TOWNSHIP OF Scugog

ACTIVE TRANSPORTATION AND TRANSPORTATION MASTER PLANS

JUNE 2021

paradigm TRANSPORTATION SOLUTIONS LIMITED

EXECUTIVE SUMMARY

INTRODUCTION

The Township of Scugog Active Transportation and Transportation Master Plans (AT and TMP) provide a long-term strategy to strengthen and support the transportation network within the municipality, with a focus on fostering the use of more active travel modes such as walking, rolling, and cycling. Maintaining the high quality of life residents currently enjoy, safeguarding the environment, preserving the historic character of the community, and facilitating continued economic growth and prosperity are priorities of the plans.

The AT and TMP provide a policy framework to support sustainable transportation practices and livable communities as Scugog grows over time, with a focus on active transportation initiative for the Port Perry Urban Area. In delivering this framework, the plans are intended to:

- Create an equitable transportation system, including an interconnected network of active transportation facilities that optimize existing infrastructure;
- Identify and propose ways to mitigate current and future road needs;
- Provide supporting policies on matters related to the design and operation of the transportation network, including matters such as safety, traffic management, and pedestrian crossings; and
- Itemize infrastructure requirements for building and maintaining the Township's transportation network in the more immediate and longer terms.

The plans were prepared following the Municipal Class Environmental Assessment (MCEA) process for Master Plans, completing requirements for Phase 1 (opportunity statement) and Phase 2 (alternatives assessment). Consistent with environmental planning principles, the study included a comprehensive public consultation and stakeholder engagement program designed to obtain feedback from Township residents, key stakeholders, and technical agencies. The program featured two rounds of community outreach, with opportunities to participate in consultation events promoted through the project website, postcards, newspaper ads, and social media. The **Engagement Summary Report** contained in **Appendix A** captures the activities and findings of the program.

PLANNING CONTEXT

The Township of Scugog is a vibrant community of approximately 21,600 people located north-east of Toronto surrounding Lake Scugog. The Township is characterized by a vast rural landscape of agricultural lands, natural environmental features, and historic settlement areas. Port Perry, the largest urban centre in Scugog with a resident population of about 9,450 people,

is the commercial core of the municipality and features one of Ontario's Top 10 Historic Downtowns according to the Ontario Report on Business.

The population of Scugog is projected to increase to 25,390 people by 2031 with growth directed primarily to the Port Perry Urban Area and the Township's rural hamlets. Reaching this forecast will require an integrated transportation system capable of safely, efficiently, and sustainably moving people and goods to, from and within the municipality.

The existing transportation network serving the Township includes provincial, regional, and local roads, sidewalks and trails, and transit service provided by Durham Region Transit and GO Transit. Although some elements of an active transportation network are present, they are limited and scattered throughout the Township. Increased connectivity in the transportation system (including trails, sidewalks, and on-street bicycle infrastructure) within and between settlement areas is needed to encourage higher levels of active travel.

The first step in developing the plans was to understand the current state of the Township. Existing conditions were reviewed to determine the current transportation-related challenges and opportunities. This review included an assessment of the natural, cultural heritage, and socioeconomic environments, the community structure, land uses, population and employment, travel behaviours and patterns, and the transportation network infrastructure.

The AT and TMP are based on the land use and transportation planning policy context defined by the Township of Scugog, Durham Region, Province of Ontario, and other public agencies. The **Policy Context** set out in **Appendix B** details the myriad municipal and provincial plans and policies that have informed the plans, highlighting relevant directives, regulations, and initiatives contained in each document.

VISION, GOALS AND OBJECTIVES

Building on the foundation provided by the Township Official Plan, the transportation vision was shaped by input received from key stakeholders, interest groups and Township Council and staff through the engagement program carried out for the study. The problem and opportunities statement also helped inform the statement, which reads as follows:

A transportation system that focuses on enhancing mobility in the Township through active transportation, ensuring the safe, efficient, and sustainable movement of people and goods, to 2031 and beyond.

The transportation vision is supported by goals encouraging mobility options, economic development and tourism, complete communities, and environmental and financial sustainability, and will be achieved through the following objectives:

- Build on existing initiatives;
- Create a connected network;
- Design for all ages and abilities;
- Develop a phasing strategy; and
- Establish policies and practices.

ALTERNATIVE PLANNING STRATEGIES

Phase 2 of the MCEA process requires examination of all reasonable alternatives to address the problems and opportunities and achieve the transportation vision. The alternative planning strategies are defined as follows:

Alternative 1: "Do Nothing"

- This alternative assumes no new investment in the transportation network to the 2031 horizon year to increase capacity - only ongoing maintenance works.

Alternative 2: "Roads Only"

- This alternative relies solely on the road programs recommended in the Township Capital Budget and 2019 Development Charges Background Study to meet future transportation needs.

Alternative 3: "Multi-Modal"

- This alternative relies on the road works identified in Alternative 2 plus investments in the active transportation network to meet future transportation needs.

A multiple account evaluation (MAE) framework was developed to compare the three alternatives and select the preferred strategy based on evaluation criteria related to transportation, natural, social and policy environments, and economic implications. The analysis of the alternatives based on the MAE framework led to the selection of Alternative 3 – "Multi-Modal" as the preferred planning strategy for the AT and TMP. Advancing both road and active transportation initiatives enhances mobility options while still ensuring safe and efficient vehicle travel in the Township. The alternative supports and is consistent with the rural and urban character of Scugog and offers the most promising effects on the transportation system, including reduced greenhouse gas (GHG) emissions.

ACTIVE TRANSPORTATION STRATEGY

Active transportation can help reduce automobile dependence, increase physical activity levels, improve public health, reduce infrastructure demands, and create more livable and vibrant communities. Many Canadian jurisdictions have recognized the positive impact of providing attractive options for active travel and developed strategies to guide future infrastructure investments and program delivery supportive of these objectives.

The recommended active transportation strategy details the pedestrian and cycling network development, provides guidelines for cycling facility design, bicycle parking, and end of trip amenities, and outlines community outreach programs to encourage walking and cycling.

The network development process builds on known plans and recognized guidelines for active transportation implementation. Ground-truthing and knowledge gathered from input provided by Township staff, local stakeholders, and the public, helped to refine the network, shape key outcomes, and provide guidance on design and application of pedestrian and cycling facilities in Scugog.

Map ES.1 and **Map ES.2** illustrate the proposed pedestrian networks for the Port Perry Urban Area and the Township's hamlets, respectively, comprised of sidewalk, multi-use path (MUP), trail, and boardwalk facilities. **Map ES.3** and **Map ES.4** illustrate the proposed cycling networks for the rural area and the Port Perry Urban Area, respectively, which include MUPs, bike lanes, "urban" and paved shoulders, and signed on-road routes. Building on the existing grid of Township roads and active transportation facilities and leveraging planned initiatives by Durham Region and the Ministry of Transportation, the future networks provide a permeable and connected system of routes facilitating travel throughout the municipality. Opportunities to travel beyond the Township's boundaries are also enabled by the network plans.

Combined with Durham Region and Ministry of Transportation initiatives, the AT and TMP provides for nearly 268 km in additional active transportation routes in the Township.

ROADS STRATEGY

Township residents and businesses depend on a safe, efficient, and reliable road network to facilitate the movement of goods and services, emergency responders, people using public transit, vehicles, taxis, bicycles, and active modes. Roads serve two primary functions, providing *travel mobility* and *access to property*. Streets also play an important role in *placemaking* within a community and are critical to local *economic vitality and competitiveness*.

The recommended roads strategy details the policies, programs, and infrastructure investments planned for the road system to address current and future needs. The plans focus

primarily on roads under the Township's jurisdiction and complements the active transportation strategy forming part of the overall multi-modal transportation plan for Scugog. Specific guidance is provided regarding road network hierarchy and functional classification of the Township's roads, two specific corridors, traffic safety, and parking.

The plans recommend applying Complete Street principles in the planning, design, and construction of all streets within the municipality, with the following six goals:

- Goal 1. Connected Street Network
- Goal 2. Safe and Accessible Infrastructure
- Goal 3. Contextual to Surroundings
- Goal 4. Balanced Movement Corridors
- Goal 5. Great People Places
- Goal 6. Sustainable

TRANSIT AND FUTURE MOBILITY

The Township's transportation vision is supported by a series of goals, one being the provision of **Mobility Options** – *A transportation system that offers a variety of efficient, effective, affordable, and accessible mobility choices for travel and goods movement to maximize capacity and encourage public transit, cycling, rolling, and walking*.

Consistent with this direction, the plans outline other available and emerging travel options in Scugog and how the Township can position the municipality to be ready for and (hopefully) benefit from the transformational and disruptive shift in mobility services coming. The actions recommended for transit and future mobility are intended to support and integrate with the other strategies with the aim of a more multi-modal transportation system to serve the community. Specific direction is provided on transit, shared mobility, and automated, connected, and electric vehicles.

IMPLEMENTATION

Successful implementation of the AT and TMP will ultimately depend on the cooperation and active participation of many stakeholders, including Durham Region, the provincial government, conservation authorities, other public agencies, the business and development community, and local citizens. The plans provide a framework for collaboration between stakeholders and will be relied upon to guide the Township's future transportation decisions and actions.

The plans describe the process and tools to implement the active transportation strategy and roads strategy and the recommended transit and future mobility actions. Proposed infrastructure and program investments are incorporated into an action plan that prioritizes the capital projects into two horizons (short and long-term) based on anticipated implementation timing. High-level phasing and cost estimates are also provided, as appropriate. The plans include advice on potential amendments to the Township Official Plan and guidance on potential funding sources and network maintenance.

Table ES.1 summarizes the total estimated cost for the active transportation initiatives and complementary programs pertaining to end of trip facilities, wayfinding signs, outreach initiatives, and monitoring. Overall, the proposed investment totals approximately:

- $1,205,800 in the short-term (0 to 5 years); and
- $12,010,100 in the long-term (beyond 5 years).

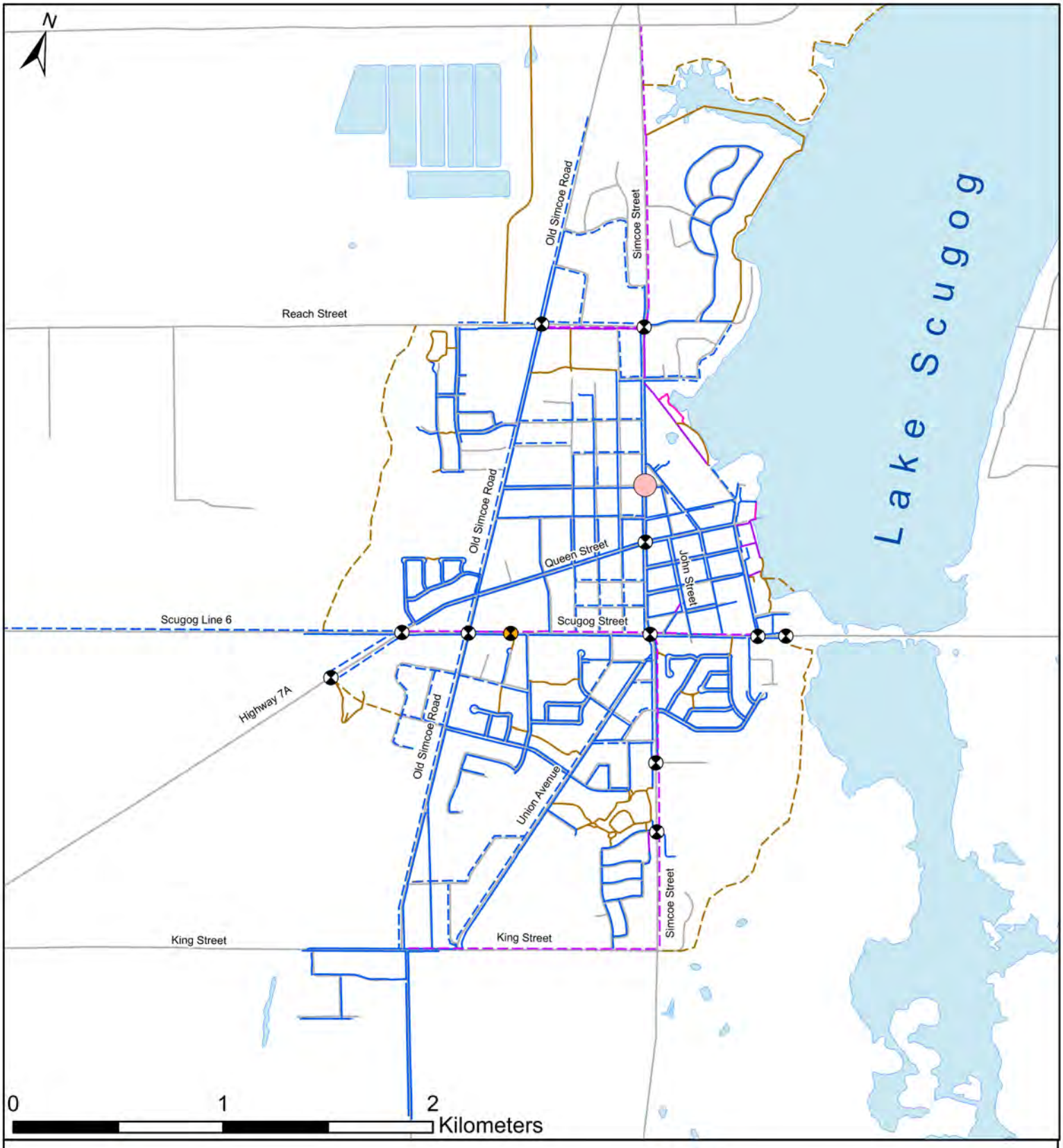
An additional $5,690,000 is identified for road network expansion projects comprising three intersection improvements and the proposed Second Island Access. The road program cost is based on estimates completed for the Township 2019 Development Charges Background Study – Engineering Service Category Analysis. Typical, ongoing maintenance and rehabilitation costs are not included in this amount.

The plans recommend developing an ongoing monitoring program and completing reviews of the AT and TMP every five years to determine the need for a detailed formal update in the future. Monitoring will also provide an indication of the necessity for an update.

TABLE ES.1: ESTIMATED COSTS FOR ACTIVE TRANSPORTATION FACILITIES AND PROGRAMS

Initiative	Indicative Cost		
	Short (0-5)	Long (5+)	TOTAL
Pedestrian Network			
Port Perry Urban Area	$280,300	$3,951,500	$4,231,800
Hamlets	$0	$546,600	$546,600
Sub-Total	**$280,300**	**$4,498,100**	**$4,778,400**
Cycling Network			
Port Perry Urban Area	$574,500	$6,386,000	$6,960,500
Rural Area	$201,000	$976,000	$1,177,000
Sub-Total	**$775,500**	**$7,362,000**	**$8,137,500**
Amenities and Programs			
End of Trip Facilities ($5,000 per year)[1]	$25,000	$25,000	$50,000
Wayfinding Signs ($5,000 per year)[1]	$25,000	$25,000	$50,000
Outreach Initiatives ($15,000 per year)[1]	$75,000	$75,000	$150,000
Monitoring Program ($5,000 per year)[1]	$25,000	$25,000	$50,000
Sub-Total	**$150,000**	**$150,000**	**$300,000**
GRAND TOTAL	**$1,205,800**	**$12,010,100**	**$13,215,900**

Note: 1. Assumes five-year program



TOWNSHIP OF Scugog

Legend

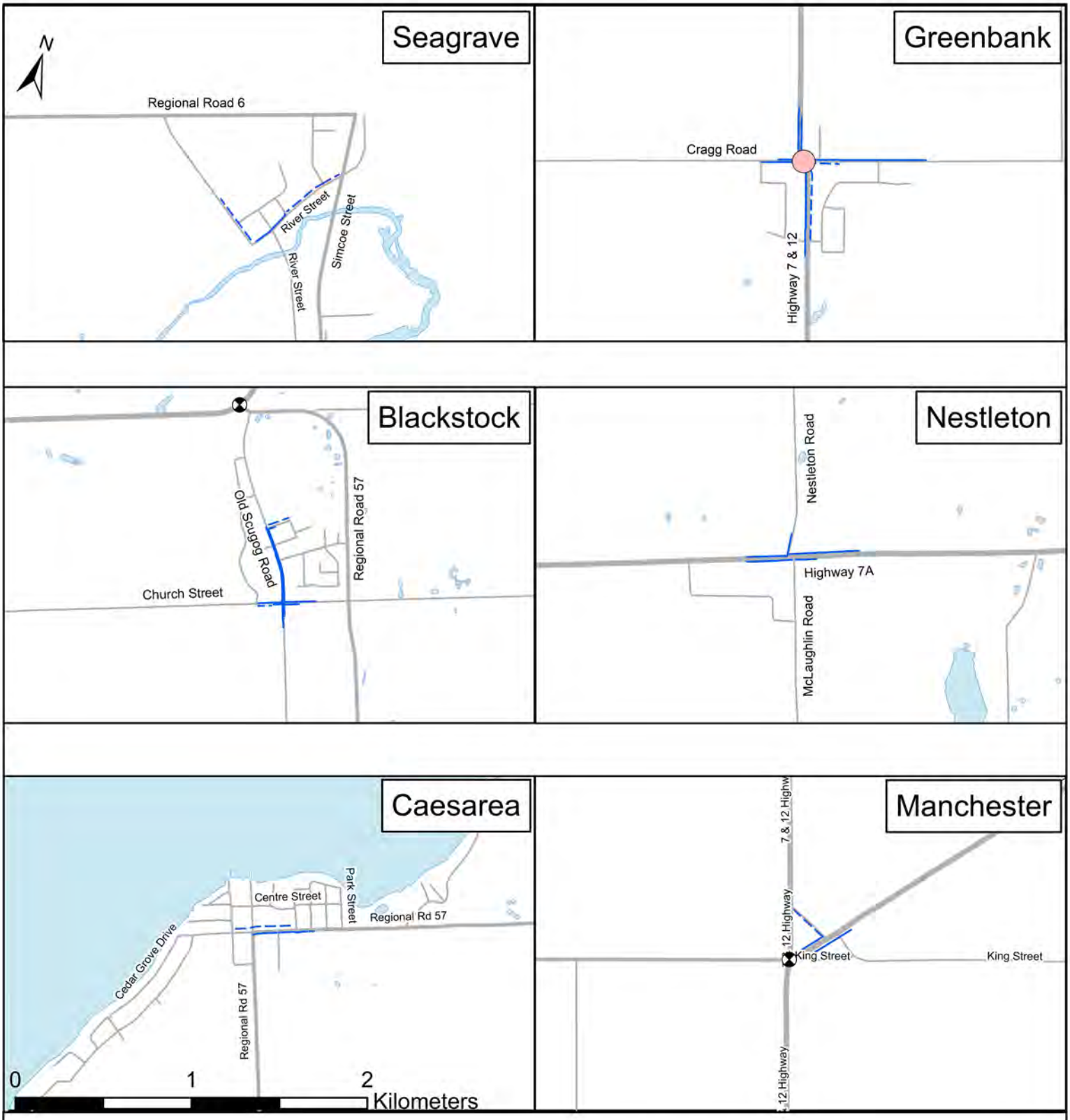
Existing Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Boardwalk

Proposed Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Pedestrian Crossover

Existing Signal
- Intersection Pedestrian Signal
- Traffic Control Signal

Map ES.1

Proposed Pedestrian Network
Port Perry Urban Area



Legend

Existing Signal

Traffic Signal Control

Existing Facility Type

Sidewalk

Proposed Facility Type

Sidewalk

Pedestrian Crossover

Road Network

Municipal

Regional

Provincial

TOWNSHIP OF Scugog

Map ES.2

Proposed Pedestrian Network
Hamlets

TOWNSHIP OF Scugog

Map ES.3

Proposed Cycling Network

Legend

Existing Facility Type
- Bike Lane
- Paved Shoulder
- Trail (Unpaved)

Proposed Facility Type
- Signed On-Road
- Signed On-Road Greenbelt Route
- Paved Shoulder
- Trail (Unpaved)

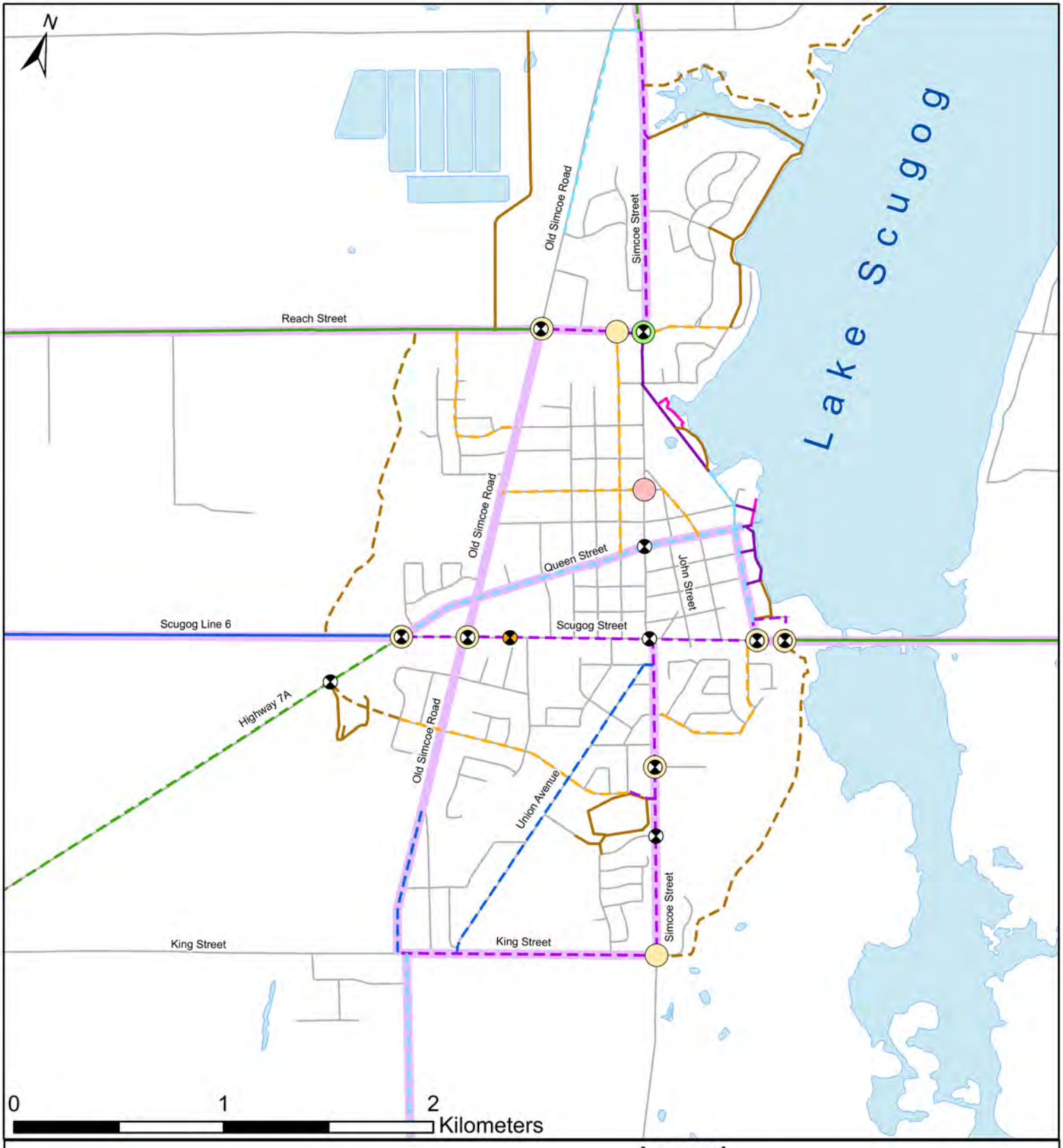
Regional Primary Cycling Network

Road Network
- Municipal
- Regional
- Provincial

Features
- Scugog Boundary
- East Cross Forest
- Municipal Boundaries

N

Saintfield Road
Trans Canada Trail
Scugog Line 12
Cragg Road
Regional Highway 47
Simcoe Street
Island Road
Regional Road 57
Scugog Line 8
Township of Uxbridge
Reach Street
SEE MAP ES.4
Lake Scugog
Nestleton Road
Malcolm Road
City of Kawartha Lakes
Scugog Line 6
Scugog Street
Highway 7A
McLaughlin Road
Marsh Hill Road
Goodwood Road
King Street
Edgerton Road
Highway 7&12
Old Simcoe Road
Old Scugog Road
Regional Road 57
Cartwright East Quarter Line
Devitts Road
Scugog Line 2
Shirley Road
Mountjoy Road
Fowler Road
0 3 6 Kilometers
Town of Whitby
City of Oshawa
Municipality of Clarington



Legend

Existing Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Bike Lane
- Paved Shoulder
- Boardwalk
- Crossride

Proposed Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Bike Lane
- Paved Shoulder
- Bicycle Priority Street
- Signed On-Road
- Crossride
- Pedestrian Crossover

- Regional Primary Cycling Network

Existing Signal
- Intersection Pedestrian Signal
- Traffic Control Signal

TOWNSHIP OF Scugog

Map ES.4

Proposed Cycling Network
Port Perry Urban Area

SUMMARY OF RECOMMENDATIONS

The following table summarizes the 55 recommended actions contained in the AT and TMP:

#	Recommendation
Active Transportation Strategy (Chapter 4)	
4.1	Adopt and implement the proposed pedestrian networks illustrated on **Map 7 (ES.1)** and **Map 8 (ES.2)**.
4.2	Adopt and apply the Sidewalk Prioritization Policy provided in **Appendix C** and maintain a consistent schedule of assessing sidewalks for needed improvements.
4.3	Adopt and implement the proposed cycling networks illustrated on **Map 9 (ES.3)** and **Map 10 (ES.4)**.
4.4	Collaborate with Durham Region and the Ministry of Transportation to implement the proposed cycling facilities on roads under their respective jurisdictions.
4.5	Continue to develop the shoreline trail around Lake Scugog as opportunities are presented.
4.6	Adopt and apply the guidelines specified in Ontario Traffic Manual Book 18, summarized in part in **Table 4.7** and **Table 4.8**, for the design and installation of linear cycling facilities.
4.7	Install crossrides to aid cyclists in crossing roads at locations meeting the criteria specified in Ontario Traffic Manual Book 18.
4.8	Adopt and apply the guidelines specified in Ontario Traffic Manual Book 18 and the TAC *Bikeway Traffic Control Guidelines for Canada*, summarized in part in **Table 4.7** and **Table 4.8**, for the installation of cycling facility signage and pavement markings.
4.9	Expand and inventory the supply of publicly available bicycle parking in Port Perry.
4.10	Encourage property owners to provide short and long-term bicycle parking on site.
4.11	Develop and implement guidelines for the provision and design of on-site bicycle parking in consultation with Durham Region, with implementation primarily through the development approval process.
4.12	Expand and inventory the supply of publicly available end-of-trip amenities, particularly bicycle repair stations, available in Port Perry.
4.13	Develop and implement guidelines for the provision of end-of-trip amenities in consultation with Durham Region, with implementation primarily through the development approval process.
4.14	Develop and implement a wayfinding plan for the cycling and pedestrian networks in consultation with Durham Region, leveraging the Township Tourism Wayfinding Plan.

#	Recommendation
4.15	Actively pursue a Bronze Bicycle Friendly Community designation from the Share the Road Cycling Coalition.
4.16	Develop and implement a robust Active Transportation Outreach and Support Strategy comprising the elements detailed in Section 4.8 in consultation with Durham Region.
Roads Strategy (Chapter 5)	
5.1	Apply the Complete Streets Implementation Process illustrated in **5.1** in the planning and design of Township roads.
5.2	Update the Township Design Criteria and Standard Detail Drawings to reflect Complete Streets principles.
5.3	Redesignate Old Simcoe Road between Simcoe Street and Scugog Line 8 from a Collector/Local road to a Type C Arterial road in the Township of Scugog Official Plan.
5.4	Implement the proposed intersection works listed in **Table 5.1**.
5.5	Complete the Second Island Access Class EA Update and Detailed Design and proceed with implementation within the timeframe of this plan.
5.6	Conduct a corridor operation and design study for Queen Street.
5.7	Adopt and apply the Traffic Calming Implementation Protocol provided in **Appendix C**.
5.8	Apply the All-Way Stop Warrant Policy.
5.9	Develop and post public education and communication material pertaining to neighbourhood traffic management, traffic control devices, warrants, and frequently asked questions on the Township's website.
5.10	Apply the Establishing Speed Limits on Township Roads Policy.
5.11	Adopt and apply the pedestrian crossing Treatment System Selection process specified in Ontario Traffic Manual Book 15.
5.12	Consider the installation of School Zones and Community Safety Zones on a site-specific basis having regard for the guidance specified.
5.13	Adopt and apply the Roundabout Feasibility Policy provided in **Appendix C**.
5.14	Consider safety explicitly in responding to requests for parking restriction changes.
5.15	Consider amendments to the Township Zoning By-law parking requirements pertaining to bicycles, shared parking, shared mobility, and automated, connected, and electric vehicle use.
5.16	Prepare a parking strategy for downtown Port Perry.
Transit and Future Mobility (Chapter 6)	
6.1	Advocate for the continuation and expansion of transit service to and within Scugog with Durham Region Transit and GO Transit/Metrolinx.

#	Recommendation
6.2	Facilitate and promote transit within the Township through actions such as supportive land use, active transportation connections, road works, and real-time transit information.
6.3	Develop a shared mobility strategy for the Township in collaboration with local stakeholders and potential partners.
6.4	Facilitate and promote shared mobility within the Township through the introduction or modification of by-laws, policies, and guidelines pertaining to the allocation of public rights-of-ways, development and zoning regulations, insurance and for-hire vehicle regulations, and taxation and fees.
6.5	Develop an action plan identifying the tasks required to prepare the Township for the introduction of automated, connected, and electric vehicles, which include changes to by-laws, policies, and guidelines pertaining to testing, infrastructure design, parking, curb management, traffic control, vehicles, and other items.
6.6	Pursuant to the action plan, permit the testing and deployment of automated and connected vehicles on Township roads.
6.7	As part of the action plan, develop an electric vehicle charging station program, beginning with installations at the Municipal Office, Scugog Community Recreation Centre, and Scugog Public Library, and on Queen Street in downtown Port Perry.
6.8	As part of the action plan, develop an automated, connected, and electric vehicle public education program.
Implementation (Chapter 7)	
7.1	Amend the Township of Scugog Official Plan to incorporate the proposed policy and schedule changes listed in **Table 7.1**.
7.2	Adopt the Durham Region Transportation Impact Study Guidelines and develop supplemental local guidance for the consideration of active travel modes and justification of parking variances.
7.3	Implement the recommended transportation infrastructure and policies through the land development (*Planning Act*) approval process where appropriate.
7.4	Adopt the recommended phasing plan specified in **Table 7.4** to guide the prioritization of pedestrian facility implementation and budget preparation.
7.5	Adopt the recommended phasing plan specified in **Table 7.5** and **Table 7.6** to guide the prioritization of cycling facility implementation and budget preparation.
7.6	Reassess the recommended phasing and funding of the proposed pedestrian and cycling facility projects annually, including exploring potential funding sources and other opportunities to implement the network.

#	Recommendation
7.7	Adopt the recommended phasing plan specified in **Table 7.9** to guide the prioritization of road network implementation and budget preparation.
7.8	Monitor provincial and federal programs for potential transportation funding opportunities.
7.9	Explore opportunities for regional, developer, private sector, and other alternative funding where appropriate to help finance implementation of the recommendations.
7.10	(Continue to) engage in a regular, ongoing maintenance program for the road and active transportation networks consistent with the Minimum Maintenance Standards for Municipal Highways unless specifically defined otherwise.
7.11	Identify a Priority Cycling Network for enhanced winter maintenance and allocate the necessary ongoing funding to perform the additional maintenance activities subject to budget approval.
7.12	Allocate the necessary ongoing funding to perform the additional maintenance activities resulting from expansion of the active transportation network subject to budget approval.
7.13	Prioritize maintenance on the routes identified in the proposed cycling networks shown on **Map 9 (ES.3)** and **Map 10 (ES.4)**.
7.14	Develop and implement an ongoing transportation monitoring program with defined performance measures and targets based on the framework provided in **Table 7.10**.
7.15	Review the Active Transportation and Transportation Master Plans every five years, ideally in conjunction with updates to the Township of Scugog Official Plan and Development Charges Background Study.

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MAPS

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1 ABOUT THIS PLAN

1.1 CONTEXT

Within Durham Region and part of the Greater Toronto Area (GTA), the Township of Scugog is a vibrant community of approximately 21,600 people surrounding Lake Scugog. The Township is characterized by a vast rural landscape of agricultural lands, natural environmental features, and historic settlement areas. Port Perry, the largest urban centre in Scugog with a resident population of about 9,450 people, is the commercial core of the municipality and features one of Ontario's Top 10 Historic Downtowns according to the Ontario Report on Business.

Figure 1.1 illustrates the location of the Township of Scugog and its context within Durham Region. The Mississaugas of Scugog Island First Nation is located adjacent to the Township and spans a portion of the territories covered by the Williams Treaties of 1923[1].

Located only 75 km from Toronto, businesses in Scugog enjoy convenient access to the largest consumer market in Canada and fourth largest region in North America. Over four million people live within a one-hour drive of the Township, making the community attractive for economic development. Key industries in Scugog include agriculture, tourism, and light manufacturing.

According to the Township of Scugog Official Plan, the population of the municipality is projected to grow to 25,390 people by the year 2031. Reaching this forecast will require an integrated transportation system capable of safely, efficiently, and sustainably moving people and goods to, from and within the municipality.

1.2 PURPOSE

The Township Official Plan encourages cycling and walking as sustainable, energy efficient, affordable, and accessible forms of travel and includes policies aimed at creating a transportation system that safely and efficiently accommodates active modes. With its highly desirable location, small town feel and idyllic lifestyle, the Township believes the opportunity exists to support and foster greater use of active transportation in and around the community.

[1] The Williams Treaties include traditional territories of seven First Nations, including the Chippewas of Beausoleil, Georgina Island and Rama and the Mississaugas of Alderville, Curve Lake, Hiawatha and Scugog Island.

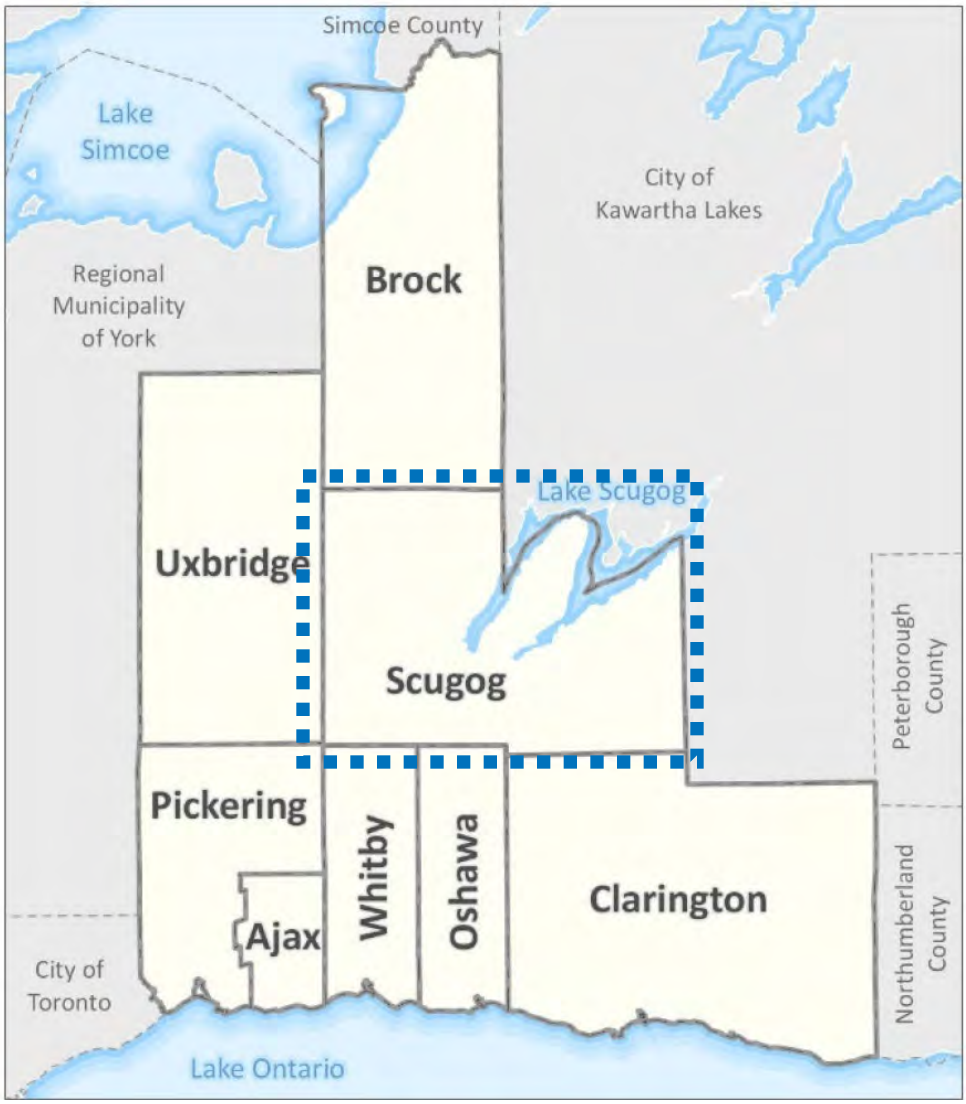


FIGURE 1.1: THE TOWNSHIP OF SCUGOG WITHIN DURHAM REGION

(Source: Environment and Greenland System Discussion Paper, September 2019, Durham Region Planning and Economic Development Department)

It is now becoming common for municipalities to integrate their active transportation strategies into broader Transportation Master Plans given the importance and necessity of addressing future mobility needs in a coordinated, comprehensive fashion. This approach is consistent with the goals of the Township Official Plan, which aims to "establish an integrated transportation system that safely and efficiently accommodates various modes of transportation".

Building on these directions, the Township has developed the Active Transportation and Transportation Master Plans (AT and TMP) outlining the immediate and longer-term strategies to improve the attractiveness and safety of walking and cycling in Scugog, with a focus on the Port Perry Urban Area. The plans also define actions to strengthen and support the other elements of the transportation system serving the municipality, particularly the Township's road network. Maintaining the high quality of life residents currently enjoy, safeguarding the environment, preserving the historic character of the community, and facilitating continued economic growth and prosperity are priorities of the plans.

1.3 SCOPE AND OBJECTIVES

The AT and TMP recommend facility improvements and supporting policies and programs to meet transportation needs in the Township of Scugog to the year 2031 (and beyond). The objectives of the plans are to:

- Articulate a "Made in Scugog" approach to transportation that aligns with the unique features of the community, fulfils the vision stated in the Township Strategic Plan, and prioritizes travel by active modes;
- Establish a clear vision for the transportation network that will accommodate planned growth and development within the Township;
- Provide individuals a broader range of safe and accessible travel options, which help to support social equity, public health, compact development, liveability (including age-friendly communities) and the environment;
- Leverage the Township's prior investments and initiatives in transportation, with a focus on increasing opportunities for residents and visitors to walk and cycle to work, live and play;
- Improve public access and circulation within the Port Perry Urban Area (downtown area and employment lands) and the rural hamlets, and to the Township's vital natural environmental features – the Oak Ridges Moraine and the Lake Scugog shoreline; and
- Support economic development in the Township in part through reliable and efficient goods movements.

By providing direction and next steps for planning, building, and maintaining the Township's transportation network, the AT and TMP serve as a "blueprint" for action by Township Council, with implementation aided through several tools, including:

- **Development Charges By-laws and Annual Budgets** – These documents will identify the necessary financial resources to implement the recommended programs and infrastructure improvements identified in the AT and TMP;
- **Land Use Planning Process** – Elements of the AT and TMP will be incorporated into the Township Official Plan by amendment to ensure implementation through policy direction and the review and approval of development applications;
- **Environmental Assessments** – The Township must complete the Municipal Class EA planning and design process initiated through the AT and TMP to move forward with the implementation of certain infrastructure improvements identified in the plans. This is necessary to satisfy provincial and federal statutory requirements; and
- **Guideline Documents** – Guidelines, such as those setting design specifications and recommended operating and maintenance procedures, will provide further implementation detail and complement the AT and TMP.

It is important to recognize that certain assumptions underlying the AT and TMP may prove imprecise over time due to changing conditions and will need to be periodically updated. Ideally, this assessment would be linked to the five-year review of the Township Official Plan per the *Planning Act*.

Successful implementation of the AT and TMP will ultimately depend on the cooperation and active participation of many stakeholders, including Durham Region, the provincial government, conservation authorities, other public agencies, the business and development community, and local citizens. The plans provide a framework for collaboration between stakeholders and will be relied upon to guide the Township's future transportation decisions and actions.

1.4 MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

The work undertaken in preparing the AT and TMP followed the Municipal Class Environmental Assessment (MCEA)[2], an approved process under the *Environmental Assessment Act* for the planning of municipal infrastructure projects in Ontario. The study incorporated the key principles of successful environmental assessment planning, which include:

- Consulting with affected parties early, often and throughout the study;
- Considering a reasonable range of alternatives;

[2] Municipal Engineers Association. *Municipal Class Environmental Assessment (Class EA).* October 2000, last amended in 2015.

- Identifying and considering the effects of each alternative on all aspects of the environment;
- Evaluating the alternatives systematically to determine their net environmental effects; and
- Providing clear, complete, and traceable documentation of the planning process.

The AT and TMP study followed master planning **Approach #1** of the MCEA, with preparation of this document at the conclusion of Phases 1 and 2 of the Planning and Design Process being:

- Identifying the problem or opportunity (Phase 1); and
- Identifying alternative solutions to address the problem or opportunity (taking into consideration the existing environment) and establishing the preferred solution (taking into consideration public and review agency input) (Phase 2).

Consistent with this approach, the AT and TMP were completed at a broad level of assessment, allowing the plans to serve as the basis for more detailed future investigations if required.

1.5 STUDY PROCESS

The AT and TMP study comprised three phases:

Foundation Building (May to September 2019)

- This phase summarized existing conditions and established the vision and objectives of the AT and TMP and the active transportation network route selection criteria. The first phase culminated with the initial round of public and stakeholder engagement.

Plan Formulation (August to December 2019)

- This phase involved the technical tasks of alternative planning solution assessment, gap analysis, network review, policy formulation, network design and guideline/standard development.

Strategy Confirmation (January 2020 to April 2021)

- This phase included development of the AT and TMP by assembling the recommended elements together into a cohesive and comprehensive transportation strategy for the Township. The second round of public and stakeholder engagement was completed during this phase.

1.6 REPORT ORGANIZATION

The remainder of this report is organized into six chapters:

- **Chapter 2 – Stakeholder Engagement** summarizes the engagement activities carried out in developing the AT and TMP with details of the program content, communication methods and feedback received;
- **Chapter 3 – Foundations** describes the policy context for the AT and TMP, the natural, cultural, and socio-economic environments and transportation system in place at the time of preparing the plans, the outlook for the municipality, the alternative planning solutions considered to address identified problems and opportunities, and the Township's transportation vision and objectives;

- **Chapter 4 – Active Transportation Strategy** presents the proposed cycling and pedestrian networks and supporting policies, guidelines, and end-of-trip facilities, with a description of the process followed to develop this component of the plans;
- **Chapter 5 – Roads Strategy** provides the vehicle travel forecasts and the road network strategy to meet future transportation needs;
- **Chapter 6 – Transit and Future Mobility** outlines other available and emerging travel options in the Township, including public transit, shared mobility, and automated, connected, and electric vehicles; and
- **Chapter 7 – Implementation** explains the process and tools for implementing the AT and TMP, provides phasing, costing, and potential financing for the recommended improvement program, highlights operating and maintenance considerations, and proposes monitoring strategies and a process of continual review and updates to the plans.

