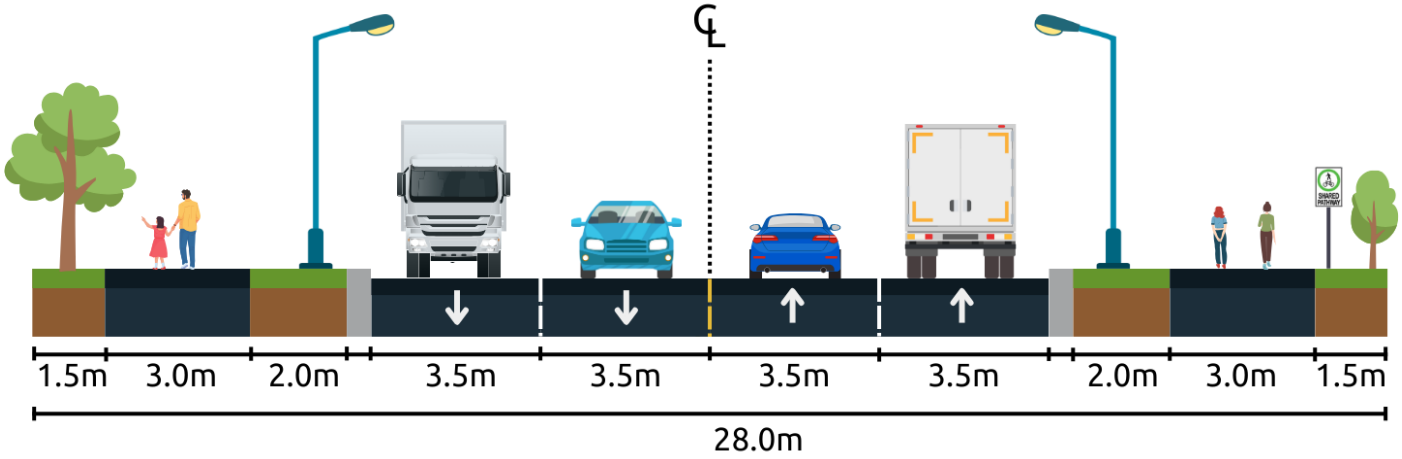


Exhibit 4.8 – Industrial Arterial Cross Section Example

4.2.6 Rural Collector Road Cross Section

The rural collector road typical cross section is intended for majority of the well-travelled routes beyond the urban area of Brighton. The asphalt width is seven (7) metres wide, comprised of a single 3.5-metre-wide travel lane in each direction with a 1.5-metre-wide shoulder and a half-metre rounding area before descending into a drainage ditch. In some cases, cycling enhancements may be pursued in the form of signed bike routes or dedicated bike lanes.

The typical rural collector cross section has a total right-of-way width of 30 metres, with the understanding that property availability will be specific to each corridor. An example of the typical rural collector cross section is shown in Exhibit 4.9.

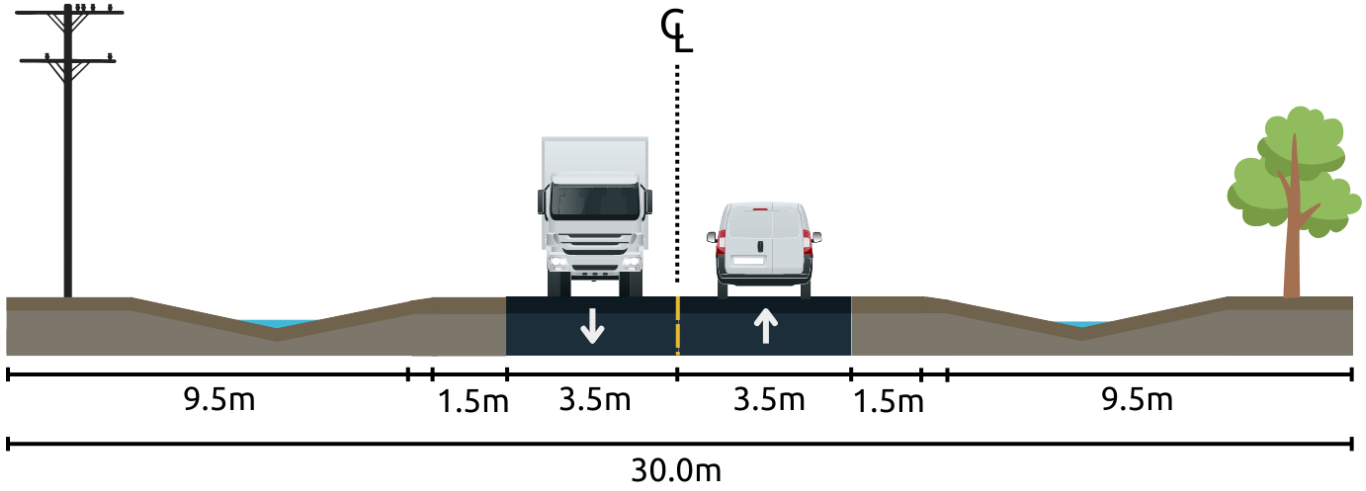


Exhibit 4.9 – Rural Collector Cross Section Example

4.3 Road Safety

Road safety was consistently identified as an improvement area throughout the consultation process. The principal concerns related to speeding and lack of infrastructure for active transportation users.

4.3.1 Traffic Calming

Traffic calming is the act of managing driver behaviour and operating speeds through the application of various passive and/or physical roadway measures. A street that is well traffic calmed usually results in operating speeds and traffic volumes that are suitable for the intended function of the street, which reduces cut-through traffic on local streets and creates a safer, more inclusive community.

Traffic calming can be implemented in a variety of ways, although the types of measures can generally be classified as either passive (soft) or physical.

Passive Traffic Calming measures can include road signage, pavement markings, lawn signs, flexible signs and flexible bollards. These measures are typically quick and cost-efficient to implement, with the intended purpose being to reduce driver operating speeds through increased driver workload and perceived risk. Many municipalities start with passive traffic calming and only implement physical traffic calming if the speeding/cut-through issues still persist.

Physical Traffic Calming measures, as the name suggests, are any traffic calming measures that include a physical alteration to the travelled path of the roadway. While physical traffic calming measures are more effective in reducing operating speeds and cut-through traffic, they are more expensive and are usually met with discord within communities—largely due to the two (2) typical factions of those heavily in favour of traffic calming and those heavily against. Examples of physical traffic calming include speed humps, speed cushions, raised crosswalks, curb extensions, and many more.

Traffic Calming Policy

Creating a streamlined traffic calming process helps balance the expectations of residents with the available resources of the Municipality. Moreover, the policy allows for a progressive approach to traffic calming, allowing cost-friendly options to be properly evaluated before moving forward with more expensive measures.

The general process of the traffic calming policy is as follows:

1. A pre-screening is completed to evaluate if the roadway is suitable for traffic calming.
2. Passive traffic calming measures are implemented in the form of radar signage, and operating speeds are monitored.
3. Passive traffic calming measures are upgraded to flex signage, and operating speeds are monitored.
4. Petition is undertaken. Where at least 70% of residents support physical traffic calming (one signature per household), physical traffic calming is implemented, unless otherwise disapproved by emergency services, transit services, or council.

If speeding issues are resolved at any point throughout the process, subsequent steps are not pursued, but the existing measures will be maintained along with a police referral. A more detailed explanation of the process can be found in the Traffic Calming Policy.

4.3.2 Speed Limit Policy

The Speed Limit Policy allows for members of the public, council or Municipality staff to request speed limit adjustments on Municipal roadways. Following a request, the roadway speed limit is reviewed using the methodology outlined in the Transportation Association of Canada (TAC) *Guidelines for Establishing Posted Speed Limits*, with the results being communicated to the impacted parties thereafter. For all roadways, speed limits are enacted in accordance with the *Highway Traffic Act* and any amendments or regulations related thereto.

The objective of the speed limit policy is to set to safe speed limits that balance the mobility needs of its users. The full details of the process can be found in the Speed Limit Policy.

4.3.3 Community Safety Zone Policy

Community Safety Zones (CSZs) are designated areas that are intended to improve driver behaviour, reduce operating speeds, minimize distracted driving, and enhance safety. Community safety zones are strategically placed in areas with a high concentration of vulnerable road users, such as near schools or parks.

As part of the TMP, the Community Safety Zone Policy was created. This policy is intended to streamline how community safety zones are selected and established, in

alignment with the *Highway Traffic Act* and any amendments or regulations related thereto.