The report also includes a series of **appendices** containing the details of the Stakeholder Engagement Program, the research and technical analysis completed in preparing the plans, and the supporting policies and procedures created (or updated).

2 STAKEHOLDER ENGAGEMENT

2.1 PROGRAM OVERVIEW

Consultation is a core component of the MCEA process and vital element of a master planning study. The **Engagement Program** for the project offered the public, review agencies, other municipalities and First Nations and Aboriginal Peoples a variety of opportunities to learn about the AT and TMP and provide input into the development of the long-range transportation strategy for Scugog. Through the study, the Township was able to inform and educate interested parties about local transportation opportunities and challenges, especially pertaining to active travel mode use. Promoting the environmental, health, equity, and sustainability benefits of walking, cycling, and rolling was a fundamental goal of the study.

The Engagement Program featured a wide range of consultation, outreach, and communication initiatives to involve a broad spectrum of participants. Designed to satisfy MCEA requirements pertaining to future infrastructure projects, the program focused on the following key messages:

- The Township is planning for growth in population and employment within the community;
- The Township wants to provide users with a range of safe, efficient, and accessible mobility choices, with an emphasis on promoting active travel; and
- Involving residents, businesses, agencies, and other stakeholders throughout the study would ensure the final plan is pragmatic and meets community needs now and into the future.

Appendix A contains the **Engagement Summary Report**, which provides a detailed synopsis of the consultation approach, outreach methods, engaged stakeholders, and program milestones, as well as supporting documentation with the feedback received.

2.2 NOTICES OF STUDY INITIATION AND COMPLETION

The AT and TMP study formally launched on July 11, 2019[3], with the Notice of Study Commencement published on the Township website[4] and sent to impacted regulatory

[3] A pop-up event and online engagement occurred prior to July 11, 2019 but was not considered the formal launch of the project.

[4] For the online notice, visit: https://www.scugog.ca/en/township-office/resources/Documents/PWP/Scugog-ATP-TMP---Notice-of-Commencement-2019-07-09---FINAL.PDF

agencies, known members of the public and relevant First Nations representatives per the MCEA. The Project Contact List generated for the distribution of notices was maintained throughout the study.

The Township issued the Notice of Completion on July 8, 2021 signifying conclusion of the study per the MCEA.

2.3 ONLINE ENGAGEMENT

The following online engagement methods were used to enhance the reach and value of stakeholder engagement in the AT and TMP study:

- The **project webpage** on the Township website [5] served as the primary communication portal for the study. The webpage contained all project-related information including engagement materials and pertinent study reports and background documents. Links to the online survey and interactive map were also provided.

- **Email addresses** were provided on the project webpage and in all communication materials for people to contact the team on topics of interest or inquiries about the study.

- **Social media posts** were issued at key junctions in the study to publicize upcoming engagement events, provide information about the study, and improve general awareness about transportation issues in Scugog. Existing Township communication channels (e.g., Twitter, Facebook) were leveraged to reach established followers.

- An **online survey** hosted on SurveyMonkey at study commencement invited input on current transportation conditions, concerns, needs and expectations in the Township. Barriers and motivators to the use of active transportation facilities and services were also explored.

- An **interactive map** hosted on Social Pinpoint allowed respondents to offer location-specific feedback on the transportation system serving the Township. Comments were grouped into four themes (active transportation, roads, general, and ideas and suggestions).

[5] For the project website, visit: https://www.scugog.ca/en/township-office/active-transportation-plan-and-transportation-master-plan.aspx

Key messages communicated through the online survey and interactive map included:

- The community supports an improved active transportation network;
- More residents and visitors would walk/roll to their destinations if sidewalk connectivity were improved;
- Several gaps in the sidewalk network exist and need to be addressed;
- Certain conditions (e.g., proximity to high volume, high speed roadways, surface cracking, narrow width, etc.) prevent or make individuals uncomfortable using the sidewalks;
- Increasing the amount and quality of cycling infrastructure will encourage residents and visitors to cycle more often;
- The multi-use trail along the shore of Lake Scugog should be extended to the north;
- More pedestrian crossing opportunities are needed along Simcoe Street (Regional Road 2);
- Another vehicular and/or active transportation access is needed to/from Scugog Island;
- Road surface conditions need improvement; and
- Increased frequency and coverage of transit services are needed.

2.4 TECHNICAL ADVISORY COMMITTEE MEETINGS

The Township formed a Technical Advisory Committee (TAC) to provide direction and advice of the project. Members of the TAC included Township Councillors, local cycling groups, and Accessibility Advisory Committee representatives.

The TAC met twice during the study. At the first meeting, the TAC provided feedback on the goals, objectives, vision, and draft cycling network, and offered input on the Township's active transportation strengths and opportunities. The second meeting focussed on discussion of the recommended directions for the AT and TMP.

2.5 POP-UP SESSIONS

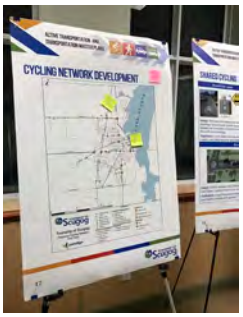
Two pop-up sessions were conducted early in the study to provide individuals an in-person opportunity to share their experiences and concerns with moving around Scugog. Each session featured a series of display boards providing an overview of the study, the project webpage address, a QR code to access the online survey and interactive map, and maps of the municipality. Combined, approximately 130 individuals were reached through the pop-up sessions.

Key themes from the pop-up events included:

- Road surface conditions within the Township need improving
- Events along the main streets of Port Perry cause a lot of congestion and noise;
- The Port Perry waterfront pathway could be better maintained (e.g., weeds and fishing waste);
- Many residents were impacted by the reductions in GO bus service;
- More bike racks are needed in downtown Port Perry;
- More crossing opportunities are needed on Simcoe Street (Regional Road 2) between Queen Street and Reach Street;
- A cyclist/pedestrian connection is needed from Port Perry to the island;
- Several gaps exist in the sidewalk network in areas with higher pedestrian volumes and/or vulnerable road users (e.g., near senior's homes and schools); and
- More pedestrian and cyclist amenities are needed (e.g., garbage/recycling bins and water fountains) within Port Perry.

2.6 PUBLIC INFORMATION CENTRE

A Public Information Centre (PIC) was held in November 2019 to present the recommended directions for the AT and TMP. The policies, programs and infrastructure investments for walking, cycling and roads presented at the meeting formed the basis for the plans.



The following themes were noted from the comments/questions received from attendees:

- Existing pedestrian and cycling network gaps are a major barrier to active transportation use and a safety issue;
- The complexity and layout of the Highway 7A/Scugog Street, Queen Street and Scugog Line 6 intersection poses challenges to pedestrian and cyclist travel and overall safety;
- The Township should consider micromobility options such as electric scooters and bike share in Port Perry;
- Signage is required in urban areas (i.e., Port Perry) to denote cycling routes and guide cyclists through the community safely;
- The Township should consider speed limit reductions to 40 km/h on local roads, especially near large pedestrian and cyclist generators such as schools, community centres and the hospital; and
- Due to high traffic volumes, an alternative to Simcoe Street is required for north-south cycling in the Township. While Old Simcoe Road is a good option, increasing traffic volumes and speeds impact safety for cyclists. The Township should consider traffic calming measures to make Old Simcoe Road more cycling friendly.

2.7 REVIEW PERIOD

The proposed AT and TMP was released for comment prior to Township Council considering the plans for approval. Regulatory agencies, known members of the public, and First Nations representatives on the Project Contact List were informed of the review period by email and mail. Notice was also posted on the Township's website.

3 FOUNDATIONS

3.1 POLICY CONTEXT

The AT and TMP are based on the land use and transportation planning policy context defined by the Township of Scugog, Durham Region, Province of Ontario, and other public agencies. **Figure 3.1** shows the myriad municipal and provincial plans and policies that have informed the AT and TMP. **Appendix B** details the **Policy Context** for the plans, summarizing the relevant directives and initiatives set out in each document.

Province of Ontario	Durham Region	Township of Scugog
• Provincial Policy Statement • *Places to Grow Act, 2005* and Growth Plan for the Greater Golden Horseshoe • Oak Ridges Moraine Conservation Plan • Greenbelt Plan • *Accessibility for Ontarians with Disabilities Act* • Metrolinx 2041 Regional Transportation Plan • Ministry of Transportation Transit Supportive Guidelines • #CycleON: Ontario's Cycling Strategy • Ontario Trails Strategy	• Durham Regional Official Plan • Durham Region Strategic Plan • Durham Region Transportation Master Plan • Durham Regional Cycling Plan • Durham Vision Zero – Strategic Road and Safety Action Plan	• Strategic Plan • Official Plan • Zoning By-law • 2019 Development Charges Background Study and By-law • Tourism Wayfinding Plan • Downtown Port Perry Heritage Conservation District Plan • Parks, Recreation and Culture Strategic Master Plan • Lake Scugog Environmental Management Plan • Lake Scugog Enhancement Class Environmental Assessment

FIGURE 3.1: POLICY FRAMEWORK

3.1.1 DURHAM REGIONAL CYCLING PLAN UPDATE

At the time of preparing the AT and TMP, Durham Region was undertaking an update to the Regional Cycling Plan. Completing these studies concurrently provided an opportunity to align the cycling networks and supporting policies and strategies of the two plans.

The proposed Regional Cycling Plan Update recognizes successful implementation will depend on strong, active partnerships with the many stakeholders with ties to cycling in Durham Region, especially the area municipalities. **Table 3.1** summarizes how the role envisioned for municipalities in supporting implementation of the different regional plan elements aligns with the cycling components of the Township's active transportation plan. In many cases, the AT and TMP further details the guidance outlined in the regional strategy as it applies to the Township.

The proposed Regional Cycling Plan Update was not approved by Regional Council at the time of completing the AT and TMP and is still subject to change.

3.2 EXISTING ENVIRONMENT

3.2.1 GEOGRAPHIC SETTING

As **Figure 1.1** shows, the Township of Scugog is bordered by the Township of Uxbridge to the west, Township of Brock to the north, City of Kawartha Lakes to the east and the Town of Whitby, City of Oshawa, and Municipality of Clarington to the south. The AT and TMP cover the entire Township, with greater detail provided for the Port Perry Urban Area given its importance as the commercial centre of the municipality.

3.2.2 NATURAL ENVIRONMENT

The social, environmental, and economic health and well-being of a community is directly linked to and influenced by the quality of its natural environment.

The Township benefits from a wide range of natural heritage features, including environmentally significant areas, woodlands, wetlands, valley and stream corridors, and wildlife habitats. These features are preserved and protected through numerous policies and regulations, including the Oak Ridges Moraine Conservation Plan, Greenbelt Plan, Durham Regional Official Plan, Township Official Plan, and other natural heritage plans and sub-watershed studies. The goal of these framework documents is to provide long-term and sustainable environmental, economic, and social benefits for the community.

TABLE 3.1: ALIGNMENT WITH PROPOSED DURHAM REGIONAL CYCLING PLAN UPDATE

Regional Cycling Plan Element	Typical Area Municipal Role	How AT and TMP Aligns
Primary Cycling Network (Chapter 2)	• Ownership over local roadways where Primary Cycling Network facilities are proposed • Provide localized understandings of cycling demand to inform the Primary Cycling Network design	• Incorporates all elements of the Primary Cycling Network into the Township network and bolsters with local routes (Section 4.3)
Bicycle Parking Strategy (Section 4.1)	• Provide insight and expertise about local priorities and needs.	• Provides guidance pertaining to the supply and design of bicycle parking including a recommendation to develop guidelines (Section 4.5)
Signage and Wayfinding Strategy (Section 4.2)	• Identify local demand and need for wayfinding signage • Implement wayfinding signage on local roads and property under their direct ownership	• Provides guidance pertaining to signage and wayfinding including a recommendation to develop a wayfinding plan (Section 4.7)
Education and Encouragement Strategy (Section 4.3)	• Organize events and initiatives tailored to the needs and aspirations of their local communities	• Emphasizes the importance of education and encouragement including a recommendation to develop an Active Transportation Outreach and Support Strategy (Section 4.8)
Bicycle Maintenance Strategy (Section 4.4)	• Inform understandings of local bicycle maintenance needs • Responsible for the routine maintenance of local roads.	• Provides direction for regular, ongoing maintenance including a recommendation to identify a Priority Cycling Network for winter maintenance (Section 7.5)
Implementation Strategy (Section 3.2)	• Coordinate the construction of Primary Cycling Network routes with the area municipalities and coordinate programming and messaging on a Regional scale.	• Provides a strategy for implementing the cycling network including a recommendation to adopt a proposed phasing plan (Sections 7.2 and 7.3)
Financial Strategy (Section 3.1)	• Establish cost-sharing agreements for both maintenance and implementation of cycling facilities, to minimize financial barriers and ensure the financial sustainability of all proposed Regional Cycling Plan Update actions.	• Provides cost estimates and potential funding sources including a recommendation to monitor government programs and explore opportunities with partners such as Durham Region (Sections 7.3 and 7.4)

Figure 3.2 illustrates the rural area land use designations in the Township Official Plan (Schedule A) (areas highlighted in pink are lands deferred in the plan). The plan defines a connected network of Environmental Significant Areas, Significant Wetland Areas, Significant Forest Areas, Greenbelt Natural Heritage System, and Oak Ridges Moraine System, as **Figure 3.3** depicts (Schedule E). These natural features are preserved and protected through numerous policies and regulations. For any project-specific environmental assessments completed for future Schedule B/C projects, the Project File Report/Environmental Study will identify impacts to these natural heritage features, as well as any species at risk, and recommend mitigation measures.

With its location on the Oak Ridges Moraine, the Township features several significant groundwater sources subject to the provisions of the *Clean Water Act*, 2006. The purpose of the Act is to protect sources of municipal drinking water including lakes, rivers and well water. Pursuant to the legislation, local Source Protection Plans (SPPs) have been developed locally, containing policies to protect municipal sources of drinking water. The SPPs identify vulnerable areas including Wellhead Protection Areas (WHPAs), Highly Vulnerable Aquifers (HVAs), and Significant Groundwater Recharge Areas (SGRAs).

Figure 3.4 details the highly vulnerable aquifers and wellhead protection areas in the Township Official Plan (Schedule F). The Township has three drinking water systems with WHPA located in Blackstock (one well), Greenbank (five wells), and Port Perry (three wells). The figure indicates most of the Township is identified as an HVA. The Oak Ridge Moraine extends through the south and west areas of the municipality.

The projects identified in the AT and TMP are subject to the applicable policies outlined in the Trent Source Protection Plan. For any project specific environmental assessments completed for future Schedule B/C projects, the Project File Report/Environmental Study Report will identify and describe the specific source protection policies that apply to those undertakings.

3.2.3 CULTURAL HERITAGE

The Township has a unique cultural heritage due to its historic location on Lake Scugog. The municipality seeks to identify, converse, and enhance its cultural heritage resources and to encourage all new developments to occur in a manner that respects the Township's rich cultural heritage.

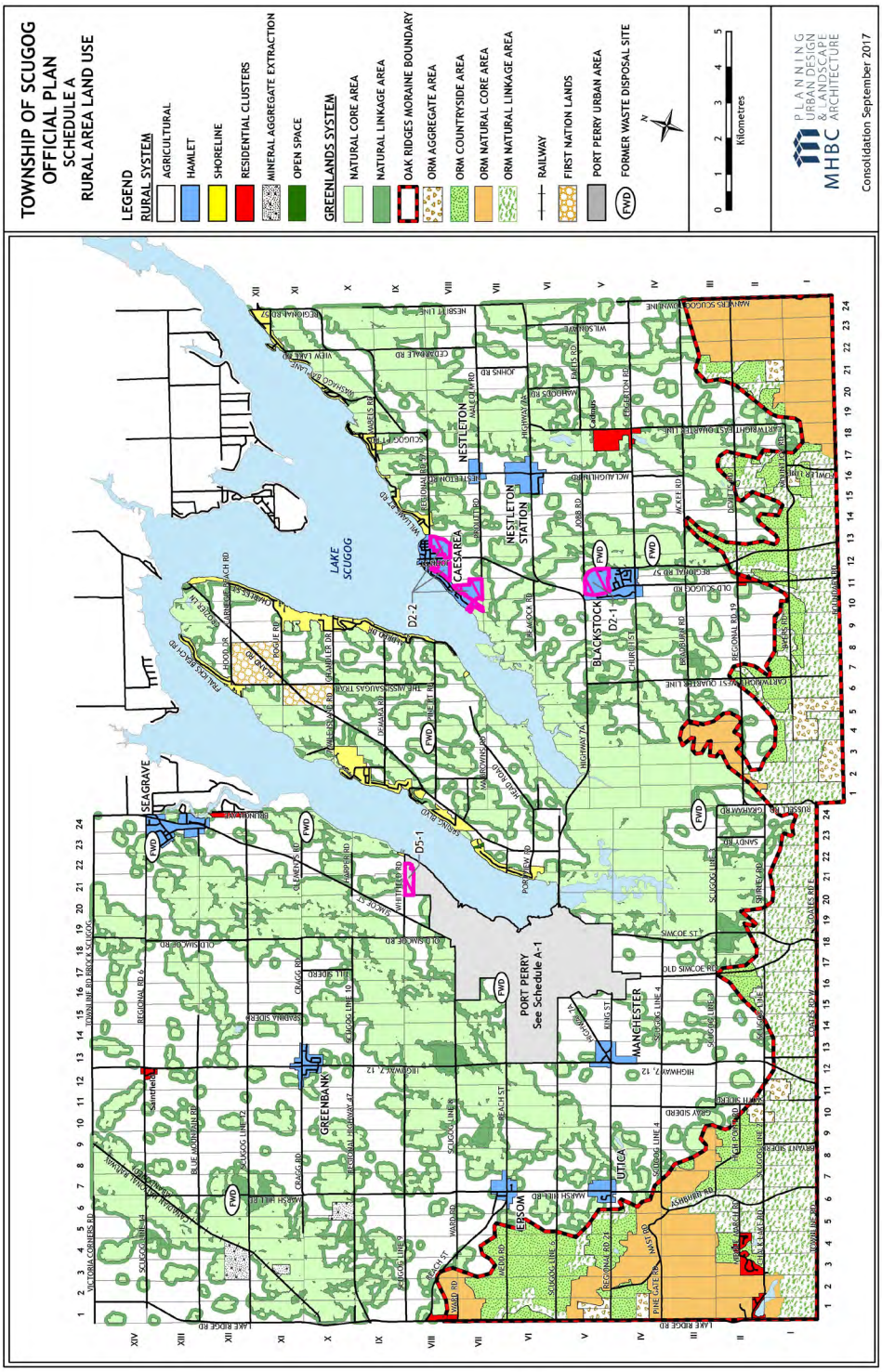


FIGURE 3.2: RURAL AREA LAND USE

(Source: Township of Scugog Official Plan)

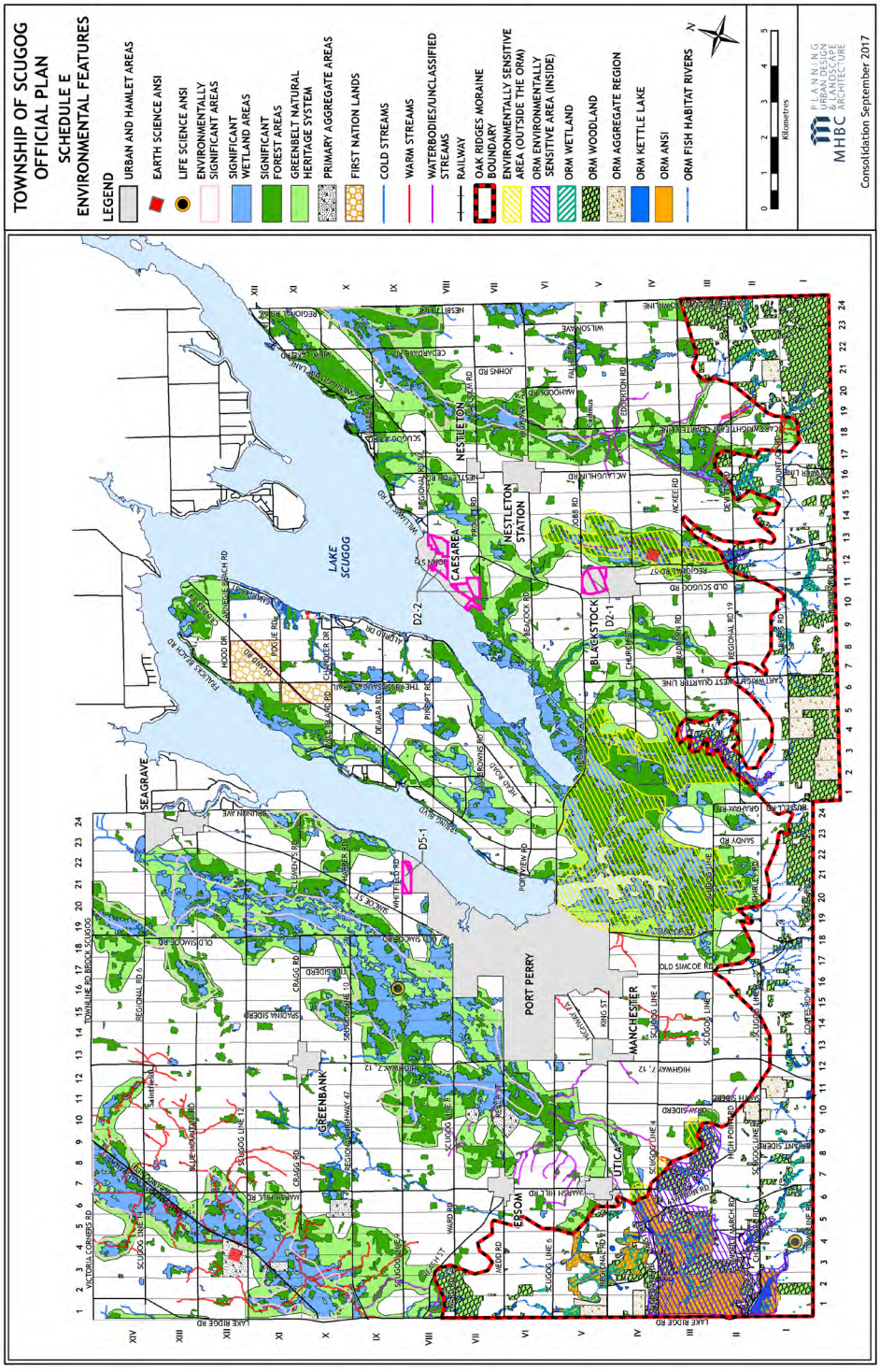


FIGURE 3.3: ENVIRONMENTAL FEATURES

(Source: Township of Scugog Official Plan)

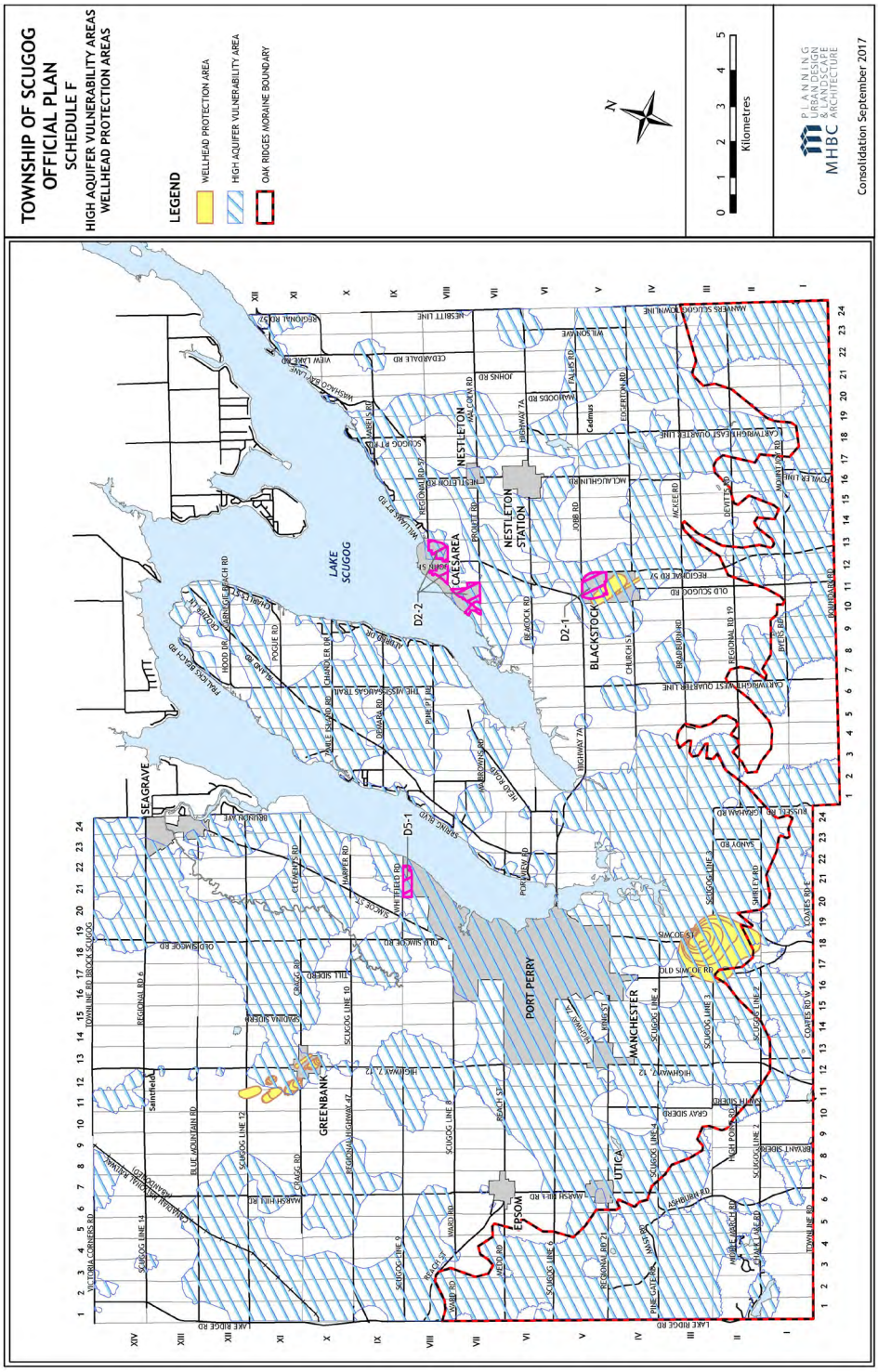


FIGURE 3.4: HIGHLY VULNERABLE AQUIFERS AND WELLHEAD PROTECTION AREAS

(Source: Township of Scugog Official Plan)

Section 3.5 of the Township Official Plan establishes policies for cultural heritage organized around three key components: built heritage resources, cultural heritage landscapes and archaeological resources. The policies within the plan recognize that cultural landscapes include natural and man-made features that define the character of the Township. The plan also requires existing historic buildings, trails, and roadways in the Township to be preserved wherever possible, and new structures developed near these features be designed to reflect the surrounding landscape and built form.

The Township has one Heritage Conservation District (HCD) designated under the *Ontario Heritage Act* located in downtown Port Perry on Queen Street from Simcoe Street to Water Street, and Water Street in the vicinity of Queen Street. The goal of the Downtown Port Perry HCD is to accommodate the continued evolution of the downtown, while conserving and protecting the unique heritage characteristics that have been fundamental to its success. The plan also introduces an HCD designation by-law that among other things requires property owners to obtain a Heritage Permit from the Township to complete external alternations and additions, new construction, building demolition, and signs in the district.

3.2.4 SOCIOECONOMIC AND DEMOGRAPHIC PROFILE

The Township of Scugog was formed in 1974 through the amalgamation of the former Townships of Scugog, Reach and Cartwright, and the Town of Port Perry. Located within Durham Region, Scugog is comprised of the Port Perry Urban Area, and several smaller, rural communities including Blackstock, Caesarea, Epsom, Greenbank, Manchester, Nestleton, Nestleton Station, Seagrave, and Utica.

The Township has a population of about 21,600 people based on the 2016 Statistics Canada Census of Population. Approximately, 9,450 of its residents reside in the urban area of Port Perry. The median age of Township residents is 44 years old, consistent with general trends for Ontario. **Figure 3.5** summarizes other relevant social, demographic, economic and transportation characteristics of the Township.

The key industries in Scugog include agriculture, tourism, and light manufacturing. The tourism sector provides residents and visitors access to bed and breakfasts, restaurants, fresh farm markets, a revitalized lakefront, a vibrant downtown, annual community events, and the Great Blue Heron Casino. With the Township located only 75 kilometres from Toronto, many residents commute to the city and other communities within the broader Greater Toronto Area for work.

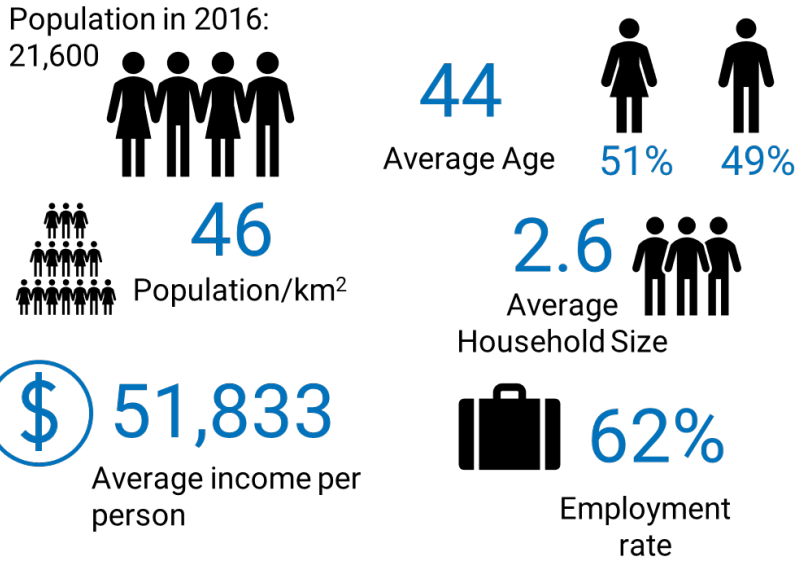


FIGURE 3.5: SOCIOECONOMIC AND DEMOGRAPHIC PROFILE OF SCUGOG RESIDENTS
(Source: Statistics Canada Census of Population)

3.2.5 UTILITIES

The Township is serviced by a range of public and private utilities including potable water, sanitary and storm sewerage, hydro electric, natural gas, and telecommunications. Any project-specific environmental assessments completed for Schedule B/C projects will require a Project File Report/Environmental Study Report identifying impacts to utilities and mitigation/management measures. Possible impacts will be assessed in consultation with utility providers during detailed design and required accommodations made.

3.3 TRANSPORTATION SYSTEM

The current transportation network serving Scugog residents and businesses accommodates most modes of surface travel including automobiles, trucks, transit, cyclists, and pedestrians. Of this network, the Township is responsible for approximately 413 km of local, collector, and minor arterial roads (including 16 bridges and eight culverts), 12 km of off-road trails and paths, 64 km of sidewalk and boulevard multi-use path, and 2 km of bike lanes. Durham Region and the Province of Ontario have jurisdiction of the primary arterial roads and transit within the municipality, plus the remaining elements of the active transportation network, which consist primarily of paved shoulders.

3.3.1 EXISTING NETWORKS, FACILITIES AND SERVICES

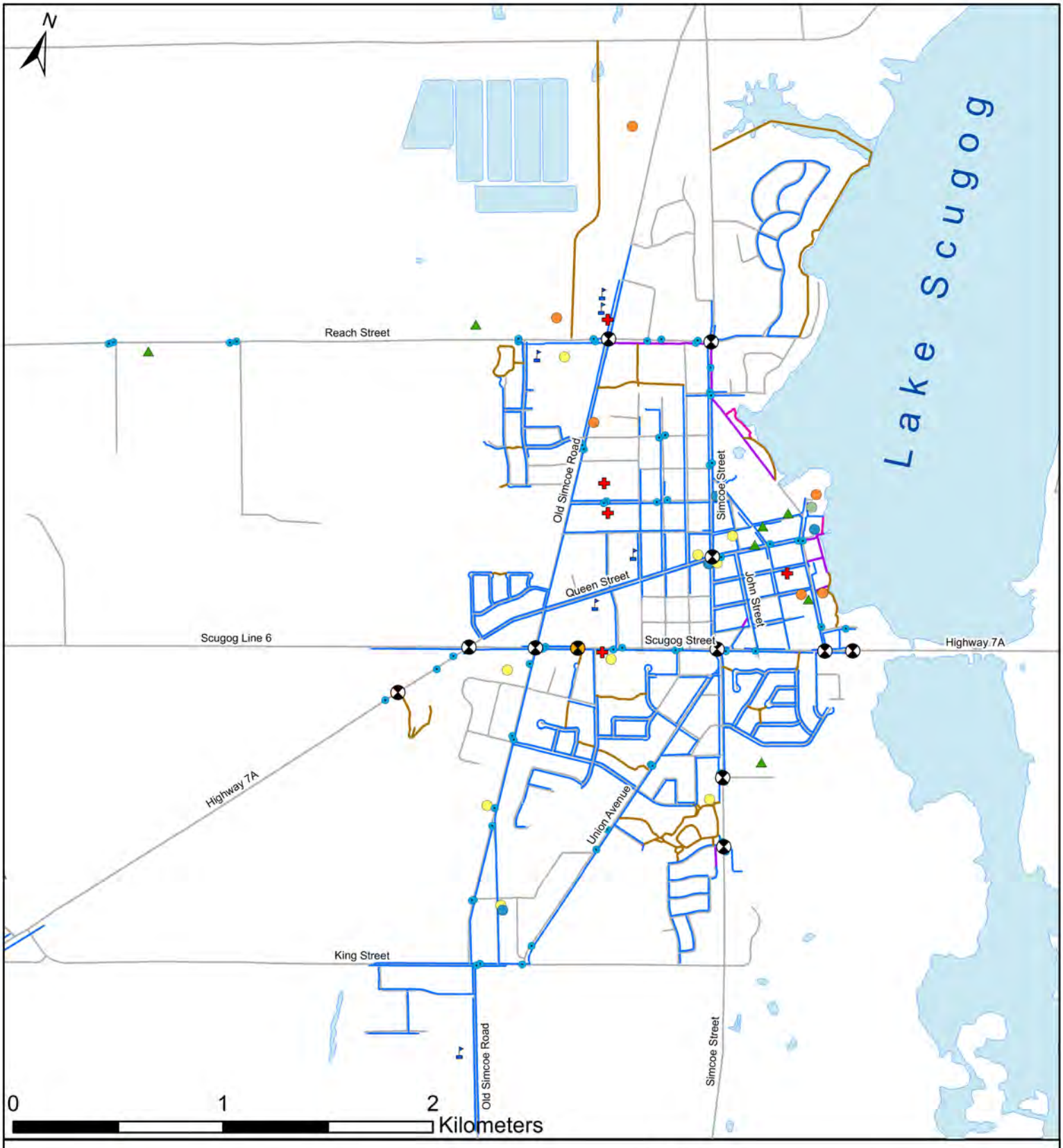
Active Transportation Network

The active transportation network in Scugog consists of the following facility types:

- **Signed Dedicated Bike Lanes** – An on-road bikeway separated from traffic by a solid white line. These facilities are marked on the pavement with a painted bicycle symbol and signs adjacent to the road posted at regular intervals;
- **Off-Road Trails** – An off-road, unpaved facility shared by cyclists and pedestrians. Fully separated from traffic, these facilities typically have a stone dusted surface;
- **Multi-use Paths and Trails** – An off-road, paved (asphalt) facility shared by cyclists and pedestrians. These facilities may be fully separated from traffic (trail) or located within the road boulevard (path);
- **Paved Shoulders** – An on-road facility shared by cyclists, pedestrians, agricultural equipment, and emergency vehicles. These facilities are separated from the vehicle travel lane by a solid white line. It may or may not be marked with bike route signs;
- **Signed Bike Routes** – An on-road bike route that may or may not be marked with Bike Route signs for wayfinding purposes. These facilities are located on a road with lower vehicular volumes and speeds;
- **Boardwalks** – An off-road, elevated (typically wood or similar surface) facility primarily for pedestrians but shared with cyclists. These facilities are provided adjacent to the shoreline where marsh lands and frequent flooding does not allow for ground-level facilities; and
- **Sidewalks** – An off-road, paved (typically concrete) facility for pedestrians typically located adjacent to a roadway.

Map 1 and **Map 2** illustrate the existing pedestrian networks within the Port Perry Urban Area and the Township's hamlets, respectively. **Map 3** and **Map 4** show the existing cycling networks for the rural area and the Port Perry Urban Area, respectively. The networks were compiled separately for clarity from GIS data obtained from Durham Region in spring of 2019. Additional resources, such as the Greenbelt Route, were incorporated to ensure the entire system was captured.

The rural communities in Scugog currently have minimal active transportation infrastructure except for limited sidewalk facilities in several hamlets. In some circumstances, such as low traffic volume and speed roadways, this may be suitable. But in other cases, the lack of facilities presents safety and accessibility issues forcing residents to use their personal vehicle even for short trips.



TOWNSHIP OF Scugog

Map 1

Existing Pedestrian Network
Port Perry Urban Area

Legend

Feature

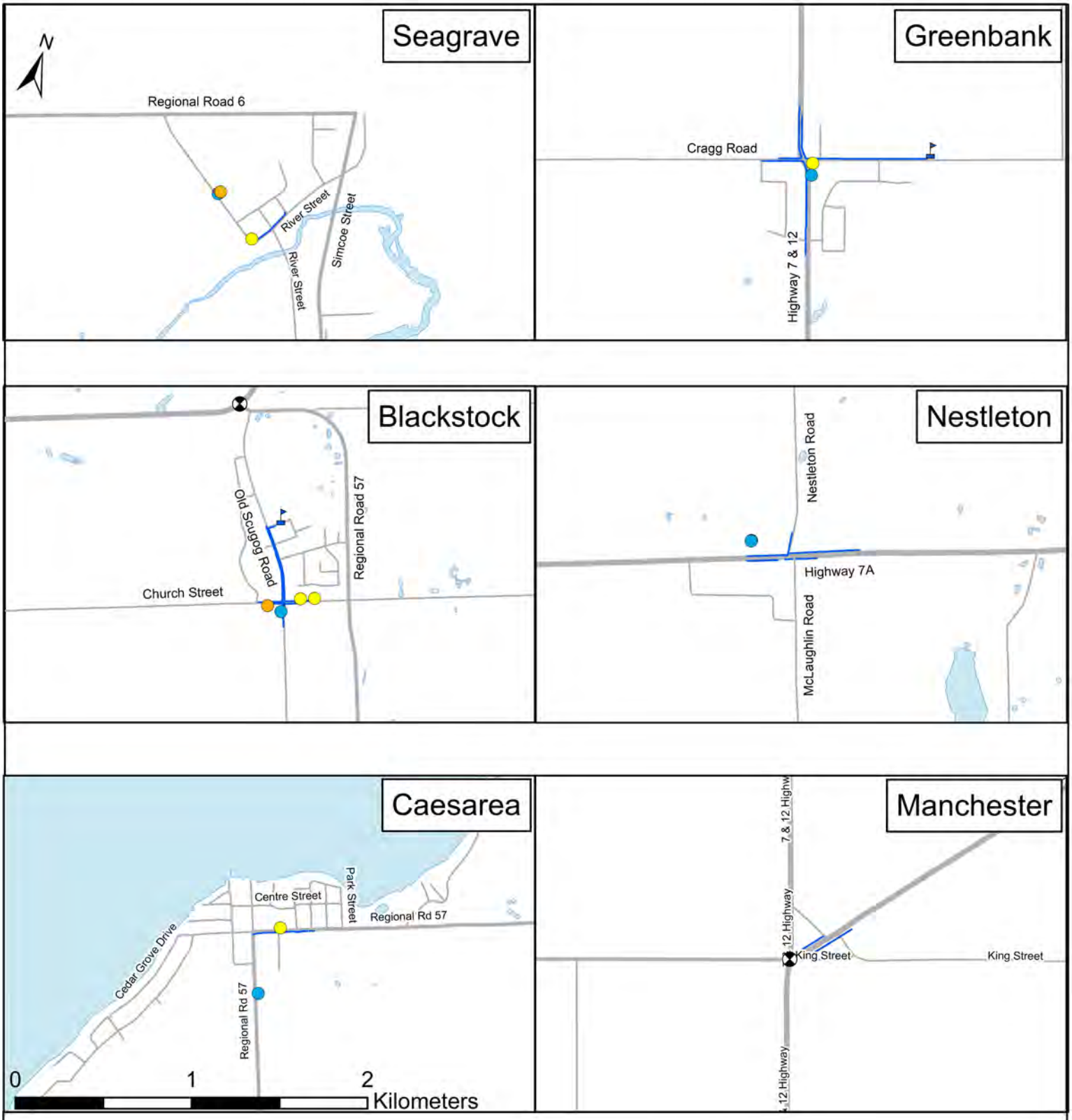
- Community Facility
- Library
- Place of Worship
- Recreation Facility
- Healthcare Facility
- Government Office
- School
- Bus Stop

Existing Facility Type

- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Boardwalk

Existing Signal

- Intersection Pedestrian Signal
- Traffic Control Signal



Legend

Features

- Community Facility
- Place of Worship
- Recreation Facility
- Education

Existing Signal

- Traffic Signal Control

Existing Facility Type

- Sidewalk

Road Network

- Municipal
- Regional
- Provincial

TOWNSHIP OF Scugog

Map 2

Existing Pedestrian Network
Hamlets

TOWNSHIP OF Scugog

Map 3

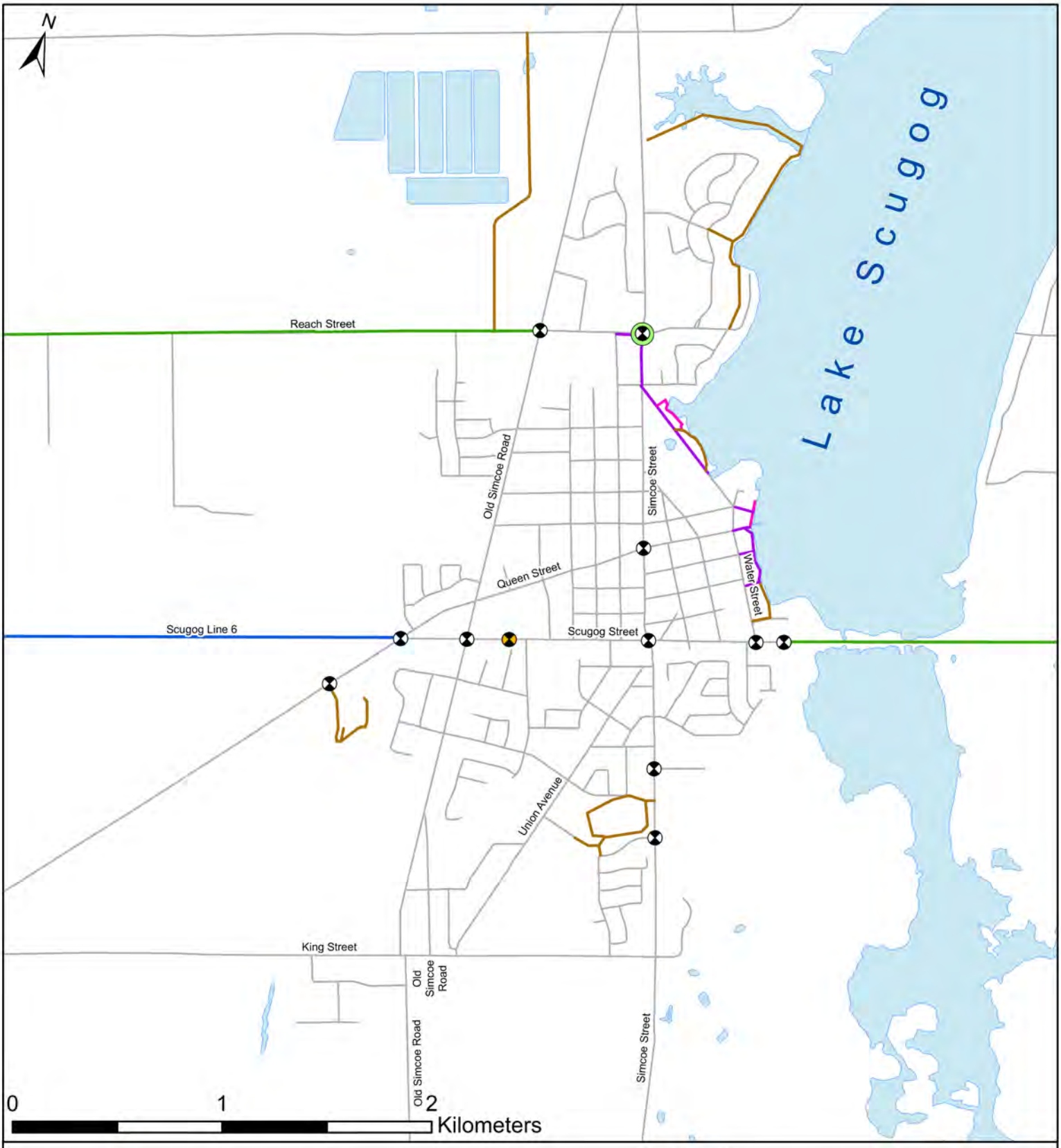
Existing Cycling Network

Legend

Existing Facility Type	Road Network	Features
Bike Lane	Municipal	Scugog Boundary
Paved Shoulder	Regional	East Cross Forest
Trail (Unpaved)	Provincial	Municipal Boundaries
Greenbelt Route		

N

Saintfield Road
Trans Canada Trail
Scugog Line 12
Cragg Road
Regional Highway 47
Simcoe Street
Island Road
Lake Scugog
Regional Road 57
Scugog Line 8
SEE MAP 4
Reach Street
Nestleton Road
Malcolm Road
Township of Uxbridge
Scugog Line 6
Scugog Street
City of Kawartha Lakes
Highway 7A
McLaughlin Road
Marsh Hill Road
Goodwood Road
King Street
Edgerton Road
Highway 7&12
Old Simcoe Road
Old Scugog Road
Regional Road 57
Cartwright East Quarter Line
Devitts Road
Scugog Line 2
Shirley Road
Mountjoy Road
Fowler Road
0 3 6 Kilometers
Town of Whitby
City of Oshawa
Municipality of Clarington



TOWNSHIP OF Scugog

Map 4

Existing Cycling Network
Port Perry Urban Area

Legend

Existing Facility Type

- Multi-use Path (Paved)
- Trail (Unpaved)
- Bike Lane
- Paved Shoulder
- Boardwalk
- Crossride

Existing Signal

- Intersection Pedestrian Signal
- Traffic Control Signal

Although the rural hamlets generally lack active transportation infrastructure, there are some connections between these communities. The Greenbelt Route, a 475 kilometre, signed cycling route that stretches from Niagara Region to Northumberland County passes through the Township. Locally, the route comprises a series of local roads that do not offer much separation from motorists but tend to have lower traffic volumes and speeds and/or paved shoulders.