4.4 Roundabout Implementation

Currently, there are no roundabouts in Brighton. However, roundabouts are a form of intersection control that are realizing increased popularity in Ontario. While they are not always the preferred solution, there are cases where roundabouts provide far better level of service and safety than traditional traffic signals. As a result, roundabouts should be added to the shortlist of design options for intersections that would otherwise be defaulted to a traffic signal.

The implementation of roundabouts is commonly preceded by a complex planning and justification process. The decision to implement a traffic signal or roundabout will be subject to unique, location-specific circumstances, as each options presents its own advantages and disadvantages. In alignment with the TMP, a set of Roundabout Implementation Guidelines has been developed, providing a series of checklist items that will aid roadway practitioners in finding the most suitable intersection control alternative.

The checklist considers items such as safety, operations, traffic flows, property availability, intersection geometry, proximity to signals and/or rail, surrounding land use, traffic calming, vulnerable road users (i.e., cyclists and pedestrians), and cost. The Roundabout Implementation Guidelines are provided in Appendix 3.

4.5 Active Transportation

Active transportation was one (1) of the most prominent topics throughout the consultation process. In general, residents are keen on enhancing connectivity for both cyclists and pedestrians in a safe, inclusive manner.

4.5.1 Cycling Facility Selection

The first step in providing an inclusive cycling network is to understand the current cycling culture within Brighton. The "Four Types" categorization is an approach to classifying the types of cyclists based on their comfortability and experience on the roadway (R. Geller). The approach categorizes cyclists into the following groups:

- Strong & Fearless
- Enthused & Confident
- Interested but Concerned
- No Way No How

The categorization approach isolates target markets with respect to cycling, with the overall intent being to progressively move members of each category along until they reach the "Strong & Fearless category". The benefit of this approach is that each target market requires different initiatives to enhance their comfortability. For example, the "Interested but Concerned" category may require a greater emphasis on provided fully separated cycling facilities that will help residents gain experience completing recreational trips on their bicycle. In contrast, residents in the "Enthused & Confident" category are likely more concerned with network connectivity, which will allow them to travel vast distances on their bike for long recreational trips or commuting.

Based on the Northumberland County Cycling Master Plan, a large proportion of residents (62%) within the County are interested in cycling but are not comfortable travelling alongside vehicular traffic. Similar views on cycling were also received throughout the consultation process. Therefore, it is expected that the community of Brighton can be reasonably described as "Interested but Concerned"

In order to target this category, varying degrees of separation must be provided within the network, with specific efforts to provide fully separated facilities where possible (i.e., multi-use paths separated by a boulevard). This approach allows for residents to select a facility based on their comfortability and experience, and will ignite a positive shift in cycling culture within Brighton.

When considering the active transportation accommodation along a new corridor, practitioners can follow the methodology outlined in the Ontario Traffic Manual – Book 18 Cycling Facilities (OTM Book 18). The OTM methodology provides a three (3) step process to selecting appropriate cycling facilities. These steps are to:

1. Pre-select facility based on right-of-way availability, adjacent land uses, motor vehicles volumes, and motor vehicle speeds. This can be done through the OTM Urban/Suburban Nomograph as seen in Exhibit 4.10, and Rural Nomograph as seen in Exhibit 4.11.
2. Complete a robust review of corridor-specific context, considerations, and constraints.
3. Justify the decision and document potential design treatments.

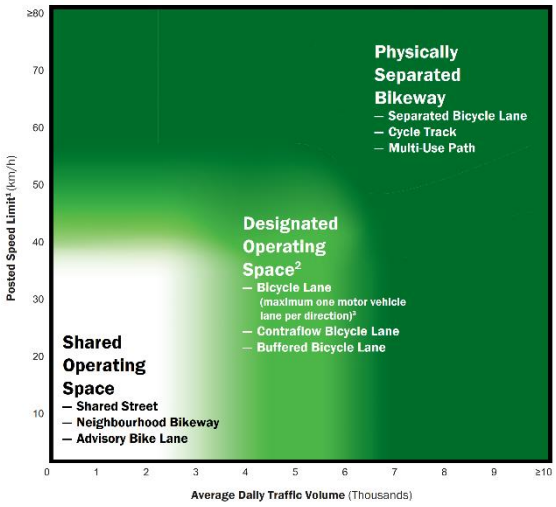


Exhibit 4.10 – Desirable Cycling Facility Pre-Selection Nomograph – Urban Context (OTM Book 18)

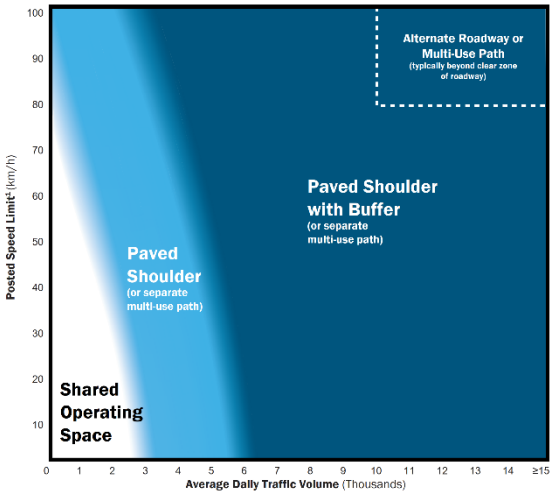


Exhibit 4.11 – Desirable Cycling Facility Pre-Selection Nomograph – Rural Context (OTM Book 18)

4.5.2 Multi-Modal Level of Service (MMLOS)

Multi-modal level of service (MMLOS) is a method of quantifying the degree to which all modes of travel on a roadway are accommodated. In short, the "level of service"—commonly referred as "LOS"—is a letter grade that is assigned to a roadway based on its performance, ranging from LOS 'F' as the least desirable grade to LOS 'A' as the most desirable grade. As an example, a roadway with narrow bike facilities, no buffer from traffic, and many conflicts with other modes (i.e., driveways), may be assigned a bicycle LOS of 'F'. In contrast, a roadway with spacious bike facilities, physical buffers from traffic, and little-to-no conflicts with other modes, may be assigned a bicycle LOS of 'A'.

The MMLOS considers pedestrians, bicycles, transit, trucks, and cars, with an individual grade assigned for each respective mode. In many cases, roadway

practitioners must focus their efforts on certain modes in light of potential property and cost constraints. An example of this would be Main Street, where the principal focus should be on walkability and access to local business (on-street parking) rather than accommodation of large trucks. The evaluation of what levels of service can be reasonably achieved for each mode should be discussed at the onset of any roadway project.

The Ontario Traffic Council (OTC) developed the *Multi-Modal Level of Service Guidelines* in February 2022. This methodology outlines a step-by-step approach to assessing multi-modal operations, from establishing LOS targets to assessing future design alternatives through the lens of each respective mode. The MMLOS analysis should be undertaken at the planning/preliminary design stage of each roadway project to prescribe roadway design elements that promote the targeted multi-modal performance of the corridor.

4.5.3 New Cycling Facilities

The proposed cycling network seeks to foster an enhanced interest and comfortability for cycling, with specific focus on recreational trips and short trips. Where possible, fully separated facilities have been provided in the form of multi-use paths in response to the community being identified as "interested but concerned". However, to accommodate more experienced cyclists as well, on-road facilities have been proposed along Prince Edward Street, which is a common link for longer cycling trips that travel beyond the borders of the Municipality.

The proposed cycling facilities are summarized in Table 4.1 and correspondingly illustrated in Exhibit 4.12.