In Port Perry, sidewalks are provided on one or both sides of most arterial, collector and local roads. For the most part, these sidewalks are well maintained and connected. It is noted that some sidewalks along major arterial roadways are positioned directly next to the curb, with no boulevard buffer, creating a higher stress environment for pedestrians.

Port Perry also has a somewhat disjointed network of unpaved trails, bike lanes, and multi-use trails (MUTs), scattered throughout the community. Despite the lack of dedicated bicycle infrastructure, the Township's well-connected road network offers several low vehicle speed and volume roadways for cyclist use.

Road Network

Scugog is served by a grid network of roads consisting of Province of Ontario highways, Durham Region arterial roads and Township arterial, collector, and local roads. **Map 5** and **Map 6** illustrate the existing road networks for the rural area and the Port Perry Urban Area, respectively, with designations from the Township Official Plan denoted.

Highway 7/12 and Highway 7A are the provincial highways within the municipality. The Durham Region arterials include Regional Roads 2 (Simcoe Street), 6 (Saintfield Road), 7 (Island Road), 8 (Reach Street), 19 (Shirley Road), 21 (Goodwood Road), 23 (Lake Ridge Road), 57, and Regional Highway 47. All these roads carry significant volumes of through traffic and heavy vehicles at higher speeds.

The Township arterial and collector road system forms smaller block grids between the provincial highways and regional arterials. These roads are generally continuous and carry moderate traffic volumes. Within the Port Perry Urban Area, key arterial and collector roads include:

- King Street/Rose Street (Type C Arterial)
- Old Simcoe Road (Collector)
- Queen Street (Collector)
- Scugog Line 6 (Type C Arterial)
- Union Avenue (Collector)
- Victoria Street (Collector)
- Water Street (Collector)

Local roads connect to the Collector roads and provide access to individual properties in residential and commercial areas.

N

TOWNSHIP OF Scugog

Map 5

Existing Road Network

Legend

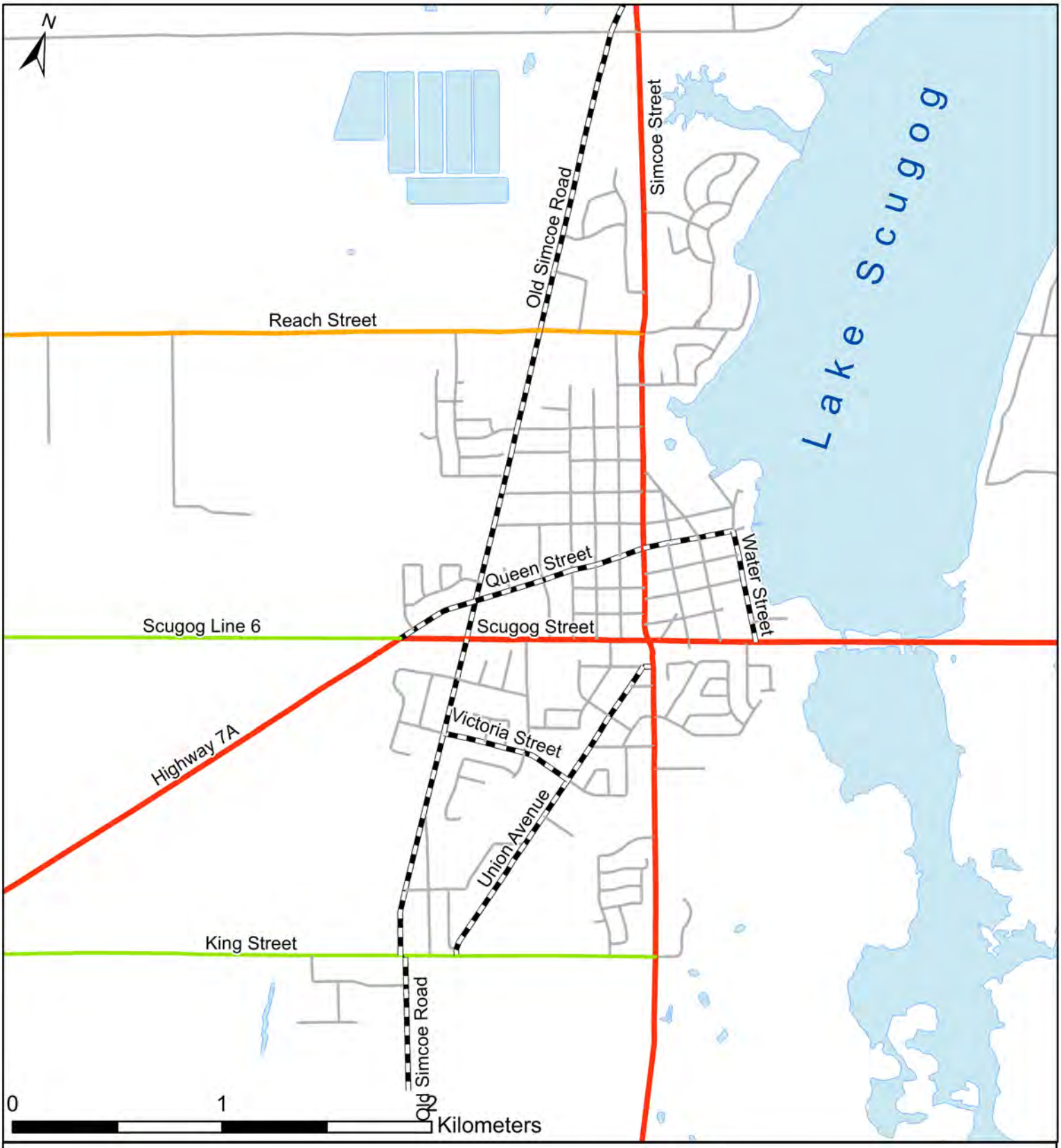
Road Network Designations
- Type A Arterial
- Type B Arterial
- Type C Arterial
- Collector
- Local

Features
- Scugog Boundary
- East Cross Forest
- Municipal Boundaries

Saintfield Road
Scugog Line 12
Cragg Road
Regional Highway 47
Scugog Line 8
Reach Street
Scugog Line 6
Goodwood Road
Scugog Line 2
Simcoe Street
Island Road
Regional Road 57
Malcolm Road
Nestleton Road
Highway 7A
McLaughlin Road
Edgerton Road
Devitts Road
Mountjoy Road
Shirley Road
Scugog Street
King Street
Marsh Hill Road
Highway 7&12
Old Simcoe Road
Old Scugog Road
Cartwright East Quarter Line
Fowler Road
Township of Uxbridge
City of Kawartha Lakes
Town of Whitby
City of Oshawa
Municipality of Clarington
Lake Scugog

SEE MAP 6

0 3 6 Kilometers



Legend

Road Network Designations

- Type A Arterial
- Type B Arterial
- Type C Arterial
- Collector
- Local

TOWNSHIP OF Scugog

Map 6

Existing Road Network
Port Perry Urban Area

Transit

Durham Region Transit (DRT) is the transit operator in the Township, providing a unified service throughout Durham Region. DRT currently operates one bus route in the Township and on-demand service in the rural areas of Scugog (as of November 2020):

- Route 905 (Thickson-Reach) is a regular service route operating between Uxbridge through Port Perry to Whitby GO Station seven days a week. The service operates with 10 southbound runs from Uxbridge between 7:15 AM and 8:45 PM and 12 northbound runs from Whitby between 5:45 AM and 11:15 AM. On weekends, the number of buses is reduced to nine in each direction, operating between 6:45 AM and 11:00 PM.
- On-demand service is available in Scugog outside the Port Perry Urban Area. Riders can travel curb to curb, curb to stop, or stop to stop, and connect with scheduled DRT and GO Transit bus routes. Service operates Monday to Friday from 5:00 AM to 12:00 AM, and weekends from 7:00 AM to 9:00 PM.

Additionally, GO Transit operates Route 81 between Beaverton and Whitby GO Station with three stops in Scugog – one in Greenbank and two in Port Perry. The service operates Monday to Friday with two southbound runs from Beaverton (5:50 AM and 2:55 PM) and two northbound runs from Whitby (9:08 AM and 5:08 PM). On Saturdays and Sundays, the service operates with two southbound runs from Beaverton (8:55 AM and 1:55 PM) and two northbound runs from Whitby (11:38 AM and 4:42 PM). In late 2019, service levels were reduced to the current two trips in each direction per day and the stop in downtown Port Perry was eliminated.

Smart Commute Durham

Smart Commute Durham is a non-profit Transportation Management Association (TMA) led by Durham Region that works with local employers to provide employee transportation strategies and improve air quality and traffic. Its mission is to reduce traffic congestion, greenhouse gas emissions and their related cost to the environment, economy, and the community. Launched in 2007, Smart Commute Durham provides several services to help drivers change their travel behaviour, including:

- Workplace-based support, such as site assessment, promotion of travel options, carpool-matching, employee vanpool programs and emergency rides home;
- Promotion of the benefits of transit-supportive development and smart-growth strategies; and
- Tips for travelling via walking, cycling and transit.

The program now has over 30 participating workplaces across the Region, including the Great Blue Heron Casino in Scugog.

Commuter Parking (Carpool) Lots

There are two designated commuter parking lots in the Township, located at Simcoe Street and Shirley Road (20 spaces) and the Greenbank Hall (Highway 7/12 and Cragg Road) (4 spaces)

3.3.2 TRAVEL TRENDS

Data from the 2016 Transportation Tomorrow Survey provided important insights into current travel trends in the Township. The Transportation Tomorrow Survey is a comprehensive travel survey conducted in the Greater Golden Horseshoe Area once every five years. Data are categorized into household, person, and trip tables, and geocoded to permit location-specific analyses.

Figure 3.6 summarizes the primary mode of travel for commuting (home-work trips) for residents of Scugog. Auto driver (81%) is the most common mode, followed by auto passenger (12%), walking (5%) and transit (3%). It should be noted that with the recent reductions in GO Transit service to/from Port Perry, it is likely that some transit trips will have shifted to auto driver or passenger.

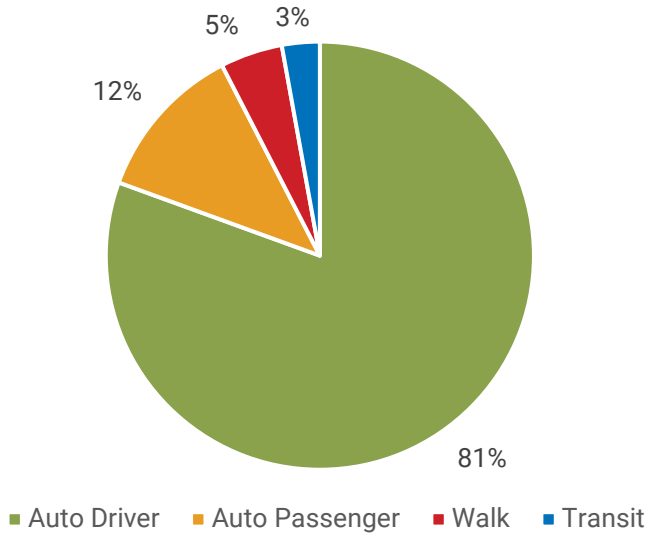


FIGURE 3.6: PRIMARY MODE OF COMMUTING FOR SCUGOG RESIDENTS
(Source: Transportation Tomorrow Survey)

Figure 3.7 illustrates the workplace destination of Scugog residents. Most travel to locations in Durham Region (71%) followed by the City of Toronto (14%).

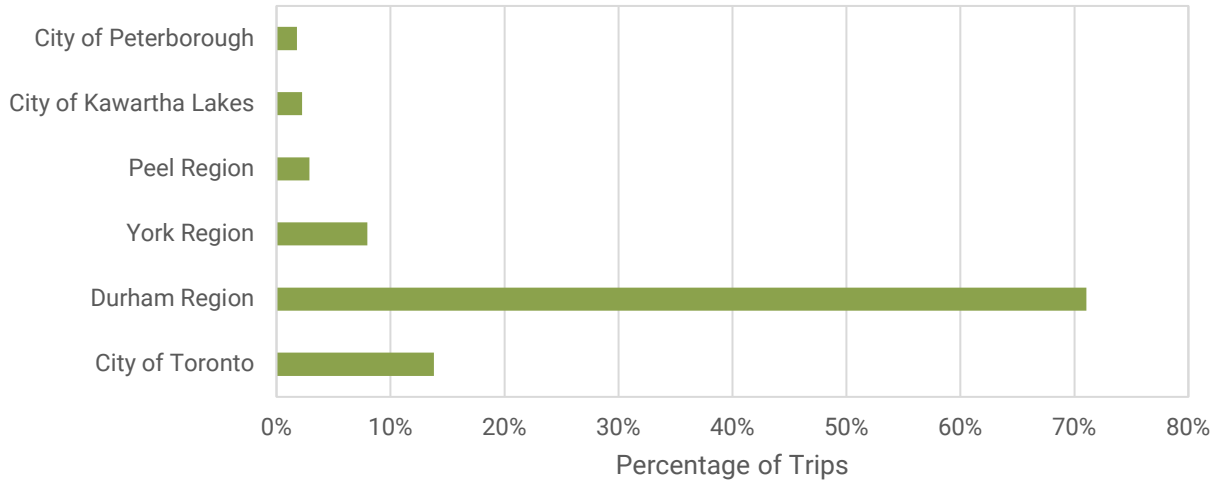


FIGURE 3.7: WORKPLACE DESTINATION OF SCUGOG RESIDENTS

(Source: Transportation Tomorrow Survey)

As **Figure 3.8** depicts, over 50% of work trips made by Scugog residents to locations within Durham Region are destined to workplaces within the Township itself. Oshawa (16%) is the second most common workplace destination in the Region.

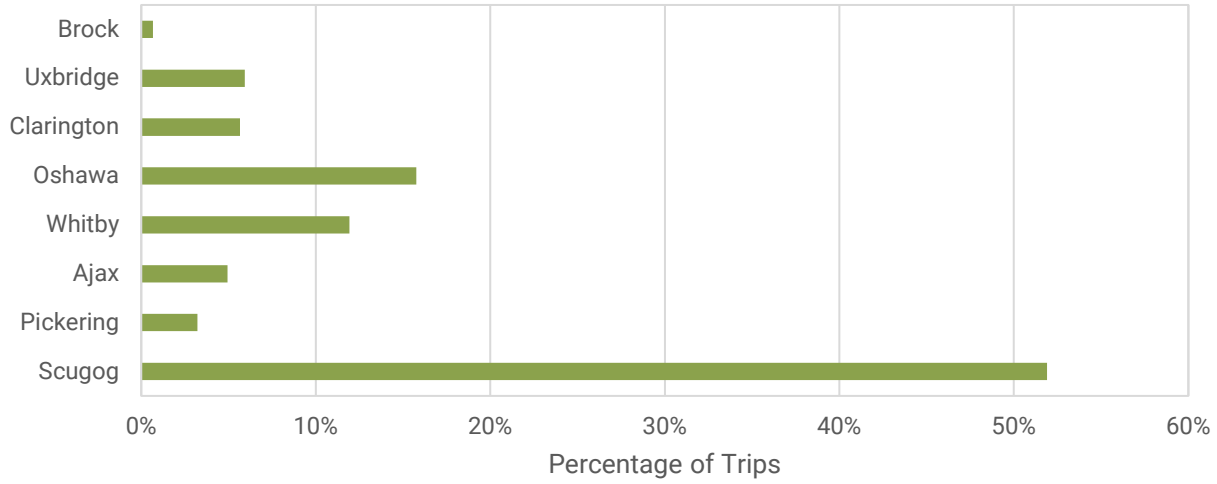


FIGURE 3.8: WORKPLACE DESTINATION WITHIN DURHAM REGION OF SCUGOG RESIDENTS

(Source: Transportation Tomorrow Survey)

Figure 3.9 shows the origin of work trips destined to Scugog (excluding trips originating within the Township). Other municipalities in Durham Region (82%) are the primary origin of inbound commuting trips, followed by the City of Kawartha Lakes (12%).

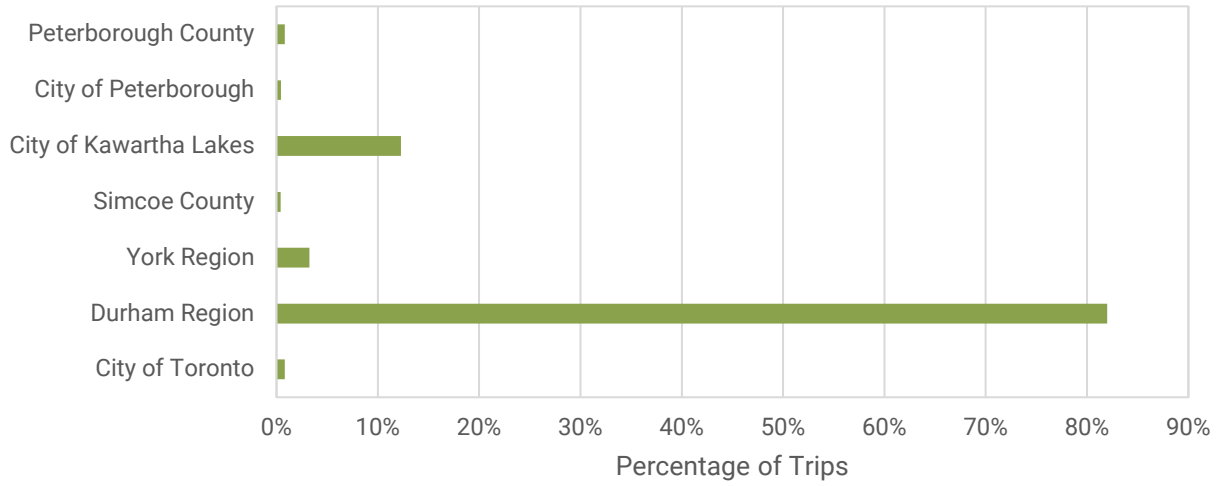


FIGURE 3.9: ORIGIN OF WORK TRIPS DESTINED TO SCUGOG BY NON-RESIDENTS

(Source: Transportation Tomorrow Survey)

As **Figure 3.10** illustrates, over 30% of work trips made by Durham Region residents destined for Scugog (but not made by Scugog residents) originate in Oshawa. Clarington (19%) and Whitby (18%) are the next most common origins.

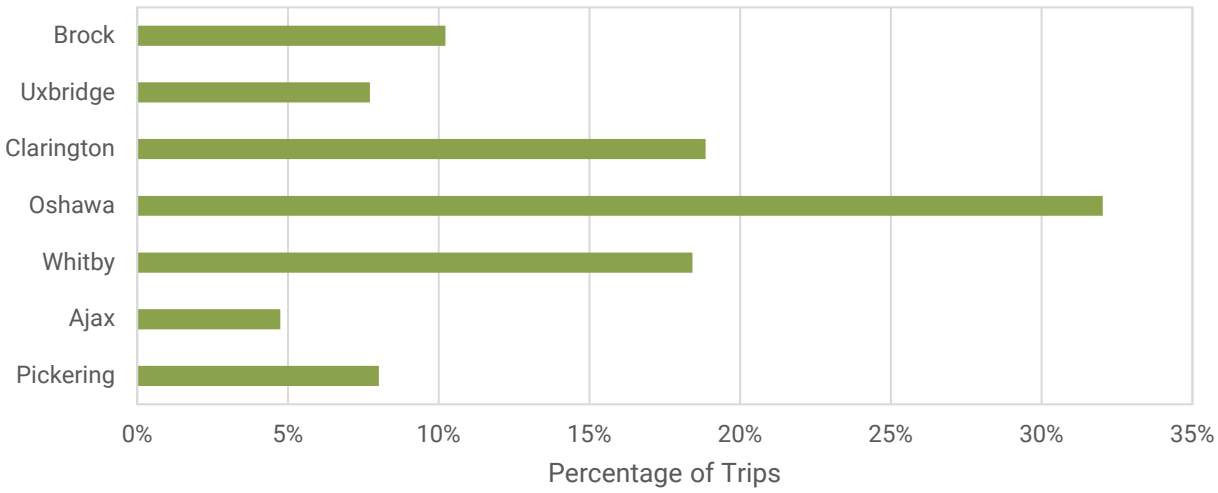


FIGURE 3.10: ORIGIN OF WORK TRIPS FROM DURHAM REGION TO SCUGOG BY NON-RESIDENTS

(Source: Transportation Tomorrow Survey)

Implications of Coronavirus Pandemic

The Coronavirus pandemic was ongoing at the time of completing the AT and TMP. During the pandemic, communities, including the Township, experienced considerable change in travel behaviour as governments implemented strict physical distancing measures to control the spread of the virus. Reduced travel demand, especially in "shared" modes like transit and ridesharing, and increased active travel (i.e., walking and cycling) were observed during this unprecedented time in history. During the pandemic, nations around the world also experienced an increased awareness of social equity issues in response to this event.

While many previous travel trends are expected to resume as life returns to "normal", this event has the potential to change behaviour and transportation services moving forward, like:

- More employees working from home or on modified work schedules;
- Less in-person meetings in favour of online video conferencing;
- Greater trip planning and trip chaining to reduce the number of outings;
- Increased use of active transportation modes;
- Heightened expectations for more equitable distribution of funding for transportation services, especially those serving disadvantaged communities; and
- Fewer discretionary trips due to ecommerce or reduced income.

Although impossible to predict the impact at this point, the AT and TMP takes into consideration the potential implications to the extent possible in its strategies and action plans.

3.3.3 ACTIVE TRANSPORTATION USE

Available cycling and walking data from the following three sources were analyzed to further understand active travel trends in the Township:

Durham Region Cordon Count Program

Data collected through the Durham Region Cordon Count Program offer insight into current bicycle usage in the Township. **Table 3.2** summarizes the daytime (5:30 AM to 7:30 PM) bicycle volumes observed for all roads crossing the noted screenlines[6] based on data from the 2014 survey.[7]

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6 A screenline is an imaginary line on one side of a roadway, or along a boundary or natural barrier.

7 The 2014 survey was the most recent available data that counted cyclists at the time of completing the analysis for the AT and TMP in mid-2020.

TABLE 3.2: SCREENLINE BICYCLE VOLUMES

(Source: Durham Region Cordon Count Program)

Screenline	Intersecting Roads	Two-Way Bicycle Volumes (5:30AM to 7:30PM)
#38 – East of Scugog West Limit (Lake Ridge Road (Regional Road 23))	Chalk Lake Road, Pine Gate Road, Goodwood Road, Scugog Line 6, Medd Road, Reach Street (Regional Road 8), Scugog Line 9, Regional Highway 47, Scugog Line 12, Blue Mountain Road, Scugog Line 14	45
#52 – West of Scugog Central (former Reach Township/Cartwright Township Boundary)	Shirley Road, Highway 7A, Simcoe Street (Regional Road 2)	6
#56 – West of Scugog East Limit (Nesbitt Line Road and Manvers Scugog Townline Road)	Devitts Road, Mckee Road, Edgerton Road, Highway 7A, Malcolm Road, Regional Road 57, Loon Street	35

The volume of cyclists observed was relatively nominal, owing in part to the rural setting and the challenges of cycling within these areas of the Township. Of all intersecting roads, Medd Road was used by the greatest number of cyclists with a total two-way daytime bicycle volume of 19 trips observed.

Durham Region Traffic Count Program

Average daily and peak hour bicycle volumes at select count locations were obtained from the Durham Region Works Department. Most counts were collected in July or August of 2017[8]. Higher volumes were recorded along Simcoe Street between Reach Street and Queen Street and on Reach Street west of Old Simcoe Street, consistent with the expectation that cycling would be more prevalent in the urbanized Port Perry area. Bicycle volumes were also noted to spike on weekends, suggesting recreational cycling is popular in the Township.

[8] The 2017 counts were the most recent available data at the time of completing the analysis for the AT and TMP in mid-2020.

Strava

Strava is a crowdsourced website and mobile application that individuals can use to log their exercise activity. Cyclists and other fitness enthusiasts use Strava to track their travel routes, times, and dates. Strava then creates spatial representation maps (i.e., heat maps) based on the volume and frequency of routes travelled by app users and makes the maps available for public use, helping individuals quickly identify locations experiencing the greatest activity.

Figure 3.11 and **Figure 3.12** depict the maps obtained from the Strava Global Heatmap website[9] showing cycling activity Township-wide and in Port Perry, respectively. The maps identified the following roads as being well-used by cyclists:

East-West Routes:

- Reach Street (Regional Road 8) west of Old Simcoe Road
- Scugog Line 6
- Townline Road/Coates Road West, west of Simcoe Street (Regional Road 2)
- Shirley Road (Regional Road 19)
- Regional Road 57 east of Caesarea
- Queen Street from Highway 7A to Water Street

North-South Routes:

- Marsh Hill Road from Reach Street to Scugog Line 4
- Ashburn Road from Scugog Line 4 to Townline Road
- Old Simcoe Road from Reach Street to Simcoe Street
- Simcoe Street from Shirley Road to Coates Road West
- Regional Road 57 from Highway 7A to Boundary Road

Note that Strava data should be used with caution as app users tend to be avid cyclists, experienced and comfortable riding on roads with higher vehicle speeds and volumes. For this reason, the maps may not provide an accurate representation of the routes used by less confident cyclists, which represent the largest group of potential riders. That said, the Strava data does offer insight into cyclist desire lines and travel trends helpful for planning new and improved facilities.

[9] Strava. *Global Heat Map.* 2019. https://www.strava.com/heatmap#15.37/-78.95060/44.10498/hot/ride. This was most recent available data at the time of completing the analysis for the AT and TMP in mid 2020.

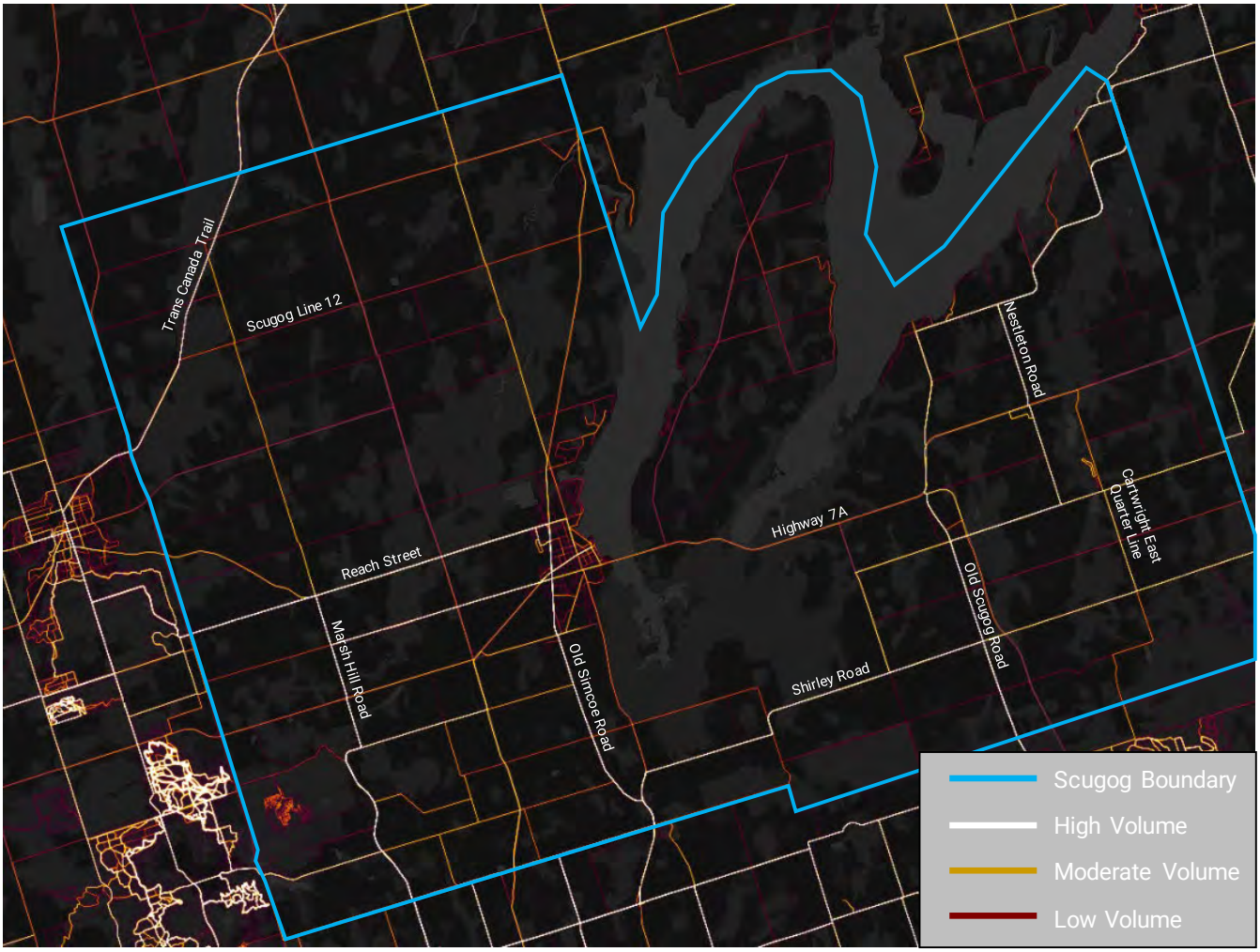


FIGURE 3.11: STRAVA HEAT MAP – TOWNSHIP-WIDE

(Source: www.strava.com/heatmap)

FIGURE 3.12: STRAVA HEAT MAP – PORT PERRY

(Source: www.strava.com/heatmap)

3.4 GROWTH AND DEVELOPMENT

Scugog is expected to continue to grow to the 2031 horizon year of the AT and TMP. The data indicate that both residential and non-residential development in the Township will increase at a rate greater than the historical average over the immediate future.

Per the Township Official Plan, the municipality intends to direct this growth primarily to Port Perry and the rural hamlets. Within the Port Perry Urban Area, the prime settlement district within the Township, the plan aims to ensure development is sequential and phased to make economical use of existing infrastructure and services. Intensification will also be promoted. **Figure 3.13** shows the planned urban structure for Port Perry (Schedule A-1).

Table 3.3 summarizes the residential and non-residential development forecasts for the 2019 to 2031 planning period developed for the Township 2019 Development Charges Background Study, the most current source of population and employment projections for the municipality at the time of preparing the AT and TMP. The forecasts were derived from a range of information including Statistics Canada Census and National Household Survey data and Canada Mortgage Housing Corporation housing market statistics, with reference to the Durham Regional Official Plan. Section III and Appendix A of the background study explain the process of preparing the development forecasts in further detail.

TABLE 3.3: DEVELOPMENT FORECASTS

Type	2018	2019-2031	
	Existing Estimate	Forecast Change	At 2031
Residential			
Total Occupied Dwellings	8,233	1,270	9,503
• *Singles and Semis*		*826*	
• *Rows and Other Multiples*		*127*	
• *Apartments*		*318*	
Census Population	21,647	2,653	24,300
• *Forecast Population in New Units*		*3,280*	
Non-Residential			
Employment Place of Work	7,758	740	8,498
• *Non-Residential Building Space (sq. m)*		*50,050*	

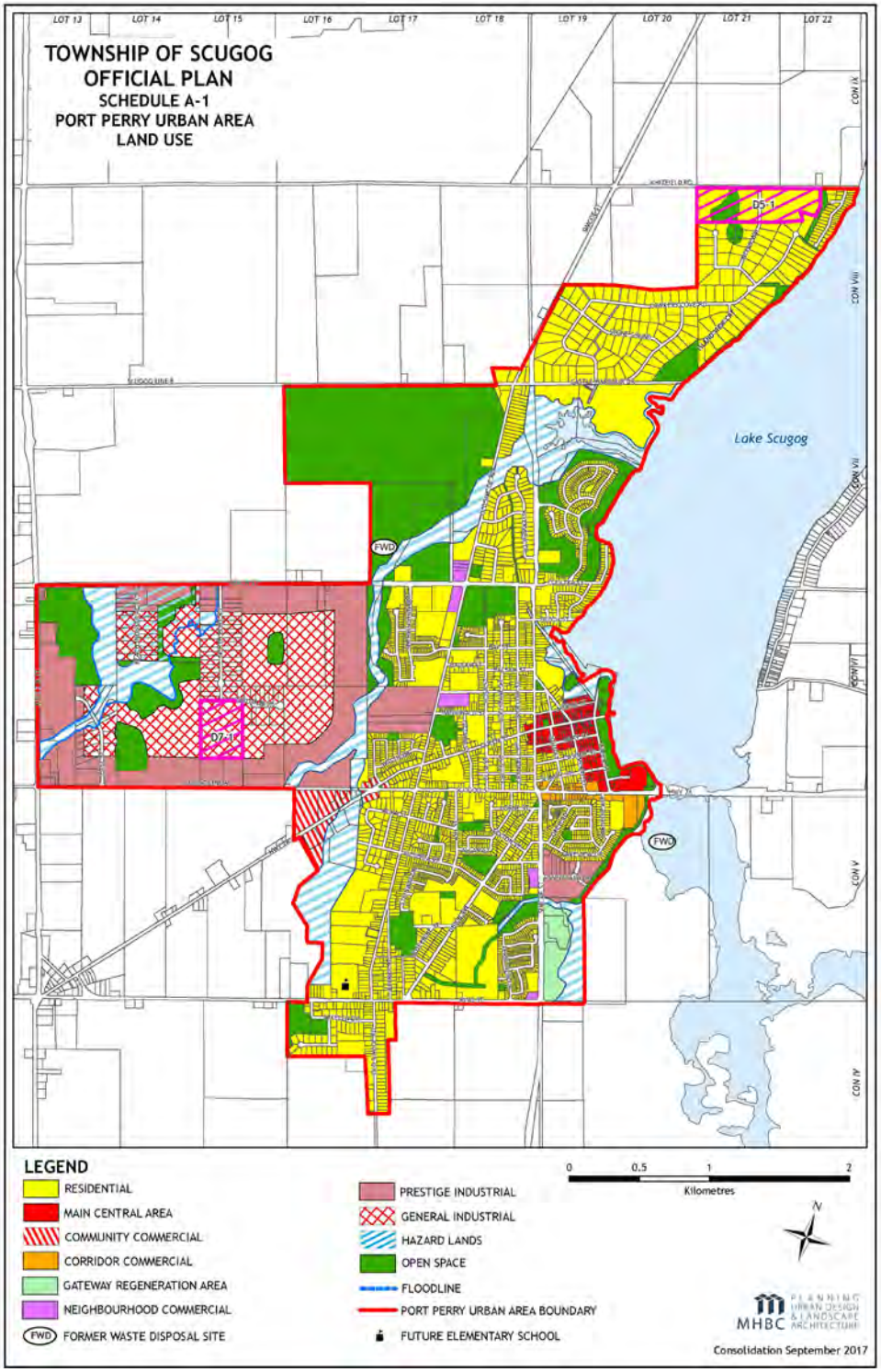


FIGURE 3.13: PORT PERRY URBAN AREA LAND USE

(Source: Township of Scugog Official Plan)

Based on these projections, the total number of new residential units in the Township is anticipated to increase by 1,270 between 2019 and 2031, which translates to a population in new units of approximately 3,280 persons. The forecast persons in newly constructed units are based on the historical time series of population growth in housing over the last ten-year census period (2006-2016) as reflected in 2016 Statistics Canada Census Data and historical trends. After taking into consideration other factors, such as changes in household size and structure over time, the Township is forecast to grow by about 2,650 persons over 2018 Census population figures to the year 2031.

Employment in the Township is also expected to increase over this period. The employment base is forecast to grow by 740 jobs, with these employees accommodated in 50,050 square metres of new non-residential gross floor area (GFA). Typical employment densities (square metres per employee) by type (i.e., commercial/ retail, employment land and institutional) were used to convert the employment forecast into building space estimates noted above.

3.5 FUTURE DIRECTIONS

3.5.1 OPPORTUNITIES AND CHALLENGES

The assessment summarized in the preceding sections highlight existing conditions and prevailing trends that will shape and influence the Township's transportation system in the coming years. It is important to recognize and plan for these opportunities and challenges to develop a transportation network that serves all users.

The following summarizes the key transportation opportunities in the Township:

Opportunities
The Waterfront and Downtown Port Perry provide vibrant, lively spaces for residents and visitors to gather and socialize. It is important to maintain active transportation connections and adequate parking at these key destinations to retain the small-town character. **Connected road network** in Port Perry allows for easy movement of vehicles and provides significant potential for active transportation routes. Maintaining the existing grid network of roads can reduce the need for new infrastructure to accommodate growth.

Existing trail and sidewalk network within Port Perry provides a good foundation for full future connectivity throughout the Township. Additional connections and accessible active transportation infrastructure would allow more people to travel around Scugog in a healthy, sustainable way.

Community and Council support for active transportation improvements has led to investments in the pedestrian and cycling network. The Township should continue to leverage the existing support to help justify further investment in active transportation.

The Township will also face some significant transportation challenges in the coming years, including:

Challenges
Serving forecast growth in a safe, sustainable, and cost-effective manner that facilitates travel by different modes and does not create more congestion.
Need for public education to ensure motorists, cyclists and pedestrians understand and follow the rules of the road. Public education campaigns can help increase transportation safety in the community.
Limited funding available to allocate between transportation maintenance, improvements, and new infrastructure projects in the Township. Active transportation initiatives are often lower priority, given the Township budget is insufficient to carry out all projects. Therefore, not all routes or facilities are maintained to the same standard. The Township should take advantage of opportunities to work with other businesses, organizations, or funding partners to achieve their goals.
Persuading residents to use active transportation modes more frequently for trips within built-up areas. Reducing the reliance on motorized vehicles can help combat climate change and improve public health.
Rolling terrain and topography in the Township creates obstacles for accessible active transportation. A variety of active transportation route alternatives should be available, catering to the different abilities of users.
Provincial and regional roads bisect Port Perry (and the Township as a whole) causing barriers to connectivity and safety concerns for active transportation users. Ongoing collaboration is required between the Township, Durham Region, and the Province of Ontario to rectify gaps in the transportation network and enhance safety.

3.5.2 PROBLEMS AND OPPORTUNITIES STATEMENT

The Township of Scugog strives to be a livable, sustainable community that provides accessible mobility options for people of all ages and abilities. The existing road network does not prioritize vulnerable road users and has pinch points where congestion builds. The existing active transportation network has several gaps and does not provide access to all areas of the Township. Vulnerable road users, such as young children and seniors, experience difficulties getting around Scugog safely and independently.

By developing a well-connected and integrated multi-modal transportation network throughout the Township, those of all ages and abilities, living in and visiting Scugog, will be provided with the freedom of transportation choice, creating a more liveable, sustainable community.

Development of this problem and opportunities statement meets the requirements for Phase 1 of the MCEA process for master plans.

3.5.3 VISION, GOALS AND OBJECTIVES

The Township's transportation vision statement reads as follows:

A transportation system that focuses on enhancing mobility in the Township through active transportation, ensuring the safe, efficient, and sustainable movement of people and goods, to 2031 and beyond.

Building on the foundation provided by the Township Official Plan, the vision was shaped by input received from key stakeholders, interest groups and Township Council and staff through the engagement program carried out for the study. The problem and opportunities statement also helped inform the statement.

The transportation vision is supported by the following goals:

- **Mobility Options** – A transportation system that offers a variety of safe, efficient, effective, affordable, and accessible mobility choices for travel and goods movement to maximize capacity and encourage public transit, cycling, rolling, and walking.

- **Economic Development and Tourism** – A transportation system that supports the retention, growth, and creation of businesses, and attraction of new investment and economic activity in the Township.
- **Complete Community** – A transportation system that enhances quality of life, inclusivity, health, and connections throughout the community.
- **Environmentally Sustainable** – A transportation system that leverages and improves transportation infrastructure and facilities while protecting and enhancing the natural environment.
- **Financially Sustainable** – A transportation system that improves financial sustainability, through innovative funding and delivery of services.

The transportation vision and goals will be achieved through the following objectives:

- **Build on existing initiatives** to reinforce goals and values of the Township.
- **Create a connected network** that provides safe connections to all major attractions.
- **Design for all ages and abilities** to the extent possible to ensure everyone can safely use and benefit from the improved system.
- **Develop a phasing strategy** to implement the plans over time with short and long-term priorities.
- **Establish policies and practices** to guide implementation of the AT and TMP consistent with the transportation vision and goals.

By creating this blueprint to guide its transportation actions, the Township will be better positioned to address existing challenges and meet future needs.

3.5.4 ALTERNATIVE PLANNING STRATEGIES

Phase 2 of the MCEA process requires documentation and examination of all reasonable alternatives to address the problems and opportunities and achieve the transportation vision. The alternative planning strategies are defined as follows:

Alternative 1: "Do Nothing"

- This alternative assumes no new investment in the transportation network to the 2031 horizon year to increase capacity - only ongoing maintenance works.

Alternative 2: "Roads Only"

- This alternative relies solely on the road programs recommended in the Township Capital Budget and 2019 Development Charges Background Study to meet future transportation needs.

Alternative 3: "Multi-Modal"

- This alternative relies on the road works identified in Alternative 2 plus investments in the active transportation network to meet future transportation needs.

A multiple account evaluation (MAE) framework was developed to compare the three alternatives and select the preferred strategy. The evaluation criteria used in the assessment included factors related to transportation, natural, social and policy environments, and economic implications. **Table 3.4** presents the five criteria and their applicable measures.

For each alternative, the evaluation criteria were assigned a score between 1 and 5 based on the scale provided below the MAE matrix. The alternatives were then ranked in terms of overall score. **Table 3.5** summarizes the MAE results.

Alternative 1 ("Do Nothing"), while minimizing impact to the natural environment and with no financial implications, does not meet the transportation, social or policy environment objectives, and was therefore screened out from further consideration.

Alternative 2 ("Roads Only") expands and improves the efficiency of the road network but does not support the Township's sustainability objectives. Additionally, this car-centric alternative poses more adverse impacts to the natural environment that the Multi-Modal option and does not encourage healthier travel options for users.

TABLE 3.4: EVALUATION CRITERIA AND MEASURES

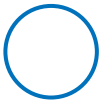
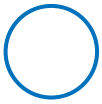
Evaluation Criteria	Measures
Transportation	• Efficiency in moving people and goods • Degree of network connectivity and continuity • Range of active transportation options available • Facilitation of goods movement
Natural Environment	• Protection of significant natural environmental areas, local streams, aquatic resources, environmentally sensitive areas, and air quality
Social Environment	• Safety of all users • Appropriateness for the demographic • Support for a healthier community • Mobility for all users
Policy Environment	• Compatibility with provincial and municipal objectives • Alignment with Township policies
Economic	• Capital and maintenance costs • Impact on travel time • Support for the existing and potential business community

Alternative 3 ("Multi-Modal") would expand/improve both the road and active transportation networks. This more equitable approach produces the highest rankings for transportation, social, and policy objectives. While financial implications are greater, the overall benefits are more closely aligned with the transportation vision and goals.

The analysis of the alternatives based on the MAE framework led to the selection of Alternative 3 – "Multi-Modal" as the preferred planning strategy for the AT and TMP. Advancing both road and active transportation initiatives enhances mobility options while still ensuring safe and efficient vehicle travel in the Township. The alternative supports and is consistent with the rural and urban character of Scugog and offers the most promising effects on the transportation system, including reduced greenhouse gas (GHG) emissions. Alternative 3 provides the foundation to help limit future GHG emissions including:

- Encouraging travel by more sustainable modes such as walking, cycling, and transit;
- Reducing demand for and dependence on automobiles for trip making;
- Minimizing unnecessary travel; and
- Making more efficient use of existing infrastructure and services.

TABLE 3.5: MULTIPLE ACCOUNT EVALUATION OF ALTERNATIVE PLANNING STRATEGIES

Alternative	Transportation	Natural Environment	Social Environment	Policy Environment	Economic	OVERALL RANK
Alternative 1 Do Nothing						3
Alternative 2 Roads Only						2
Alternative 3 Multi-Modal						1

4 ACTIVE TRANSPORTATION STRATEGY

4.1 OVERVIEW

Active transportation can help reduce automobile dependence, increase physical activity levels, improve public health, reduce infrastructure demands, and create more livable and vibrant communities. Many Canadian jurisdictions have recognized the positive impact of providing attractive options for active travel and developed strategies to guide future infrastructure investments and program delivery supportive of these objectives.

This chapter describes the recommended active transportation strategy for the Township of Scugog. The following reference documents provided guidance in developing the pedestrian and cycling networks and supporting policies and programs detailed below:

- *Ontario Traffic Manual (OTM) Book 18 – Cycling Facilities*[10] – OTM Book 18 offers guidance on the planning, design, and operation of on and off-road cycling facilities specific to Ontario. Of note, the Bicycle Facility Selection Tool included in the document provides a three-step facility selection process, which served as the basis for the cycling network development in this plan (see Subsection 4.3.3). The process provides a consistent planning framework that is straightforward to apply and uses readily available data;
- *Small Town and Rural Multimodal Networks*[11] – This reference document provides multimodal design guidance for small town and rural communities drawn from successful case studies in the United States; and
- *Pedestrian and Bicycle Planning – Guide to Best Practice*[12] – This document provides a template for implementing active transportation designs and concepts.

Active transportation plans developed by other Ontario municipalities like Scugog were also reviewed to identify information and practices potentially applicable to the Township.

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10 Queen's Printer for Ontario. *Ontario Traffic Manual Book 18 – Cycling Facilities*. December 2013.
11 U.S. Department of Transportation, Federal Highway Administration. *Small Town and Rural Multimodal Networks*. December 2016.
12 Victoria Transport Policy Institute. *Pedestrian and Bicycle Planning – Guide to Best Practice*. August 2009. http://www.ta.org.br/site2/Banco/7manuais/VTPInmtguide.pdf

4.2 PEDESTRIAN NETWORK

4.2.1 NETWORK DEVELOPMENT

Pedestrian networks must be safe, comfortable, and enjoyable. Compared to other users, pedestrians cover less ground in the same amount of time and experience the street the most intensely. Pedestrians are also the most vulnerable roadway users and must rely on all senses to safely navigate their trips.

The provision of sidewalks in suitable locations is a prerequisite for a walkable community. The benefits of a walkable community are numerous and include:

- Enhanced access to business and associated economic development;
- Reduced reliance on the private automobile for short trips (i.e., less than 1 km) with resulting reduction in traffic and associated greenhouse gas emission; and
- Fostering more sustainable, complete, and walkable communities.

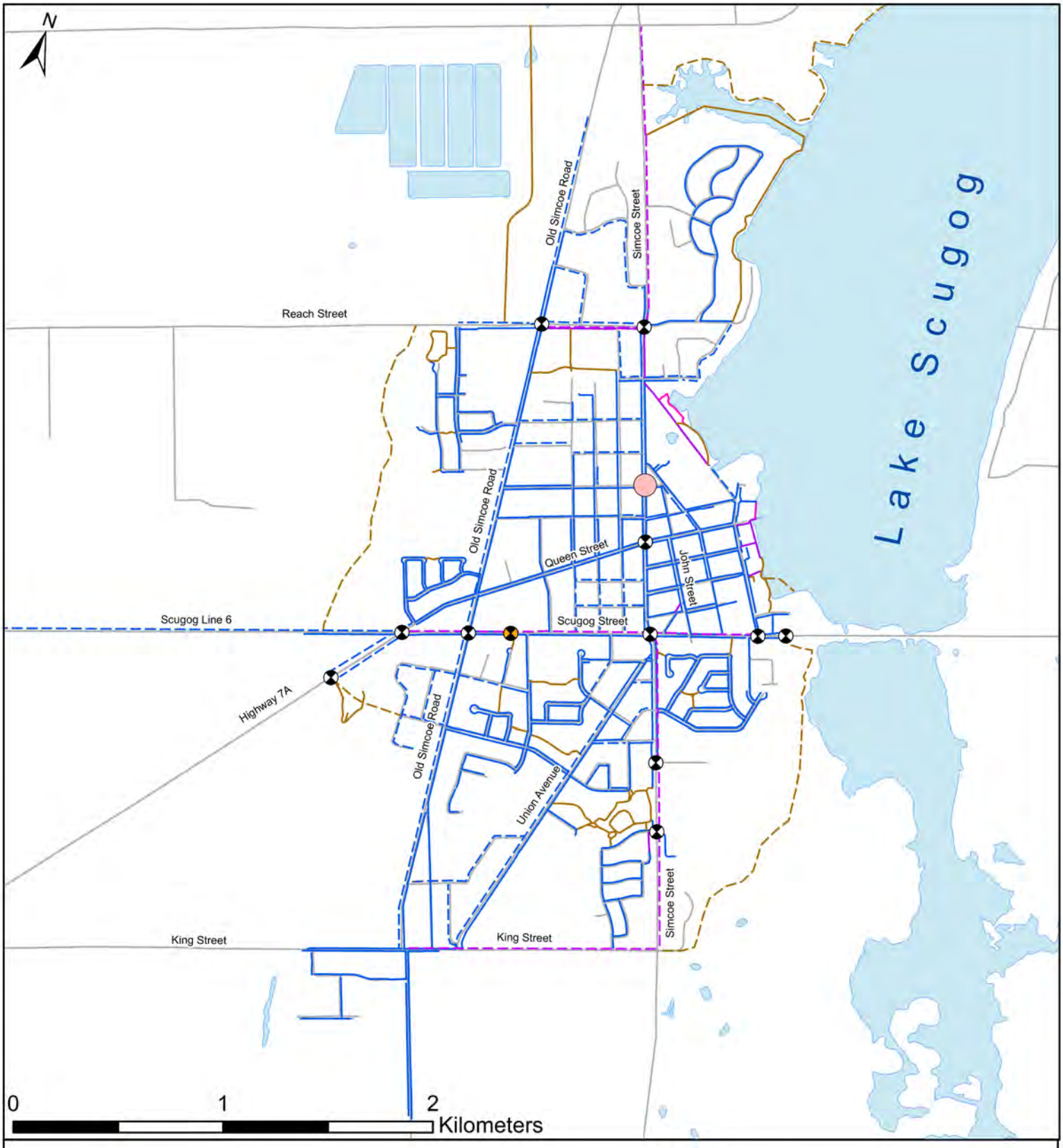
Map 7 and **Map 8** illustrate the proposed pedestrian networks for the Port Perry Urban Area and the Township's hamlets, respectively. The network comprises sidewalk, multi-use path (MUP), trail, and boardwalk facilities, with several elements in common with the proposed cycling network for the Port Perry Urban Area shown on **Map 10**. Subsection 4.3.3 describes the process followed to identify the common facilities.

In planning and designing the pedestrian network, consideration was given to ensuring routes were:

- **Connected and Permeable** – Provided continuous routes serving pedestrian desire lines. Eliminating gaps in the existing sidewalk network was also a key priority;
- **Accessible and Comfortable** – Minimized impediments to barrier-free travel;
- **Safe** – Situated in appropriate locations and limited road crossings; and
- **Relevant to Context** – Suited to the Township and leveraged existing facilities.

Specific factors considered in establishing the network included:

- Roadway classification – Sidewalks should be provided on both sides of arterial and collector roads, while local roadways should have sidewalks on at least one side;
- Length of road;
- Traffic volumes;
- Speed limit;



TOWNSHIP OF Scugog

Legend

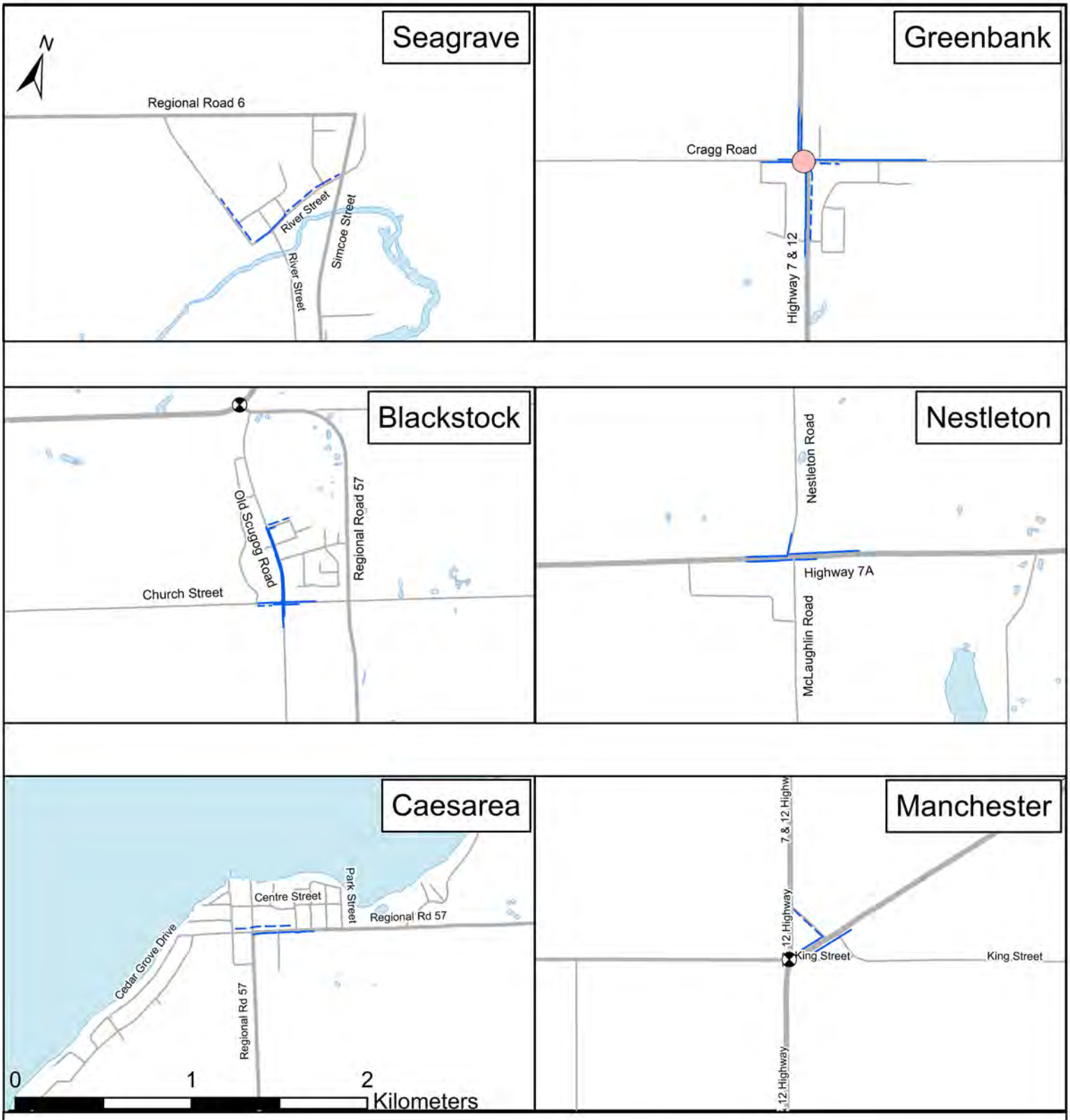
Existing Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Boardwalk

Proposed Facility Type
- Multi-use Path (Paved)
- Trail (Unpaved)
- Sidewalk
- Pedestrian Crossover

Existing Signal
- Intersection Pedestrian Signal
- Traffic Control Signal

Map 7

Proposed Pedestrian Network
Port Perry Urban Area



Legend

Existing Signal
- Traffic Signal Control

Existing Facility Type
- Sidewalk

Proposed Facility Type
- Sidewalk
- Pedestrian Crossover

Road Network
- Municipal
- Regional
- Provincial

TOWNSHIP OF Scugog

Map 8

Proposed Pedestrian Network
Hamlets

- Number of dwellings served; and
- Proximity to schools, parks, churches, transit stops, and recreational and commercial establishments.

Note the proposed pedestrian networks shown on **Map 7** and **Map 8** do not include planned neighbourhood-level sidewalk and trail extensions to be provided through draft approved plans of subdivision (as of December 2020). These additional connections will help to further expand the pedestrian network in Scugog.

Recommendation 4.1 – Adopt and implement the proposed pedestrian networks illustrated on Map 7 and Map 8.

4.2.2 SIDEWALK PRIORITIZATION POLICY

With limited funding available for upgrades to sidewalk facilities and construction of new sections, the Township would benefit from a methodology to prioritize sidewalk improvement projects. The recommended **Sidewalk Prioritization Policy** in **Appendix C** establishes a rational framework for ranking sidewalk projects in existing and potential future settlement areas consistent with the objectives of the AT and TMP and the Township Official Plan. The approach consists of assigning a point score to a series of criteria generally grouped into the following categories:

- Existing sidewalk condition;
- Compliance with *Accessibility for Ontarians with Disabilities Act* (AODA) requirements;
- Conformity with the AT and TMP;
- Land use and connectivity;
- Road characteristics;
- Public support;
- Constructability; and
- Cost.

Projects with higher scores are given priority for implementation. In general, the point allocations have been assigned to prioritize safety and the needs of low-mobility and/or vulnerable pedestrians.

Recommendation 4.2 – Adopt and apply the Sidewalk Prioritization Policy provided in Appendix C and maintain a consistent schedule of assessing sidewalks for needed improvements.

4.3 CYCLING NETWORK

4.3.1 FACTORS INFLUENCING CYCLING USE

Promoting cycling as a viable transportation option requires a comprehensive network of bicycle facilities. The network should feature a hierarchy of routes reflective of the existing street network and key destinations and integrate with key pedestrian facilities. Two key factors influence cycling use and ultimately network design:

User Characteristics

User characteristics impact both the frequency of active travel and the facilities used within the network. In designing the cycling network for Scugog, the following characteristics were considered:

- **Age** – With just under half (47%[13]) of all Township residents over 50 years of age, and 21% over 65, the network should include facilities to facilitate movement of a more aging population. Seniors tend to engage in shorter distance cycling activities (1 to 5 kilometers) such as running errands or visiting nearby friends and family.
- **Skill and Comfort Level** – Research has shown typical cyclists can be categorized into four groups[14]:
  - *Strong and Fearless* cyclists mostly ride for recreational and utilitarian purposes. These individuals are comfortable riding beside motor vehicles of all sizes and will typically cycle regardless of traffic and roadway conditions;
  - *Enthused and Confident* cyclists are like the strong and fearless type. They are generally comfortable sharing the road with motor vehicles but prefer to ride within areas designated for exclusive cyclist use such as bike lanes or trails;
  - *Interested but Concerned* cyclists avoid riding in higher volumes of vehicular traffic and tend to be discouraged by extreme topographic conditions and/or inconsistent bicycle facilities. These individuals do not cycle frequently but would like to ride more since they may not have their own automobile (e.g., children or seniors). They may be drawn to cycling with implementation of separated facilities that provide additional space between cyclists and motorists; and
  - *No Way, No How* individuals have never been (and may never be) drawn to cycling. Factors contributing to this avoidance could include topography, lack of skill, capability, and/or preference.

[13] Statistics Canada. *2016 Census Profile Scugog Township*. 2016 https://www12.statcan.gc.ca/
[14] Roger Geller. *Four Types of Cyclists*. 2006.

Figure 4.1 illustrates the distribution of cyclists by type. With 60% of the population typically categorized as "interested but concerned" users, the plan attempts to target this large market of potential cyclists who could be attracted to cycling with better facilities.

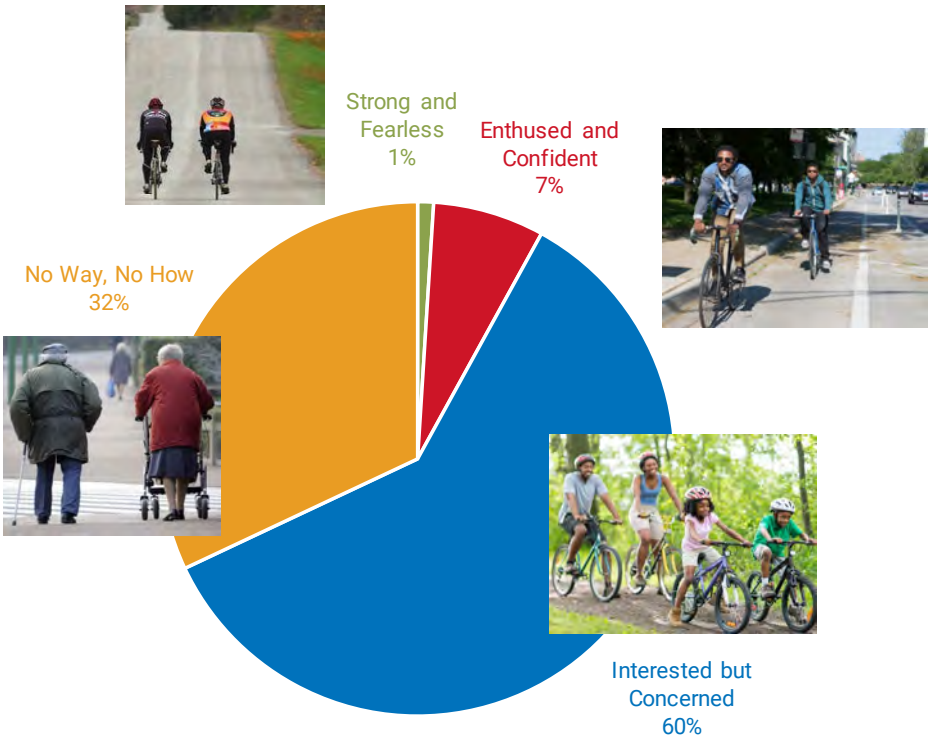


FIGURE 4.1: FOUR TYPES OF CYCLISTS
(Source: Roger Geller)

- **Trip Purpose** –The purpose of the trip affects travel patterns differently. For example:
  - Cyclists making utilitarian trips (e.g., errands, visiting people) tend to seek the most direct path but may be willing to go short distances out of the way for routes with fewer traffic control devices or lower traffic volumes or speeds;
  - Recreational trips are typically made on low volume rural roadways, quiet neighbourhood streets or off-road bicycle facilities. These trips are defined by the level of enjoyment, scenery and company of other cyclists experienced by the rider; and
  - Touring trips (i.e., longer recreational trips) involve travel between urban areas or to specific points of interest. These trips involve more planning with cyclists often arranging overnight accommodation and mapping out preferred routes.

While all three trip types are important to consider, the primary objective of the AT and TMP is to encourage drivers to cycle more. As such, the plan focuses more on utilitarian trips; and

- **Other Potential Users** –While other users, such as in-line skaters, joggers, and electric bike and scooter riders, may travel on the active transportation network in Scugog, the plan focuses on cyclists (and pedestrians).

Facility Design

Facility design plays an important role in improving the attractiveness and ease of cycling. A properly designed facility will provide the cyclist adequate operating space to maintain balance and comfort. This envelope includes the horizonal space required for the bicycle, the vertical space for the user on top of the bicycle, and extra space for maneuvering, passing other cyclists and overall comfort. These requirements vary between bicycle types, user abilities and cyclist speeds.

OTM Book 18 defines the desired operating space for cyclists as 1.5 metres horizontally and 2.5 metres vertically, as **Figure 4.2** illustrates.

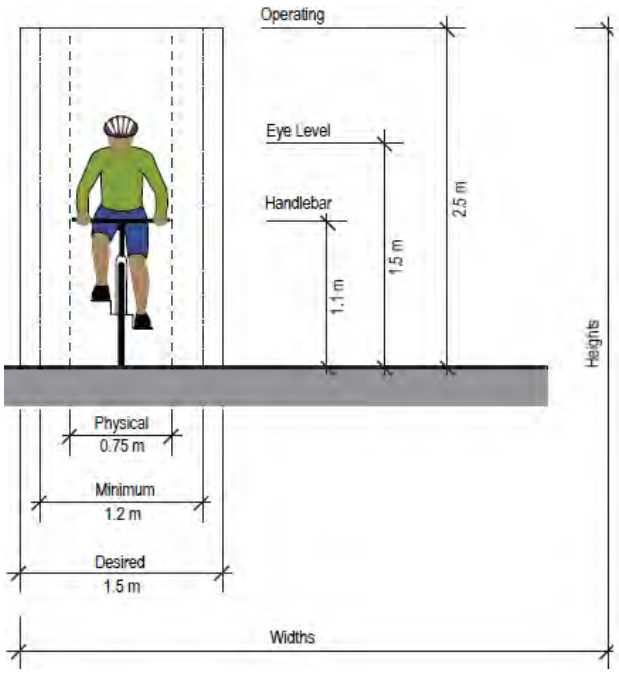


FIGURE 4.2: CYCLIST OPERATING SPACE
(Source: OTM Book 18)

4.3.2 TYPES OF CYCLING FACILITIES

Cycling facilities can be divided into two main categories: on-road and off-road. The following sections summarize the typical characteristics of facilities already in place or being proposed for cycling use in the Township within each category. Section 4.4 provides more detailed descriptions and application guidelines for the on- and off-road facilities listed below.

On-Road Facilities

Under the *Highway Traffic Act*, all roadways in Ontario are deemed shared facilities for cycling unless signed otherwise. That said, routes expressly forming part of a cycling network should be signed and marked properly to designate their role for awareness, consistency, and wayfinding.

The following describes the types of on-road cycling facilities in place or being proposed for Scugog:

- **Shared Use Lanes** alert motorists of the expectation to share the roadway with cyclists using pavement markings (sharrows) and signs. These treatments are typically only considered for local and (sub)urban roads with lower traffic volumes and motor vehicle operating speeds.
- **Paved Shoulders** provide space for cyclists to the right of the travel lane, between the white painted line and the edge of pavement/curb, to operate separately from motor vehicles. Used more commonly on rural roads (albeit some communities will denote “urban shoulders”), the additional paved surface is not designated or marked as a bicycle lane and will still serve stopped, disabled and emergency vehicles.
- **Bicycle Priority Streets** optimize travel for cyclists operating alongside motor vehicles through traffic calming and other speed management measures, such as speed humps, wayfinding signs, chicanes, and pedestrian crossings. This type of facility is ideal for streets with low-speed and low-volume traffic conditions, providing convenient and often direct access through neighbourhoods.
- **Bike Lanes** designate a portion of the roadway for preferential or exclusive use by cyclists through pavement markings, signs, and other traffic control devices (e.g., flexible bollards), as well as on-street parking. This type of facility is typically located on urban arterial or collector roadways that have higher traffic volumes and operating speeds.

Off-Road Facilities

Off-road cycling facilities physically separate cyclists from motor vehicle traffic through elevation changes, physical barriers, or distance from the travelled road. These facilities are appropriate for both experienced and inexperienced cyclists and, if permitted, other active transportation users such as pedestrians, in-line skaters, skateboarders, and wheelchair users.

The following describes the types of off-road cycling facilities in place or being proposed for Scugog:

- **Multi-use Paths and Trails** are paved (asphalt or concrete) or unpaved (stone dusted) linear facilities physically separated from motor vehicle traffic. These facilities are often used by both pedestrians and cyclists, requiring users to be more attentive to potential conflicts given the speed differential.

  Located within the road right-of-way but separated by a boulevard from the travel lanes, a MUP is typically implemented adjacent to roadways with higher motor vehicle speeds and volumes along key cycling corridors. Situated on property outside the road allowance, a MUT offers more scenic and indirect routes for recreational cyclists but can also provide a direct commuter link in corridors not served by on-road bicycle facilities.

4.3.3 NETWORK DEVELOPMENT

The proposed cycling network was developed using a five-step process based on the Bicycle Facility Selection Tool contained in OTM Book 18 and shaped by input gathered through the Stakeholder Engagement Program (see Chapter 2). In planning and designing the cycling network, consideration was given to ensuring safety, capacity, and connectivity for all riders. Network development also reflected future capacity and mode share goals rather than solely present-day demands.

Figure 4.3 illustrates the network design process, which reflects the Township's vision of creating a more connected and accessible active transportation network. The following summarizes the steps completed in developing the proposed cycling network for the Township:

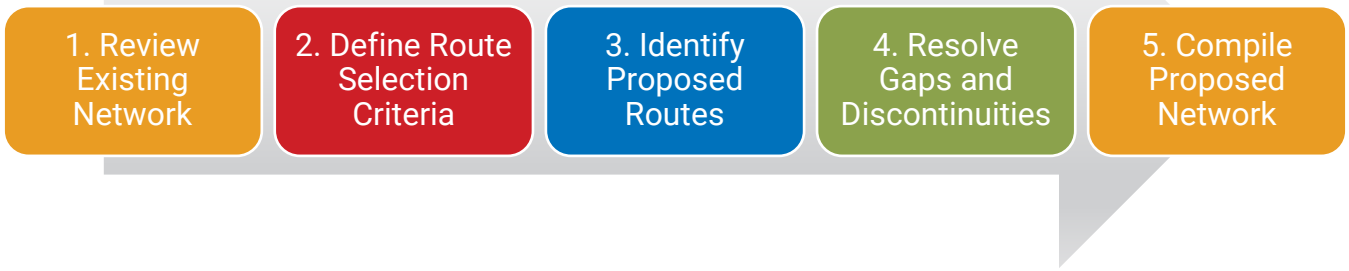


FIGURE 4.3: CYCLING NETWORK DEVELOPMENT PROCESS

Step 1 – Review Existing Network

The existing cycling routes depicted on **Map 3** and **Map 4** served as the starting point for the network development process. The map was supplemented with proposed routes denoted in Province of Ontario (#CycleON Province-wide Cycling Network Map), Durham Region (proposed Regional Cycling Plan Update Primary Cycling Network), and adjacent municipal cycling plans to establish the base network of existing and planned facilities within and connecting to the Township. At the time of completing network development, Durham Region was in the process of updating the Regional Cycling Plan, providing a unique opportunity to coordinate the routes between the plans.

Step 2 – Define Route Selection Criteria

A series of criteria were established to aid in identifying preferred routes and facility types for the Township's proposed cycling network. **Table 4.1** summarizes the route selection criteria, which were derived in part from the transportation vision, goals, and objectives stated in Subsection 3.5.2. The criteria reflect common measures used by municipalities in assessing the appropriateness of candidate cycling routes.

Step 3 – Identify Proposed Routes

The next step in determining the proposed cycling network was to identify primary east-west and north-south routes through Port Perry and the rural area of the Township based on the route selection criteria defined in **Table 4.1**. Offering a grid network of parallel routes in both orientations improves network connectivity and coverage, thereby providing options for cyclists.

TABLE 4.1: ROUTE SELECTION CRITERIA

Criteria	Description
Accessibility and Potential Use	The route should provide adequate space to develop a facility that meets AODA requirements. It should serve a wide range of users, regardless of differences in capabilities and socio-economic circumstances, and accesses key origins and destinations.
Connectivity and Directness	The route should provide a complete connection, linking to other routes, key places of interest and other modes of transportation. The shortest routes to key destinations are preferred, although less direct routes may be necessary to improve comfort and safety.
Safe and Comfortable	The route should minimize risk and provide adequate comfort to users. Routes with higher vehicular speeds and volumes should have space available to provide adequate separation between vehicles and cyclists (and pedestrians). Routes without street parking are preferred. Proper protection from or removal of street parking should be considered where applicable. Other considerations include surface quality, sightlines, and maintenance.
Context Sensitive and Cost Effective	Routes should build on existing infrastructure where possible with higher volume routes given priority. Routes and corresponding facilities should be appropriate based on the expected volume and type of cyclist (and pedestrian) traffic (tourist versus commuter). Cycling infrastructure should be coordinated with construction and other road projects.
Physical Barriers	Physical barriers include topography, rivers, narrow bridges, freeways, and railroad tracks. While routes with few or no barriers are preferred, in some instances they are unavoidable. In these cases, an appropriate level of safety and comfort should be provided while also maintaining connectivity and directness.

Table 4.2 and **Table 4.3** summarize the proposed east-west and north-south cycling routes for the Port Perry Urban Area and the rural areas of the Township, respectively. The tables denote the routes also identified on the proposed Regional Cycling Plan Update Primary Cycling Network (which includes routes shown on the provincial cycling network). **Appendix D** provides the **Detailed Cycling Route Assessment** with a description and examination of each route.

The tables list proposed cycling improvements including features to aid in crossing roads consistent with the principles of the Durham Region Vision Zero Program. An assessment of implementation opportunities and challenges for each route are provided. See Subsection 4.3.2 for further information on the different facility types noted in the explanation of the proposed cycling improvements. For certain routes, on-road bike route signs are proposed as an interim measure until the recommended facility type can be introduced. Implementation timing for the proposed facility will depend on further investigation, consultation with potentially affected parties, and/or funding availability. **Chapter 7** provides the recommended prioritization of route implementation considering these factors.

As noted in Step 1, routes shown in Province of Ontario, Durham Region, and adjacent municipal cycling plans formed part of the base network of existing and planned facilities. Through the network development process, additional regional roads and provincial highways were identified as desirable cycling routes in Scugog, as **Table 4.4** summarizes. While the AT and TMP does not compel or commit the Region and/or the Ministry of Transportation to implement routes under their respective jurisdictions, both agencies should be requested to consider implementing these facilities with future road rehabilitation works.

Step 4 – Resolve Gaps and Discontinuities

The proposed routes identified in Step 3 provide the foundation for a connected and complete cycling network in Scugog, but minor gaps and discontinuities inevitably remain. Eliminating these breaks in the network alleviates the need for cyclists to merge with vehicular traffic, sometimes unexpectedly, when the bicycle route “pauses”. This leads to improved connectivity, safety, and satisfaction for all road users, which can hopefully encourage “interested but concerned” cyclists to travel more regularly by bike.

Table 4.5 summarizes the identified gaps and discontinuities with the proposed cycling routes in the Port Perry Urban Area and identifies potential solutions to resolve the missing links. Opportunities and challenges presented by each route continuity option, which are primarily located along the waterfront, are highlighted in the table. **Appendix D** provides the **Detailed Cycling Route Assessment** of the different alternatives considered for reference.

Step 5 – Compile Proposed Network

Map 9 and **Map 10** illustrate the proposed cycling networks for the rural area and the Port Perry Urban Area, respectively. Building on the existing grid of Township roads, the future network provides a permeable and connected system of routes facilitating travel throughout the municipality, with a focus on the Port Perry Urban Area given its higher population, increased density, and suitable road pattern. Opportunities to travel beyond the Township's boundaries are also facilitated by the network concept.

Table 4.6 summarizes the length of existing and proposed cycling routes for the network, inclusive of all jurisdictions. The table also captures the pedestrian facilities denoted on **Map 7** and **Map 8** for completeness. Combined with potential Durham Region and Ministry of Transportation initiatives, the AT and TMP provides for nearly 268 km in additional active transportation routes in the Township.

Recommendation 4.3 – Adopt and implement the proposed cycling networks illustrated on **Map 9** and **Map 10**.

Recommendation 4.4 – Collaborate with Durham Region and the Ministry of Transportation to implement the proposed cycling facilities on roads under their respective jurisdictions.

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
East-West Routes			
King Street from Old Simcoe Road to Simcoe Street[1]	• Construct boulevard multi-use path. Install signed on-road bike route **as interim measure**. • Install signalized crossride at Simcoe Street	• Leverages existing infrastructure • Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Wide road right-of-way allows for separated facilities • Coordinates implementation with planned development • Improves connectivity for pedestrians	• Requires improved crossing at Simcoe Street • Heavy vehicles may be using King Street/Rose Street to by-pass Scugog Street, which could make cyclists feel less safe
Victoria Street and Earl Cuddie Boulevard from Highway 7A to Simcoe Street (includes future west extension)	• Construct off-road multi-use trail – Highway 7A to Alma Street • Designate and redesign as bicycle priority street. Install signed on-road bike route **as interim measure** – Alma Street to Dr. Herbert A. Bruce Park trail. • Pave unpaved sections of off-road multi-use trail in park to Simcoe Street • Construct boulevard multi-use path on west side of Simcoe Street from park to Vanedward Drive • Install signalized crossride on Simcoe Street at Vanedward Drive	• Connects to other routes • Connects to places of interest (commercial, parks) • Leverages signalized crossing on Simcoe Street • Offers an attractive and enjoyable route • Improves connectivity for pedestrians	• Not a direct connection to east of Simcoe Street

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
Lakeview Drive and Carnegie Street from Simcoe Street to Scugog Street	• Designate and redesign as bicycle priority street. Install signed on-road bike route **as interim measure**.	• Connects to other routes • Connects to places of interest (downtown, waterfront, commercial)	• Not a direct connection west of Simcoe Street • Offset intersection with Scugog Street
Scugog Street from Scugog Line 6/Queen Street to Water Street	• Replace sidewalk/ construct new boulevard multi-use path	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to places of interest (downtown waterfront, schools, commercial)	• Higher speed road with limited crossing opportunities
Queen Street from Scugog Line 6/Scugog Street to Water Street[1]	• Install signed on-road bike route (depending on outcome of corridor operation and design study per Recommendation 5.6) • Install signalized crossride at Scugog Line 6/Queen Street/Scugog Street intersection	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network and Province-wide Cycling Network • Connects to places of interest (downtown waterfront, schools, commercial) • Provides positive guidance for cyclists at complex intersection	• Scugog Line 6/ Queen Street/ Scugog Street intersection geometry increases complexity of crossing manoeuvres – improvements required • Narrow roadway width limits options for protected cycling

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
Paxton Street and Perry Street from Old Simcoe Road to Queen Street	• Designate and redesign as bicycle priority street. Install signed on-road bike route **as interim measure**. • Install pedestrian crossover at Simcoe Street	• Connects to other routes. • Connects to places of interest (hospital, downtown)	• Improvements required at intersection with Simcoe Street (e.g., protected crossing) • Skewed intersection with Perry Street creates awkward sight lines
Reach Street[1] and Coulter Street from Old Simcoe Road to Waterfront Trail	• Reconstruct boulevard multi-use path on Reach Street – Old Simcoe Road to Bigelow Street. • Install signalized crossride at Old Simcoe Road • Install unsignalized crossing at Bigelow Street • Designate and redesign Coulter Street as bicycle priority street. Install signed on-road bike route on Coulter Street **as interim measure**.	• Leverages existing Township and Regional infrastructure (paved shoulders on Reach Street west to Medd Road) • Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to places of interest (schools, community centre, seniors' homes, fairgrounds) • Provides controlled crossings at major intersections – Simcoe Street, Old Simcoe Road • Improves connectivity for pedestrians	• Skewed intersection with Old Simcoe Road could create awkward sight lines

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
North-South Routes			
Old Simcoe Road (within Port Perry Urban Area)[1] and Scugog Line 8	• Install signed on-road bike route – south limit to King Street • Install bike lanes – King Street to Edinborough Avenue. Install marked on-road bike route ("urban shoulders") **as interim measure**. • Install signalized crossride at Scugog Street • Install signed on-road bike route – Edinborough Avenue to Scugog Line 8	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to places of interest (schools, hospital, community centre, commercial) • Leverages planned road works (Old Simcoe Road, north of Queen Street scheduled for road resurfacing within five years) • Takes advantage of existing controlled crossings at major intersections (Reach Street, Queen Street and Scugog Street) • Provides a direct north-south route • Wide boulevard may allow for multi-use path	• May need to widen roadway to accommodate bike lanes

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
Bigelow Street from Queen Street to Reach Street	• Designate and redesign as bicycle priority street • Install marked on-road bike route ("urban shoulders") **as interim measure** – Queen Street to Kellett Street • Install signed on-road bike route **as interim measure** – Kellett Street to Reach Street	• Connects to other routes and places of interest • Offers an attractive and enjoyable route • Provides direct north-south route	• May require additional traffic control at Queen Street (e.g., all-way stop, refuge area), which may prove challenging due to proximity of Simcoe Street • Existing road surface is in poor condition. Road resurfacing required. • Cannot connect route south of Queen Street because there is no protected crossing at Scugog Street
Union Avenue and Lorne Street from King Street to Simcoe Street	• Construct bike lanes with future road reconstruction projects – King Street to Josephine Street, Major Street to Simcoe Street • Convert to bike lanes/ "urban shoulders" once adjacent sections constructed – Josephine Street to Major Street • Install signed on-road bike route **as interim measure**	• Connects residential communities • Requires minimal resources to upgrade	• No connection north of Lorne Street

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
Simcoe Street from King Street to Scugog Street[1]	• Replace sidewalk/ construct new boulevard multi-use path	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to place of interest (commercial) • Improves connectivity for pedestrians	• Higher speed road with limited crossing opportunities
Water Street from Scugog Street to North Street[1]	• Install signed on-road bike route	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network and Province-wide cycling network • Connects to places of interest (downtown waterfront, commercial)	• Narrow roadway width limits options for protected cycling
Sherrington Drive and Chimney Hill Way from Reach Street to Old Simcoe Road	• Designate and redesign as bicycle priority street. Install signed on-road bike route **as interim measure**.	• Connects to other routes • Connects to places of interest (schools, churches, community centre)	• Not a direct connection east of Old Simcoe Road • Unsignalized intersection with Reach Street may require improved crossing • Offset intersection with Old Simcoe Road

TABLE 4.2: PROPOSED CYCLING ROUTES– PORT PERRY URBAN AREA

Route	Description	Opportunities	Challenges
Simcoe Street from Reach Street to Scugog Line 8/ Castle Harbour Drive[1]	• Construct boulevard multi-use path	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to place of interest (community facilities) • Improves connectivity for pedestrians • Connects to Waterfront Trail	• Higher speed road with limited crossing opportunities • Limited connections to key places of interest

Notes:
1. Forms part of the proposed Regional Cycling Plan Update Primary Cycling Network

TABLE 4.3: PROPOSED CYCLING ROUTES – RURAL AREA

Route	Description	Opportunities	Challenges
East-West Routes			
Scugog Line 14 from Trans Canada Trail to Highway 7/12	• Install signed on-road bike route	• Connects to other routes • Provides continuous connection to proposed paved shoulders on Saintfield Road east of Highway 7/12 • Connects outside the Township • Lower vehicular volumes along route	• May require intersection treatments at Highway 7/12 (i.e., signs and pavement markings)[2] • Cyclists and motorists may not be comfortable sharing the roadway
Scugog Line 12 from Trans Canada Trail to Marsh Hill Road	• Install signed on-road bike route	• Connects to other routes • Connects outside the Township • Lower vehicular volumes along route	• Cyclists and motorists may not be comfortable sharing the roadway
Cragg Road from Highway 7/12 to Old Simcoe Road	• Install signed on-road bike route	• Connects to other routes • Connects to settlement area (Greenbank) • Lower vehicular volumes along route	• Does not provide a direct connection west of Highway 7/12 • Cyclists and motorists may not be comfortable sharing the roadway

TABLE 4.3: PROPOSED CYCLING ROUTES – RURAL AREA

Route	Description	Opportunities	Challenges
Medd Road from Lake Ridge Road to Reach Street[1]	• Install signed on-road bike route	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to settlement area (Epsom) • Connects outside the Township • Route frequently used by cyclists	• May require intersection treatments at Lake Ridge Road (i.e., signs and pavement markings)[2] • Cyclists and motorists may not be comfortable sharing the roadway
Scugog Line 6 from Marsh Hill Road to Highway 7/12[1]	• Install signed on-road bike route	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Provides continuous connection to bike lanes east of Highway 7/12 • Lower vehicular volumes along route	• Cyclists and motorists may not be comfortable sharing the roadway
Chalk Lake Road from Lake Ridge Road to Ashburn Road	• Install signed on-road bike route	• Connects to other routes • Connects outside the Township • Lower vehicle volumes along route	• May require intersection treatments at Lake Ridge Road (i.e., signs and pavement markings)[2] • Cyclists and motorists may not be comfortable sharing the roadway • Challenging roadway geometry

TABLE 4.3: PROPOSED CYCLING ROUTES – RURAL AREA

Route	Description	Opportunities	Challenges
Church Street/ Edgerton Road from Old Scugog Road to Manvers Scugog Townline Road	• Install signed on-road bike route	• Connects to other routes • Connects to settlement areas (Blackstock, Cadmus) • Connects outside the Township • Lower vehicular volumes along route	• Cyclists and motorists may not be comfortable sharing the roadway
Devitts Road from Regional Road 57 to Manvers Scugog Townline Road	• Install signed on-road bike route	• Connects to other routes • Provides a connection to Durham East Cross Forest Conservation Area • Connects outside the Township • Lower vehicular volumes along route	• Cyclists and motorists may not be comfortable sharing the roadway
North-South Routes			
Cartwright East Quarter Line/ Mount Joy Road/Fowler Road from Boundary Road to Edgerton Road	• Install signed on-road bike route	• Connects to other routes • Provides a connection to Durham East Cross Forest Conservation Area • Provides for potential connections outside the Township • Lower vehicular volumes along route	• May require intersection treatments at Highway 7A (i.e., signs and pavement markings)[2] • Existing road surface is in poor condition. Road resurfacing required. • Cyclists and motorists may not be comfortable sharing the roadway