Table 4.1 – Proposed Cycling Facilities

Code	Corridor	Facility Type	Limits
AT-1	Applewood Drive	Multi-Use Path	Loyalist Drive to Northerly Limit
AT-2	Baldwin Street	Paved Shoulder	Harbour Street to Lambton Street/Bay Street East
AT-3	Butler Street	Multi-Use Path	Ontario Street to Cedar Street
AT-4	Butler Street West	Multi-Use Path	Westerly Limit to Ontario Street
AT-5	Cedar Street	Multi-Use Path	Harbour Street to Prince Edward Street
AT-6	Dundas Street	Multi-Use Path	Prince Edward Street to Urban Boundary
AT-7	Elizabeth Street	Multi-Use Path	Prince Edward Street to John Street
AT-8	Harbour Street	Multi-Use Path	Ontario Street to Prince Edward Street
AT-9	Lakeshore Road	Paved Shoulder	Huff Road to Presqu'ile Parkway
AT-10	Loyalist Drive	Multi-Use Path	Cedar Street to Easterly Limit
AT-11	Main Street	Multi-Use Path	Empire Boulevard to Prince Edward Street
AT-12	Ontario Street	Multi-Use Path	Raglan Street to Main Street
AT-13	Presqu'ile Parkway	Multi-Use Path (Widened)	Presqui'ile Provincial Park to Ontario Street
AT-14	Prince Edward Street	Conventional Bike Lane	Harbour Street to Elizabeth Street
AT-15	Prince Edward Street	Conventional Bike Lane	Elizabeth Street to Municipal Boundary
AT-16	Raglan Street	Multi-Use Path	Westerly Limit to Cedar Street

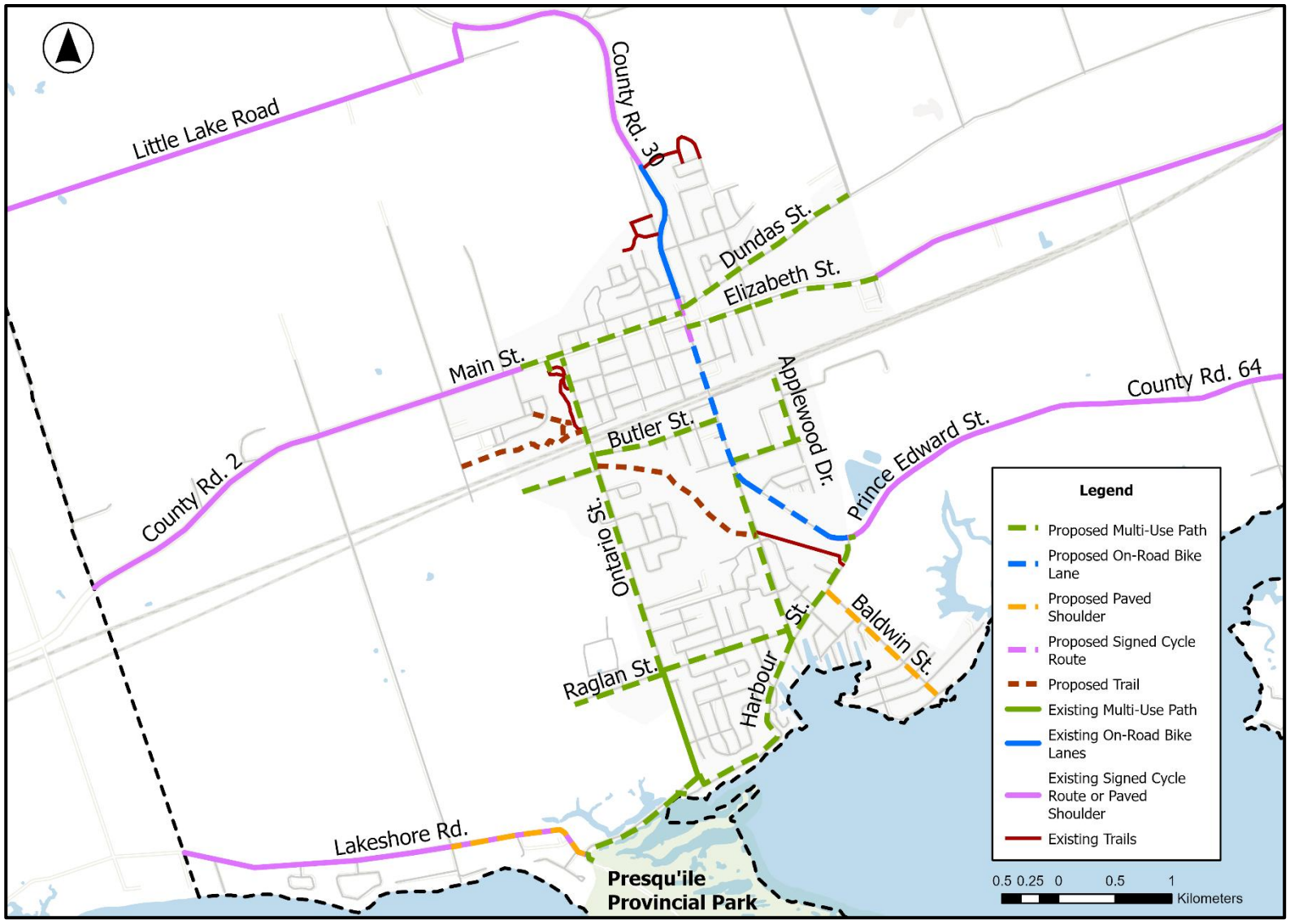


Exhibit 4.12 – Proposed Cycling Network

4.5.4 Pedestrian Network

Pedestrian facility connectivity was a key takeaway from the public consultation process, with a general theme that too few separated facilities are provided across the community, especially near schools. To address this concern, separated walking facilities were incorporated into all typical roadway cross sections, thus ensuring that all future subdivisions and new roadways include a separated walking facility.

Moreover, new walking facilities have been proposed within the urban area. The proposed pedestrian network is summarized in Table 4.2 and illustrated in Exhibit 4.13. It is noted that Table 4.2 only lists sidewalks and trails, but pedestrians are also accommodated by the proposed multi-use path additions that are included under *Section 4.4.3 New Cycling Facilities*.

Table 4.2 – Proposed Sidewalk and Trail Facilities

Code	Corridor	Limits
AT-17	Anne Street	Brintnell Boulevard to BaldwinStreet
AT-18	Daniels Drive	Along One (1) Side for Entire Loop
AT-19	Elizabeth Street	Pinnacle Street South to Urban Boundary
AT-20	Iroquois Avenue	Ontario Street to Seneca Drive
AT-21	Kingsley Avenue	Northerly Limit to a Point 15 Metres South of Dean Drive
AT-22	Lance Street	Raglan Street to Shewman Road
AT-23	Mills Road	Nesbitt Drive to existing sidewalk opposite 7 Mills Road
AT-24	Mohawk Avenue	Ontario Street to Iroquois Avenue
AT-25	Oliphant Street/ Richardson Street	Prince Edward Street to Gross Street
AT-26	Pinnacle Street South	Elizabeth Street to Southerly Limit
AT-27	Presqu'ile Gate	Ontario Street to Mills Road
AT-28	New Pedestrian Trail	Cedar Street to Butler Street
AT-29	New Pedestrian Trail	South of Cortland Way and north of the CN/CP Rail Lines

In addition to new sidewalk links, a new pedestrian crossing (PXO) has been proposed along Raglan Street opposite the entrance to the local green/park space. This PXO is intended to provide a safe access to the park located south of Raglan Street by connecting to the existing sidewalk on the north side of the street with the existing park entrance on the south side of the street.