TABLE 4.3: PROPOSED CYCLING ROUTES – RURAL AREA

Route	Description	Opportunities	Challenges
Nestleton Road/ McLaughlin Road from Edgerton Road to Regional Road 57	• Install signed on-road bike route	• Connects to other routes • Connects to settlement areas (Nestleton Station, North Nestleton) • Lower vehicular volumes along route	• May require intersection treatments at Highway 7A (i.e., signs and pavement markings)[2] • Existing road surface is in poor condition. Road resurfacing required. • Cyclists and motorists may not be comfortable sharing the roadway
Old Scugog Road from Boundary Road to Regional Road 57[1]	• Install signed on-road bike route	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects to settlement areas (Burketon, Blackstock) • Route frequently used by cyclists	• May require intersection treatments at Shirley Road (i.e., signs and pavement markings)[2] • Existing road surface is in poor condition. Road resurfacing required. • Cyclists and motorists may not be comfortable sharing the roadway
Old Simcoe Road (outside Port Perry Urban Area)[1]	• Install signed on-road bike route – Simcoe Street to south limit of Port Perry, north limit of Port Perry to Saintfield Road. **Construct** paved shoulders at time of road reconstruction – Simcoe Street to south limit of Port Perry.	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Lower vehicular volumes along route • Route frequently used by cyclists	• Portions of roadway not paved, which may not be comfortable for all cyclists • Cyclists and motorists may not be comfortable sharing the roadway

TABLE 4.3: PROPOSED CYCLING ROUTES – RURAL AREA

Route	Description	Opportunities	Challenges
Marsh Hill Road Road/Scugog Line 4/Ashburn Road from Scugog Line 12 to Townline Road[1]	• Install signed on-road bike route	• Connects to other routes – part of proposed Regional Cycling Plan Update Primary Cycling Network • Connects outside the Township • Lower vehicular volumes along route • Route frequently used by cyclists	• May require intersection treatments at Regional Highway 47, Reach Street, and Goodwood Road (i.e., signs and pavement markings)[2] • Higher speed roadway • Existing road surface is in poor condition. Road resurfacing required. • Cyclists and motorists may not be comfortable sharing the roadway
Proposed Second Island Access	• Construct paved shoulders at time of road construction • Install signed on-road bike route on existing road sections	• Provides a safer alternative for cyclists	• Timing of construction unknown

Notes:
1. Forms part of the proposed Regional Cycling Plan Update Primary Cycling Network
2. Type of signage and extent of pavement markings contingent on cyclist and vehicular volumes and sight lines

TABLE 4.4: SUGGESTED CYCLING ROUTES ON REGIONAL ROADS AND PROVINCIAL HIGHWAYS NOT ALREADY IDENTIFIED IN OTHER PLANS

Route	Description	Opportunities	Challenges
Saintfield Road (Regional Road 6) from Highway 7/12 to Simcoe Street	• Consider constructing paved shoulders	• Connects to other routes	• May require intersection treatments at Highway 7/12 (i.e., signs and pavement markings)[1] • Higher speed roadway
Highway 7A from Highway 7/12 to Scugog Line 6/Queen Street	• Consider constructing paved shoulders	• Connects to other routes	• May require intersection treatments at Highway 7/12 (i.e., signs and pavement markings)[1] • Higher speed roadway

Notes:
1. Type of signage and extent of pavement markings contingent on cyclist and vehicular volumes and sight lines

TABLE 4.5: PROPOSED SOLUTIONS TO GAPS AND DISCONTINUITIES – PORT PERRY URBAN AREA

Location	Proposed Solution	Opportunities	Challenges
Waterfront Trail – Boardwalk to Rail Trail	• Construct concrete section from boardwalk to sidewalk on Water Street • Construct curb cut and ramp at new roundabout leg exclusively for cyclists • Install shared use on-road bike route ("sharrows") within roundabout and on Old Rail Line	• Connects two major active transportation facilities • Old Rail Lane is a low volume roadway where cyclists of all ages and abilities can feel comfortable sharing the road	• Cyclist and vehicle interactions required within roundabout • Library may limit pedestrian and cyclist sight lines at southeast corner of building creating potential for conflicts
Waterfront Trail – Curt Street to south of Scugog Street <u>Alignment 1</u> – Water Street and Carnegie Street	• Coordinate with Province to construct boulevard multi-use path on Scugog Street • Install signalized crossride on Scugog Street at Water Street • Construct boulevard multi-use path on east side of Water Street	• Provides direct connection • Leverages existing and planned infrastructure • Separated facility provides a safer, more comfortable experience for cyclists	• Limited boulevard space on south side of Scugog Street • Coordination required with Province on type and timing of facility on Scugog Street • Several driveways along route increase potential for motorist-cyclist conflicts
Waterfront Trail – Curt Street to south of Scugog Street <u>Alignment 2</u> – New Connection and Future Multi-Use Trail	• Coordinate with Province to construct boulevard multi-use path on Scugog Street • Install signalized crossride on Scugog Street at commercial driveway access (Port Perry Plaza/grocery store) • Coordinate with commercial property owner to construct multi-use path linking trail on Curt Street to crossride	• Provides a direct connection and continues the Waterfront Trail • Leverages existing and planned infrastructure • Separated facility provides a safer, more comfortable experience for cyclists	• Coordination required with Province on type and timing of facility on Scugog Street • Unpredictable motorist behaviour in parking lot could increase cyclist-motorist conflicts • Coordination required with commercial property owner(s) to install facility within parking lot area

TOWNSHIP OF Scugog

Map 9

Proposed Cycling Network

Legend

Existing Facility Type
- Bike Lane
- Paved Shoulder
- Trail (Unpaved)

Proposed Facility Type
- Signed On-Road
- Signed On-Road Greenbelt Route
- Paved Shoulder
- Trail (Unpaved)

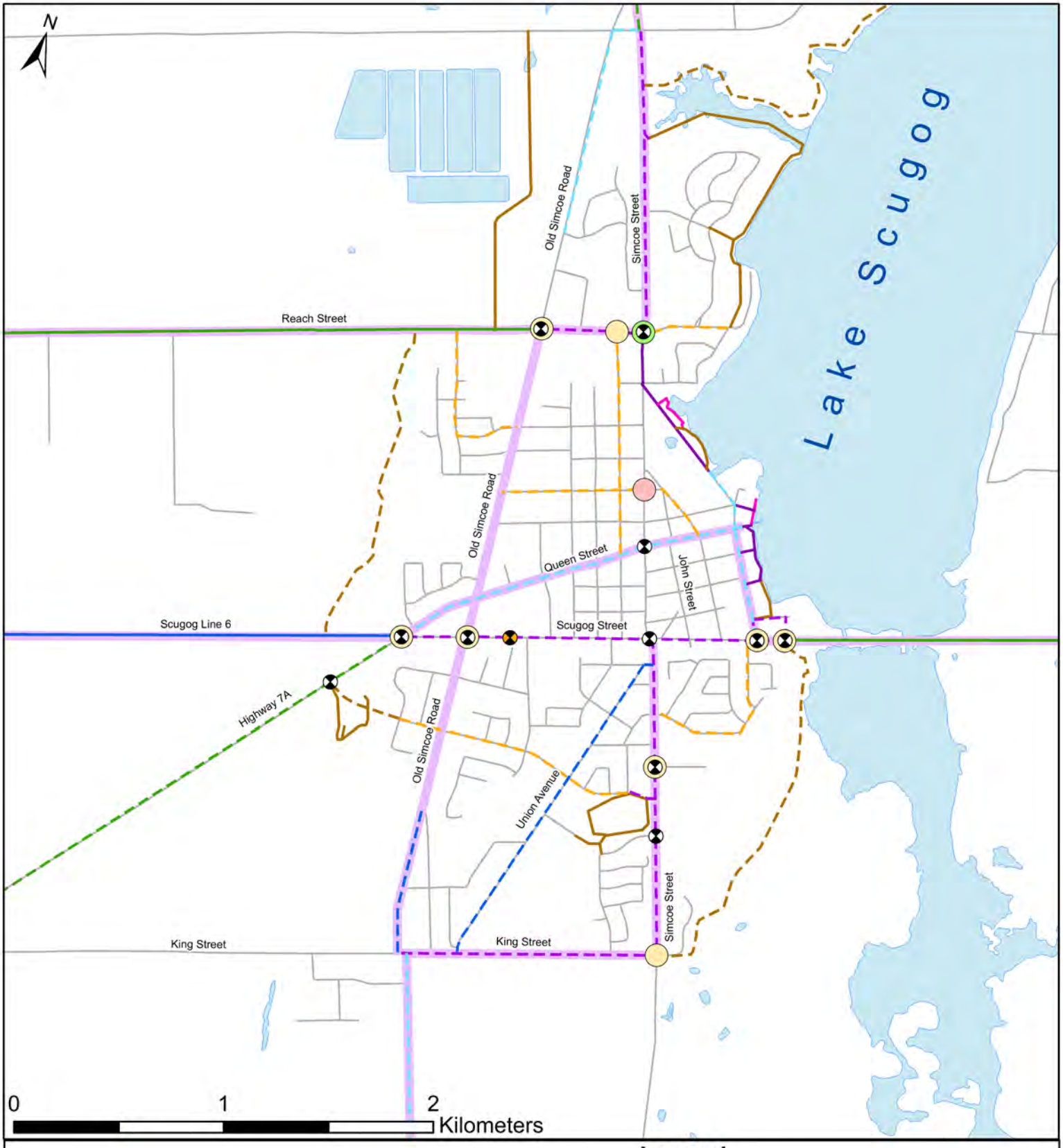
Regional Primary Cycling Network

Road Network
- Municipal
- Regional
- Provincial

Features
- Scugog Boundary
- East Cross Forest
- Municipal Boundaries

N

Saintfield Road
Trans Canada Trail
Scugog Line 12
Cragg Road
Regional Highway 47
Simcoe Street
Island Road
Lake Scugog
Regional Road 57
Malcolm Road
Nestleton Road
City of Kawartha Lakes
Township of Uxbridge
Scugog Line 8
Reach Street
SEE MAP 10
Scugog Line 6
Scugog Street
Highway 7A
McLaughlin Road
Edgerton Road
Marsh Hill Road
Goodwood Road
King Street
Highway 7&12
Old Simcoe Road
Old Scugog Road
Regional Road 57
Cartwright East Quarter Line
Devitts Road
Scugog Line 2
Shirley Road
Mountjoy Road
Fowler Road
0 3 6 Kilometers
Town of Whitby
City of Oshawa
Municipality of Clarington



Legend

TOWNSHIP OF Scugog

Map 10

Proposed Cycling Network
Port Perry Urban Area

Existing Facility Type

- Multi-use Path (Paved)
- Trail (Unpaved)
- Bike Lane
- Paved Shoulder
- Boardwalk
- Crossride

Proposed Facility Type

- Multi-use Path (Paved)
- Trail (Unpaved)
- Bike Lane
- Paved Shoulder
- Bicycle Priority Street
- Signed On-Road
- Crossride
- Pedestrian Crossover

- Regional Primary Cycling Network

Existing Signal

- Intersection Pedestrian Signal
- Traffic Control Signal

TABLE 4.6: LENGTH OF ACTIVE TRANSPORTATION FACILITIES

Facility Type	Length (km)		
	Existing	Proposed	Total
Multi-Use Path/Trail (Paved)	1.7	7.8	9.5
Multi-Use Path/Trail (Unpaved)	9.2	7.2	16.4
Sidewalk	62.9	19.7	82.6
Boardwalk	0.3	-	0.3
Bike Lane	4.8	10.4	15.2
Bicycle Priority Street	-	10.8	10.8
Paved Shoulder	66.9	12.8	79.7
Urban Shoulder	-	8.7	8.7
Signed Cycle Route[1,2]	-	203.4	203.4
Sub-Total	**145.8**	**280.8**	**426.6**
Less signed on-road bike routes proposed as an interim measure[2]	-	-32.8	-32.8
Plus suggested cycling routes on regional roads and provincial highways not already identified in other plans[3]	-	+19.6	+19.6
NET TOTAL	**145.8**	**267.6**	**413.4**
Crossrides/Pedestrian Crossovers	1	10	11

Notes:
1. Includes signed and shared use on-road bike routes.
2. Includes signed on-road bike routes proposed as an interim measure.
3. Per **Table 4.4**.

4.3.4 CONTINUOUS TRAIL AROUND LAKE SCUGOG

Section 8.4 b) of the Township Official Plan recognizes the development of a continuous shoreline trail around Lake Scugog as a priority for the Township. Consistent with this direction, the AT and TMP includes initiatives to eliminate gaps in the waterfront trail within Port Perry and extend the facility north from its current terminus in Canterbury Common and south from Scugog Street to Simcoe Street.

These and other actions by the Township, like trail improvement projects and land acquisition via *Planning Act* approvals, are helping to advance the shoreline trail incrementally and should continue. It is important to recognize this ambitious, aspiration initiative will take time to realize given:

- Most property for the trail remains in private ownership with little to no prospect of acquisition through the land development process;
- A significant portion of the Lake Scugog shoreline lies outside the Township. Its uncertain whether the City of Kawartha Lakes shares a similar interest in creating a trail along its section;
- The Lake Scugog shoreline includes several important natural heritage (including Provincially Significant Wetlands) and other features that could make trail development more difficult in certain locations. It may be necessary to route the trail onto an adjacent road in these instances; and
- The cost to implement the trail will be considerable given the length of the shoreline.

Recommendation 4.5 – Continue to develop the shoreline trail around Lake Scugog as opportunities are presented.

4.4 CYCLING FACILITY DESIGN GUIDELINES

The following cycling facility guidelines were developed based on current best practices and a review of the Township's infrastructure-related engineering and planning design standards and policies. The guidelines summarized below are not intended to be prescriptive or replace sound engineering judgement and should be used in combination with other reference guidebooks particularly OTM Book 18.

4.4.1 LINEAR FACILITIES

Table 4.7 and **Table 4.8** provide descriptions and application guidelines for the on and off-road cycling facilities, respectively, introduced in Subsection 4.3.2 and referenced in the tables in Subsection 4.3.3. OTM Book 18 provides guidance for the design and implementation of these linear facilities. **Figure 4.4** details the signage and pavement marking provisions referenced in the tables.

Recommendation 4.6 – Adopt and apply the guidelines specified in Ontario Traffic Manual Book 18, summarized in part in **Table 4.7** and **Table 4.8**, for the design and installation of linear cycling facilities.

4.4.2 CROSSRIDES

Crossrides are designated roadway crossing locations where cyclists are permitted to ride within a crosswalk without having to dismount. Crossride locations are denoted by signs, pavement markings, and a traffic signal if the crossing is signalized. **Table 4.9** provides descriptions and application guidance for the four types of crossrides based on OTM Book 18. Subsection 4.3.3 identifies potential locations for their use in Scugog.

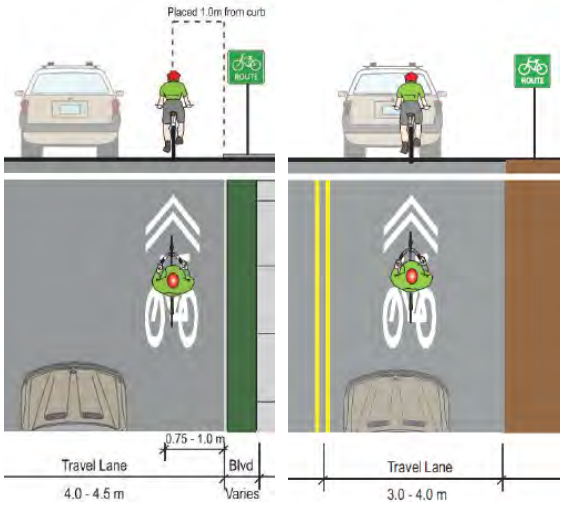
Recommendation 4.7 – Install crossrides to aid cyclists in crossing roads at locations meeting the criteria specified in Ontario Traffic Manual Book 18.

4.4.3 SIGNAGE AND PAVEMENT MARKINGS

It is important that each facility be signed and marked appropriately, consistent with recommended practices in OTM Book 18, the TAC *Bikeway Traffic Control Guidelines for Canada* and other accepted guidelines. Effective delineation will help clarify the proper use of each facility and minimize potential confusion between motorists and cyclists. **Figure 4.4** summarizes the recommended signage and pavement marking guidelines for cycling facilities in Scugog based on OTM Book 18 and the TAC guidebook. Section 4.8 provides further information specific to wayfinding signs.

TABLE 4.7: ON-ROAD CYCLING FACILITIES

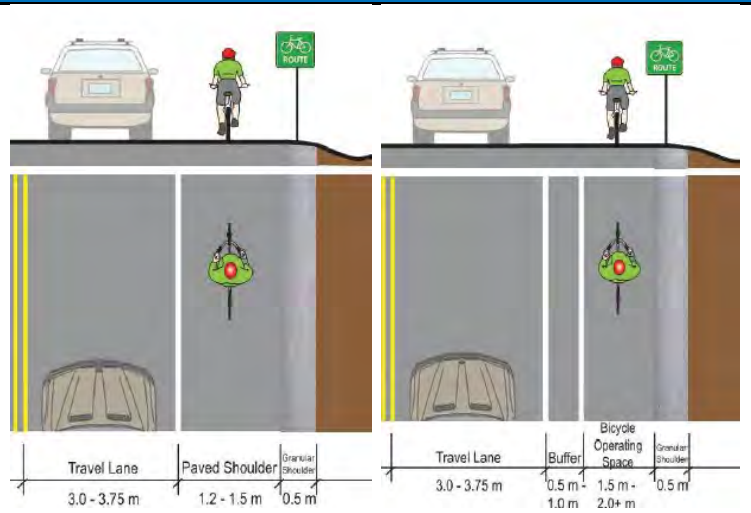
Shared Use Lane		

Description	• A travel lane on a roadway shared by motor vehicles and cyclists denoted with shared use lane pavement markings (known as "sharrows") and/or bicycle route marker signs
	• Sharrows identify preferred location for cyclist to ride
	• Option to include:
	  • Wayfinding signs to guide cyclists
	  • Warning signs to remind motorists to share the road
		
		Source: OTM Book 18
		 
		Source: OTM Book 18

Application	• Local rural and (sub)urban roadways
	• Streets with low traffic volumes and speeds
	• Pros:
	  • Alerts motorists of expectation to share the lane with cyclists
	  • Guides cyclists where to ride within the shared lane
	  • Minimal cost to implement
	• Cons:
	  • Provides little to no protection for cyclists
	  • Creates potential for conflict between cyclists and motorists
	  • May not be suitable for all ages and abilities
	  • No legal status
		
		Source: OTM Book 18
		 
		Source: City of Barrie

TABLE 4.7: ON-ROAD CYCLING FACILITIES

Paved Shoulder		

Description	• Portion of a roadway contiguous with the travelled way, and used to accommodate stopped vehicles, emergency use, pedestrians, and cyclists as well as for lateral support of the pavement structure
	• Route denoted with bicycle route marker sign
	• Option to increase separation/improve delineation with:
	  • Painted buffer zone
	  • Bicycle-friendly rumble strips
		
		Source: OTM Book 18

Application	• Rural secondary highways, arterials, and collectors with lower traffic volumes
	• Some urban environments (although other types of cycling facilities typically preferred)
	• Pros:
	  • Provides location (and some protection) for cyclists off travelled portion of road
	  • Offers other benefits (emergencies, maintenance)
	  • Increases comfort and safety for cyclists
	  • May be first step towards dedicated bike lanes
	• Cons:
	  • Provides less protection for cyclists than separated facility
	  • Potential for conflict between cyclists and motorists
	  • May not be suitable for all ages and abilities
	  • Can be costly if reconstruction required
	  • No legal status
		 
		Source: OTM Book 18

TABLE 4.7: ON-ROAD CYCLING FACILITIES

Bicycle Priority Street	
Description	• A roadway shared by motor vehicles and cyclists denoted with traffic calming measures, enhanced crossing treatments and shared use lane pavement markings (known as "sharrows") • Sharrows identify preferred location for cyclist to ride • Centre line is not marked midblock

Application	• Low volume, low speed local roadways near schools and other community destinations
	• Several design treatments available to offer priority for cyclists over traffic. Type and detail of design will depend on vehicle and pedestrian volumes.
	• Pros:
	  • Increases comfort and safety for cyclists by reducing vehicle speeds
	  • Connects residential streets to commercial corridors and community services
	  • Improves conditions for pedestrians (assuming sidewalks are also provided) and quality of life for residents
	  • Less visually impactful than separated facilities
	• Cons:
	  • May require additional space to provide sidewalk
	  • Provides little to no protection for cyclists
	  • May not be suitable for all ages and abilities

Standard Bicycle Boulevard

Crossing Treatments

Crosswalk Markings and Crossing Warning Signs

Curb Extensions

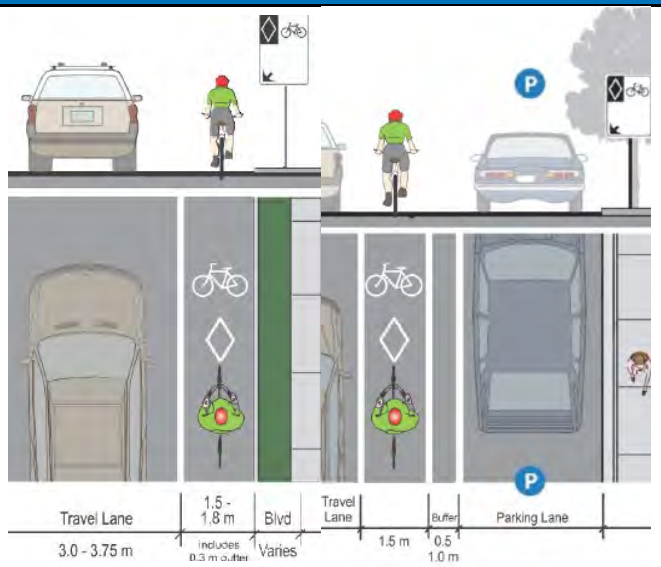
Active Warning Beacons

Median Islands

Pedestrian Hybrid Beacons

Source: FHWA Small Town & Rural Multimodal Networks

TABLE 4.7: ON-ROAD CYCLING FACILITIES

<table>
<tr><th colspan="3">Bike Lane</th></tr>
<tr><td>Description</td><td>• Portion of a roadway designated for preferential or exclusive use by cyclists, separated from motor vehicle traffic by longitudinal solid white lines and denoted by a diamond with a bicycle symbol
• Signed with No Stopping and reserved bike lane signs
• Option to increase separation/improve delineation with:
  • Painted buffer zone
  • Bollards, planters, or vehicle parking
  • Bicycle-friendly rumble strips</td><td rowspan="2"> 

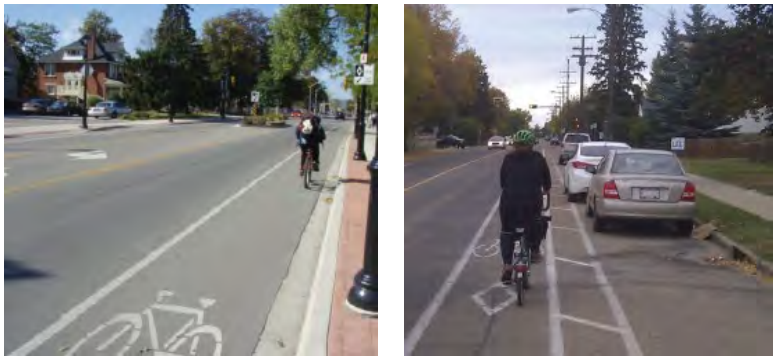
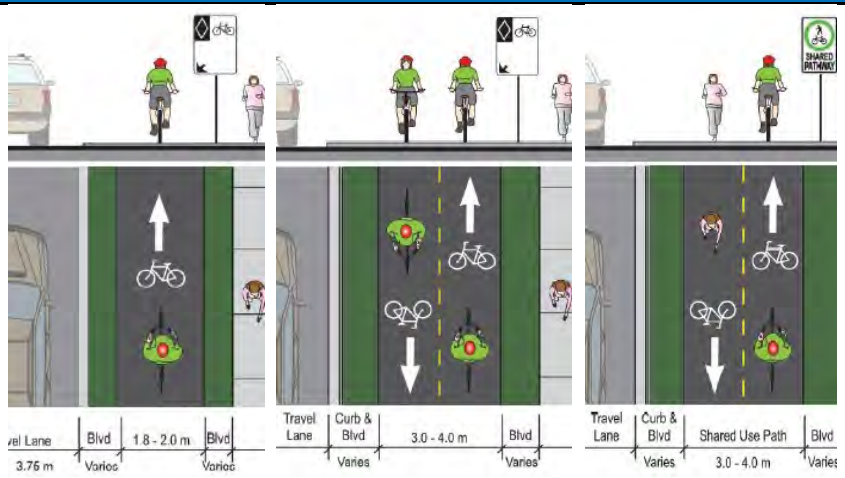
Source: OTM Book 18
 
Source: bikecalgary.org</td></tr>
<tr><td>Application</td><td>• Urban arterial and collector roadways
• Higher traffic volumes and operating speeds
• Pros:
  • Provides exclusive location (and some protection) for cyclists
  • Increases comfort and safety for cyclists
  • Grants legal status to cycling facilities
• Cons:
  • Provides less protection for cyclists than separated facility
  • Potential for conflict between cyclists and motorists at intersections and with parked vehicles
  • May not be suitable for all ages and abilities
  • Can be costly if road widening required</td></tr>
</table>

TABLE 4.8: OFF-ROAD CYCLING FACILITIES

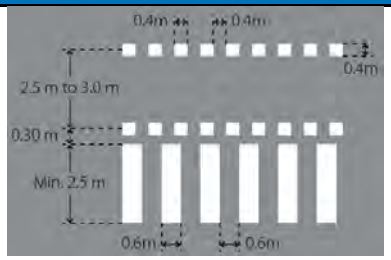
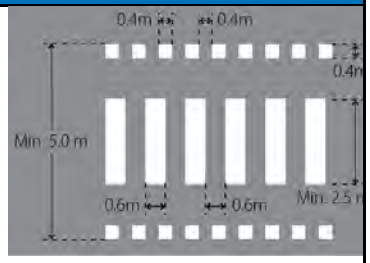
Multi-Use Paths and Trails		

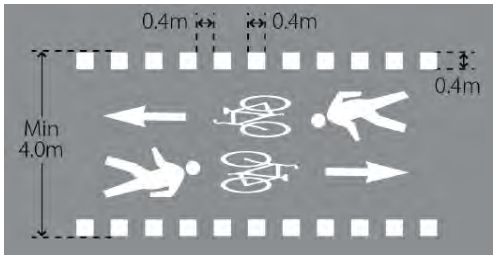
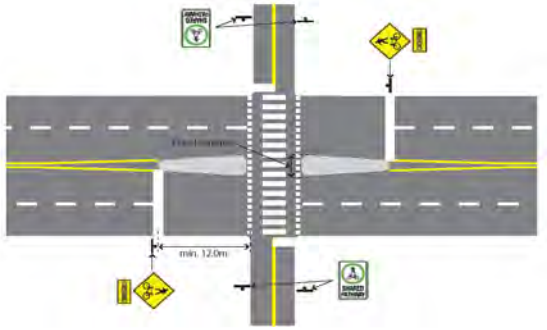
Description	• Paved or unpaved facility physically separated from motor vehicle traffic by:
	  • Boulevard if located within the road allowance, or
	  • Other properties if situated outside the right-of-way
	• Facility may be restricted for exclusive cyclist use or shared with pedestrians and other active travel modes (e.g., skateboards, scooters). Not for use by motorized vehicles.
	• Wayfinding signs typically provided along the facilities to guide users
		
		Source: OTM Book 18

Application	• Popular tourist destinations; Parallel to high volume, high speed roadways where a shared facility is not feasible or desirable; Direct commuter route in corridors not served by on-road bicycle facilities
	• Pros:
	  • Suitable for both experienced and inexperienced cyclists and typically for all ages and abilities
	  • Provides exclusive location for cyclists
	  • Increases comfort and safety for cyclists
	• Cons:
	  • Potential for conflict between cyclists and motorists at intersections (MUP) and between cyclists and pedestrians due to speed differential
	  • May not offer direct route
	  • Often costly to implement and requires property
		
		Source: City of Toronto
		 
		Source: The Torontoist

TABLE 4.9: CROSSRIDES

Crossrides		

Description	• Designated location for cyclists to travel across a roadway without having to dismount
	• Different crossride configurations:
	  • Separated – Cyclist and pedestrian crossings separated
	  • Combined – Cyclist crossing locations provided on either side of pedestrian crosswalk
	  • Mixed – Cyclists and pedestrians share same space
	  • Midblock – More direct link between adjacent facilities
	• Option to include bicycle signals
		 Separate Crossride
		  Combined Crossride

Application	• Intersection of Multi-Use Path or Trail with a roadway; Bicycle facility passing through a signalized intersection
	• Pros:
	  • Increases convenience for cyclists
	  • Provides more visible and direct connection between cycling facilities that cross higher volume and/or speed roadways
	  • Can reduce serious injuries and collisions
	• Cons:
	  • Can be costly to implement
	  • Can impact motor vehicle traffic operation
	• Design Guidance:
	  • Remove channelized right-turns to increase safety
	  • Provide pathway organization signs or guidance signs and markings to explain how to navigate the crossride
	  • Provide cyclist pushbuttons in a location that does not require riders to dismount
		 Mixed Crossride
		  Midblock Crossride Source: OTM Book 18

S1. Shared Pathway Sign

OTM RB-71
300 x 450

S2. Pathway Organization Sign

OTM RB-72a
300 x 450

OTM RB-72b
300 x 450

S3. Bicycling Route Marker Sign

OTM M511
450 x 450

S4. Reserved Bicycle Lane Signs

TAC RB-90
600 x 750

TAC RB-91
600 x 750

TAC RB-92
600 x 750

S5. Running Vehicles Yield to Bicycles Signs

TAC RB-37
600 x 750

S6. Share the Road Sign

OTM WC-19
600 x 600

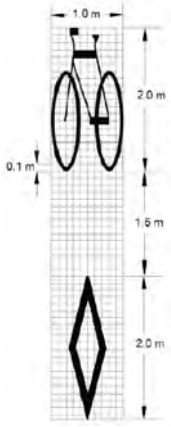
OTM WC-19t
300 x 600

S7. Shared Use Lane Single File Sign

OTM WC-24
600 x 600

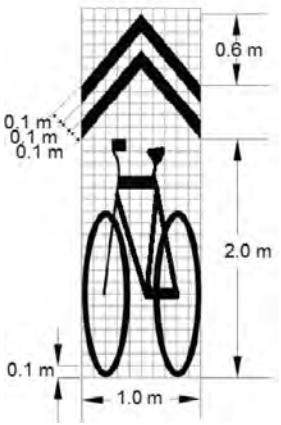
OTM WC-24t
300 x 600

P1. Bicycle Lane Pavement Markings



TAC Table 7-1

P2. "Sharrow" Pavement Marking



TAC Section 7.4.3

P3. Trail Pavement Markings (optional)

OTM Book 18 (Figure 4.98)

FIGURE 4.4: BICYCLE FACILITY SIGNS AND PAVEMENT MARKINGS

Recommendation 4.8 – Adopt and apply the guidelines specified in Ontario Traffic Manual Book 18 and TAC *Bikeway Traffic Control Guidelines for Canada*, summarized in part in **Table 4.7** and **Table 4.8**, for the installation of cycling facility signage and pavement markings.

4.4.4 ROUNDABOUTS

OTM Book 18 and the TAC *Canadian Roundabout Design Guide*[15] provide guidance on how to integrate cycling facilities safely and efficiently into roundabouts[16]. According to Section 5.3 of OTM Book 18:

- At **single-lane roundabouts**, cyclists are expected to share the roadway with motorists. The bicycle lane should transition to a shared roadway in advance of the roundabout. Share the road signs and pavement marking (sharrows) should be provided to remind users of the expected positioning of the cyclist within the roundabout. Where cyclists are likely to take the first exit of the roundabout, a bypass may be provided in the form of an in-boulevard shared use path. Cyclist access to and from the bypass facility should be provided by tapered ramps.
- For **multi-lane roundabouts**, cyclists should be given a choice between sharing the roadway with motorists and transitioning to a shared use pathway. This bypass should be surfaced with asphalt, have a desired width of 4 metres (which may be reduced to 3 metres under constrained conditions) and have a yellow directional dividing line. Cyclists should yield to pedestrians where their paths cross.

Figure 4.5 illustrates the recommended design of bicycle lanes at roundabouts per OTM Book 18[17].

Cyclists uncomfortable riding through a roundabout can walk their bicycles across the intersection within the defined pedestrian crosswalks. If crossing protection is required, OTM Book 15 – Pedestrian Crossing Facilities[18] provides guidance on the application of pedestrian-oriented traffic control devices at roundabouts, including Level 2 Type B and C Pedestrian Crossovers. These devices are defined by the prescribed use of regulatory and warning signs (side and/or overhead mounted crossover signs), rapid rectangular flashing beacons, and ladder and "shark's tooth" pavement markings.

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15 Transportation Association of Canada. *Canadian Roundabout Design Guide.* 2017.

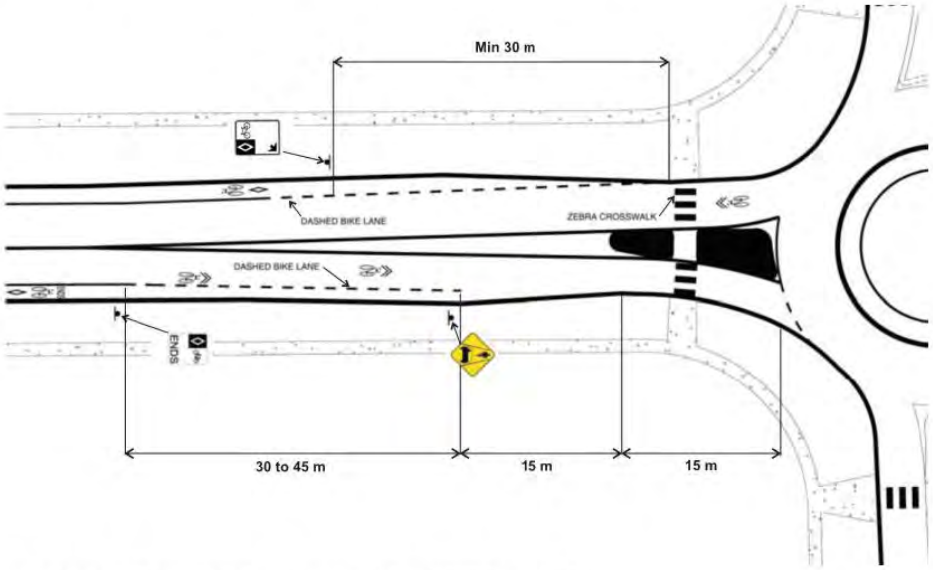
16 There is currently one roundabout on roads under the Township's jurisdiction. The proposed cycling network does not include any routes that travel through this intersection.

17 Queen's Printer for Ontario. *Ontario Traffic Manual Book 18 – Cycling Facilities*. December 2013. Figures 5.9 and 5.11, pp. 137 and 139.

18 Queen's Printer for Ontario. *Ontario Traffic Manual Book 15 – Pedestrian Crossing Facilities*. June 2016.

Figure 5.9 – Bicycle Lane at a Single Lane Roundabout, No Bicycle Bypass

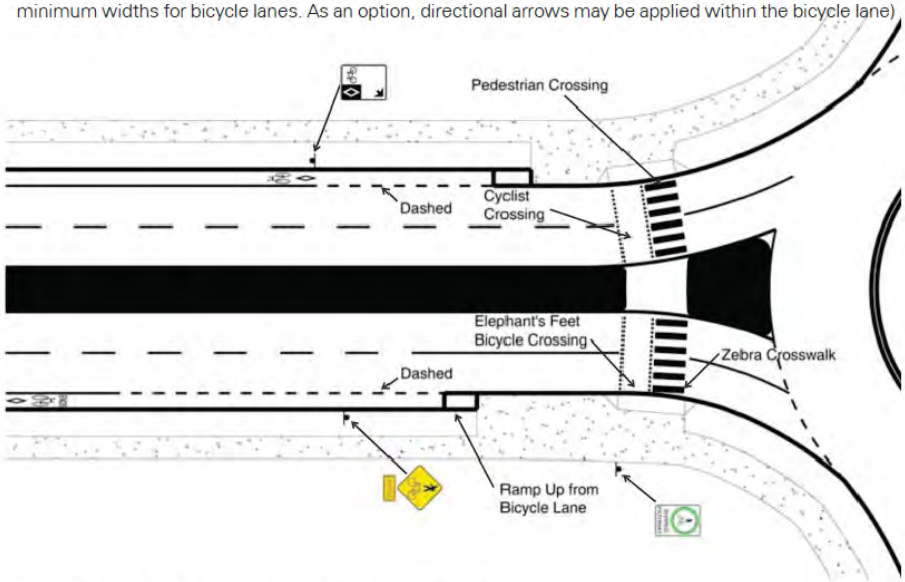
(Signs not directly related to the bicycle facilities have been omitted for clarity. See Table 4.3 for desired and suggested minimum widths for bicycle lanes. As an option, directional arrows may be applied within the bicycle lane)



Source: Based on TAC Bikeway Traffic Control Guidelines for Canada, 2012 (Figure 34, p. 88)

Figure 5.11 – Bicycle Lane at a Multi-lane Roundabout with Bicycle Bypass

(Signs not directly related to the bicycle facilities have been omitted for clarity. See Table 4.3 for desired and suggested minimum widths for bicycle lanes. As an option, directional arrows may be applied within the bicycle lane)



Source: TAC Bikeway Traffic Control Guidelines for Canada, 2012 (Figure 35, p. 89)

FIGURE 4.5: BICYCLE LANES AT ROUNDABOUTS

(Source: OTM Book 18)

4.5 BICYCLE PARKING

Cyclists need safe, secure, and accessible bicycle parking at their destination. Potential riders can be deterred from cycling simply because there is nowhere suitable to park their bicycle on arrival. Publicly available bicycle parking is provided in Port Perry at the Post Office, near the Municipal Parking Lot on Mary Street, and at the Palmer Park playground (as of November 2020). Opportunities to expand both the on-site and off-site supply should continue to be pursued. Available spaces should also be inventoried to aid the Township in understanding its existing bicycle parking supply, communicate locations to potential users, and provide the foundation for asset management as well as rationalization for future investments.

The following subsections provide general guidance on the planning, design, operation, and maintenance of bicycle parking facilities. It further details and complements the material presented in the proposed Regional Cycling Plan Update, which sets out the basis for a Bicycle Parking Strategy at the regional level. The Association of Bicycle and Pedestrian Professionals (APBP) publication *Bicycle Parking Guidelines*[19] is an additional resource that can help identify and inform tools and policies used in the design and application of bicycle parking. The guidance around site planning, bicycle parking rates relative to land use, selection tools, and implementation direction is most applicable to the Township.

Recommendation 4.9 – Expand and inventory the supply of publicly available bicycle parking in Port Perry.

4.5.1 TYPES OF FACILITIES

Bicycle parking facilities fall into two categories: short-term and long-term. **Table 4.10** summarizes the typical characteristics of the two types of parking.

Short and long-term parking serve different needs. If users will typically be parking for two hours or longer, they are likely to value security and shelter above the convenience and ease that typically characterizes short-term parking. Guidance for the application and design of both types of bicycle parking is provided below:

[19] Association of Bicycle and Pedestrian Professionals. *Bicycle Parking Guidelines.* 2019

TABLE 4.10: CHARACTERISTICS OF BICYCLE PARKING FACILITIES

(Source: APBP *Bicycle Parking Guidelines*)

Criteria	Short-Term	Long-Term
Parking Duration	Less than two hours	More than two hours
Fixture Types	Simple bicycle racks	Lockers, racks in secured areas
Weather Protection	Unsheltered	Sheltered or enclosed
Security	Unsecured, passive surveillance ("eyes on the street")	Secured, active surveillance, either supervised or unsupervised
Typical Land Uses	Commercial/retail, medical/ healthcare, community facilities	Residential, workplace

Short-Term Parking

Short-term parking facilities are intended to provide a secure, public area for visitors and others to leave their bicycles for a limited time. These facilities usually consist of post and ring or larger bike racks positioned near building entrances or public spaces. Overhead protection of the area may be offered with little to no surveillance.

The following criteria should be considered in the design of short-term bicycle parking facilities:

- Parking spaces should be placed in convenient, accessible, and well-lit areas;
- Bike racks should be permanently anchored; and
- Aisles between bicycle racks and other pedestrian facilities (e.g., sidewalks, entrances) should be at least 1.2 metres wide.

Long-Term Parking

Long-term parking facilities are usually located in multiple unit residential buildings, schools, office buildings and transit hubs. These facilities offer a secure place, such as an enclosed room, locker, or covered and fenced area, for cyclists to leave their bikes for extended periods of time (typically all day or overnight but can be longer).

The following criteria should be considered in the design of long-term bicycle parking facilities:

- Each parking space should have at least 1.9 metres vertical clearance and be a minimum of 0.6 metres wide and:

  - 1.8 metres in length if bicycle is to be parked horizontally (on two wheels); or
  - 1.0 metres in length if bicycle is to be placed vertically (resting on one wheel).
- Aisles between parked bicycles should be at least 1.5 metres wide;
- Bicycle racks/storage lockers should be securely anchored and allow the bicycle frame to be locked;
- The parking area should be securely enclosed by solid opaque walls or a compound enclosed by a metal fence to maximize security;
- The parking spaces should be located at building grade or within one storey of building grade in an area that provides convenient access to main entrances or well used areas (i.e., no more than 50 metres from an elevator or building entrance); and
- For accessibility purposes, a minimum of 50% of the parking spaces should allow for bicycles to be parked horizontally.

4.5.2 PARKING RATES

Bicycle parking demand depends to a great extent on the trip purpose and destination. Land uses that generate higher than average demands include:

- Schools, colleges, and universities;
- Hospitals;
- Places of assembly and community facilities (e.g., arenas, community centres, public spaces, downtown core etc.); and
- Places of worship.

Section 8.4 of the Township Official Plan requires developments within major employment lands over a gross floor area of 560 square metres to install bicycle racks as a condition of site plan approval. However, the Township Official Plan and Zoning Bylaw (or any other Township document) offer no further guidance on the required/ recommended supply of bicycle parking for employment lands or any other land use.

Table 4.11 provides bicycle parking rates by land use for both short and long-term facilities. Future development should be encouraged to provide on-site parking consistent with these rates.

Recommendation 4.10 – Encourage property owners to provide short and long term bicycle parking on site.

TABLE 4.11: BICYCLE PARKING RATES

Land Use	Long-Term Parking	Short-Term Parking
Commercial		
Office	2 spaces plus 2 spaces per 1,000 m^2 of gross floor area (GFA)	At least 3 spaces for any building with 2,000 m^2 or more of GFA
Retail, Service and Other Commercial	2 spaces plus 1 space per 1,000 m^2 of GFA	At least 3 spaces for any building with 1,000 m^2 or more of GFA
Institutional		
Elementary Schools	0.25 spaces per classroom	At least 3 spaces at each public entrance
Secondary Schools	0.5 spaces per classroom	At least 3 spaces at each public entrance
Place of Worship or Assembly	No requirement	At least 3 spaces at each public entrance
Other Institutional	2 spaces plus 1 space per 1,000 m^2 of GFA	A minimum of 6 spaces at each public entrance
Industrial		
All Industrial	2 spaces plus 0.25 spaces per 1,000 m^2 of GFA	At least 3 spaces for any building with 2,000 m^2 or more of GFA
Residential		
Apartment	0.5 spaces per unit	At least 3 spaces for any building with 50 or more units
Other Residential	No requirement	No requirement

4.5.3 PLACEMENT AND DESIGN

Safe and convenient access to and from bicycle parking is imperative to maximizing its utility and use. Effective parking design should consider the following items:

- **Location** – Bicycle parking should be located within 30 metres of the trip destination or amenity, with short-term facilities placed closer (e.g., near entrance doors). The location should also provide convenient and safe access to and from nearby bicycle routes and primary entry points.
- **Point of Access** – The safest and most direct route for users to access bicycle parking should be delineated and signed where necessary. In some cases, access to facilities via parking lots, loading bays, building entries, internal elevators or other obscured or circuitous access points may be necessary, but should be avoided if possible.
- **Access Routes** – Access routes to bicycle parking should be designed to:
  - Provide adequate overhead clearance (mounted cyclists are taller than pedestrians and most motor vehicles);
  - Provide driveways or ramps designed to accommodate bicycle travel for on-sidewalk, short-term parking;
  - Avoid steep ramps, speed humps, catch basins and other hazards to cyclists;
  - Provide appropriate levels of surveillance and lighting;
  - Avoid interference with emergency access, loading bays and other infrastructure;
  - Avoid hazard and impedance to pedestrians.
- **Rack** – A properly designed bike rack supports a bicycle that cannot otherwise stand on its own (i.e., provides two points of contact) and allows cyclists to lock the bike frame to the rack. **Figure 4.6** provides examples of both desirable and undesirable rack design.