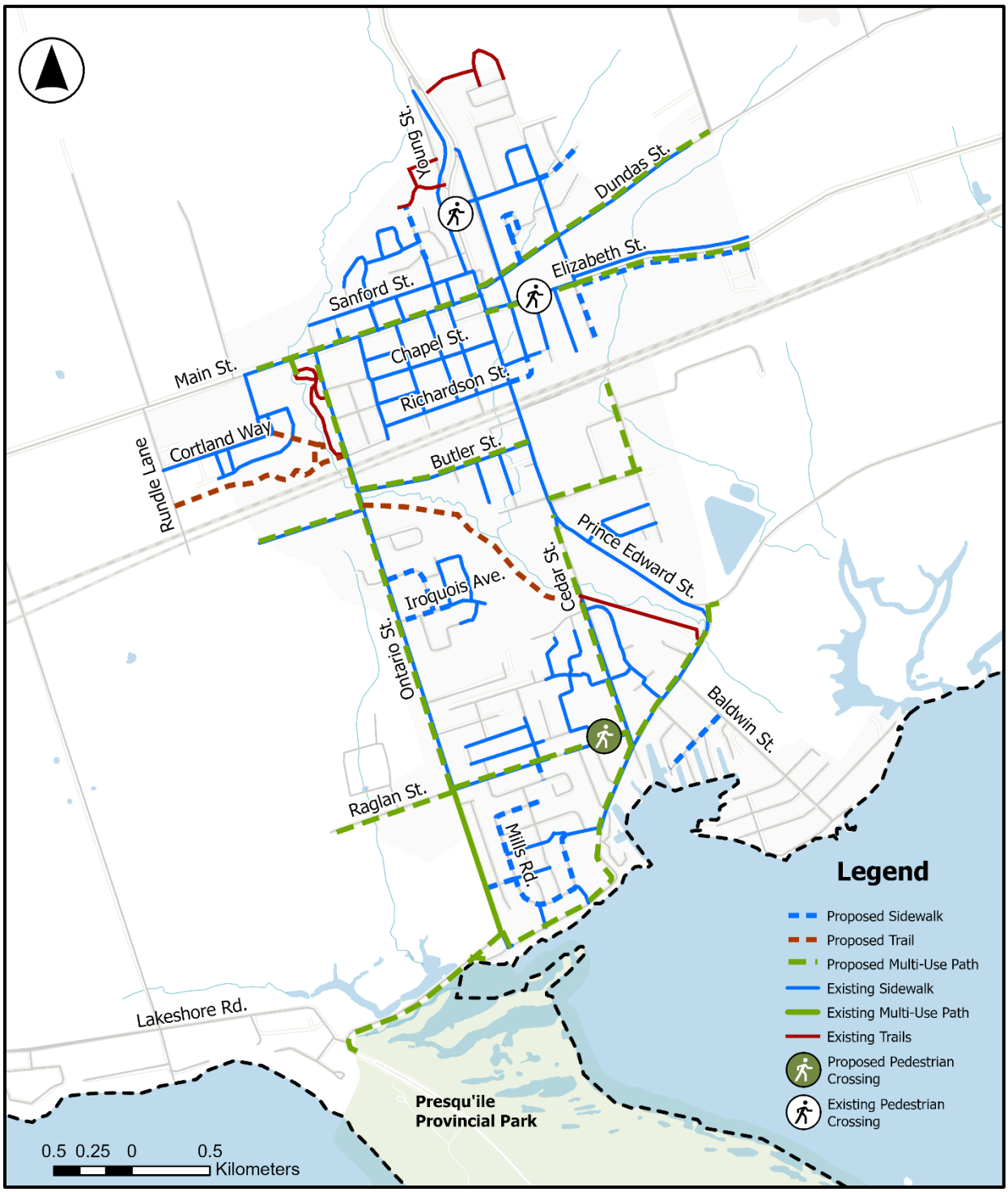


Exhibit 4.13 – Proposed Pedestrian and Trail Network

4.6 New Roadways

New roadway links are vital in maintaining sufficient roadway operations and connectivity while introducing new residents, business, and recreational space. The identification of new roadway links considered a number of items including future traffic conditions, known development configurations, and overall network connectivity.

A review of Brighton's road network emphasized a need for new collector roads—links that can help reduce thoroughfare on local roadways and serve as a natural transition from strictly residential land uses to more mixed-use and commercial space. The primary goal of the new collector roads is to provide additional, unimpeded connectivity within the urban area, with roadways equipped to accommodate multi-modal mobility to a greater degree than local streets. Moreover, the network review identified the need for additional major local corridors in the northeast and southwest quadrants of the urban area

The placement and classification of the proposed roadways have been made at a planning level and are conceptual in nature. It should be noted that road projects recommended within this section will require coordinated roadway or Environmental Assessment (EA) studies to first confirm their feasibility and then evaluate suitable design alternatives thereafter.

A summary of the proposed new roadways is provided in Table 4.3, with a corresponding visual provided in Exhibit 4.14.

Table 4.3 – Proposed New Roadways

Code*	Proposed Roadway Name	Limits
Urban Cross Section		
C-1	Castle Ridge Extension	Sarill Lane to New Collector #2
C-2	Dunnet Drive Extension	Existing Easterly Limit to Hardy Lane
C-3	Meadowcreek Drive	Existing Westerly Limit to Ontario Street
C-4	Meadowcreek Drive	Ontario Street to Urban Boundary
C-5	New Collector # 1	Simpson Street to Percy Street
C-6	New Collector # 2	New Major Local to Elizabeth Street
C-7	Rundle Lane	Urban Boundary to Presqu'ile Parkway
C-8	Singleton Street Extension	Existing Easterly Limit to Georgine Street
Industrial Cross Section		
C-9	Georgina Street Extension	Smith Street to Elizabeth Street
C-10	John Street Extension	Elizabeth Street to Prince Edward Street
C-11	Loyalist Drive Extension	Applewood Drive to John Street Extension
C-12	Sharp Road Extension	Sharp Street to John Street Extension
Rural Cross Section		
C-13	Butler Street West	Rundle Lane to Urban Boundary
C-14	Meadowcreek Drive	Huff Road to Urban Boundary
C-15	New Collector # 3	Princess Street to Little Lake Road
C-16	Raglan Street Extension	Municipal Boundary to Existing Westerly Limit
C-17	Rundle Lane	Existing Southerly Limit to Urban Boundary
C-18	Sarill Lane Extension	Whites Road to Castle Ridge Drive
C-19	Simpson Street	Little Lake Drive to Existing Northerly Limit

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit 4.14.

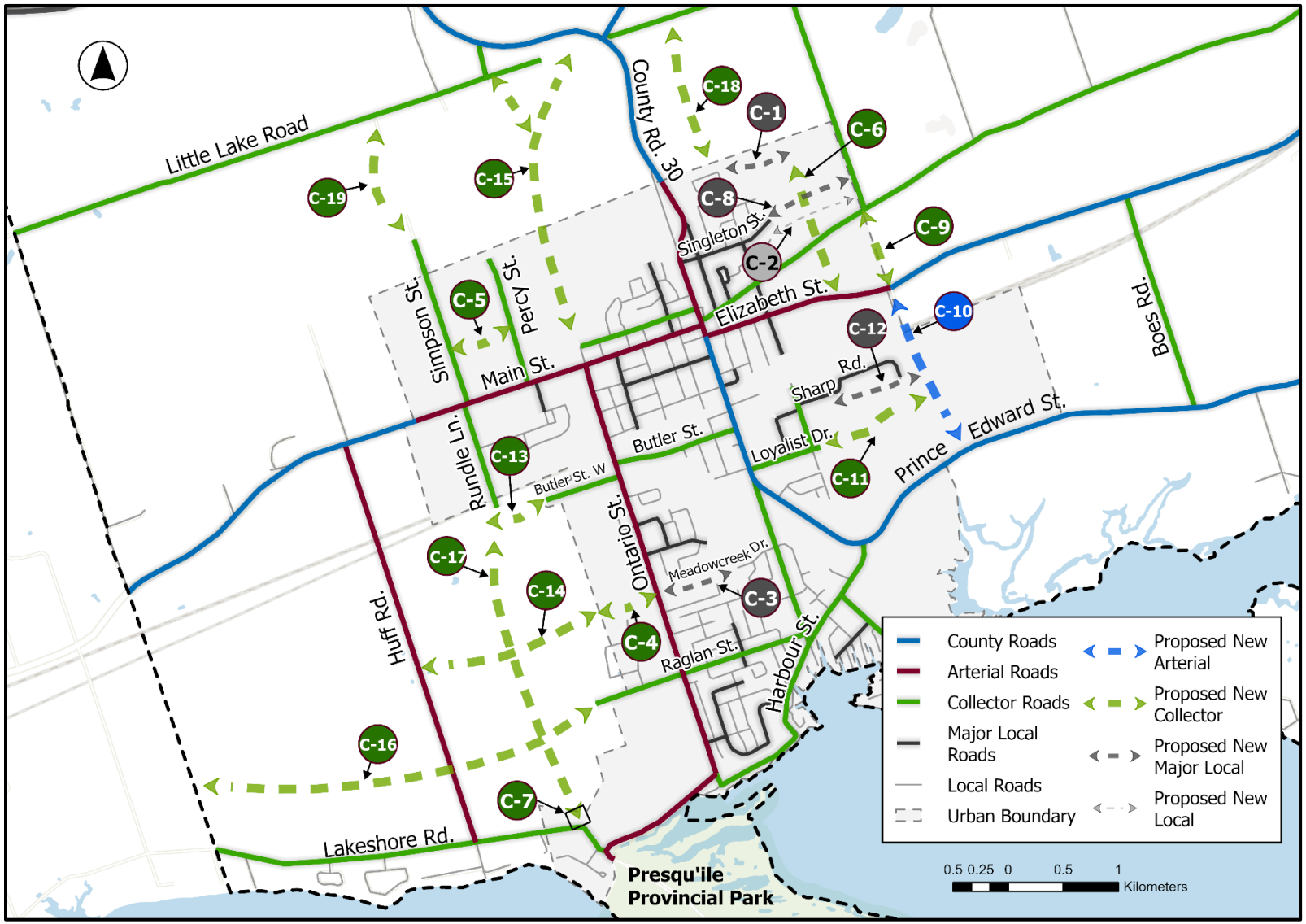


Exhibit 4.14 – Proposed New Roadways

4.7 Localized Intersection Improvements

Localized intersection improvements refer to modifications at individual intersections that will greatly improve capacity, safety, or connectivity. The improvements can be relatively minor in nature, such as re-allocating asphalt width through the use of pavement markings—or more significant, such as roadway re-alignment.