Recommendation 4.11 – Develop and implement guidelines for the provision and design of on-site bicycle parking in consultation with Durham Region, with implementation primarily through the development approval process.

Desirable Design

Undesirable Design

FIGURE 4.6: BIKE RACK DESIGN

4.6 END-OF-TRIP AMENITIES

4.6.1 TYPES OF AMENITIES

Attractive and conveniently located end-of-trip amenities are essential to a successful cycling system. For some users, the availability of facilities and services (in addition to bicycle parking) can be the determining factor in deciding whether to cycle (longer distances) to work, school, shopping, and other destinations. Potential end-of-trip amenities to consider include:

- Change rooms and lockers (see Subsection 4.6.2 for further guidance);
- Showers and washrooms (see Subsection 4.6.2 for further guidance);
- Courtesy items such as hairdryers, irons and ironing boards, washing machines and dryers, towel service, clothing hooks, fans, and electrical outlets;
- Repair equipment and supplies such as pumps, plyers, wrenches, oil, and puncture repair kits. This may take the form of a bicycle repair (or "fix-it") station as shown in **Figure 4.7**; and
- Parcel delivery service.

Table 4.12 summarizes the types of amenities recommended for different locations. Opportunities to expand the supply should continue to be pursued. Available amenities should also be inventoried for the same reasons as bicycle parking per Section 4.5.

Recommendation 4.12 – Expand and inventory the supply of publicly available end-of-trip amenities, particularly bicycle repair stations, available in Port Perry.

4.6.2 SELECTION AND DESIGN

The selection and design of end-of-trip amenities should address:

- **Location** – Amenities should be located close to bicycle parking and/or primary building entrances. Certain amenities, particularly bicycle repair stations, should be publicly available, whether provided by the Township, a community group, and/or a private entity;
- **Segregation** – Separate, individual change rooms, lockers, showers and/or washrooms should be available. Unisex design allows for greater inclusivity and flexibility.
- **Safety and Security** – Well-designed facilities have non-slip surfaces, hooks and/or benches to keep belongings off the floor, adequate lighting and ventilation and regularly cleaned and maintained. Facilities that can be locked and/or are access controlled are preferred.

Table 4.13 provides guidance on the number of change rooms and showers to include in future developments based on projected staffing. If it is not possible to provide these amenities on-site, access to facilities within an adjoining building or a nearby gym should be considered.

If provided, lockers should be placed in change rooms (preferably) or adjacent to bicycle parking. Alternatively, additional storage space can be provided within bicycle lockers.

Recommendation 4.13 – Introduce guidelines for the provision of specified end-of-trip amenities in consultation with Durham Region, with implementation primarily through the development approval process.

FIGURE 4.7: BICYCLE REPAIR STATION

TABLE 4.12: POTENTIAL END-OF-TRIP AMENITIES

Amenity	Location		
	Workplace	School	Commercial[1]
Change Rooms	●		
Lockers	●	●	
Showers	●		
Washrooms	●		●
Courtesy Items	●		
Repair Equipment	●		●
Parcel Delivery			●

Notes:
1. Includes retail stores and shops, shopping centres, business centres, customer service centres, etc.

TABLE 4.13: NUMBER OF CHANGE ROOMS AND SHOWERS

Total Staff	Number of Change Rooms and Showers
0-19	1
20-49	2
50-149	4
150-299	6
300-500	8
>500	Additional showers at a rate of 2 showers for every 250 staff

4.7 WAYFINDING

Wayfinding is a system of signs, markings, maps, and other signifiers by which people follow a route from one place to another. It is intended to help individuals navigate their surroundings intuitively and efficiently, enhancing user experience.

A robust wayfinding system can have many positive outcomes for the active transportation system. Some of the benefits include:

- Orientation;
- Route planning;
- Promotion (of active transportation and tourism); and
- Placemaking.

The Township has recently completed a Tourism Wayfinding Plan. The plan features a municipal-wide directional signage strategy that includes pedestrian and cycling oriented signing. Implementing the plan will aid in wayfinding for pedestrians and cyclists and help leverage the economic development and tourism benefits of active travel. Opportunities to extend the sign system to other elements of the active transportation network should also be explored.

Recommendation 4.14 – Develop and implement a wayfinding plan for the cycling and pedestrian networks in consultation with Durham Region, leveraging the Township Tourism Wayfinding Plan.

4.8 COMMUNITY OUTREACH AND SUPPORT

The proposed network plans need to be accompanied by a complementary and comprehensive Active Transportation Outreach and Support Strategy aimed at promoting walking and cycling and fostering community support for related initiatives. The strategy should:

- Raise community awareness of active transportation and promote walking and cycling as a normal, convenient option for individuals of all ages and abilities;
- Develop consistent messaging that can be used across a variety of platforms and audiences;
- Illustrate the value (e.g., health, tourism, environmental, safety) of walking and cycling to the community; and
- Educate individuals about their responsibilities as cyclists, pedestrians, and motorists when interacting with other modes.

The strategy should leverage existing outreach programs and initiatives underway by the Township and local groups. Of note, the Township participated in a Bicycle Friendly Communities (BFC) workshop in September 2018 hosted by the Share the Road Cycling Coalition to assess the bicycle friendliness of Scugog in five categories ("the five E's"). The proposed Active Transportation Outreach and Support Strategy detailed in the following sections builds on the Education, Encouragement, Enforcement, and Evaluation recommendations of the **BFC Workshop Summary Report** provided in **Appendix E**. Some of these recommendations are already underway. To provide further focus and heightened awareness for these initiatives, the Township should actively pursue a Bronze Bicycle Friendly Community designation from the Coalition (as a start).

Recommendation 4.15 – Actively pursue a Bronze Bicycle Friendly Community designation from the Share the Road Cycling Coalition.

Recommendation 4.16 – Develop and implement a robust Active Transportation Outreach and Support Strategy comprising the elements detailed in Section 4.8 in consultation with Durham Region.

4.8.1 EDUCATION

Ongoing education will be a critical element of the Active Transportation Outreach and Support Strategy. An education program could help new riders gain confidence and provide motorists a better understanding of how to interact with pedestrians and cyclists on the road. Education on proper use of cycling facilities for all roadway users should be included in the program.

Potential actions to educate the community (and Township staff) on active transportation include:

- Participating in the Active and Sustainable School Travel (ASST) Program led by Durham Region to provide school travel planning resources and routes to school planning maps;
- Developing actions plans to support active and sustainable school travel for students in Scugog;
- Expanding education programs and campaigns in partnership with local groups and organizations (e.g., Durham Region). Examples include:
  - Using social media and local media to distribute information on walking and cycling;
  - Conducting lunch and learn walks and rides around the Township;

  - Offering a series of Senior Trail Walks and Rides through the community; and
  - Holding bike rodeos at schools; and
- Providing Township staff resources and opportunities to participate in training and development initiatives related to active transportation.

4.8.2 ENCOURAGEMENT

Encouragement initiatives can help shift attitudes of pedestrians, cyclists, motorists, and the public towards creating a safer and more sustainable community. Efforts to celebrate walking and cycling will hopefully inspire and motivate people of all ages to use active modes more regularly.

Potential actions to encourage active transportation within the community include:

- Developing an up-to-date walking and cycling map;
- Developing a marketing campaign and promotion materials (e.g., "You can walk/bike here");
- Holding events that target cyclists of all ages and abilities such as:
  - Slow Rolls – Arranging guided slow bike rides through the community;
  - Bike Month – Carrying out a month-long series of bicycle-related activities across the community (typically in June);
  - "Bike to Work Day" Breakfast – Organizing a group ride to a free breakfast to show appreciation for individuals who choose to cycle to work or school;
  - Bike Maintenance Clinics – Partnering with local bike shops or bike advocacy groups to provide individuals with basic maintenance skills; and
  - Bike Valet – Providing free, secure bike parking at large events;
- Creating an active transportation page on the Township's website;
- Investigating a small-scale bike share system for Port Perry (see Chapter 6);
- Promoting new and existing walking and cycling infrastructure and services to encourage tourism in partnerships with local farms, orchards, breweries, cideries, vineyards. Opportunities to leverage existing programs and resources should be explored first (e.g., bicycleontario.ca); and
- Collaborating with and supporting the Durham Active Transportation Committee. Given the many interrelated initiatives ongoing or set to commence with the proposed Regional Cycling Plan Update, the Township will focus on participating in the region-wide committee prior to considering a working group specific to Scugog.

4.8.3 ENFORCEMENT

Regular enforcement helps to encourage and promote safe walking and cycling. Local enforcement officers (by-law and police) play an important role in this process, not only ensuring compliance with applicable regulations and by-laws, but also serving as role models and ambassadors for demonstrating appropriate behaviour.

Potential actions to promote safe walking and cycling through enforcement include:

- Requesting the Durham Regional Police Service to conduct pedestrian and cycling safety blitzes;
- Requesting the Durham Regional Police Service and Township By-law Enforcement officers to engage in "Positive Ticketing" campaigns; and
- Requesting the Durham Regional Police Service and Township By-law Enforcement officers to participate in safety equipment giveaways to educate pedestrians and cyclists about safety requirements.

4.8.4 EVALUATION

Evaluation is an important element of any outreach and support strategy. Conducting regular, on-going data collection and assessments will enable the Township to determine the effectiveness of new programs and the need for refinements to previous initiatives, with the goal of progressing towards recognition as a BFC.

Consistent with the directions set out in Section 7.6, potential actions to monitor and assess the state of active transportation within the community include:

- Conducting surveys at regular intervals to:
  - Ascertain opinions on the Township's active transportation network and initiatives and use of the facilities;
  - Estimate the number of students walking and cycling to school;
- Installing permanent pedestrian and bike counters at key locations;
- Preparing annual "State of Walking and Cycling" reports to track progress and refine the strategy; and
- Appointing a bicycle program manager to coordinate evaluation activities.

5 ROADS STRATEGY

5.1 OVERVIEW

The Township depends on a safe, efficient, and reliable road network to facilitate the movement of goods and services, emergency responders, and people using public transit, vehicles, taxis, bicycles, and active modes. Roads serve two primary functions, providing *travel mobility* and *access to property*. Streets also play an important role in *placemaking* within a community and are critical to local *economic vitality and competitiveness*.

This chapter describes the recommended roads strategy for the Township of Scugog. The strategy details the policies, programs and infrastructure investments planned for the road system to address current and future needs. The plan focusses primarily on roads under the Township's jurisdiction and complements the active transportation strategy presented in Chapter 4 forming part of the overall multi-modal transportation plan for Scugog.

5.2 COMPLETE STREETS

5.2.1 PRINCIPLES

"Complete Streets" are public streets that are planned, designed, and constructed considering the need to comfortably move all people. This means streets that accommodate people of all ages and mobility abilities using a range of travel modes, including walking, cycling, public transit, and driving. Complete Streets are meant to establish safe, comfortable, and barrier-free environments for moving people through communities that provide a diversity of options for non-automobile travel, in the interests of providing options for active and healthy living. Having a network of Complete Streets is critical to achieving both the active transportation strategy articulated in Chapter 4 and the roads strategy set out below.

The Township of Scugog is committed to applying Complete Street principles in the planning, design, and construction of all streets within the municipality. This approach applies to both public streets constructed as part of newly developing areas of Scugog as well as the reconstruction and rehabilitation of existing roads. It is important to note that the Township's commitment does not necessarily mean that all streets will be composed the same. Rather, context, planned function and existing conditions will dictate design.

5.2.2 GOALS

The following six goals form the basis for the planning, design, construction, and operation of Complete Streets within Scugog:

Goal 1. Connected Street Network

Streets need to be inter-connected on a Township-wide basis to create continuous routes of travel for all modes. It helps to avoid placing pedestrians and cyclists in uncomfortable or unsafe situations because of inconsistencies and gaps in the network. Connected systems offer street users practical and predictable choices for moving around Scugog, whether on foot, bicycle, or in a car.

Goal 2. Safe and Accessible Infrastructure

Streets need to be safe and accessible for people of all ages, genders, and abilities. This is especially true for the most vulnerable street users, which include children, older adults, people with disabilities and those utilizing mobility devices. Users of non-motorized travel modes, such as walking and cycling, also need prioritization. Streets that are perceived as safe and accessible are more comfortable in general, leading to a greater likelihood of movement by active transportation.

Goal 3. Contextual to Surroundings

Street design needs to reflect each street's context, recognizing the variety of streets both urban and rural within Scugog. A "one-size-fits-all" approach to street design is not appropriate given that the hierarchy, function, and location of all streets varies. Creating Complete Streets is more about a mindset and an effective process, rather than a rigid application of design standards. Street design needs to appropriately respond to its situational and contextual relationships, with flexibility of application important.

Goal 4. Balanced Movement Corridors

Streets need to be designed and constructed to accommodate the needs of different travel modes equitably. With existing streets, it typically involves reprioritizing street space to better utilize the public right-of-way to accommodate all travel modes. For new streets, the focus is on right-sizing streets and their components from the outset. This is not to say that every street will accommodate all forms of travel equally. Rather, the consideration given to different users and travel modes will vary by location, context, and street function.

Goal 5. Great People Places

Streets should help promote healthy and active lifestyles by becoming more comfortable and inviting for people to walk and bicycle and be physically active. Streets need to be attractive and inviting public spaces that are comfortable to use. They form part of the Township's public realm and need to be designed to promote a sense of civic pride and embrace an important part of placemaking for communities. Coordinated with the street design, the surrounding urban form needs to be scaled and organized to reinforce the street as a desirable and comfortable urban environment that supports movement by non-automobile means.

Goal 6. Sustainable

Streets should be designed and constructed with an eye to sustainability and resiliency. Sustainably designed streets include efforts to reduce urban heat island effects, stormwater runoff, energy consumption, and greenhouse gas emissions. These efforts are achieved partly through composing streets to support active transportation and partly by incorporating sustainably driven infrastructure and elements.

5.2.3 IMPLEMENTATION

Complete Streets are as much as about the process as they are about the final product. Implementation needs to recognize that each street has a different transportation function, locational context, and existing conditions.

Figure 5.1 outlines the general process for the implementation of Complete Streets in Scugog. The process can be applied to new construction, reconstruction or rehabilitation projects undertaken by either the Township or a development proponent.

The Township 2003 Design Criteria and Standard Detail Drawings are currently being updated. The current standards are focussed primarily on serving motor vehicles and have limited regard for other travel modes. The integration of the Complete Streets approach will allow for a cohesive road network within the available right-of-way and connectivity throughout the Township's network.

Recommendation 5.1 – Apply the Complete Streets Implementation Process illustrated in **Figure 5.1** in the planning and design of Township roads.

Recommendation 5.2 – Update the Township Design Criteria and Standard Detail Drawings to reflect Complete Streets principles.

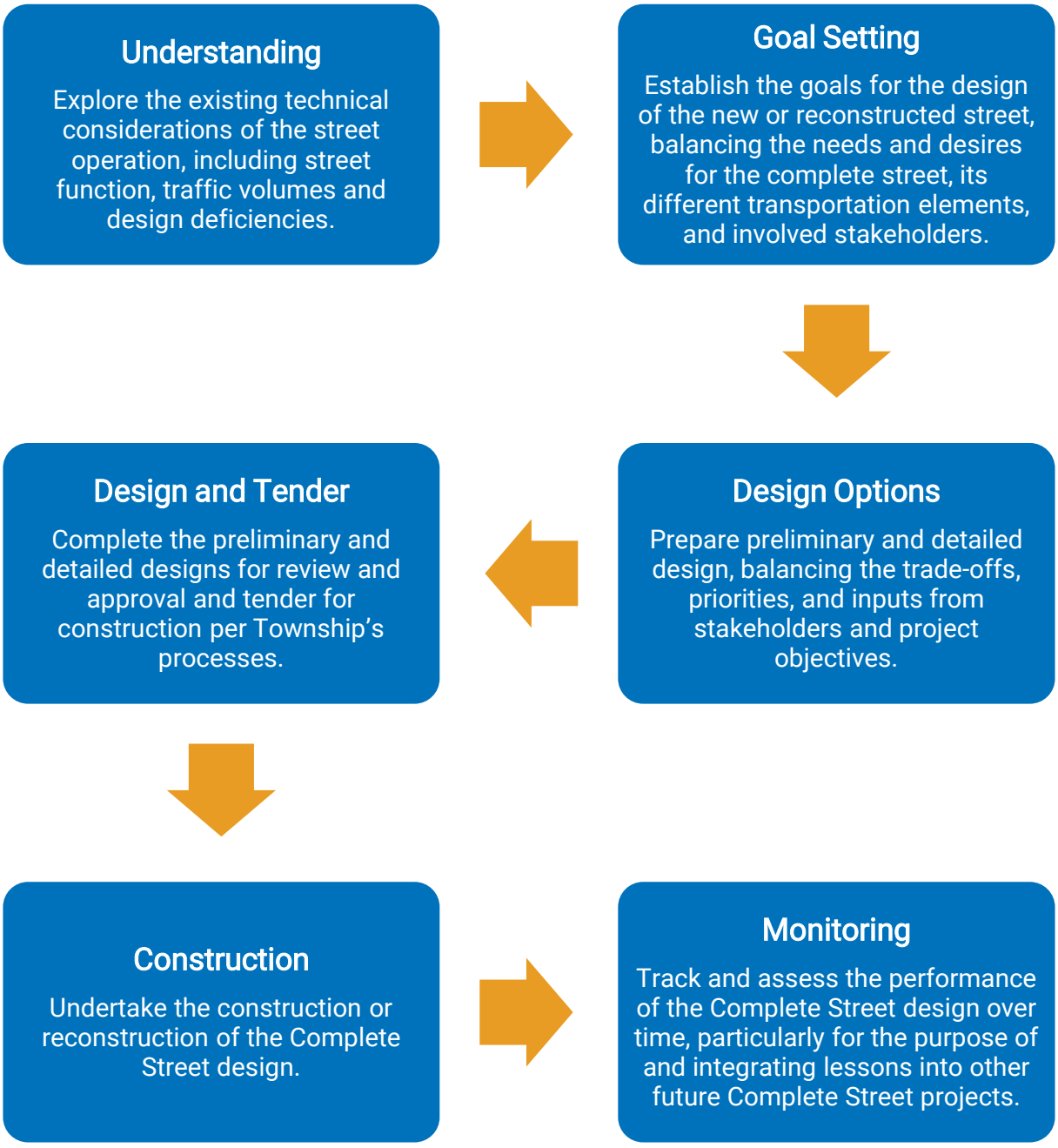


FIGURE 5.1: COMPLETE STREETS IMPLEMENTATION PROCESS

5.3 ROAD NETWORK HIERARCHY

5.3.1 FUNCTIONAL CLASSIFICATION

Most contemporary road networks comprise various road types, each of which serves a specific role or function in facilitating travel between points of trip origin and destination and providing access to abutting property.

A functional roadway classification system establishes a "hierarchy" of roads that provides for a gradation in service from access to movement. In a functional system, each type of road serves a distinct stage of the trip making process. The concept is premised on the principle that roads do not operate independently but are part of an interconnected system. Each type of road performs a specific function in moving traffic throughout the network and in providing access to abutting lands.

The road system operates most efficiently and safely when each type of facility is designed and managed to serve a defined trip stage consistent with its position in the hierarchy. When a roadway attempts to prioritize both movement and access, neither function is well served. This compression of functions typically results in higher collision rates, traffic congestion and excessive vehicle emissions and fuel consumption, not to mention community displeasure with neighbourhood traffic conditions.

Roadway classification systems typically divide roads into five main categories: Freeway/Expressway, Arterial, Collector, Local and Public Lane. **Figure 5.2** illustrates the relative importance of the service functions of traffic movement and land access for the different roadway classifications.

Prescribing a road network hierarchy helps to minimize potential conflicts between local and non-local traffic by classifying roads based on their intended role and function. Factors influencing roadway classification include the density of access, service function, traffic volume, flow characteristics and design speed. The number of access points and their spacing is a major influence on the running speed and flow characteristics of a roadway.

5.3.2 TOWNSHIP OF SCUGOG OFFICIAL PLAN ROAD DESIGNATIONS

As noted in Subsection 3.3.1, the Township Official Plan defines a road classification system consisting of Arterial, Collector, Local and Private roads. The classification criteria contained in the plan categorize the various types of roadways by their mobility and land access functions. The Township Official Plan denotes the following classifications and general facility design guidelines:

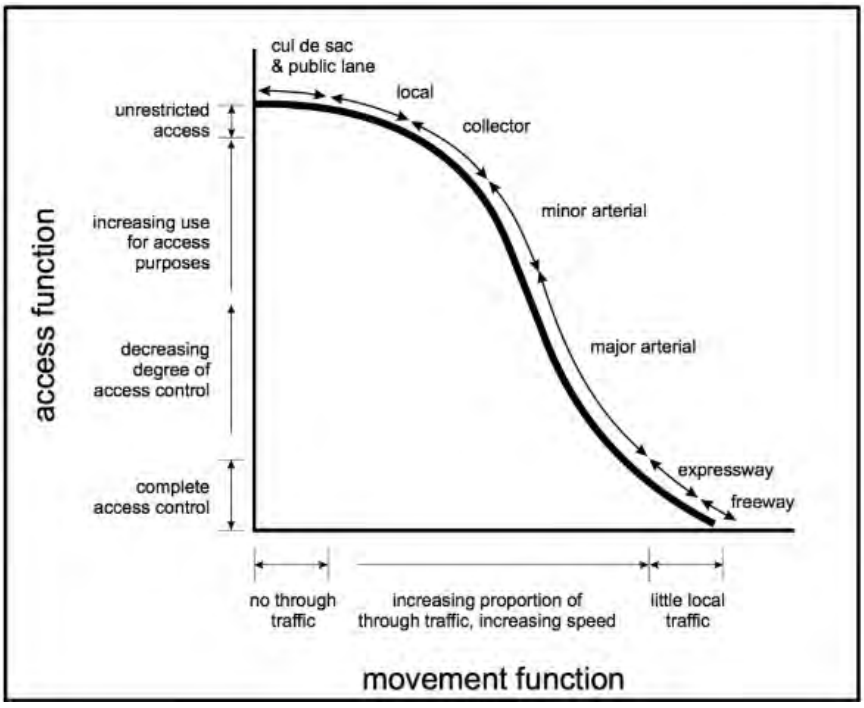


FIGURE 5.2: ROADWAY SERVICE FUNCTION

(Source: TAC *Geometric Design Guide for Canadian Roads*)

- **Arterial roads** – Under the jurisdiction of the Ministry of Transportation, Durham Region or the Township, these roads are designed to serve transportation needs within the Township and to other municipalities. Arterial roads in Scugog are further categorized into:
  - Type A Arterial roads, which are designed to accommodate large volumes of traffic at moderate to high speeds over relatively long distances;
  - Type B Arterial roads, which are designed to accommodate moderate volumes of traffic at moderate speeds over longer distances; and
  - Type C Arterial roads, which are designed to accommodate lower volumes of traffic at slower speeds over relatively short distances.
- **Collector roads** – Under the jurisdiction of the Township and designed to move moderate volumes of traffic over short distances within a particular area of the municipality, the primary function of a Collector road is to collect and distribute traffic among Local, other Collector and Arterial roads and major traffic generators.
- **Local roads** – Under the jurisdiction of the Township, Local roads are designed to carry lower volumes of traffic and facilitate access to individual properties.

- **Private roads** – These include lanes, mutual driveways, roads, or rights-of-way maintained by private individuals or Condominium Corporations.

As previously noted, **Map 5** and **Map 6** illustrate the current Township Official Plan designations for public roads within Scugog and the Port Perry Urban Area, respectively, based on Schedules A and A-1of the plan.

Recognizing that conditions can shift, and future requirements may necessitate different treatments, the Township Official Plan road designations were reviewed to assess the need for potential changes. The review followed guidance provided in the Township and Durham Regional Official Plans, TAC *Geometric Design Guide for Canadian Roads*[20], and Durham Region *Arterial Corridor Guidelines*[21].

The assessment concluded that most roads in the Township function consistent with their current designations and are expected to serve similar roles in the roadway network into the future. The exception was Old Simcoe Road from Simcoe Street to Scugog Line 8 and Scugog Line 8 from Old Simcoe Road to Simcoe Street. This roadway section functions more like a Type C Arterial road than a Local or Collector road per its current designation, exhibiting many typical characteristics, including:

- Providing a continuous north-south connection through Port Perry;
- Connecting to arterial roads such as Simcoe Street, Reach Street, Scugog Street and King Street/Rose Street;
- Bordering several planned future development parcels in Port Perry;
- Offering an alternative to Simcoe Street;
- Carrying moderate traffic volumes; and
- Presenting an opportunity for an active transportation corridor.

Corresponding changes to the Durham Regional Official Plan are not considered necessary. Old Simcoe Road provides a minor arterial road function in the context of the Township and not at a regional level.

Recommendation 5.3 – Redesignate Old Simcoe Road between Simcoe Street and Scugog Line 8 and Scugog Line 8 between Old Simcoe Road and Simcoe Street from a Collector/Local road to a Type C Arterial road in the Township of Scugog Official Plan.

[20] Transportation Association of Canada. *Geometric Design Guide for Canadian Roads*. June 2017.
[21] TSH Associates and Urban Strategies Inc. *Durham Region Arterial Corridor Guidelines*. February 2007.

5.4 FUTURE ROAD NEEDS

The recently completed Township 2019 Development Charges Background Study – Engineering Service Category Analysis provided the basis for the road program contained in the AT and TMP. **Appendix F** includes an excerpt from the report documenting the analysis carried out to assess the road works needed to serve forecast growth in the Township to the year 2031. The analysis concluded no Township road widening projects would be required for capacity purposes but identified the need for mitigation measures at the following intersections in the Port Perry Urban Area:

Old Simcoe Road and Chimney Hill Way/Bay Street

The need for left-turn lanes was assessed at the Old Simcoe Road and Chimney Hill Way/Bay Street intersection based on forecast future (2031) traffic volumes. The analysis was completed using the nomographs provided in the Ministry of Transportation Design Supplement to the TAC *Geometric Design Guide for Canadian Roads*[22] for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 60 kilometres per hour (10 kilometres per hour over the posted speed limit).

A northbound left-turn lane with 15 metres of storage will be warranted on Old Simcoe Road at Chimney Hill Way/Bay Street by the 2031 horizon. Although southbound left-turn volumes would not justify the provision of an exclusive lane, proper runout lane treatment required to offset the northbound left-turn would almost result in an opposing lane. The preferred solution can be considered during the design phase.

Old Simcoe Road and King Street

The increased traffic volumes at the intersections of Old Simcoe Road with King Street are expected to cause operational and safety issues due to its poor geometric alignment. On this basis, changes to the intersection should be included in the recommended program.

Simcoe Street and Scugog Line 8/Castle Harbour Drive
Old Simcoe Road and Queen Street

The analysis detailed in **Appendix F** forecasts the intersections of Simcoe Street and Scugog Line 8/Castle Harbour Drive and Old Simcoe Road and Queen Street will operate with critical movements under future 2031 summer traffic conditions. With traffic control signals not justified at either intersection based on the warrant calculations,

[22] Ministry of Transportation Ontario. *Design Supplement for TAC Geometric Design Guide for Canadian Roads*. June 2017.

exclusive left-turn lanes were considered to alleviate the forecast vehicle delay. Operation of the two intersections were evaluated assuming turn lanes on:

- The minor approaches at Scugog Line 8/Castle Harbour Drive and Simcoe Street (eastbound and westbound); and
- All approaches at Old Simcoe Road and Queen Street.

The Old Simcoe Road and Queen Street intersection is forecast to operate at acceptable levels of service with no problem movements with the turn lanes. However, the Simcoe Street and Scugog Line 8/Castle Harbour Drive intersection is still expected to experience problem conditions, with the eastbound and westbound left-turn movements forecast to operate at LOS F but with v/c ratios of 0.36 and 0.16, respectively. With the operational deficiency due to the volume of through traffic on Simcoe Street, a regional road, any intersection changes would be at the discretion of Durham Region.

Table 5.1 summarizes the intersection works recommended to serve future growth to the year 2031. Implementation timing and final extent and configuration of the proposed works will be confirmed prior to construction.

TABLE 5.1: RECOMMENDED INTERSECTION WORKS

Intersection	Proposed Works
Old Simcoe Road and Chimney Hill Way/ Bay Street	Northbound and southbound left-turn lanes with 15 metres of storage
Old Simcoe Road and King Street	Geometric changes
Old Simcoe Road and Queen Street	Geometric changes

Recommendation 5.4 – Implement the proposed intersection improvements listed in **Table 5.1**.

5.5 SPECIFIC ROAD CORRIDORS

5.5.1 PROPOSED SECOND ISLAND ACCESS

Roadway access to Scugog Island is currently limited to one facility, Island Road (Regional Road 7). Having only a single route poses a potential risk to public safety for the nearly 2,500 island residents and thousands of visitors travelling to the Great Blue Heron Casino. Closures of the road can reduce and possibly restrict access for emergency services (i.e., fire, ambulance, and police), and would impede evacuation if

required. The seriousness of the situation has been demonstrated in the past when collisions on Island Road have forced its closure for extended periods of time.

In 2007, the Township completed a Schedule C Municipal Class EA to address the need for an additional access road to Scugog Island. The study identified the following problems and opportunities related to access:

- The existing single access to the Scugog Island road network has been identified as a concern by emergency services. Road blocking incidents on the single access of Island Road can result in access restrictions to large areas of the Island;
- Higher traffic volumes and levels of congestion are associated with higher collision experience. The potential for an access blocking incident will increase over time due to expected traffic growth; and
- Traffic volumes are forecast to increase to a level that will result in vehicle congestion and delay at the intersection of Highway 7A and Island Road due to an inability to accommodate eastbound, left-turn vehicles in the projected traffic flow. Island Road already serves more than 12,500 vehicles per day, due in large part to the casino.

The study confirmed the need for a new route to access Scugog Island. The proposed second access is intended to provide an alternative means of connecting Highway 7A to the Scugog Island road network if the primary route, Island Road, becomes impassable. The new access is not intended to carry large volumes of traffic, which is the role and function of Island Road, a regional arterial roadway.

The study also identified the preferred routing for the connection. The design features two separate and distinct sections to complete missing links in the road network on Scugog Island and provide a continuous route. A new intersection on Highway 7A was proposed for the road connection at a location about 1.2 km east of Island Road.

The Township has recently embarked on an update to the Class EA given the delay in implementing the 2007 study recommendations. The municipality still intends to construct the road (albeit the specific configuration may change based on the EA update) and has earmarked funding for the project in its recent 2019 Development Charges Background Study. The need for the facility has not diminished over time and has likely become more pressing with growth on Scugog Island.

Recommendation 5.5 – Complete the Second Island Access Class EA Update and Detailed Design and proceed with implementation within the timeframe of this plan.

5.5.2 QUEEN STREET

Designated as a Collector road in the Township Official Plan, Queen Street serves both as the "main street" of historic downtown Port Perry and its primary access route to and from the west. Given its central location, Queen Street provides a strategic connection in the Port Perry Urban Area road and cycling networks despite its relatively short length, somewhat narrow pavement width, unique geometry, and moderately challenging grades. The roadway also provides needed circulation to key employment and institutional uses in Scugog, including several schools. As a result, the roadway can sometimes experience less than desirable operating conditions in meeting the competing needs of different road users.

Completing a corridor study for Queen Street would enable the Township to further investigate and confirm the function of the roadway considering the myriad roles the street serves. In addition to revisiting street design, the study would update the traffic and parking analysis completed for the *Paxton Street and School Area Transportation Review*[23]. The study should also include a review of the Queen Street/Scugog Street/ Scugog Line 6 intersection. The atypical configuration of this intersection raises the potential for future operational and safety concerns especially as active transportation use in the area continues to grow.

Recommendation 5.6 – Conduct a corridor operation and design study for Queen Street.

5.6 TRAFFIC SAFETY POLICIES

The Township aims to provide for the safe, orderly, and efficient movement of persons and goods on roads under its jurisdiction. Safety is the highest priority of these objectives and a core responsibility for the Township as a road authority. Given the serious human and financial consequences of a collision, particularly one involving a vulnerable road user, the community expects municipal commitment to achieving a high level of road safety in Scugog.

The following sections summarize a series of policies to improve traffic safety in the Township. These policies augment the recommended transportation strategies described in the AT and TMP with the aim of:

- Enhancing safety of a route or area arising from identified hazards or direct community concerns;

[23] TSH Associates. *Paxton Street and School Areas Transportation Review*. January 2006.

- Improving safety, mobility and accessibility for children, pedestrians (including individuals with mobility challenges) and cyclists;
- Improving the amenity and "quality of life" of residential neighbourhoods; and
- Considering impacts to the operation of transit, emergency response and public service vehicles, as well as agricultural equipment.

The policies detailed in the following sections will assist Township Council and staff in implementing the AT and TMP and guiding future decisions pertaining to traffic safety measures on roads in Scugog. The guidance will prove especially helpful in addressing citizen requests, providing a consistent, reasoned approach for responding to resident enquiries and concerns.

Note that the supporting policies outlined below are recommendations to the Township and intended to serve as input to more formal directives being prepared for Council approval at a subsequent date.

5.6.1 TRAFFIC CALMING

Traffic calming is the broad term used to describe the process and measures applied by road authorities to address concerns about the behaviour of motor vehicle drivers travelling on streets within their jurisdictions. Typically, the concerns relate to speeding and/or shortcutting traffic on local or collector roads in residential neighbourhoods but can extend to urban and rural arterial roads [24].

Municipalities apply traffic calming measures in both existing neighbourhoods and new developments to mitigate the adverse impacts of vehicular travel. When properly used, these measures can help reduce motor vehicle speeds, decrease traffic volumes, and/or alleviate conflicts between street users, restoring streets to their desired function. This leads to increased motorist awareness of other street users and ultimately improvements in both real and perceived road safety.

Despite their advantages, traffic calming measures can pose negative consequences on transit, maintenance, and emergency vehicle operation in some settings. Their presence can also cause traffic to divert to other streets, sometimes to the detriment of those residents. Implementation costs, visual appearance and compatibility with adjacent development can also pose an impediment to their use.

To support implementation and help minimize potential liability, the TAC *Canadian Guide to Traffic Calming*[25] recommends municipalities adopt an overarching traffic

[24] Transportation Association of Canada. *Canadian Guide to Traffic Calming*. February 2018.
[25] Transportation Association of Canada. *Canadian Guide to Traffic Calming*. February 2018.

calming policy and procedures before pursuing any measures. This guideline should articulate the criteria, process, and key factors to consider in developing a traffic calming plan.

Outside passing reference in the Township Official Plan[26], the municipality does not have a comprehensive policy or procedures for the assessment, design, and implementation of appropriate traffic calming measures on roads under its jurisdiction. With growing traffic safety concerns in parts of the community, the municipality has identified the need for defined criteria, consistent guidelines, and a typical process for considering prospective locations for traffic calming.

The recommended **Traffic Calming Implementation Protocol** in **Appendix C** provides guidance on the applicability of different traffic calming measures and sets out a participative process for addressing resident concerns about road safety. The policy and procedures are intended to apply to both existing conditions and new development and provide criteria and a process for determining if traffic calming is warranted and if so, the types of measures recommended. The process is somewhat reactive by nature (usually initiated by a resident, community association or business group, but the Township can instigate the process), with traffic calming measures oriented to Local, Collector, and Type C Arterial roads (per the Township Official Plan) in residential neighbourhoods. Sections 4.1.6.c) xii) and 8.3.5.b) of the Township Official Plan provides supporting policy direction.

Involving the public is essential to an effective traffic calming planning process. Neighbourhood residents, as well as other potentially affected stakeholders such as emergency responders (Durham Region Police Service, Durham Emergency Medical Service, Township Fire Department), Durham Region Transit, and public works staff, should be involved in identifying the problem, assessing potential measures, selecting the preferred strategy, and implementing the recommended plan.

In addition to specifying the planning process, the protocol identifies applicable physical traffic calming measures for use in the Township, which include horizontal and vertical deflection measures. Suitable **vertical deflection** measures include:

- Speed Cushions;
- Speed Humps and Tables; and
- Raised Crosswalks and Intersections.

[26] Township of Scugog. *Township of Scugog Official Plan.* Section 4.1.6.c) xii) and Section 8.3.5.b). 2010.

Suitable **horizontal deflection** treatments include:

- Vertical Centreline Treatments (in-road bollards);
- On-Street Parking;
- Traffic Circles, Traffic Buttons and Mini-Roundabouts;
- Corner Curb Radius Reductions;
- Curb Extensions; and
- Raised Median Islands.

The protocol also describes measures to supplement the physical traffic calming treatments, such as rumble strips, speed display boards, driver feedback signs, portable messaging signs, sidewalk extensions, textured crosswalks, education campaigns, targeted enforcement, and neighbourhood traffic committees.

The Traffic Calming Implementation Protocol will help Township staff identify situations where traffic calming measures may be warranted, either in the design of new subdivisions and site plans or to address traffic intrusion and/or speeding issues on existing streets, and to select the most appropriate treatment to apply.

Policy:

The Township may consider the implementation of traffic calming measures on residential Local, Collector, and Type C Arterial roads within the settlement areas of the municipality shown on Schedule A and A-1 of the Township Official Plan.

The Township will follow the guidelines and criteria specified in the **Traffic Calming Implementation Protocol** in assessing, designing, and implementing appropriate traffic calming measures on Township roads.

Recommendation 5.7 – Adopt and apply the Traffic Calming Implementation Protocol provided in **Appendix C**.

5.6.2 ALL-WAY STOP CONTROL

STOP signs are regulatory devices intended to assign right-of-way between vehicles approaching an intersection from different directions. The STOP sign requires the driver to stop their vehicle before entering the intersection, yield to any traffic in or approaching the intersection, and then proceed when safe to do so.[27]

Installing STOP signs on all approaches to an intersection results in an all-way stop condition. When used at the intersection of two relatively equal roadways having similar traffic volumes and operating characteristics, all-way stop control can be effective, providing gap opportunities for minor street traffic that would not otherwise be available. But many communities commonly use this form of control at locations not meeting recommended thresholds for installation in response to local traffic concerns.

The use of all-way stop control to address safety issues associated with vehicle speeds, traffic infiltration and pedestrian safety has received considerable attention in communities across North America. The "ease" and low cost of implementation make all-way stop control a resident and elected-official remedial solution to numerous traffic issues. This practice has led to a proliferation of "unwarranted" installations with several unintended consequences, such as traffic noise, motor vehicle pollution, poor compliance, enforcement issues and inappropriate driver behaviours like midblock speeding and shortcutting[28]. These adverse impacts have in fact diminished safety for all road users, especially vulnerable pedestrians and cyclists, uncertain whether approaching motorists will stop.

The Township All-Way Stop Warrant Policy is based on the methodology set out in OTM Book 5 – Regulatory Signs[29], which provides guidance on the criteria and warrants for the installation of all-way stop control. The policy also highlights conditions where all-way stop control should not be used, including:

- Solely as a speed control measure;
- Solely to protect pedestrians, especially school aged children;
- Solely to reduce traffic infiltration potential;
- Where off-set intersection, poor geometry or more than four-legs exist;
- Where progressive signal timing systems existing; and
- Higher speed roadways (posted speeds greater than 60 km/h).

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27 Queen's Printer for Ontario. *Ontario Traffic Manual Book 5 – Regulatory Signs.* March 2000.
28 Bretherton, W. Martin Jr. *Multi-way Stops – The Research Shows the MUTCD is Correct!.*
29 Queen's Printer for Ontario. *Ontario Traffic Manual Book 5 – Regulatory Signs.* March 2000.

Educating the community on all-way stop control and the reasons behind warrants would provide interested residents insight into the rationale and methods the Township uses to select traffic control devices. Information related to stop signs plus other topics such as setting posted speed limits, truck routes and active transportation routes should be posted on the Township's website.

Policy:

The Township will only consider the installation of all-way stop control at intersections meeting the warrants and criteria specified in the **All-Way Stop Warrant Policy**.

The Township will not use all-way stop control as a traffic calming measure to control speed or reduce traffic infiltration.

Recommendation 5.8 – Apply the All-Way Stop Warrant Policy.

Recommendation 5.9 – Develop and post public education and communication material pertaining to traffic control devices, warrants, and frequently asked questions on the Township's website.

5.6.3 SPEED LIMITS

Speed regulations aid motorists in selecting operating speeds that are safe for the prevailing conditions. The maximum safe speed at any location will vary as road geometry, traffic demands and road environment change.

The *Highway Traffic Act* (HTA) defines the regulations pertaining to speed limits in Ontario. Per Section 128.1 of the HTA, the default (or statutory) speed limit in the Township of Scugog is 50 km/h in built-up areas, which include the Port Perry Urban Area, Hamlet, Shoreline, and Residential Cluster designations on Township Official Plan Schedules A and A-1. Outside these built-up areas, the default speed limit is 80 km/h.

In accordance with the HTA, Council has passed by-laws over time to change the speed limits of specific roads to rates of speed other than the default limits. The speed limits are set out in the Township Traffic By-law (By-law Number 05-20). As well, through this by-law, speed limits on all roads adjacent to schools and some roads adjacent to parks have been reduced to 40 km/h.

The selection of a posted speed limit for a specific location must take into consideration legislative regulations (primarily defined in the HTA), public recognition and understanding, ease of implementation, capital and maintenance costs, and adherence to recognized engineering standards and practices. With these myriad

considerations and trade-offs, Township Council has adopted the **Establishing Speed Limits on Township Roads** policy to aid in determining consistent, enforceable, and safe speed limits throughout the municipality. The policy is based on the methodology set out in the TAC *Canadian Guidelines for Establishing Posted Speed Limits*[30]. The recommended practices contained in the guidebook should be applied with sound engineering judgment in determining appropriate posted speed limits.

Policy:

The Township may consider revisions to the statutory speed limits on roads under its jurisdiction.

The Township will follow the guidelines and criteria specified in its policy for **Establishing Speed Limits on Township Roads** in assessing and implementing appropriate speed limits.

Recommendation 5.10 – Apply the Establishing Speed Limits on Township Roads Policy.

5.6.4 PEDESTRIAN CROSSINGS

The HTA provides the legal framework for pedestrian crossing treatments in Ontario, defining two categories of crossings:

- **Controlled**: A crossing supported by one of three control measures: Stop/Yield signs, Pedestrian Crossovers (PXO), or traffic control signals. Vehicles are required to stop or yield to pedestrians within a controlled crossing per the HTA; and
- **Uncontrolled**: All other crossings including unmarked crosswalks at intersections, marked crossings that are unsigned or unsignalized, and school crossings where the designated crossing guard is not present. Pedestrians must yield to traffic and wait for a safe gap to cross prior to entering the roadway at these locations as they do not have the right-of-way.

OTM Book 15 provides accepted warrants and guidelines for the application of controlled crossings in the Province. The purpose of providing a pedestrian crossing treatment as a traffic control device is to establish and convey to motorists that pedestrians have the right-of-way to cross the road at that location under the control conditions. Assigning right-of-way priority encourages pedestrians to cross at defined

[30] Transportation Association of Canada. *Canadian Guidelines for Establishing Posted Speed Limits*. December 2009.

locations and reduces the number of uncontrolled crossings. A connected, safe, and convenient network of pedestrian facilities provides for a more sustainable and healthier community.

Per OTM Book 15, the current treatment systems include:

Traffic Control Signals:

- Full Traffic Signals
- Intersection Pedestrian Signals (IPS)
- Midblock Pedestrian Signals (MPS)

Pedestrian Crossovers (PXOs):

- Level 1 Type A PXO
- Level 2 Type B PXO
- Level 2 Type C PXO
- Level 2 Type D PXO

Signs and Supervised:

- STOP/All-Way STOP
- YIELD
- Supervised School Crossings

OTM Book 15 provides a Decision Support Tool (DST) to aid in determining need for and selecting the appropriate pedestrian crossing control treatment. The DST features a two-stage process. The first stage involves a Preliminary Assessment to screen the location for suitability. If initial screening requirements are fulfilled, the process progresses to the second stage of Pedestrian Crossing Selection.

The Township should apply the recommended practice in OTM Book 15 when considering requests for pedestrian crossings. Following the Treatment System Selection process outlined in the guidebook will ensure consistent assessment and application of all requests.

Policy:

The Township will consider the installation of controlled pedestrian crossings meeting the warrants and criteria specified in Ontario Traffic Manual Book 15 (Pedestrian Crossing Treatments).

The Township will not pavement mark unprotected crosswalks.

Recommendation 5.11 – Adopt and apply the pedestrian crossing Treatment System Selection process specified in Ontario Traffic Manual Book 15.

5.6.5 SCHOOL ZONES AND COMMUNITY SAFETY ZONES

Under the HTA, the Township has the authority to designate two types of “zones” for heightened safety and enforcement emphasis using:

- The **SCHOOL ZONE** MAXIMUM SPEED sign, which indicates to motorists they should reduce their speeds at certain times because they are entering an area where school children are present and may be crossing the road; and
- **COMMUNITY SAFETY ZONE** signs, which inform drivers they are entering an area the community has deemed paramount to the safety of its children/citizens. These sections of roadway are typically near schools, day care centres, playgrounds, parks, hospitals, senior citizen residences and may also be used for collision-prone areas within a community. Traffic related offences committed within these zones are subject to increased fines (many set fines are doubled such as speeding and traffic signal related offences).

Both tools enable the Township to focus resources and attention on specific locations where safety risk to vulnerable road users is highest. However, experience from other communities suggests the signs can be ineffective and benefits not commensurate with the enforcement effort required. For this reason, the Township should use School Zones and Community Safety Zones selectively following the guidance provided in OTM Book 5 when identifying locations.

While final determination of the School Zone limits will still rely on sound engineering judgement, the School Zone Input Worksheet developed by TAC and detailed in the *School and Playground Areas and Zones: Guidelines for Application and Implementation*[31] should be used as a guide.

If designating a School Zone, the speed limit should be set at no lower than 40 km/h and supplemented with the flashing signal indication and "When Flashing" tab. Per OTM and TAC guidelines, the speed limit should be reduced by no more than 20 km/h in a single step. If further speed reductions are required, the extent of the School Zone should be reduced accordingly. The reduced Speed Zone should be in effect uniformly across the district between the hours of 7:00AM-9:30AM and 2:00PM-5:00PM during school days.

The following guidelines are recommended for establishing a Community Safety Zone on a Township roadway:

- Community Safety Zones should only be implemented for community-based facilities such as schools, community centres, parks, retirement areas, or roadway sections with continual high collision rates;

[31] Transportation Association of Canada. *School and Playground Areas and Zones: Guidelines for Application and Implementation*. October 2006.

- Each by-law establishing a Community Safety Zone must indicate that the designation is in effect for 24 hours a day to assist the Durham Regional Police Service with enforcement; and
- Community Safety Zones must always be used in conjunction with other traffic safety and police enforcement measures.

Policy:

The Township may consider the installation of School Zones and Community Safety Zones on a site-specific basis having regard for the guidance specified in this section.

The Township will not actively encourage the designation of new School Zones and Community Safety Zones on Township roads.

Recommendation 5.12 – Consider the installation of School Zones and Community Safety Zones on a site-specific basis having regard for the guidance specified.

5.6.6 ROUNDABOUTS

Roundabouts are becoming a more prominent form of intersection traffic control in Canada. A type of circular intersection, vehicles entering a roundabout must yield to traffic circulating counterclockwise around the central island, minimizing potential conflict points, and reducing vehicle speeds. The Township currently features one roundabout at North Street/Water Street and Old Rail Lane in Port Perry.

Roundabouts provide several advantages over other forms of intersection traffic control, primarily in terms of:

- Safety (fewer conflicts, lower speeds, and reduced collision severity);
- Capacity (reduced vehicle delays, fewer queues, and improved access management); and/or
- Environmental (reduced fuel consumption and emissions).

In most cases, improving safety is the main reason road authorities construct roundabouts in Canada.

Although roundabouts offer many benefits, there are limitations and disadvantages to consider, including:

- Spatial requirements (may require more property than conventional stop-controlled or signalized intersections);

- Construction costs (may have higher initial construction cost but lower lifecycle);
- Constructability (retrofitting may be more difficult);
- Operational (traffic volumes and patterns may adversely influence capacity);
- Accessibility (may pose challenges for pedestrians with vision impairment or mobility challenges); and
- Public education (may require outreach if roundabouts not common to the area).

Based on this assessment, roundabouts should be considered for intersection traffic control on Collector roads within the Township. Roundabouts could also be considered on Local and Arterial roads in Scugog where traffic control signals are warranted.

The **Roundabout Feasibility Policy** included in **Appendix C** provides further information on the benefits of roundabouts and an overview of implementation considerations. The policy includes a Screening Tool to assess the feasibility of implementing a roundabout in comparison to other treatments, such as auxiliary lanes, traffic control signals and all-way stop control. The tool indicates whether to proceed to a more detailed Intersection Control Study based on a screening-level assessment of likely merits. The criteria and guidance provided in the TAC *Canadian Roundabout Design Guide*[32] supplement use of the tool.

An Intersection Control Study is the final step in confirming the feasibility and benefit of providing a roundabout. This operational and design study reviews reasonable forms of traffic control for the subject intersection or corridor in more detail and compares the options based on several measures including:

- Road user safety for all potential users including a detailed review of the societal costs of collision potential;
- Level of service and delay for all potential users;
- Environmental impacts such as fuel consumption, vehicle emissions and noise;
- Capital and operating costs;
- Compatibility with road/corridor traffic control strategies, and adjacent land use and access;
- Property impacts; and
- Effects on transit operations, emergency service provision, accommodation of persons with disabilities and farm vehicle operations.

[32] Transportation Association of Canada. *Canadian Roundabout Design Guide*. January 2017.

Policy:

The Township may consider the use of roundabouts for intersection traffic control:

1. In existing locations where a traffic control upgrade is warranted, capital improvements are being considered, an offset alignment exists, or safety or capacity issues have been identified.
2. In new development areas where a new intersection is planned on: an arterial and/ or collector road that warrants or may warrant traffic control signals or all-way stop control; and a local road where traffic calming or development staging is required.

The Township will follow the guidelines and criteria specified in the **Roundabout Feasibility Policy** in assessing potential roundabout locations on Township roads.

Recommendation 5.13 – Adopt and apply the Roundabout Feasibility Policy provided in **Appendix C**.

5.7 PARKING

5.7.1 CONTEXT

Parking is an integral element of a community's transportation system. An appropriate balance of supply and demand for parking is necessary to support the viability of businesses and integrity of residential neighbourhoods. Management of the supply, location and price of parking can be an effective way to influence travel behaviour and encourage active travel and transit modes. Currently, the Township does not charge for parking in any lot or on-street location other than at the Port Perry Municipal Boat Ramp Parking Lot.

Within the commercial areas of Scugog, particularly downtown Port Perry, on-street parking facilitates access to businesses by customers and allows some delivery and pick-up of goods. In this context, on-street parking is typically shorter term and turnover of vehicles is encouraged through limited duration parking meters and time-limited parking and loading zones. On-street parking in residential areas typically serves as longer-term accommodation for vehicles of residents and their guests.

Overall, the Township has few persistent parking issues except in the downtown area and in some of the newer residential communities. The following subsections address the key parking-related items.

5.7.2 ON-STREET PARKING AND STOPPING REGULATIONS

On street parking has an important relationship to pedestrian and motorist safety, the capacity and level of congestion on a street, and the economic well-being of adjacent businesses. It can create a buffer, separating pedestrians on the sidewalk from motor vehicle traffic on the adjacent roadway. The presence of on-street parking may also reduce motorists' speed, further enhancing pedestrian safety and comfort.

On the other hand, on-street parking typically results in less visibility between motorist and pedestrians, especially for children. The pedestrian dart-out, often involving children, is one of the most common types of midblock pedestrian collisions in residential areas. Therefore, the restriction of on-street parking in areas with pedestrian activity may improve pedestrian safety. It can also enhance visibility with other street users and approaching vehicles.

The Township has recently updated its Traffic By-law No. 05-20. The by-law contains the necessary regulatory framework to control most on-street parking and stopping activity in the municipality. No further review is required at this time.

In applying the by-law to requests for changes to parking and stopping provisions, the Township should consider:

- **In the Vicinity of Elementary Schools** – Prohibiting stopping on the opposite side of the street and parking along the frontage. These prohibitions should be signed. This parking restriction shall be evaluated on a case by case basis.
- **In the Vicinity of Pedestrian Crossovers** – Prohibiting parking within 30 metres of any crosswalk that is not located at an intersection. These prohibitions should be signed.
- **In the Vicinity of Intersections** – Prohibiting parking within 10 metres of an unsignalized intersection and 15 metres of a signalized intersection. These prohibitions should be signed if there is a recurring issue. The primary purpose of restricting parking at intersections is to improve sight distance.
- **On Streets with High Parking Activity** – Adjusting regulations to increase turnover if there is a demand issue. Prohibiting parking or stopping if there is a sight visibility concern. Implementing permit parking if in a residential area or a non-residential area that experiences long duration parking, such as during the daytime near employment uses.
- **Shoulder Areas/Edges of Pavement Reserved for Pedestrians and Cyclists** – Prohibiting parking in conjunction with the design of active transportation facilities. Depending on the characteristics of the roadway, the prohibition should be limited to

certain times of the day and certain days of the week. The time and day limitations should be tailored to the specific location in consultation with abutting property owners. These prohibitions should be signed.

Recommendation 5.14 – Consider safety explicitly in responding to requests for parking restriction changes.

5.7.3 OFF-STREET/ON-SITE PARKING

On-site parking is influenced by the Township through its land use planning regulations. Zoning By-law No. 14-14 stipulates parking regulations for new developments based on land use type. Currently, standard zoning requires a minimum number of parking stalls, but there is no maximum limit on the number of stalls that can be provided. A review of these standards should be conducted to ensure alignment with the AT and TMP. Specific items to consider include:

- Parking requirements for residential intensification areas;
- Opportunities for shared parking in commercial areas like downtown and the hamlets;
- Parking provisions for bicycles, rideshare and carshare (per Chapter 6); and
- Implications of new mobility and emerging trends and technologies (per Chapter 6).

Recommendation 5.15 – Consider amendments to the Township Zoning By-law parking requirements pertaining to bicycles, shared mobility, and automated, connected and electric vehicle use.

5.7.4 PARKING IN DOWNTOWN PORT PERRY

Parking is often viewed as one of the basic elements in sustaining a healthy downtown and in promoting the expansion of retail and office activity within the community core. The supply, location and price of parking are very sensitive issues for downtown businesses and area residents. Inadequate supply or high parking prices can serve as deterrents to patron visits, hinder the attraction of new businesses to downtown areas, and impact adjacent neighbourhoods

The parking system in downtown Port Perry consists of:

- **Public on-street parking (On-Street).** On-Street parking is intended to provide close and convenient parking for patrons visiting the downtown area;

- **Municipally controlled off-street parking (Municipal Lot).** These lots are typically shared between short-term (customers) and longer-term users (employees); and
- **Privately owned, publicly accessible off-street parking (Private Off-Street).** Private Off-Street parking is provided throughout the Study Area, generally adjacent to the Downtown businesses and residences they serve.

A long-term parking strategy for downtown Port Perry should be developed given the importance of parking to the continued viability of the core area. Planning is especially prudent if the preferred solution requires property acquisition and/or lead time to budget/raise funds and undertake preparatory work. A typical scope of work for a study like this entails:

1. ***Data Collection:*** *Review existing parking inventory, parking policies/regulations and collect parking utilization and duration data.*
2. ***Needs Analysis:*** *Identify current parking deficiencies by analyzing the Township's parking utilization and duration patterns.*
3. ***Recommendations:*** *Recommend parking management strategies to improve the efficiency of the existing and future parking supply based on survey data and stakeholder feedback.*

Possible actions to explore through the study include:

- Establishing a standard procedure and guidelines for assessing curbside use regulation changes (parking, standing, stopping);
- Revising on-street parking regulations to make better use of existing supply, particularly at peak times, including pricing;
- Using targeted enforcement to achieve compliance with regulations;
- Supplementing existing wayfinding and public information to make parking easier to find and access;
- Preparing a strategy to manage peak demand during special events;
- Identifying potential locations for additional off-street parking; and
- Collecting cash-in-lieu of parking.

Recommendation 5.16 – Prepare a parking strategy for downtown Port Perry.

6 TRANSIT AND FUTURE MOBILITY

6.1 OVERVIEW

The Township's transportation vision described in Subsection 3.5.3 is supported by a series of goals, one being the provision of **Mobility Options** – *A transportation system that offers a variety of efficient, effective, affordable, and accessible mobility choices for travel and goods movement to maximize capacity and encourage public transit, cycling, rolling, and walking*. Chapters 4 and 5 describe the recommended active transportation strategy and roads strategy, respectively. This chapter outlines other available and emerging travel options in Scugog and how the Township can position the municipality to be ready for and (hopefully) benefit from the transformational and disruptive shift in mobility services coming. The actions recommended for transit and future mobility are intended to support and integrate with the other strategies with the aim of a more multi-modal transportation system to serve the community.

6.2 TRANSIT

Durham Region Transit (DRT) provides scheduled (fixed route), on-demand, and specialized (for qualified individuals) bus transit services within the Township, offering connections within Scugog and to the rest of Durham Region and beyond. Additionally, GO Transit operates a bus route with stops in the Township, linking to the broader inter-regional transportation network. Subsection 3.3.1 describes existing transit services in further detail.

Providing efficient and effective transit service is key to offering individuals mobility choices and serving a broader segment of the community, especially people who are unable to drive or do not have access to an automobile because of age, income and/or physical disability. Universal access to reliable public transportation is also needed to create the types of compact and complete communities envisioned by provincial policy and municipal land use plans. The demand for and reliance on these services continues to expand as Scugog grows and its population ages, placing additional pressure on existing systems to meet needs.

Section 8.5 of the Township Official Plan details the policies intended to support the use and accessibility of public transit in Scugog. The plan states the Township will:

- *In consultation with Durham Region and the Ministry of Transportation, continue to support fully accessible public transit service particularly for service nodes and corridors in new development areas.*
- *Continue to support Durham Region Transit and GO bus service in the community.*

- *Encourage opportunities to promote future transit usage, particularly along Transit Spines which facilitate inter-regional and inter-municipal services along Arterial roads and intersect with local transit services. Transit Spines designations shall be consistent with Schedule 'C' Map C3 of the Durham Regional Official Plan. Walking distances to transit will be minimized by:*
  - *Locating commercial, mixed-use, and higher density developments adjacent to transit spines;*
  - *Having main entrances to commercial and mixed-use development within 4 metres of the road allowance on transit spines; and*
  - *Improving access from interior neighbourhoods to transit spines.*
- *When considering development proposals in the Port Perry Urban Area, ensure that development does not preclude opportunities for public transit in the future.*

With the growth and change experienced in Durham Region over the last few decades and the emergence of activity centres across the Region, the demand for more frequent inter-municipal transit service has grown. Residents attending public open houses and forwarding comments during the study expressed a strong desire for improved transit connections between municipalities and greater service frequency.

Enhancements to transit service within the Township was also a theme of participant feedback. In 2017, DRT introduced the "652 Connector" to supplement its fixed route bus service locally. This flexible, on-demand van service offers individuals in the rural areas without access to scheduled transit an alternative to the auto for travel within Scugog, including "first and last mile" trips linking to scheduled bus routes. Extending this service, within both the rural and urban areas of the Township, could encourage greater transit use, possibly more than achievable through expansion of the fixed route bus system.

While the Township is not responsible for service delivery, the municipality can help facilitate and promote transit through actions such as:

- Encouraging transit-supportive development through Official Plan policy, Zoning By-law regulations and site plan control;
- Creating safe and accessible active transportation connections to and from transit stops by developing the pedestrian and cycling networks detailed in Chapter 4;
- Rehabilitating and upgrading roads used for transit routes to enhance the operational efficiency of buses; and
- Providing real-time transit information at locations such as the community centre and Municipal Office.

Recommendation 6.1 – Advocate for the continuation and expansion of transit service to and within Scugog with Durham Region Transit and GO Transit/Metrolinx, respectively.

Recommendation 6.2 – Facilitate and promote transit within the Township through actions such as supportive land use, active transportation connections, road works, and real-time transit information.

6.3 SHARED MOBILITY

Technological, socio-demographic, and behavioural changes are impacting travel behaviour and mode choice across Canada and around the world[33]. Interest in new modes of transportation, such as bikesharing, carsharing, and ridesourcing, has grown tremendously in recent years as society seeks more sustainable alternatives to the private automobile. This evolution in mobility can be traced to the emergence of the sharing economy. Defined as a peer-to-peer (P2P) based activity of acquiring, providing, or sharing access to goods and services, the modern sharing economy is typically facilitated by a community-based online digital platform[34]. The rapid advancement of technology over this period, particularly in smartphones and mobile applications, has contributed to this evolution, with real-time information about where, when, and how to access or connect between different modes now readily available.

Through the sharing economy rose mobility on demand (MOD) and mobility as a service (MaaS). MOD is often referred to as how people or goods move from point A to point B, and which mode(s) are selected based on time, cost, and convenience. It emphasizes the commodification of passenger mobility, goods delivery, and transportation systems management. The term MaaS is typically used when discussing the software applications people use to make travel decisions and data used to study that travel. It primarily emphasizes passenger mobility allowing travelers to seamlessly plan, book, and pay for a multimodal trip on a pay-as-you-go and/or subscription basis. The concepts are similar because they both involve integration of transportation modes through fares, a digital interface, and the physical mobility options[35], [36]. **Figure 6.1** compares the concepts, illustrating the relationship between MOD and MaaS.

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33 National Academies of Sciences, Engineering, and Medicine. *Foreseeing the Impact of Transformational Technologies on Land Use and Transportation*. 2019. https://doi.org/10.17226/25580

34 https://www.investopedia.com/terms/s/sharing-economy.asp [Accessed May 29, 2020]

35 Abel, Sarah. *Mobility and the Public Right of Way*. June 2019.

36 Shaheen, Susan and Adam Cohen. *Similarities and Differences of Mobility on Demand (MOD) and Mobility as a Service (MaaS).* June 2020.

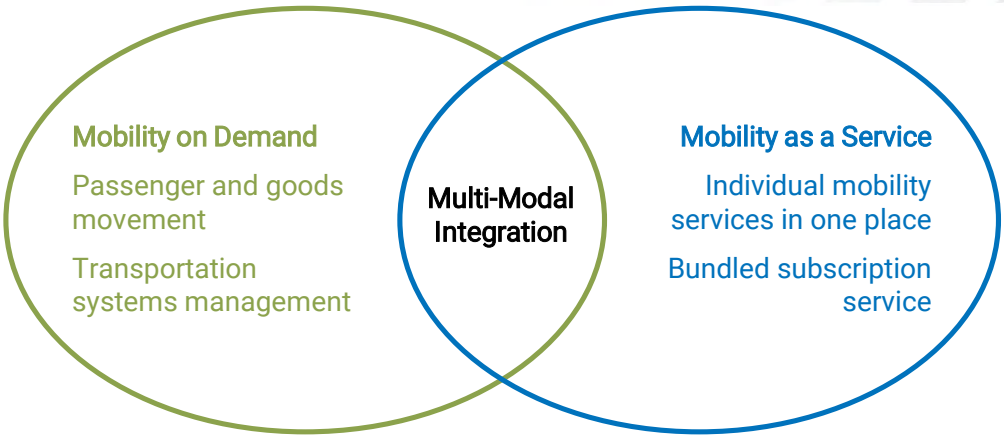


FIGURE 6.1: RELATING MOBILITY ON DEMAND AND MOBILITY AS A SERVICE

(Source: ITE Journal, Susan Shaheen and Adam Cohen, 2020)

New technologies and ideas in shared mobility continue to grow. In the broad sense, most forms can be categorized as either a transportation network company (TNC) or mobility service provider (MSP). Both rely on a smartphone application to connect individual users with a travel mode. **Figure 6.2** illustrates examples of share mobility options.

FIGURE 6.2: EXAMPLES OF SHARED MOBILITY

The most prominent forms of shared mobility currently (and those with the highest potential applicability in Scugog) include:

- **Car Sharing** – A service that provides members with access to an automobile for intervals of (typically) less than a day, alleviating the need for users to privately own a vehicle. Two main models exist:
  - *Fleet operations*, where a company supplies and maintains a fleet of vehicles in pre-positioned locations (i.e., pick-up and drop-off at same location) or "floating"

within a defined boundary (i.e., pick-up and drop-off at different locations). Current examples include Enterprise, Zipcar and Communauto; and

- *Peer-to-peer operations*, where individuals share their personal vehicles directly with other carshare subscribers. Turo is a current example.

Car sharing services offer mobility options for individuals without automobiles and have the potential to reduce the volume of short distance vehicle trips. The prevalence of privately-owned vehicles, abundant parking, and smaller pools of potential members can present challenges to their viability in smaller communities like Scugog though.

- **Bike Sharing** – A service that offers short-term bike rentals, usually for periods of an hour or less over the course of a membership. The "period" can range from a single ride, to several days, to an annual membership. Two main models exist:
  - *Docked systems*, where bicycles are rented from an automated station (locked "docking stations" or "docks") and returned to a station belonging to the same system. Bike Share Toronto and BIXI Montreal are current examples; and
  - *Dockless system*, where self-locking and free-floating bicycles are rented and returned anywhere within a specified zone. Although not prevalent in Canada, current examples include Lime, Jump and Bird.

  With its compact urban form and grid street network plus the volume of visitor and tourist traffic along the waterfront and within downtown, Port Perry tends to experience more short distance trips, which lends favourably to bike sharing. But like car sharing, similar challenges to usage exist.

- **Electric Kick-Style Scooter (E-Scooter) Sharing** – A service in which electric motorized scooters (also referred to as e-scooters) are rented for short-term use. E-scooters are typically "dockless", like the bike sharing service. Although not prevalent in Canada, current examples include Lime, Jump and Bird.

  On January 1, 2020, the Province launched a pilot program to permit e-scooters on Ontario roads, thereby enabling their use locally. Like bike sharing, the tendency for short distance trips in Port Perry is conducive to e-scooter use.

- **Ride Sharing, Ride Hailing and Ride Sourcing** – A service that involves adding passengers to a private trip in which the driver and travellers share a common destination. Traditional forms of ride sharing services include carpooling and vanpooling. Today, transportation network companies (TNCs) such as Uber and Lyft are examples of ride hailing services although their "pool" functions are akin to ride sharing. A ride sourcing service, like Poparide, that allows individuals to coordinate shared rides through an online app.

There may be a role for ride sharing, ride hailing and ride sourcing platforms to serve trips not accommodated by DRT fixed route and on-demand public transit services and local taxis, particularly longer distance, intermunicipal travel.

- **Shuttles** – A service that relies on small buses or vans to provide public mobility within a defined area. A form of "microtransit", two common models exist:
  - *Circulating shuttles*, which carry passengers for short trips along a fixed route to/from specific destinations and designated locations such as transit stops, offices, stopping, and community facilities; and
  - *Demand-responsive shuttles*, which transport passengers, often door to door, in vehicles that alter their routes based on demand rather than following a fixed timetable.

While more common in urban areas, shared mobility services can also be successful in addressing the transportation challenges of small and rural communities like Scugog. These services can complement the transit system and offer efficient and cost-effective options to single-occupant vehicle travel.

Municipalities typically use by-laws, policies, and guidelines to influence the availability, viability, and delivery of shared mobility services. The most common matters addressed through municipal direction include the allocation of public rights-of-ways (e.g., parking, curb space), development and zoning regulations, insurance and for-hire vehicle regulations (e.g., licensing), and taxation and fees.

Before deciding on the type of service(s) to pursue and/or permit, a shared mobility strategy should be developed for the community. The strategy should identify the specific transportation needs to be addressed and articulate a case for the service(s) that best suits requirements. Tools such as surveys, pilot projects and incentives could be used as part of the strategy to gauge local interest level. The study should engage a cross-section of local stakeholders and potential partners to ensure broad support for the initiative and ultimately facilitate implementation.

The shared mobility strategy should consider the merit of introducing/piloting an "EcoMobility" hub(s) in the Township, possibly near the waterfront or in downtown Port Perry. These hubs serve as one-stop service points for multimodal systems and typically feature a range of shared mobility services including bike share, ride share and car share facilities. **Figure 6.3** illustrates the concept.

FIGURE 6.3: ECOMOBILITY HUB CONCEPT
(Source: Multi Mobility, Sophia von Berg, 2014)

Recommendation 6.3 – Develop a shared mobility strategy for the Township in collaboration with local stakeholders and potential partners.

Recommendation 6.4 – Facilitate and promote shared mobility within the Township through the introduction or modification of by-laws, policies, and guidelines pertaining to the allocation of public rights-of-ways, development and zoning regulations, insurance and for-hire vehicle regulations, and taxation and fees.

6.4 AUTOMATED, CONNECTED AND ELECTRIC VEHICLES

Over the past decade, the automotive industry has experienced considerable change due to innovation and rapidly evolving technology, some of which impacts local governments. Potentially transformative automobile technologies likely to have significant effects on municipal land use and transportation in the coming 10 to 30 years include:

- **Automated Vehicles (Avs)**, which have at least some aspect of a safety-critical control function (e.g., steering, throttle, or braking) occur without direct driver input. There are six levels of vehicle automation, starting from Level 0: No Automation to Level 5: Full Automation (or Autonomous), as defined by the Society of Automated Engineers (SAE) International;
- **Connected Vehicles (CVs)**, which rely on different wireless communication technologies to communicate with the driver, other cars on the road (vehicle-to-vehicle [V2V]), roadway infrastructure (vehicle-to-infrastructure [V2I]), and the "Cloud" [V2C], and

- **Electric Vehicles (Evs)**, which use one or more electric or traction motors for propulsion. An EV may be powered through a collector system by electricity from off-vehicle sources, or may be self-contained with a battery, solar panels, or an electric generator to convert fuel to electricity.

Automated, connected, and electric (ACE) vehicles, as illustrated in **Figure 6.4**, offer promise to improve transportation system safety and efficiency in both rural and urban communities. From a positive perspective, they have the potential to: reduce collisions, traffic congestion and emissions; improve mobility and equity, particularly for youth, seniors, and individuals with disabilities; and lessen the need for roadway expansion and on-site parking. At the same time, if not deployed and managed properly, these technologies could lead to more traffic, inequitable access to mobility, and adverse environmental impacts.

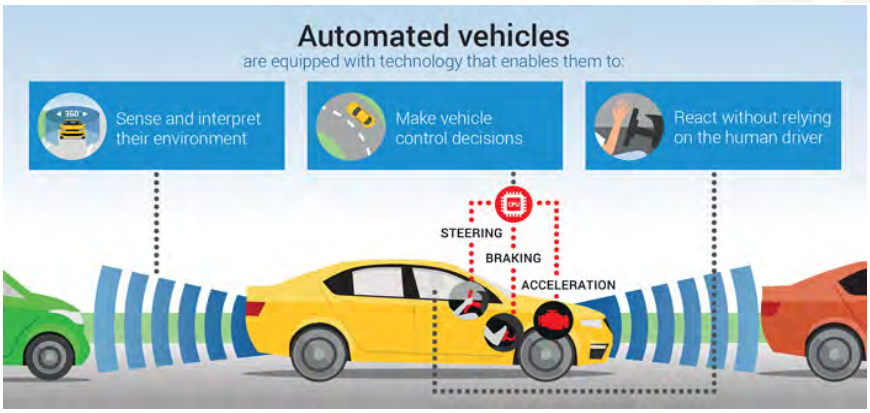
The future of ACE vehicles, especially Avs and CVs (collectively referred to as CAVs), could be highly disruptive, for better or worse. Gaining a better understanding of the likely outcome is complex and difficult to fully grasp at this time given:

- CAVs may have a broad range of economic and social impacts, many of which extend beyond transportation and are unknown or dependent on further information;
- The potential effects of widespread CAV use are both positive and negative;
- Timelines for the arrival of CAVs are uncertain; and
- The impacts of accommodating CAVs on transportation infrastructure are not well understood, especially implications for design and standards.

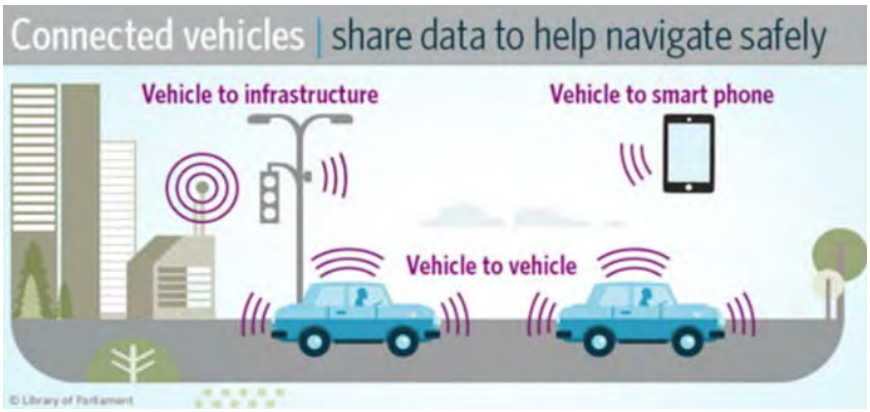
Capitalizing on opportunities and effectively addressing risks will require governments to prepare carefully. The *Automated and Connected Vehicles Policy Framework for Canada*[37] sets out the following six guiding principles for initiatives and policies related to the introduction of CAVs on public roads:

- **Prioritize safety** – While there is pressure to adapt quickly to emerging technologies, safety is a top priority for testing and deploying these vehicles;
- **Exchange information to ensure CAVs are safe and secure** – Data needs to be shared with governments and law enforcement while protecting privacy;
- **Align CAV policies and regulations** – A common, coordinated approach within Canada (and outside the county) is essential;

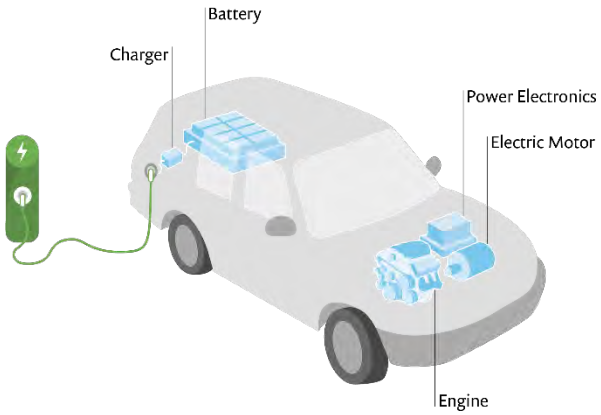
[37] Council of Ministers of Transportation and Highway Safety, Policy and Planning Support Committee (PPSC) Working Group on Automated and Connected Vehicles. *Automated and Connected Vehicles Policy Framework for Canada*. 21 January 2019.



(Source : https://www.autonomousvehicleinternational.com/news/business/eu-auto-makers-publish-automated-driving-checklist.html#prettyPhoto/0/)



(Source : https://startupheretoronto.com/partners/mentor-works/connected-vehicles-innovative-technology-driving-market/)



(Source : https://www.kindpng.com/downpng/hhomibb_transparent-electric-car-png-city-car-png-download/)

FIGURE 6.4: AUTOMATED, CONNECTED, AND ELECTRIC VEHICLES

- **Raise public awareness of the capabilities and limitations of CAVs** – Governments, as well as industry, will play an important role in education and outreach;
- **Prepare proactively for the deployment of CAVs on public roads** – All levels of government must ready themselves for the potential safety, mobility, and land use planning implications of these technologies; and
- **Collaborate continually with those involved in the CAV sector** – A culture of cooperation and collaboration will be essential to successful implementation.

Consistent with these principles, the roles and responsibilities for municipalities in the introduction of ACE vehicles can include[38]:

- Enacting and enforcing traffic and parking by-laws;
- Facilitating trials and deployment on municipal roads (In 2016, the Province launched a ten-year pilot program allowing the testing of Avs on Ontario roads);
- Adapting and implementing infrastructure to support deployment;
- Implementing curb management strategies to organize operation and designate areas for vehicle dwelling;
- Implementing or modifying policies pertaining to the supply and management of on-street, municipal lot, and private, off-street parking;
- Developing strategies to repurpose infrastructure and land no longer required for parking;
- Managing and regulating passenger transportation impacted by deployment (including public transit, taxis, and shared mobility services);
- Creating and managing new logistics, regulations, and revenue structures for traffic and parking control;
- Engaging, educating, and raising awareness with the public; and
- Establishing funding streams for related initiatives.

The installation of EV charging stations in municipal parking lots and on-street is another action being taken by municipalities to support ACE vehicle use. By helping to make electric vehicles more convenient, municipalities hope to encourage greater use of this environmentally friendly alternative to lower their overall carbon footprint. In some communities, municipalities are partnering with private companies (such as Tesla) to implement the stations at public facilities and on-street (see **Figure 6.5**). At present, Scugog has no EV charging stations[39].

[38] Ministry of Transportation Ontario. *CAV Readiness Plan, Final Report*. March 2020.
[39] According to the website PlugShare https://www.plugshare.com/ [Accessed June 3, 2020].

FIGURE 6.5: ON-STREET EV CHARGING STATION

Recommendation 6.5 – Develop an action plan identifying the tasks required to prepare the Township for the introduction of automated, connected, and electric vehicles, which include changes to by-laws, policies, and guidelines pertaining to testing, infrastructure design, parking, curb management, traffic control, vehicles, and other items.

Recommendation 6.6 – Pursuant to the action plan, permit the testing and deployment of automated and connected vehicles on Township roads.

Recommendation 6.7 – As part of the action plan, develop an electric vehicle charging station program, beginning with installations at the Municipal Office, Scugog Community Recreation Centre, and Scugog Public Library, and on Queen Street in downtown Port Perry.

Recommendation 6.8 – As part of the action plan, develop an automated, connected, and electric vehicle public education program.

7 IMPLEMENTATION

7.1 OVERVIEW

This chapter outlines the process and tools to implement the active transportation strategy and roads strategy described in Chapters 4 and 5, respectively, and the recommended transit and future mobility actions in Chapter 6. Phasing and cost estimates for the proposed infrastructure and program investments are also provided, where appropriate.

7.2 IMPLEMENTATION TOOLS

7.2.1 TOWNSHIP OF SCUGOG OFFICIAL PLAN AMENDMENTS

The AT and TMP introduce key themes and principles that should be incorporated into the Township Official Plan, the municipality's guiding land use and policy document. **Table 7.1** summarizes the proposed policy and schedule changes that will inform a future Official Plan Amendment pursuant to the *Planning Act*.

TABLE 7.1: PROPOSED OFFICIAL PLAN POLICY AND SCHEDULE CHANGES

Section	Proposed Revision
Policies	
8.1 Objectives	Add/modify objectives to state the Township will apply a Complete Streets approach to the design, rehabilitation, and reconstruction of existing and planned roads
8.2 General Development Policies	Add/modify policies to include active transportation
8.3 Roads	Add/modify policies to reference, where appropriate, relationship of active transportation with roads Add/modify policies to incorporate Complete Streets principles and additional road safety considerations Add policies to acknowledge shared mobility and automated/connected/electric vehicle use
8.4 Pedestrian and Cycling Routes and Facilities	Add/modify policies to incorporate relevant provisions of the active transportation strategy detailed in Chapter 4.

TABLE 7.1: PROPOSED OFFICIAL PLAN POLICY AND SCHEDULE CHANGES

Section	Proposed Revision
8.6 Parking	Add/modify policies to provide direction regarding parking and curbside use for bicycles, shared mobility, automated/ connected/electric vehicles
All sections in Chapter 8	Update/refine wording to reflect more contemporary/ appropriate terminology
Schedules	
Schedules B and B-1 and C and C-1	Designate/modify proposed cycling routes based on the network plans illustrated on **Map 9** and **Map 10**
Schedules C and C-1	Redesignate Old Simcoe Road from a Collector/Local road to a Type C Arterial road between Simcoe Street (south connection) and Scugog Line 8 Redesignate Scugog Line 8 from a Local road to a Type C Arterial road between Old Simcoe Road and Simcoe Street Redesignate Old Simcoe Road from a Collector road to a Local road north of Scugog Line 8

Recommendation 7.1 – Amend the Township of Scugog Official Plan to incorporate the proposed policy and schedule changes listed in **Table 7.1**.

7.2.2 FUTURE ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The AT and TMP was prepared following the MCEA, addressing the first two phases of this approved planning process under the *Environmental Assessment Act*. Except for the proposed Second Island Access (which is the subject of a separate, already ongoing Schedule C MCEA study), all projects identified through the plans fall under Schedule A or A+ of the MCEA. These activities are pre-approved under the Act and can proceed to implementation, subject to advising the public for Schedule A+ projects.

7.2.3 DEVELOPMENT APPROVAL PROCESS

The *Planning Act* establishes the framework for land use planning in Ontario, providing the basis for a variety of mechanisms municipalities use to facilitate development in their communities. The most common tools used by the Township to guide and control development in Scugog include Official Plan Amendments, Zoning By-law Amendments

and Minor Variances, Site Plan Control, and Draft Plans of Subdivision and Condominium. The type of application(s) will depend on the development contemplated and the permission required from the Township to enable the plan.

Township Official Plan policies and Zoning By-law regulations can be used to control the density and use of land to moderate travel demand generated by proposed development. Typically, the applicant would prepare a Transportation Impact Study to examine the potential effects on the transportation network and identify the on and off-site measures required to align the performance of the system with Township goals and objectives once the development is built and occupied. These technical studies help the Township in assessing the merits and potential effects of a proposed development and in determining the justification for its approval. Through the study, the proponent must demonstrate the transportation system can function safely and efficiently with the proposed development, considering network improvements and other initiatives secured/identified in conjunction with the development proposal. The study must also show the proposed development:

- Can be well-integrated with the auto, transit, and active transportation networks;
- Can be phased, if necessary, to coincide with the implementation of transportation system improvements and other initiatives, thereby ensuring supply and demand are better aligned over time; and
- Includes reasonable and achievable measures to facilitate and promote transit, cycling, and walking for trips to and from the subject lands.

Durham Region maintains guidelines for the preparation of Transportation Impact Studies, which primarily assess vehicular traffic impacts. Local guidance for the consideration of active travel modes and justification of parking variances should be developed.

The development approval process can also be used to implement the transportation infrastructure and policies identified in the AT and TMP directly related to specific lands. The *Planning Act* authorizes municipalities to impose conditions on development approvals to secure compliance. From a transportation perspective, typical conditions imposed include:

- Dedication of property for abutting road, pathway, and other transportation rights-of-way described in the Township Official Plan at no cost to the municipality;
- Design conditions for access to/from the subject development, such as intersection controls, lane arrangements, ramps, curbing, and traffic direction signs;
- Requirements and design conditions for off-street loading and parking facilities; and

- Design conditions for walkways, walkway ramps, and other means of pedestrian access.

Recommendation 7.2 – Adopt the Durham Region Transportation Impact Study Guidelines and develop supplemental local guidance for the consideration of active travel modes and justification of parking variances.

Recommendation 7.3 – Implement the recommended transportation infrastructure and policies through the land development (*Planning Act*) approval process where appropriate.

7.2.4 ACTIVE TRANSPORTATION FACILITY IMPLEMENTATION PROCESS

Figure 7.1 details the four-step process for implementing the active transportation facilities identified in Chapter 4. The process is structured as follows:

Step 1: Identify – Identify the network implementation opportunity

The first step is to identify and communicate opportunities to implement the proposed active transportation facility by monitoring the following Township and Durham Region initiatives:

- Capital projects scheduled in both annual and forecasted budgets;
- Acquisition and disposition of land; and
- Operating budgets relevant to active transportation.

If a potential project is identified:

- Note the departments, jurisdictions, and/or organizations involved in the project;
- Compare the timing of the project to the priorities identified in the recommended phasing plan contained in Section 7.3;
- Determine if the project would permit implementation of the preferred active transportation facility type in a cost-effective manner; and
- Advise the affected department, jurisdiction and/or organization that the project may be a candidate for an active transportation facility.

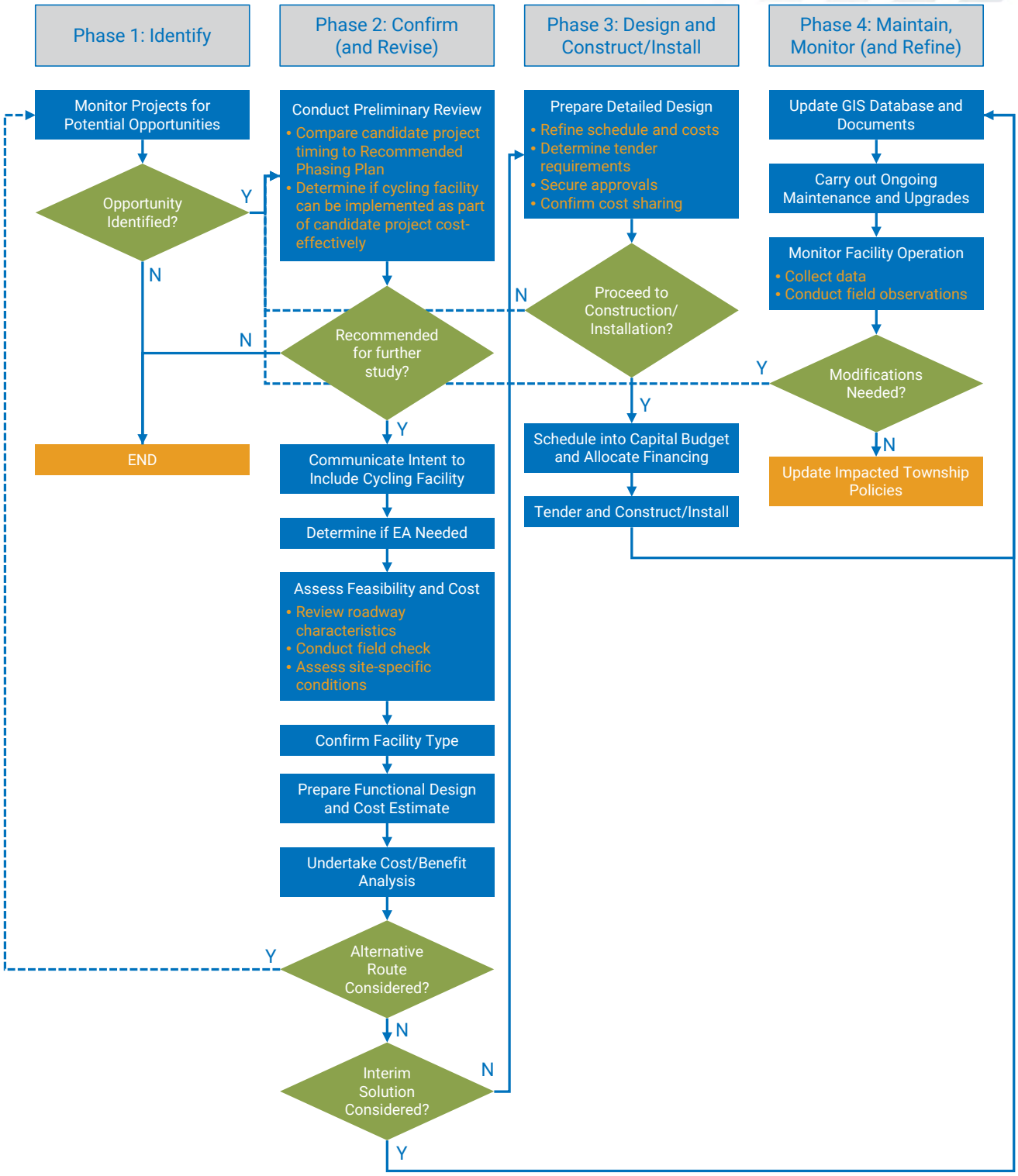


FIGURE 7.1: ACTIVE TRANSPORTATION FACILITY IMPLEMENTATION PROCESS

Step 2: Confirm (and Revise) – Confirm the feasibility of the route and facility type at time implementation is proposed and revise the concept if necessary

The second step is to confirm the feasibility and costs to implement the proposed active transportation route as part of the candidate project. For each candidate project:

- Review current roadway characteristics including traffic volumes, collision history, and commercial vehicle percentage;
- Conduct a field check to identify potential site-specific implementation challenges, such as sight distance limitations;
- Confirm facility type;
- Prepare a preliminary functional design and cost estimate. The design should follow the guidelines recommended in Chapter 4; and
- Undertake a high-level cost/benefit analysis to assess whether the proposed implementation is fiscally prudent at this time, or if another option may be more practical.