The proposed localized intersection improvements are summarized in Table 4.4, with a corresponding graphic shown in Exhibit 4.15.

Table 4.4 – Proposed Localized Intersection Improvements

Code*	Intersection	Proposed Improvement
C-20	George Street and Alice Street	Investigation of sightline issues.
C-21	John Street	Provide overpass bypassing the CN/CP rail lines, thereby enabling the John Street arterial road extension.
C-22	Main Street and Ontario Street	Implement traffic signal and auxiliary turn lanes.
C-23	Main Street/Elizabeth Street and George Street/Prince Edward Street	Alignment of Main Street and Elizabeth Street.
C-24	Ontario Street and Presqu'ile Parkway (Harbour Street)	Re-alignment of Presqu'ile Parkway.
C-25	Prince Edward Street and Cedar Street	Adjust lane alignment to create a T-intersection with a southbound auxiliary right-turn lane.
C-26	Raglan Street	Implement pedestrian crossing
C-27	Boes Road and CN/CP Rail Line	Implement a traffic signal to facilitate safe operation under the bridge.
C-28	County Road 30 and County Road 26/Whites Road	Implement a roundabout
C-29	County Road 30 and Little Lake Road	Complete sightline study to discern whether realignment is required.
C-30	County Road 30 and County Road 21	Complete sightline study to discern whether realignment is required.
C-31	County Road 30 and Carmen Road/Hansen Road	Complete study to evaluate alternatives for consolidating the closely spaced intersections.

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit 4.15.

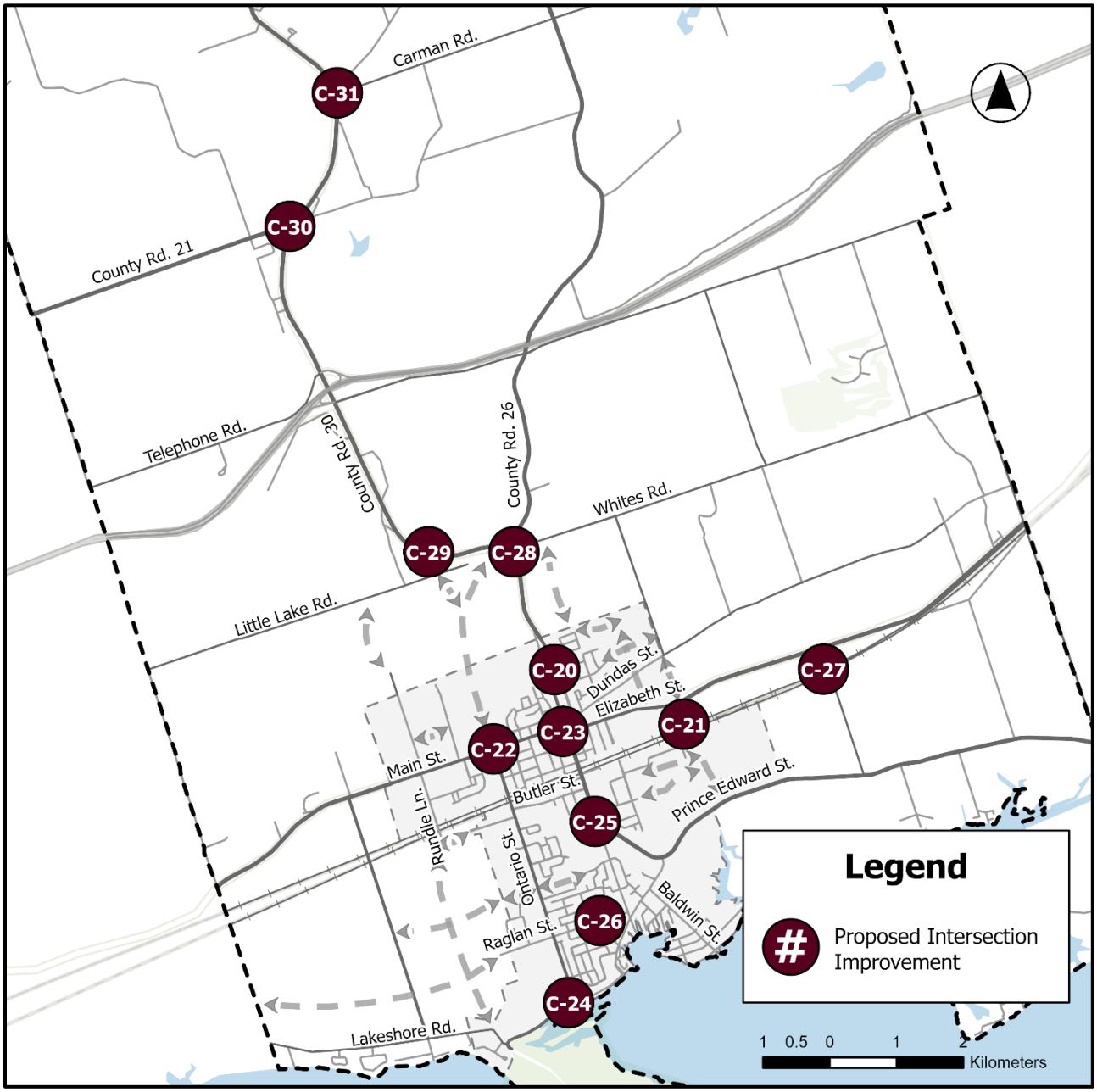


Exhibit 4.15 – Proposed Localized Intersection Improvements

The recommendation for an overpass over the rail lines (C-21) is intended to mobilize and support the future industrial park that is planned for the lands surrounding Sharp Road, south of the rail lines. This recommendation was prefaced by an extensive evaluation of alternatives, with the two (2) primary solutions being an underpass or an overpass. It was determined through this review that an overpass is the preferred option due to its comparatively minor property impacts and integration with the existing and future road configuration.

The recommendation for the Main Street/Elizabeth Street and George Street/Prince Street re-alignment will mitigate the operational shortfalls that are associated with closely spaced intersections and provide an enhanced multi-modal level of service by reducing conflicts and out-of-way travel for all modes. It is noted that this recommendation will be subject to a Schedule 'C' Municipal Class Environmental Assessment to confirm its feasibility and preferred alternative.

The remaining localized intersection improvement recommendations include further studies to upgrade intersections to traffic signals or roundabouts, mitigate potential sightline issues, re-align intersections for operational and safety benefits, and implement a pedestrian crossing along Raglan Street.

4.8 Proposed Goods Movement Network

While the existing goods movement network throughout rural Brighton is somewhat defined through a network of County Roads and Highway 401, the rural area could benefit from enhanced signage measures. In general, truck drivers are likely to select appropriate goods movement corridors based solely off experience and perceived comfortability of the roadway (i.e., lane widths, roadway alignment, etc.). However, the implementation of signage could serve to support unfamiliar truck drivers and keep all heavy vehicles within the designated network.

As for the urban area, there is currently no defined goods movement network. In some cases, such as Alice Street, truck movement has been prohibited through the use of restrictive truck signage, but this practice is scarce throughout the urban area. The lack of a defined truck route network can disrupt traffic flow, compromise roadway integrity, and introduce unnecessary discord between sensitive residential areas and the trucking industry.

As a result, the proposed goods movement recommendations are to introduce designated truck routes in the urban area and provide enhanced truck signage

across the Municipality as a whole. The proposed truck routes in the urban area maintain a keen focus on emerging commerce areas such as the proposed Brighton industrial park to be located east of Sharp Street, in addition to the following items:

- Existing truck routes
- Adjacent land uses
- Roadway classification
- Traffic operations
- Pedestrian/cyclist activity
- Noise
- Geotechnical considerations

Signage

The method in which municipalities facilitate truck movements varies by location, with the general options being permissive signage (OTM Rb-61), restrictive signage (OTM Rb-62), or a hybrid signage system (a combination of both permissive and restrictive signage). The Municipality currently utilizes a restrictive signage system for certain corridors, which indicates that a familiarity with restrictive signage is likely to exist within Brighton today. Therefore, to maintain continuity with this practice, it is recommended that Brighton continue utilizing restrictive truck signage to establish the network.

Rb-61 (OTM)
60 x 60 cm

Rb-62 (OTM)
60 x 60 cm

Rb-62A (OTM)
60 x 75 cm

The proposed goods movement corridors are summarized in Table *4.5* and graphically illustrated in Exhibit 4.16. The proposed truck routes that are denoted as "Conditional" are along corridors that do not exist today, but are proposed as per Section 4.6 of this document. For example, the extension of John Street between Elizabeth Street and Prince Edward Street does not exist today but is a recommended new roadway. At the time of implementation for the John Street extension, the roadway should be designed as an industrial arterial with the intention of truck accommodation. For proposed truck routes along corridors that

do exist today, the intention is that these roadways are supported with signage to help promote truck pathing along these corridors—and where design deficiencies may exist, these corridors should be upgraded to commercial vehicle standard at the time of roadway re-construction.