This step may take place in conjunction with or as input to a MCEA study or functional design for the candidate project.

Phasing should generally follow the plan outlined in Section 7.3. Priorities can be adjusted in response to community demand and/or the desire to advance a specific active transportation route. Exact implementation timing will be determined through this process.

If site-specific circumstances preclude construction of the recommended facility type as part of the candidate project, consider:

- Altering the facility type to better fit the route. The facility selection process should follow the guidelines detailed in Section 4.3 to ensure an appropriate solution;
- Assessing nearby parallel routes for suitability as an alternative (return to Step 1); or
- Implementing an interim solution such as sharrow pavement markings as a precursor to a bike lane.

Step 3: Design and Construct/Install – Design the facility and supporting features based on the guidelines recommended in Chapter 4 and construct/install the facility per the design

The third step is to prepare the detailed design for the recommended facility. The design is typically completed in conjunction with the candidate project and should not require significant additional resources. Where required, the project schedule, cost estimate, and tender documents should also be refined. External approvals, property acquisition, and potential cost sharing opportunities should be confirmed as well.

In most cases, the candidate project with the active transportation facility will need to be programmed in the Capital Budget and financing allocated. Coordination with other department initiatives should also be explored.

Finally, the candidate project is issued for tender where required. Construction/ installation proceeds once financing is authorized.

It is possible that the Township may decide not to proceed with the facility due to unexpected costs and/or constraints that arise during the detailed design process. If this occurs, alternative routes or facilities should be considered (return to Step 2).

Step 4: Maintain, Monitor (and Refine) – Maintain the facility, monitor its use and operation, and refine the design if needed

The fourth and final step is to maintain and monitor the implemented facility.

Ongoing maintenance and upgrades to the facility should be carried out to ensure continued safe and efficient use by pedestrians and cyclists. Section 7.5 details recommended maintenance practices.

Specific to cycling facilities, once implemented, the route should be monitored regularly to ensure it operates as planned. Monitoring will involve data collection and field observations to evaluate safety and operational efficiency. Section 7.6 outlines recommended monitoring procedures.

If the monitoring program identifies the need for modifications, alternative routes or facilities may need to be considered (return to Step 2) or revisions to the design (return to Step 3).

The Township's Geographic Information System (GIS) database and relevant municipal documents should also be updated once the facility is opened. The database should be used to track new and upgraded network segments as implemented to ensure accurate, real-time information is available for maps and analysis.

7.3 COST ESTIMATES AND IMPLEMENTATION PHASING

7.3.1 ACTIVE TRANSPORTATION

The costs of implementing the proposed cycling and pedestrian facilities identified in Chapter 4 were estimated based on indicative benchmark unit costs obtained from other recently completed active transportation plans in Ontario[40,41]. **Table 7.2** summarizes the unit costs used for linear facilities. **Table 7.3** provides the unit costs for crossings and other features. The following assumptions were made in applying the unit costs:

- Normal/average construction conditions;
- Unless otherwise stated, bi-directional routes for on-road cycling facilities; and
- Excludes costs for property acquisition, utility relocations, engineering design, contingency, and taxes.

An annual allowance for identified program items, including end-of-trip amenities (e.g., bike racks), wayfinding signs, outreach initiatives, and monitoring, was also assumed in estimating overall implementation costs.

Implementation of the proposed active transportation projects was prioritized based on the following criteria:

- **Link to Capital Projects** by scheduling network improvements concurrently with planned roadway projects;
- **Close Gaps** in the network, especially ones that create a safety risk or cause uncomfortable conditions for pedestrians and/or cyclists. Gaps that when completed resulted in continuous routes and/or important links were also a focus;
- **Reallocate Space**, where possible, to develop bike lanes through lane reallocation and repainting of pavement markings;
- **Establish a Network** by creating continuous north-south and east-west connections;
- **Respond to Demand** by focusing on areas with higher existing or projected pedestrian and/or cyclist volumes (e.g., routes that lead to/from major pedestrian generators such as schools, parks, retail establishments or employment districts);

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40 Town of Milton. *Town of Milton Transportation Master Plan, Appendix A: Active Transportation Strategy*. April 2018.

41 Town of Oakville. *Town of Oakville Active Transportation Master Plan, Technical Appendix I*. June 2017.

- **Achieve Quick Wins** by implementing short duration, easily achieved, cost-effective measures first (e.g., signs or pavement markings).

These criteria should be applied when reviewing/updating network priorities.

Table 7.4 summarizes the recommended phasing and indicative costs to implement the proposed pedestrian improvements shown on **Map 7** and **Map 8**. The table lists the locations in alphabetical order for each horizon (short and long-term). **Table 7.5** (Port Perry Urban Area) and **Table 7.6** (Rural Area) outline the phasing and costs for the proposed cycling improvements identified in **Table 4.2/Map 10** and **Table 4.3/Map 9**, respectively. **Appendix G** details the **Costing of the Proposed Active Transportation Facilities**.

Table 7.7 summarizes the total estimated cost for the active transportation initiatives and complementary programs pertaining to end of trip facilities, wayfinding signs, outreach initiatives, and monitoring. Annual costs for these programs have been assumed. Overall, the proposed investment totals approximately:

- $1,250,800 in the short-term (0 to 5 years); and
- $12,010,100 in the long-term (beyond 5 years).

Table 7.8 provides indicative costs for the suggested improvements noted in **Table 7.4** not already identified on the list of proposed Durham Region and Ministry of Transportation cycling routes. These costs have not been included in the total amounts shown in **Table 7.7**. Note that cycling facilities on Regional roads that are part of the proposed Regional Cycling Plan Update Primary Cycling Network are subject to cost sharing between the Region and the Township as defined in the proposed Regional Cycling Plan Update.

Recommendation 7.4 – Adopt the recommended phasing plan specified in **Table 7.4** to guide the prioritization of pedestrian facility implementation and budget preparation.

Recommendation 7.5 – Adopt the recommended phasing plan specified in **Table 7.5** and **Table 7.6** to guide the prioritization of cycling facility implementation and budget preparation.

Recommendation 7.6 – Reassess the recommended phasing and funding of the proposed pedestrian and cycling facility projects annually, including exploring potential funding sources and other opportunities to implement the networks.

TABLE 7.2: UNIT COSTS FOR LINEAR ACTIVE TRANSPORTATION FACILITIES

Route Type	Cost (per kilometre)	Comments
On-Road Routes		
Signed on-road bike route – rural area	$2,500	Route signs every 600m (approximately) both sides of the road
Signed on-road bike route – urban area	$3,000	Route signs every 350m (approximately) both sides of the road
Shared use on-road bike route ("sharrows")	$9,500	Route signs every 350m (approximately) and sharrow pavement markings every 75m (approximately). Assumes conventional paint.
Marked on-road bike route with edge line ("urban shoulder")	$14,000	Route signs every 350m (approximately) and longitudinal pavement markings. Assumes conventional paint.
On-road bike lane (1.5 to 1.8m) without edge line	$21,000	Bike lane signs, bike lane stencils, and longitudinal pavement markings both sides of road. Assumes conventional paint.
Retrofit of existing two-lane road to bicycle priority street	$100,000	Traffic calming measures such as neighbourhood traffic circles, through restrictions for automobiles, etc.
Paved shoulder (1.5m) on scheduled resurfacing of existing road	$150,000	Asphalt shoulder and route signs. Assumes road project already includes other costs (i.e., granular shoulder, any ditch/drainage works, longitudinal pavement markings, etc.).
On-road bike lane (1.5 to 1.8m) by retrofitting/widening existing road	$700,000	Excavation, catch basin adjustments, lead extensions, new curb/driveway ramps, asphalt and subbase both sides of road. Also bike lane signs, bike lane stencils, and longitudinal pavement markings. Assumes conventional paint.
Off-Road Routes		
Granular off-road multi-use trail (3.0m) outside of road right-of-way in an urban or rural setting	$165,000	Compacted stone dust surface trail with trail marker signs. Does not include trail lighting.
Upgrade granular to paved off-road multi-use trail (3.0m) outside of road right-of-way in an urban setting (e.g., park or open space)	$175,000	Asphalt surface trail upgraded from granular surface with trail marker signs. Some new base work (approximately 25%), with half of the material excavated removed from site. Does not include trail lighting. Assumes no utility relocations.

TABLE 7.2: UNIT COSTS FOR LINEAR ACTIVE TRANSPORTATION FACILITIES

Route Type	Cost (per kilometre)	Comments
Paved off-road multi-use trail (3.0m) outside of road right-of-way in an urban setting (e.g., park or open space)	$300,000	Asphalt surface pathway with trail marker signs. Does not include trail lighting. Assumes no utility relocations.
Paved boulevard multi-use path (3.0m) within road right-of-way	$325,000	Asphalt surface pathway one side of road. Could include removal of existing sidewalk. Assumes no utility relocations.
Concrete multi-use sidewalk (3.0m) within road right-of-way[1]	$360,000	Concrete sidewalk one side of road. Assumes no utility relocations.
Concrete sidewalk (1.5m) within road right-of-way[1]	$180,000	Concrete sidewalk one side of road. Assumes no utility relocation.

Source: Town of Ajax Integrated Transportation Master Plan (2019), adjusted to 2020 dollars.

Notes:
1. Unit cost provided by the Township.

TABLE 7.3: UNIT COSTS FOR CROSSINGS AND OTHER FEATURES

Feature	Cost (each)	Comments
Pathway directional sign ("trail sign")	$275	Assumes bollard/post (100mm x 100mm marker) with graphics on one side only
Trail/road transition at unsignalized intersection ("crossing")	$7,500	Warning signs, pavement markings, curb cuts, and minimal restoration (3.0m pathway)
Pedestrian crossover (Level 2 Type B)	$30,000	RRFBs, 2 poles, 2 foundations, 2 push buttons, and 2 arms
Trail/road transition at signalized intersection ("crossride")	$80,000	4 signal heads, 2 poles, 2 foundations, 2 controller connectors, and 2 arms

Source: Town of Ajax Integrated Transportation Master Plan (2019), adjusted to 2020 dollars.

TABLE 7.4: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED PEDESTRIAN IMPROVEMENTS

Street	Limits	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Port Perry Urban Area				
Sidewalks				
Caleb Street	Scugog Street to Elgin Street	●		$43,200
Old Rail Lane	North Street to end	●		$36,000
Perry Street	Mary Street to Queen Street	●		$9,000
Perry Street	North Street to existing sidewalk	●		$10,800
Queen Street/Highway 7A	Scugog Line 6 to Walsh Drive	●		$18,000
Reach Street	SCRC (rec centre) to Old Simcoe Road	●		$45,000
Reach Street	Old Simcoe Road to Simcoe Street	●		$88,200
Water Street (lake side @ Palmer Park)	Mary Street to Queen Street	●		$18,000
Allan Street	Sexton Street to Lorne Street		●	$36,000
Alma Street	End to Old Simcoe Road		●	$140,400
Alma Street	Old Simcoe Road to Pine Court		●	$39,600
Alva Street	Major Street to Simcoe Street		●	$39,600
Balsam Street	Old Simcoe Road to Rosa Street		●	$48,600
Balsam Street	Rosa Street to Simcoe Street		●	$63,000
Barber Street	Old Simcoe Road to Josephine Street		●	$52,200
Bay Street	Old Simcoe Road to Simcoe Street		●	$102,600
Beech Street	Beechcroft Place to Lakeshore Drive		●	$14,400
Bigelow Street	Kellett Street to Reach Street		●	$21,600
Carlan Drive	Old Simcoe Road to Reach Street		●	$66,600
Clark Street	Ella Street to Simcoe Street		●	$61,200
Cochrane Street	Paxton Street to first property		●	$9,000
Crandell Street	Scugog Street to Elgin Street		●	$43,200
Edinborough Avenue	Old Simcoe Road to Riverview Drive		●	$57,600

TABLE 7.4: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED PEDESTRIAN IMPROVEMENTS

Street	Limits	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Elgin Street	Ella Street to Simcoe Street		●	$61,200
Ella Street	Scugog Street to Elgin Street		●	$43,200
Hurd Street	Union Avenue to Barber Street		●	$55,800
Josephine Street	Barber Street to Union Avenue		●	$72,000
Kellett Street	Bigelow Street to Simcoe Street		●	$19,800
Lakeshore Drive	Beech Street to Coulter Street		●	$57,600
Major Street	Union Avenue to Earl Cuddie Boulevard		●	$32,400
Maple Street	Victoria Street to Alma Street		●	$46,800
May Street	Union Avenue to Simcoe Street		●	$19,800
McDonald Street	Bigelow Street to Simcoe Street		●	$19,800
Old Simcoe Road	King Street to Victoria Street		●	$192,600
Old Simcoe Road	Victoria Street to Scugog Street		●	$81,000
Old Simcoe Road	Scugog Street to Queen Street		●	$32,400
Old Simcoe Road	Queen Street to Balsam Street		●	$129,600
Old Simcoe Road	Carlan Drive to soccer fields		●	$129,600
Perry Street	North Street to Paxton Street		●	$28,800
Reach Street	Sherrington Drive to SCRC (rec centre)		●	$28,800
Riverview Drive	Edinborough Avenue to Simcoe Street		●	$72,000
Scugog Line 6	Highway 7/12 to Queen Street/ Highway 7A		●	$424,800
Scugog Street	Scugog Line 6/Queen Street to Smart Centres (Northwest Side)		●	$81,000
Scugog Street	Scugog Line 6/Queen Street to Smart Centres (Southeast Side)		●	$99,200
Union Avenue	King Street to Victoria Street		●	$178,200
Union Avenue	Victoria Street to Sexton Street		●	$66,600

TABLE 7.4: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED PEDESTRIAN IMPROVEMENTS

Street	Limits	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Multi-Use Trails				
Cawkers Creek Trail	King Street to Scugog Street		●	$229,400
Cawkers Creek Trail	Scugog Line 6 to Reach Street		●	$260,700
Scugog Line 8	Trail to Simcoe Street		●	$75,900
Lake Scugog Waterfront Trail	Simcoe Street to Scugog Street (includes Oyler Drive)		●	$318,800
Lake Scugog Waterfront Trail	Simcoe Street to Honeys Beach Road (north of Canterbury Common)		●	$300,300
Lake Scugog Waterfront Trail – Wayfinding Signs	Scugog Street (at Water Street) to Scugog Line 8/Castle Harbour Drive (at Simcoe Street)	●		$12,100
Hamlets				
Alexander Street	Blackstock		●	$36,000
Church Street	Blackstock		●	$21,600
Old Scugog Road	Blackstock		●	$99,000
Cedar Grove Drive/ Regional Road 57	Caesarea		●	$63,000
Highway 7/12	Greenbank		●	$82,800
Cragg Road	Greenbank		●	$30,600
Brook Stret	Manchester		●	$46,800
Highway 7A	Nestleton		●	$10,800
Coryell Street	Seagrave		●	$55,800
River Street	Seagrave		●	$70,200
Highway 7/12 and Cragg Road Pedestrian Crossover	Greenbank		●	$30,000

TABLE 7.5: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – PORT PERRY URBAN AREA

Route/Location	Description	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
East-West Routes				
King Street from Old Simcoe Road to Simcoe Street	Construct boulevard multi-use path[1]		●	$393,300
	Install signed on-road bike route **as interim measure**	●		$3,700
	Install signalized crossride at Simcoe Street[2]		●	$80,000
Victoria Street and Earl Cuddie Boulevard from Highway 7A to Simcoe Street (includes future west extension)	Construct off-road multi-use trail – Highway 7A to Alma Street[1]		●	$82,500
	Designate and redesign as bicycle priority street – Alma Street to Dr. Herbert A. Bruce Park trail		●	$116,000
	Install signed on-road bike route **as interim measure** – Alma Street to Dr. Herbert A. Bruce Park trail	●		$3,500
	Pave unpaved sections of off-road multi-use trail in park to Simcoe Street	●		$24,800
	Construct boulevard multi-use path on west side of Simcoe Street from park to Vanedward Drive[2]		●	$126,800
	Install signalized crossride on Simcoe Street at Vandeward Drive[2]		●	$80,000
Lakeview Drive and Carnegie Street from Simcoe Street to Scugog Street	Designate and redesign as bicycle priority street		●	$91,000
	Install signed on-road bike route **as interim measure**	●		$2,800
Scugog Street from Scugog Line 6/Queen Street to Water Street	Replace sidewalk/construct new boulevard multi-use path[3]		●	$546,000
Queen Street from Scugog Line 6/Scugog Street to Water Street	Install signed on-road bike route	●		$5,000
	Install signalized crossride at Scugog Line 6/Queen Street/Scugog Street intersection[3]	●		$80,000

TABLE 7.5: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – PORT PERRY URBAN AREA

Route/Location	Description	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Paxton Street and Perry Street from Old Simcoe Road to Queen Street	Designate and redesign as bicycle priority street		●	$105,000
	Install signed on-road bike route **as interim measure**	●		$3,200
	Install pedestrian crossover at Simcoe Street[2]		●	$30,000
Reach Street and Coulter Street from Old Simcoe Road to Waterfront Trail	Reconstruct boulevard multi-use path on Reach Street – Old Simcoe Road to Bigelow Street[2]		●	$120,300
	Install signalized crossride at Old Simcoe Road[2]		●	$80,000
	Install unsignalized crossing at Bigelow Street[2]		●	$7,500
	Designate and redesign Coulter Street as bicycle priority street		●	$42,000
	Install signed on-road bike route on Coulter Street **as interim measure**	●		$1,300
North-South Routes				
Old Simcoe Road (within Port Perry Urban Area) and Scugog Line 8	Install signed on-road bike route – south limit to King Street	●		$2,500
	Install bike lanes – King Street to Edinborough Avenue		●	$2,471,000
	Install marked on-road bike route ("urban shoulders") – King Street to Edinborough Avenue **as interim measure**	●		$49,500
	Install signalized crossride at Scugog Street[3]	●		$80,000
	Install signed on-road bike route – Edinborough Avenue to Scugog Line 8	●		$3,000

TABLE 7.5: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – PORT PERRY URBAN AREA

Route/Location	Description	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Bigelow Street from Queen Street to Reach Street	Designate and redesign as bicycle priority street		●	$107,000
	Install marked on-road bike route ("urban shoulders") **as interim measure** – Queen Street to Kellett Street	●		$11,500
	Install signed on-road bike route **as interim measure** – Kellett Street to Reach Street	●		$800
Union Avenue and Lorne Street from King Street to Simcoe Street	Construct bike lanes with future road reconstruction projects – King Street to Josephine Street, Major Street to Simcoe Street		●	$791,000
	Convert to bike lanes/"urban shoulders" once adjacent sections constructed– Josephine Street to Major Street		●	$11,800
	Install signed on-road bike route **as interim measure**	●		$5,100
Simcoe Street from King Street to Scugog Street	Replace sidewalk/construct new boulevard multi-use path[1,2]		●	$490,800
Water Street from Scugog Street to North Street	Install signed on-road bike route	●		$2,000
Sherrington Drive and Chimney Hill Way from Reach Street to Old Simcoe Road	Designate and redesign as bicycle priority street		●	$81,000
	Install signed on-road bike route **as interim measure**	●		$2,500
Simcoe Street from Reach Street to Scugog Line 8/Castle Harbour Drive	Construct boulevard multi-use path[1,2]		●	$468,000

TABLE 7.5: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – PORT PERRY URBAN AREA

Route/Location	Description	Phasing (Years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Gaps and Discontinuities				
Waterfront Trail – Boardwalk to Rail Trail	Construct concrete section from boardwalk to sidewalk on Water Street	●		$25,200
	Construct curb cut and ramp at new roundabout leg exclusively for cyclists	●		$5,000
	Install shared use on-road bike route ("sharrows") within roundabout and on Old Rail Line	●		$2,300
Waterfront Trail – Curt Street to south of Scugog Street Alignment 1 – Water Street and Carnegie Street	Coordinate with Province to construct boulevard multi-use path on Scugog Street[3]		●	$32,500
	Install signalized crossride on Scugog Street at Water Street[3]	●		$80,000
	Construct boulevard multi-use path on east side of Water Street	●		$35,800
Waterfront Trail – Curt Street to south of Scugog Street Alignment 2 – New Connection and Future Multi-Use Trail	Coordinate with Province to construct boulevard multi-use path on Scugog Street[3]		●	$32,500
	Install signalized crossride on Scugog Street at commercial driveway access (Port Perry Plaza/grocery store)[3]	●		$80,000
	Coordinate with commercial property owner to construct multi-use path linking trail on Curt Street to crossride	●		$65,000

Notes:
1. Constructed in whole or in part by developer
2. Subject to Durham Region approval
3. Subject to Ministry of Transportation approval

TABLE 7.6: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – RURAL AREA

Route/Location	Description	Phasing (years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
East-West Routes				
Scugog Line 14 from Trans Canada Trail to Highway 7/12	Install signed on-road bike route	●		$8,200
Scugog Line 12 from Trans Canada Trail to Marsh Hill Road	Install signed on-road bike route	●		$4,000
Cragg Road from Highway 7/12 to Old Simcoe Road	Install signed on-road bike route	●		$9,000
Medd Road from Lake Ridge Road to Reach Street	Install signed on-road bike route	●		$9,100
Scugog Line 6 from Marsh Hill Road to Highway 7/12	Install signed on-road bike route	●		$9,100
Chalk Lake Road from Lake Ridge Road to Ashburn Road	Install signed on-road bike route		●	$8,500
Church Street/Edgerton Road from Old Scugog Road to Manvers Scugog Townline Road	Install signed on-road bike route	●		$19,900
Devitts Road from Regional Road 57 to Manvers Scugog Townline Road	Install signed on-road bike route	●		$18,300
North-South Routes				
Cartwright East Quarter Line/Mount Joy Road/Fowler Road from Boundary Road to Edgerton Road	Install signed on-road bike route	●		$17,200
Nestleton Road/McLaughlin Road from Edgerton Road to Regional Road 57	Install signed on-road bike route	●		$14,400
Old Scugog Road from Boundary Road to Regional Road 57	Install signed on-road bike route	●		$17,900
Old Simcoe Road (outside Port Perry Urban Area)	Install signed on-road bike route – Simcoe Street to south limit of Port Perry, north limit of Port Perry to Saintfield Road	●		$32,300
	Construct paved shoulders at time of road reconstruction – Simcoe Street to south limit of Port Perry		●	$682,500

TABLE 7.6: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED CYCLING IMPROVEMENTS – RURAL AREA

Route/Location	Description	Phasing (years)		Indicative Cost ($)
		Short (0-5)	Long (5+)	
Marsh Hill Road/Scugog Line 4/ Ashburn Road from Scugog Line 12 to Townline Road	Install signed on-road bike route	●		$41,600
Proposed Second Island Access	Construct paved shoulders at time of road construction		●	$274,500
	Install signed on-road bike route		●	$10,500

TABLE 7.7: ESTIMATED COSTS FOR ACTIVE TRANSPORTATION FACILITIES AND PROGRAMS

Initiative	Indicative Cost		
	Short (0-5)	Long (5+)	TOTAL
Pedestrian Network			
Port Perry Urban Area	$280,300	$3,951,500	$4,231,800
Hamlets	$0	$546,600	$546,600
Sub-Total	**$280,300**	**$4,498,100**	**$4,778,400**
Cycling Network			
Port Perry Urban Area	$574,500	$6,386,000	$6,960,500
Rural Area	$201,000	$976,000	$1,177,000
Sub-Total	**$775,500**	**$7,362,000**	**$8,137,500**
Amenities and Programs			
End of Trip Facilities ($5,000 per year)[1]	$25,000	$25,000	$50,000
Wayfinding Signs ($5,000 per year)[1]	$25,000	$25,000	$50,000
Outreach Initiatives ($15,000 per year)[1]	$75,000	$75,000	$150,000
Monitoring Program ($5,000 per year)[1]	$25,000	$25,000	$50,000
Sub-Total	**$150,000**	**$150,000**	**$300,000**
GRAND TOTAL	**$1,205,800**	**$12,010,100**	**$13,215,900**

Note: 1. Assumes five-year program

TABLE 7.8: INDICATIVE COSTS FOR SUGGESTED CYCLING ROUTES ON REGIONAL ROADS AND PROVINCIAL HIGHWAYS NOT ALREADY IDENTIFIED IN OTHER PLANS

Route	Description	Indicative Cost ($)
Saintfield Road (Regional Road 6) from Highway 7/12 to Simcoe Street	**Consider** constructing paved shoulders at time of road resurfacing	$1,056,000
Highway 7A from Highway 7/12 to Scugog Line 6/Queen Street	**Consider** constructing paved shoulders at time of road resurfacing	$417,000

7.3.2 ROADS

The costs of implementing the road network projects identified in Chapter 5 were obtained from the Township 2019 Development Charges Background Study – Engineering Service Category Analysis.

The phasing of the proposed road network projects considers the forecast growth in population and employment within the Township and associated travel demand. Relative priority compared to other initiatives and the broader transportation objectives of the Township were also considered. As noted in Subsection 5.4.5, implementation timing and final extent and configuration of the proposed works will be confirmed prior to construction.

Table 7.9 details the recommended phasing and indicative costs of the road network expansion projects with the anticipated MCEA schedule for the undertaking. The total cost for the three intersection projects is estimated at approximately $1.34 million. The cost for the Proposed Second Island Access is projected at $3.75 million. Typical, ongoing maintenance and rehabilitation costs are not included in this estimate.

Recommendation 7.7 – Adopt the recommended phasing plan specified in **Table 7.9** to guide the prioritization of road network implementation and budget preparation.

TABLE 7.9: RECOMMENDED PHASING AND INDICATIVE COSTS OF PROPOSED ROAD NETWORK EXPANSION PROJECTS

Location	Description	Timing (years)		MCEA Schedule	Indicative Cost
		Short (0-5)	Long (5+)		
Old Simcoe Road and Chimney Hill Way/Bay Street	Northbound and southbound left-turn lanes with 15 metres of storage		●	A+	$840,000
Old Simcoe Road and King Street	Geometric Improvements (Roundabout)		●	A+	$850,000
Old Simcoe Road and Queen Street	Geometric Improvements		●	A+	$250,000
Proposed Second Island Access	New Connection – Highway 7A to Pine Point Road (subject to MCEA)		●	C	$3,750,000

Source: Township of Scugog Development Charges Background Study – Engineering Service Category Analysis (2019)

7.4 POTENTIAL FUNDING SOURCES

Financing for implementation of the recommended active transportation and road projects and programs identified in Section 7.3 will be drawn from the following sources:

- **Property Taxes** – Taxes levied by the Township on land and structures are the primary method for the municipality to raise revenue. The Township sets the tax rate needed to fund community programs and services through its annual budget;
- **Development Charges** – Fees levied by the Township on land development and redevelopment projects help fund the capital costs of infrastructure needed to serve planned growth. The Township 2019 Development Charges Background Study identifies the items and costs eligible for collection through the Development Charges By-law;
- **Federal Gas Tax Fund –** This permanent source of funding provided by the Federal government to municipalities (via the Association of Municipalities of Ontario (AMO)) supports local infrastructure priorities including roads and active transportation facilities. Municipal allocation is on a per capita basis and split on a 50:50 basis between upper- and lower-tier jurisdictions;

- **Other Provincial and Federal Programs** – Conditional and unconditional transfer payments to municipalities by senior levels of government can provide needed funding for transportation initiatives meeting the program eligibility criteria. Recent examples include:
  - *Ontario Builds* – This provincial program has financed a range of transportation infrastructure projects in urban and rural communities across Ontario;
  - *Green Municipal Funds* – This $1 billion program delivered by the Federation of Canadian Municipalities (FCM) and funded by the Government of Canada finances a share of eligible costs for studies, capital projects, and pilot projects that "reduce the number of vehicles on the road, the number of kilometres they travel, or the amount of time they spend transporting people or goods" or "get people to use their vehicles more efficiently or switch to less polluting forms of transportation (i.e., a modal shift to public transit, walking, or cycling)";
  - *Investing in Canada Infrastructure Program* – The public transit stream of this $20.1 billion federal program provided funding to address the construction, expansion, and improvement of transit infrastructure, and support active transportation projects that integrate "first-mile, last-mile" connectivity within a transit system. Under the program, the Federal government provided up to 40% funding for projects with municipal partners; and
- **Durham Region** – The proposed Regional Cycling Plan Update identifies two potential funding programs to assist the area municipalities implement the Primary Cycling Network and four cycling strategies:
  - *Municipal Partnership Fund (MPF)* to streamline and standardize the cost sharing of priority cycling projects and infrastructure costs, and;
  - *Active Communities Innovation Fund (ACIF)* to invest in additional cycling network and programming components such as bicycle parking, wayfinding, programming, and outreach.
- **Developer, Private Sector, and Other Alternative Funding** – In-kind or cash contributions from non-government sources can play an important role in financing the cost of public amenities like sidewalks, parking, and trails, and community programs through sponsorships and focussed advertising.

While property taxes, development charges, and Federal Gas Tax funds represent the most reliable and consistent sources of financing for the Township, other provincial and federal programs could offer potential funding sources to implement the AT and TMP recommendations. Regional, developer, private sector, and other alternative funding sources should also be leveraged to the extent possible.

Recommendation 7.8 – Monitor provincial and federal programs for potential transportation funding opportunities.

Recommendation 7.9 – Explore opportunities for regional, developer, private sector, and other alternative funding where appropriate to help finance implementation of the recommendations.

7.5 NETWORK MAINTENANCE

7.5.1 MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS

The Minimum Maintenance Standards for Municipal Highways (MMS) Regulation under the *Municipal Act,* 2001 defines standards for the maintenance of road and active transportation infrastructure in the Province of Ontario. O. Reg 232/02 clarifies the scope of the statutory defence available to a municipality under the Act by establishing maintenance standards that are non-prescriptive as to the methods or materials to be used in complying with the standards but instead describe a desired outcome.

The MMS is intended to provide municipalities with a "due diligence" defense in the event of a vehicular collision, a pedestrian slip, trip or fall, or other incident on its roads, sidewalks, and bicycle facilities. The standards set out in the MMS are not mandatory, so the Township does need to explicitly follow the Regulation. If the Township cannot meet the MMS standards specified, the municipality can still rely on Section 44(1) of the Act to demonstrate that the service provided was reasonable in the circumstances for both weather and road conditions. In short, the Township can set local maintenance standards based on its needs and resources.

Recommendation 7.10 – (Continue to) engage in a regular, ongoing maintenance program for the road and active transportation networks consistent with the Minimum Maintenance Standards for Municipal Highways unless specifically defined otherwise.

7.5.2 WINTER MAINTENANCE

The MMS specifies maintenance standards for municipal roads (highways) based on Average Daily Traffic (ADT) volume and speed limit, with roadways assigned a corresponding classification ranging from Class 1 (highest level of service/priority) to Class 6 (no specified standards). All Township roads are categorized as Class 3, 4, 5 or 6 based on these criteria.

The Township's regular winter maintenance program includes plowing snow and applying "winter sand" or salt to treat icy conditions consistent with the MMS

provisions. The municipality plows roads, sidewalks, and parking lots after 8 cm of snow accumulation, which meets the standard for Class 3 and 4 roads and exceeds for Class 5 and 6 facilities. After this depth is exceeded, the Township is responsible for deploying resources as soon as practicable to address the accumulation.

For on-road bicycle facilities, it is assumed winter maintenance will be performed concurrently with the roadway. The Township does not maintain off-road bicycle facilities in winter but may wish to consider expanding service to (some of) these routes in the future to facilitate and promote year-round cycling. These facilities could form part of a **Priority Cycling Network** of active transportation routes, intersections, crossrides, and amenities (e.g., bike racks) targeted for higher levels of service.

Recommendation 7.11 – Identify a Priority Cycling Network for enhanced winter maintenance and allocate the necessary ongoing funding to perform the additional maintenance activities subject to budget approval.

7.5.3 ONGOING MAINTENANCE OF ACTIVE TRANSPORTATION FACILITIES

Active transportation facilities need to be properly maintained during all seasons to remain safe, effective, and in a state of good repair. This helps to improve usability, alleviate potential safety hazards, maximize utility, minimize lifecycle costs, reduce risk, limit exposure to liability, and enhance the user experience.

To encourage walking, rolling, and cycling throughout the year, the program should comprise of the following maintenance activities:

- **Sweeping** – Cycling facilities located at the edge of the roadway should be swept to remove accumulating debris. The Township may wish to consider increasing sweeping frequency on Priority Cycling Network routes (subject to additional funding).
- **Surface Repairs** – The Township repairs typical cycling facility surface issues, such as bumps and depressions, cracking, potholes, and pavement drop-offs at shoulders, through its ongoing maintenance operations until such time as the road (including the bike lane) is resurfaced. Continuing to perform interim treatments such as patching and catchbasin repairs on cycling facilities is important.
- **Vegetation Management** – Roadside vegetation maintenance activities, including the installation of root barriers and trimming of shrubs and trees, should be carried out to avoid encroachment onto cycling facilities and maintain sightlines. Removal of obstructions at intersections should be prioritized.

- **Sign and Pavement Marking Maintenance** – Sign and pavement marking inspections, repainting of faded pavement markings, and replacement of discoloured and damaged signs and signs that have lost reflectivity should be conducted regularly per the MMS.
- **Drainage Improvements** – Drainage features along or adjacent to cycling facilities should be cleaned. Locations with greater vegetation will need more attention.
- **Parking** – Bicycle parking facilities should be regularly inspected. Bikes parked for extended periods of time should be tagged for removal and removed if remaining after the specified time. Severely damaged or stripped bikes should also be removed.

The additional budget will depend on the facility types added, with typical estimated annual maintenance costs ranging from[42]:

- $5,000 to $9,000 per kilometre for on-road cycling facilities; and
- $4,000 to $6,000 per kilometre for off-road multi-use trails depending on the level of service standard and trail condition.

Appendix C of OTM Book 18 provides further guidance on maintenance related matters.

Higher volumes of cyclists and riders with diverse experience are expected to frequent the spine routes shown on the proposed cycling networks on **Map 9** and **Map 10**. The highest level of maintenance services should be provided on these facilities.

Recommendation 7.12 – Allocate the necessary ongoing funding to perform the additional maintenance activities resulting from expansion of the active transportation network subject to budget approval.

Recommendation 7.13 – Prioritize maintenance on the routes identified in the proposed cycling networks shown on **Map 9** and **Map 10**.

[42] Town of Milton. *Town of Milton Transportation Master Plan, Appendix A: Active Transportation Strategy*. April 2018.

7.6 MEASURING SUCCESS

7.6.1 MONITORING PROGRAM

The success of the AT and TMP in fulfilling the Township's transportation vision, goals, and objectives will ultimately depend on the effectiveness of the recommended policies, programs, and infrastructure improvements in transforming community travel behaviour. Since a change of this nature can take time, regular monitoring of key indicators should be conducted to track progress and assess the need for remedial actions to correct course.

Figure 7.2 illustrates the recommended monitoring process. The process begins with identifying goals and objectives for the monitoring program consistent with the overarching direction for the AT and TMP. Subsection 3.5.3 defines the transportation goals of the plans as:

- Providing safe, efficient mobility options;
- Supporting economic development and tourism;
- Helping form a complete community;
- Improving environmental sustainability of the transportation system; and
- Providing a financially sustainable transportation system.

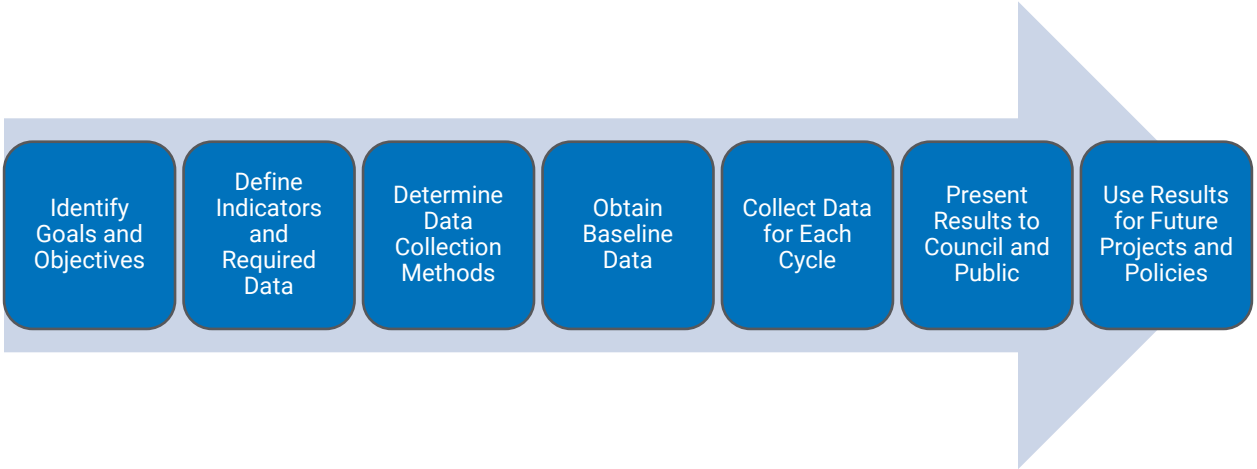

FIGURE 7.2: MONITORING PROCESS

The specific performance indicators (and targets) and data needed to quantify these measures are then defined based on the goals and objectives. Baseline data for the indicators is collected and updated with each monitoring cycle. The results and

implications (including key trends) are presented publicly and used to inform future Township projects and policies. The reporting will also highlight progress towards fulfilling the transportation vision, goals, and objectives and any needed plan refinements to ensure further success.

The indicators should examine user preference for facilities, levels of use, and other key factors over an extended timeframe to avoid immediate response bias (which occurs right after a new improvement is implemented). Data should be collected every two to three years (maximum every five years) and at the same time/season during each monitoring cycle.

Conducting regular public consultation as part of the monitoring program helps identify potentially emerging transportation issues, barriers, motivators, and opportunities in the Township. Surveys like the type used in the Engagement Program for the AT and TMP Study (see Chapter 2) would offer insight into community sentiment on transportation in Scugog and possibly provide a series of data to track change over time.

Results of the monitoring program could be reported to Council and the community through highly visual information reports and publications. The document could report progress made in implementing the AT and TMP, summarize the performance measures and targets for the previous period, and outline upcoming initiatives.

Table 7.10 outlines the proposed performance monitoring framework. For each transportation goal, the table identifies a series of performance indicators, the primary data source for each indicator, and the future sign of success (either trending up 🡅 or down 🡇).

7.6.2 ADDITIONAL MONITORING PROGRAMS

Additional monitoring should be done using surveys and before-and-after monitoring studies to assist in measuring infrastructure and program performance. Some of these initiatives should be undertaken in the same year as the Transportation Tomorrow Survey to complement the information being collected through the broader travel survey. There may also be opportunities to link monitoring programs to other agencies such as Durham Region, Metrolinx, and Ministry of Transportation.

Before-and-after studies, including project pilots, provide an effective means of evaluating the merits of novel and emerging transportation policies, projects, and programs. Such studies can help inform Township staff and Council on what works, what does not work, and how to learn and improve in the future. The specific metrics assessed, and methods used to collect data will depend on the nature of the project.

TABLE 7.10: PROPOSED PERFORMANCE MONITORING FRAMEWORK

Goal	Performance Indicator	Potential Data Source	Future Sign of Success
Safe, Efficient Mobility Options	• Bicycle, pedestrian, and transit mode shares (%) by trip purpose	Transportation Tomorrow Survey	↑
	• Auto mode share (%) by trip purpose	Transportation Tomorrow Survey	↓
	• Per-trip rate of fatal and serious injury collisions	Durham Region Collision Database	↓
	• Kilometres of on and off-road active transportation facilities	GIS Data	↑
	• Respondents that feel safe and comfortable on cycling facilities	Public Survey	↑
Support for Economic Development and Tourism	• Number of cycling related jobs and businesses	Township Records	↑
	• Number of tourists that participate in active travel	Public Survey	↑
A Complete Community	• Average trip time (min)	Transportation Tomorrow Survey	↓
	• Average journey to work trip distance (km)	Transportation Tomorrow Survey	↓
	• Share of residents (%) meeting recommended level of physical activity through transportation	Public Survey	↑
Environmental Sustainability	• Bicycle trips less than 5 kilometres in length	Transportation Tomorrow Survey	↑
	• Walk trips less than 2 kilometres	Transportation Tomorrow Survey	↑
Financially Sustainable Transportation System	• Funding for transportation initiatives per capita	Annual Budget	↑
	• Funding for cycling and pedestrian initiatives share (%) of overall transportation expenditures	Annual Budget	↑

7.6.3 DATA SOURCES

There are several potential sources of data available to help monitor progress. With rapid advances in technology as described in Chapter 6, it is anticipated that even more data sources will become available in the future. The opportunity to apply new data sets through big data, as well as collaboration with educational institutions, non-governmental agencies, and other community partners, provides new avenues to improve the quantity and quality of information and decision making.

The public is also becoming an important direct source of information. Whether through contribution of data through crowdsourcing (e.g., WAZE) or through feedback received directly or by third party "see-click-fix" mobile applications, the experiences and contributions of citizens are valued.

Recommendation 7.14 – Develop and implement an ongoing transportation monitoring program with defined performance measures and targets based on the framework provided in **Table 7.10**.

7.7 PLAN REVIEW AND UPDATES

Regular reviews and updates of the AT and TMP allow for the ongoing assessment of the performance and effectiveness of the plans. Establishing this stable transportation planning cycle ensures the strategies can respond to unforeseen conditions and imprecise assumptions, remain relevant, and fulfil the Township's transportation vision and goals.

Generally, master plans should be reviewed every five years to determine the need for a detailed formal update. The need to renew the AT and TMP should be examined in conjunction with a similar assessment of the Township Official Plan and Development Charges Background Study, which are also required every five years per the *Planning Act* and *Development Charges Act*, respectively. The monitoring program outlined in Section 7.6 will also provide an indication of the necessity for an update. In the intervening period, individuals seeking a current statement of Township transportation policies must consult the record of Council decisions in addition to the plans.

Recommendation 7.15 – Review the Active Transportation and Transportation Master Plans every five years, ideally in conjunction with updates to the Township of Scugog Official Plan and Development Charges Background Study.