Table 4.5 – Proposed Goods Movement Corridors

Corridor	Limits
Main Street	Urban boundary to Young Street/Prince Edward Street
Ontario Street	Butler Street to Main Street
Butler Street	Ontario Street to Prince Edward Street
Young Street	Urban boundary to Main Street
Prince Edward Street	Main Street to urban boundary
Elizabeth Street	Prince Edward Street to urban boundary
Loyalist Drive	Prince Edward Street to Applewood Drive
Applewood Drive	Loyalist Drive to Northerly Limit
Loyalist Drive Extension*	Applewood Drive to John Street Extension
John Street Extension*	Elizabeth Street to Prince Edward Street

*Conditional Truck Route – subject to the implementation of proposed roadways

Highway 401 Emergency Detour Routes

Schedule 'C' of the Northumberland Official Plan (OP) shows emergency detour routes (EDRs) in the event of Highway 401 closures. Emergency detour routes passing through Brighton's downtown consist of County Road 15, County Road 2, and County Road 30. It was heard throughout the PICs that there are concerns regarding the significant amounts of traffic that are diverted through the downtown area in times of Highway 401 closures.

Northumberland County is coordinating with the MTO to evaluate alternate Highway 401 emergency detour route options. Based on discussion with the Municipality, Telephone Road, which runs parallel to Highway 401, is recommended to be upgraded to a rural collector roadway so that it can be used as an emergency detour route in the future.

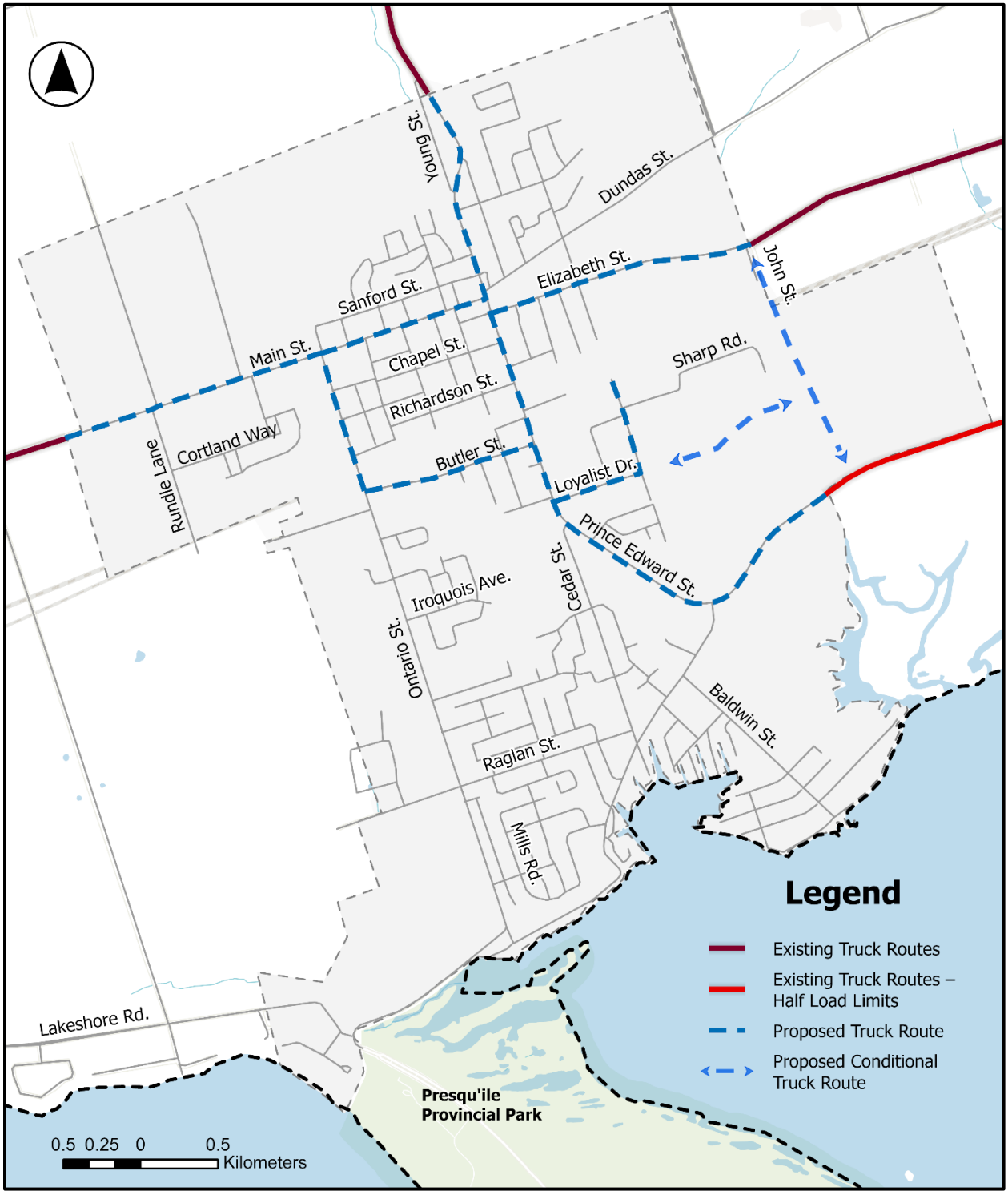
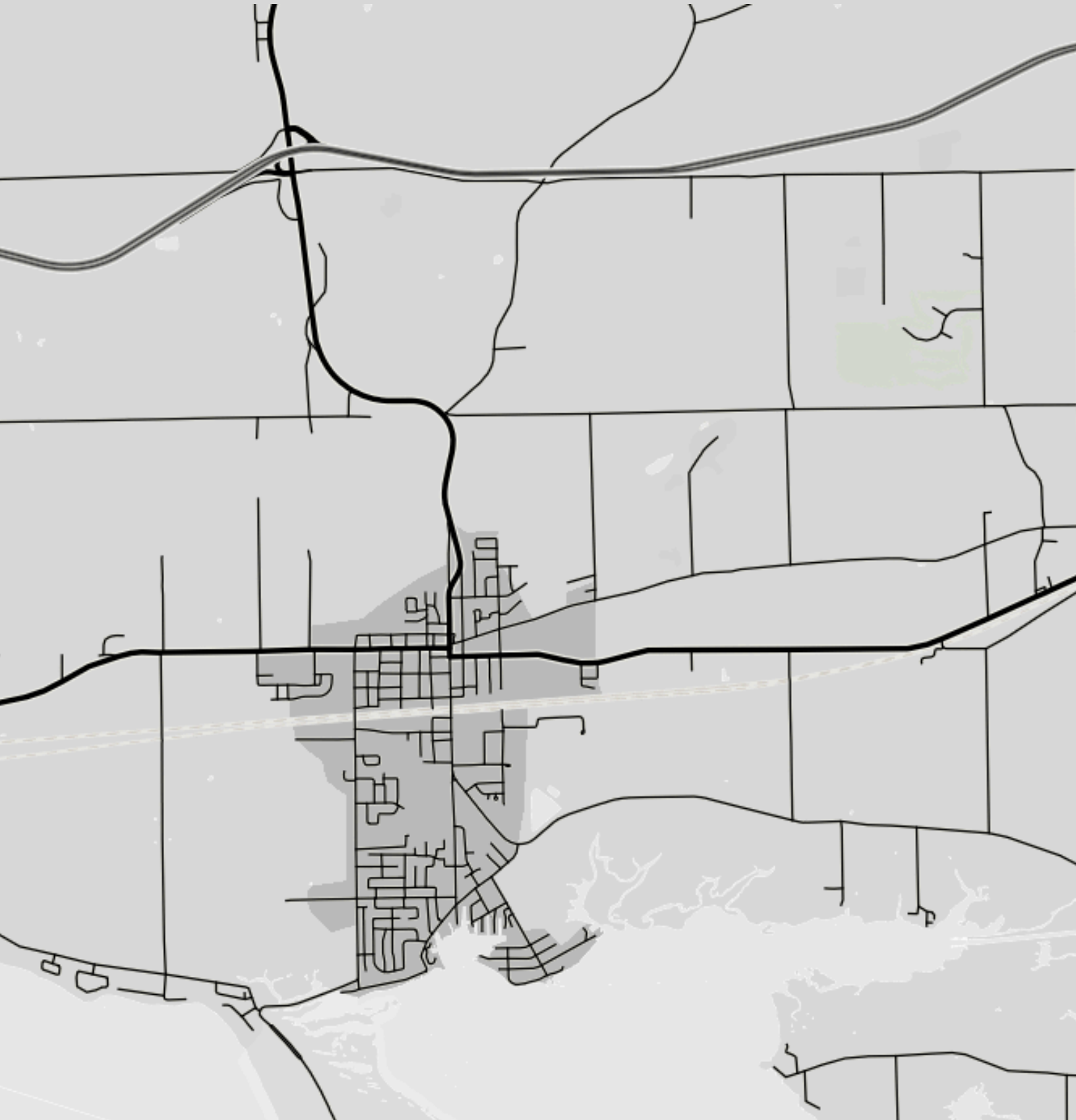


Exhibit 4.16 – Proposed Goods Movement Network

5 Implementation Plan



5 Implementation Plan

5.1 Timelines and Categories

The phasing plan provides general timelines for implementation in light of the resource and monetary strains that are imposed on the Municipality by the improvements. Moreover, by grouping the improvements into defined horizon years, network capacity and connectivity improvements can be introduced in alignment with future demands that are currently in the pipeline. The implementation timelines are organized into three (3) different horizon years as follows:

Short-Term (Up to Five Years) – The short-term recommendations are intended to be "quick win" strategies that have an immediate impact on mobility, but are commonly associated with a less complex implementation process. Substantial projects can still be grouped in the short-term category if there is a pressing need for mobility improvements under prevailing conditions or the near future.

Medium-Term (Six to Ten Years) – The medium-term recommendations are planned to occur within six (6) to ten (10) years of the TMP. These recommendations may be larger in scale, or may not trigger a need until certain developments or plans come into fruition.

Long-Term (Eleven to Twenty-Five Years) – The long-term recommendations are to occur within eleven to twenty-five years of the TMP. These initiatives are typically devised in response to future needs that have yet to be triggered, or may be substantial in nature which requires a robust planning and budgeting process.

5.1.1 Implementation Considerations

It is important to note that the implementation of each infrastructure project is subject to its own unique challenges and requirements (i.e., AODA, design standards, etc.) which will be explored at the planning and design stages for each specific project. In fact, the realization of infrastructure projects is commonly impeded by land availability constraints, topography challenges and presence of environmentally sensitive areas.

All major roadway improvements that have potential for some or significant adverse environmental effects are subject to the Schedule 'B' or 'C' Municipal Class Environmental Assessment (EA) process as outlined in the 2023 amendment. This will allow the solution to be further refined through public and technical agency

consultation and develop a design that addresses public concerns and mitigates potential environmental impacts. In general, Schedule 'B' EAs have the potential for adverse environmental impacts and can include improvements or minor expansions to existing facilities or new projects that are smaller in scale, whereas Schedule 'C" EAs are anticipated to have more sizeable environmental impacts and can include the construction of new facilities or major expansions to existing facilities. Roadway projects that are limited in scale (formerly classified as MCEA Schedule A or A+) such as rehabilitation works, minor reconstruction, or replacement of existing infrastructure are now exempt from the MCEA process.

The cost estimates associated with the proposed improvements do not include property acquisition, utility relocation, and construction cost escalation due to economic pressure and political landscape.

5.1.2 Potential Funding Sources

Opportunities for funding transportation projects exist beyond the annual capital budget process through various levels of government. These opportunities appear intermittently at the Federal and Provincial level, which will require regular monitoring from Municipal staff. Examples of funding sources from each level of government include:

Federal

Canada Public Transit Fund – The Canada Public Transit Fund (CPTF) seeks to provide enhanced public transit and active transportation across the country by providing $3 billion per year for sustainable infrastructure. This fund is beginning in 2026/2027 and will support sustainable travel modes across a wide variety of Canadian communities.

Provincial

Infrastructure Ontario (IO) – The IO program is a loan program that provides long-term financing to municipalities, allowing for larger infrastructure undertakings such as road or bridge revitalizations. The loan program has helped over $18 billion in infrastructure investments across Ontario since its inception.

County

Capital Budgeting Process – Proposed infrastructure improvements along County corridors should be funded through the Northumberland County's capital budget.

Local

Development Charges – Funding for transportation infrastructure projects is identified within the Development Charges (DC) Background Study (2024). The Municipality may attempt to recover capital cost expenditures under the provincial legislation to manage and foster growth in Brighton.

Capital Budgeting Process – Local infrastructure projects, among other items, are identified on an annual basis through the capital budgeting process.

5.2 Implementation Plan

The TMP implementation plan honours the different categories in which the recommendations present themselves. The TMP initiatives are grouped as follows: (1) Policy, Documentation and Guidelines; (2) Active Transportation; (3) New Roadways; and (4) Localized Intersection Improvements.

5.2.1 Policy, Documentation and Guideline Recommendations

Table 5.1 – Proposed Policy, Documentation and Guideline Recommendations

Code	Proposed Improvement	Description	Cost	Timing
PDG-1	Adopt Community Safety Zone (CSZ) Policy	Adopt Community Safey Zone (CSZ) Policy for use selecting and establishing new CSZs.	-	Short-Term
PDG -2	Establish goods movement network	Implement restrictive truck route signage to facilitate goods movement along designated routes only.	$14k	Short-Term
PDG -3	Adopt Roundabout Implementation Guidelines	Adopt Roundabout Implementation Guidelines to help guide future intersection control studies.	-	Short-Term
PDG -4	Adopt Traffic Calming Policy	Adopt Traffic Calming Policy for use in streamlining the traffic calming request and implementation process.	-	Short-Term
PDG -5	Adopt revised road classifications	Adopt revised road classifications and incorporate them into Schedule 'C' of the Official Plan.	-	Short-Term

PDG -6	Adopt Speed Limit Policy	Adopt the Speed Limit Policy to aid in establishing appropriate speed limits for Municipal roadways.	-	Short-Term
PDG -7	Create Traffic Impact Study (TIS) Guidelines	Formulate Traffic Impact Study (TIS) Guidelines to facilitate preparation of TIS reports for new developments.	$20k	Short-Term

5.2.2 Active Transportation Recommendations

Cycling Network Proposed Improvements

The cycling recommendations are summarized in Table 5.2 with their associated cost, timing of implementation and required EA Schedule.

Table 5.2 – Proposed Cycling Recommendations

Code	Corridor	Facility Type	Limits	Cost	Timing	Required EA
AT-1	Applewood Drive	Multi-Use Path	Loyalist Drive to Northerly Limit	$295k	Long-Term	Schedule B
AT-2	Baldwin Street	Paved Shoulder	Harbour Street to Lambton Street/Bay Street East	$120k	Short-Term	Schedule B
AT-3	Butler Street	Multi-Use Path	Ontario Street to Cedar Street	$475k	Long-Term	Schedule B
AT-4	Butler Street W	Multi-Use Path	Westerly Limit to Ontario Street	$295k	Long-Term	Schedule B
AT-5	Cedar Street	Multi-Use Path	Harbour Street to Prince Edward Street	$590k	Short-Term	Schedule B
AT-6	Dundas Street	Multi-Use Path	Prince Edward Street to Urban Boundary	$770k	Short-Term	Schedule B
AT-7	Elizabeth Street	Multi-Use Path	Prince Edward Street to John Street	$710k	Short-Term	Schedule B
AT-8	Harbour Street	Multi-Use Path	Ontario Street to Prince Edward Street	$1.2m	Short-Term	Schedule B

Code	Corridor	Facility Type	Limits	Cost	Timing	Required EA
AT-9	Lakeshore Road	Paved Shoulder	Huff Road to Presqu'ile Parkway	$105k	Long-Term	Schedule B
AT-10	Loyalist Drive	Multi-Use Path	Cedar Street to Easterly Limit	$295k	Long-Term	Schedule B
AT-11	Main Street	Multi-Use Path	Empire Boulevard to Prince Edward Street	$650k	Short-Term	Schedule B
AT-12	Ontario Street	Multi-Use Path	Raglan Street to Main Street	$1.3m	Mid-Term	Schedule B
AT-13	Presquile Parkway	Multi-Use Path (Widened)	Presqu'ile Provincial Park to Ontario Street	$590k	TBD	Schedule B
AT-14	Prince Edward Street	Conventional Bike Lane	Harbour Street to Elizabeth Street	N/A	Short-Term	N/A
AT-15	Prince Edward Street	Conventional Bike Lane	Elizabeth Street to Municipal Boundary	$335k	Long-Term	Schedule B
AT-16	Raglan Street	Multi-Use Path	Westerly Limit to Cedar Street	$885k	Long-Term	Schedule B

N/A = Not Applicable | TBD = To be determined based on road rehabilitation timing

Sidewalk Network Proposed Improvements

The proposed improvements to the sidewalk network are summarized in Table 5.3 with their associated cost and timing of implementation. It is noted that Table 5.3 only includes sidewalk additions, but pedestrians are also accommodated by the multi-use trails summarized in Table 5.2.

Table 5.3 – Proposed Sidewalk Recommendations

Code	Corridor	Limits	Cost	Timing
AT-17	Anne Street	Brintnell Boulevard to Baldwin Street	$145k	TBD
AT-18	Daniels Drive	Along One (1) Side for Entire Loop	$190k	Long-Term
AT-19	Elizabeth Street	Pinnacle Street South to Urban Boundary	$380k	Short-Term
AT-20	Iroquois Avenue	Ontario Street to Seneca Drive	$95k	Short-Term
AT-21	Kingsley Avenue	Northerly Limit to a Point 15 Metres South of Dean Drive	$145k	Short-Term
AT-22	Lance Street	Raglan Street to Shewman Road	$50k	Long-Term
AT-23	Mills Road	Nesbitt Drive to existing sidewalk opposite 7 Mills Road	$525k	Long-Term
AT-24	Mohawk Avenue	Ontario Street to Iroquois Avenue	$145k	Short-Term
AT-25	Oliphant Street/ Richardson Street	Prince Edward Street to Gross Street	$95k	TBD
AT-26	Pinnacle Street South	Elizabeth Street to Southerly Limit	$145k	Long-Term
AT-27	Presqu'ile Gate	Ontario Street to Mills Road	$95k	TBD
AT-28	New Pedestrian Trail	Cedar Street to Butler Street	$280k	Short-Term
AT-29	New Pedestrian Trail	South of Cortland Way and north of the CN/CP Rail Lines	$190k	Short-Term

TBD = To be determined based on road rehabilitation timing

5.2.3 New Roadway Recommendations

A list of the proposed new recommended roadways is provided in Table 5.4 including approximate cost, timing and required EA Schedule.

Table 5.4 – Proposed New Roadway Recommendations

Code*	Proposed Roadway Name	Limits	Cost	Timing	Required EA
Urban Cross Section					
C-1	Castle Ridge Extension	Sarill Lane to New Collector #2	$4.8m	Long-Term	Schedule C
C-2	Dunnet Drive Extension	Existing Easterly Limit to Hardy Lane	$4.8m	Mid-Term	Schedule C
C-3	Meadowcreek Drive	Existing Westerly Limit to Ontario Street	$4.1m	Mid-Term	Schedule C
C-4	Meadowcreek Drive	Ontario Street to Urban Boundary	$3.2m	Long-Term	Schedule C
C-5	New Collector # 1	Simpson Street to Percy Street	$4.1m	Long-Term	Schedule C
C-6	New Collector # 2	New Major Local to Elizabeth Street	$8.9m	Long-Term	Schedule C
C-7	Rundle Lane	Urban Boundary to Presqu'ile Parkway	$2.4m	Long-Term	Schedule C
C-8	Singleton Street Extension	Existing Easterly Limit to Georgine Street	$4.8m	Long-Term	Schedule C
Industrial Cross Section					
C-9	Georgina Street Extension	Smith Street to Elizabeth Street	$4.1m	Short-Term	Schedule C
C-10	John Street Extension	Elizabeth Street to Prince Edward Street	$8.9m	Long-Term	Schedule C
C-11	Loyalist Drive Extension	Applewood Drive to John Street Extension	$5.7m	Long-Term	Schedule C
C-12	Sharp Road Extension	Sharp Street to John Street Extension	$4.8m	Mid-Term	Schedule C
Rural Cross Section					

Code*	Proposed Roadway Name	Limits	Cost	Timing	Required EA
C-13	Butler Street West	Rundle Lane to Urban Boundary	$1.6m	Long-Term	Schedule C
C-14	Meadowcreek Drive	Huff Road to Urban Boundary	$6.3m	Long-Term	Schedule C
C-15	New Collector # 3	Princess Street to Little Lake Road	$25.2m	Long-Term	Schedule C
C-16	Raglan Street Extension	Municipal Boundary to Existing Westerly Limit	$13.7m	Long-Term	Schedule C
C-17	Rundle Lane	Existing Southerly Limit to Urban Boundary	$11.1m	Long-Term	Schedule C
C-18	Sarill Lane Extension	Whites Road to Castle Ridge Drive	$5.3m	Long-Term	Schedule C
C-19	Simpson Street	Little Lake Drive to Existing Northerly Limit	$4.8m	Long-Term	Schedule C

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit 4.14.

5.2.4 Localized Intersection Improvement Recommendations

The localized intersection improvement recommendations including approximate cost, timing and required EA Schedule are provided in Table 5.5.

Table 5.5 – Proposed Localized Intersection Improvement Recommendations

Code*	Intersection	Proposed Improvement	Cost	Timing	Required EA
C-20	George Street and Alice Street	Investigation of sightline issues.	$20k	Short-Term	N/A
C-21	John Street	Provide overpass bypassing the CN/CP rail lines, thereby enabling the John Street arterial road extension.	$75.2m	TBD	Schedule C
C-22	Main Street and Ontario Street	Implement traffic signal and auxiliary turn lanes.	$1.0m	Short-Term	N/A
C-23	Main Street/Elizabeth Street and George	Alignment of Main Street and Elizabeth Street.	$4.9m	Long-term	Schedule C

Code*	Intersection	Proposed Improvement	Cost	Timing	Required EA
	Street/Prince Edward Street				
C-24	Ontario Street and Presqu'ile Parkway (Harbour Street)	Re-alignment of Presqu'ile Parkway.	$3.7m	TBD	Schedule C
C-25	Prince Edward Street and Cedar Street	Adjust lane alignment to create a T-intersection with a southbound auxiliary right-turn lane.	County	Short-Term	N/A
C-26	Raglan Street	Implement pedestrian crossing	$14k	Short-Term	N/A
C-27	Boes Road and CN/CP Rail Line	Implement a traffic signal to facilitate safe operation under the bridge.	$500k	Short-Term	N/A
C-28	County Road 30 and County Road 26/Whites Road	Implement a roundabout	$1.0m	Short-Term	Schedule B
C-29	County Road 30 and Little Lake Road	Complete sightline study to discern whether realignment is required.	$20k	Short-Term	N/A
C-30	County Road 30 and County Road 21	Complete sightline study to discern whether realignment is required.	$20k	Short-Term	N/A
C-31	County Road 30 and Carmen Road/Hansen Road	Complete study to evaluate alternatives for consolidating the closely spaced intersections.	$20k	Short-Term	N/A

*The recommendation code (C-XX) corresponds with the numbers presented in Exhibit 4.15.

NA = Not Applicable

5.3 Plan Monitoring and Updates

It is important for the Municipality to initiate a monitoring program for the TMP. The monitoring process allows the Municipality to track progress against the desired timelines and also quantify the degree to which the initiatives are influencing mobility. The performance metrics focus on the key action items of the TMP and provides a corresponding data source and review interval period. The monitoring plan is outlined in Table 5.6.

Table 5.6 – TMP Monitoring Plan

Performance Metric	Data Source	Review Frequency
New Roadways		
Total kilometre length of road network.	Capital Program	Annually
Mobility Characteristics		
Commuting mode share	TTS	Five (5) Years
Average commute distance	TTS	Five (5) Years
Automobile ownership (number of vehicles per household)	TTS	Five (5) Years
Active Transportation		
Total kilometre length of cycling facility by class (i.e., shared, dedicated, etc.)	Capital Program	Annually
Total kilometre length of pedestrian accommodation by class (i.e., sidewalk, multi-use trail, etc.)	Capital Program	Annually
Number of sidewalk gaps or accessibility barriers within the pedestrian network.	Capital Program	Annually
Transit		
Transit ridership data	NRT	Annually
Goods Movement		
Total kilometre length of designated truck routes	Capital Program	Annually

It is understood that the recommendations of the TMP are based on the best information available at the time of the study. In reality, the dynamic nature of the political and economic landscape has a significant bearing on how development unfolds. It is for this reason that the MCEA process recommends a review of master plans every (5) years to ensure that the transportation network is adaptable to new realities that were not contemplated at the time of this study.