Town of Innisfil Transportation Master Plan Update

Final Report

Town of Innisfil, ON

March 12, 2018

Executive Summary

In March 2017, the Town of Innisfil (Town) initiated a Transportation Master Plan (TMP) Update to address existing and future auto, transit, cycling and pedestrian needs within Innisfil. The Town is bordered by Lake Simcoe to the east, the Township of Essa and the Town of New Tecumseth to the west, the City of Barrie to the north, and the Town of Bradford West Gwillimbury to the south. A location map is presented in **Exhibit A**.

Exhibit A: Location of the Town of Innisfil

The Town's previous 2013 TMP provided a long-term guide and strategy for the Town to manage planned population and employment growth to the year 2031. This TMP Update plans for a longer-term horizon to the year 2041, which takes into account Amendment 2 of the Provincial Growth Plan, Metrolinx's announcement to build the Innisfil GO Station, updated plans by Simcoe County and neighbouring municipalities, the Town's Draft Official Plan Update, which was adopted at the January 17th, 2018 Council meeting, the Town's Trails Master Plan, and the implementation of on-demand transit service.

This document builds on these plans to develop a well-integrated, multimodal and sustainable transportation network that will result in:

- Better support for all modes of travel
- Better connections between communities within Innisfil and with its neighbouring municipalities
- Improved mobility for people of all ages and abilities
- Improved accessibility to Town and Simcoe County facilities and services
- Reduced reliance of autos for local trips within the Town
- An efficient and safe transportation network
- A sustainable and resilient transportation system

To meet these objectives, the TMP Update:

- Plans for and identifies actions to leverage emerging technologies and mobility options, such as automated and connected vehicles, electric vehicles (EV), and bike share services
- Identifies road and trail network improvements
- Considers fixed route transit opportunities for Innisfil
- Develops a peak hour traffic model to forecast future travel demand
- Develops “Made in Innisfil” policies, including the Complete Street Guidelines, Traffic Calming Policy, Speed Limits Policy, Sidewalk Prioritization Policy, Pedestrian Crossing Policy, Gravel Road Prioritization Policy, Slurry Seal Policy and Roundabout Implementation Policy
- Provides financial planning and input to Development Charges update

A. Study Approach and Consultation

The TMP Update follows Phases 1 and 2 of the Municipal Class Environmental Assessment process (October 2000, as amended in 2007, 2011 & 2015), including a public consultation component. The following summarizes the public announcements and opportunities for public and agency input and participation in the study:

- Notice of Study Commencement in March 2017
- Public opinion survey, to understand the transportation needs and concerns of Town residents, open between April 2017 and June 2017. The survey was available both online and in paper-copy formats at the Innisfil Town Hall and Public Libraries. The survey questionnaire and findings are provided in **Appendix A.**
- Updates and references to the study through the Town of Innisfil website at: http://www.innisfil.ca/TMP
- Two public open houses, at the Innisfil Town Hall in June 2017 and the Innisfil Recreational Complex (IRC) in September 2017. Public open house materials can be found in **Appendix B**
- Three Technical Agencies Committee (TAC) meetings with Town staff and external stakeholders held in April, May and September 2017

B. The Current Transportation System

The Town of Innisfil's existing transportation network includes provincial, county and local roads, sidewalks and trails, a new on-demand local transit service, and commuter transit service via GO Bus and GO Rail stations located just outside the Town's boundaries. Although some elements of an active transportation network are present, they are limited and scattered throughout the Town. Increased connectivity in the transportation system (including trails, sidewalks and on-street bicycle infrastructure), within and between settlement areas is needed to encourage non-auto trips.

Based on a review of the existing network, a number of local transportation issues were identified including a number of hotspot locations where congestion is present. These locations include the Innisfil Beach Road on-ramps and off-ramps to Highway 400, Innisfil Beach Road east of 20th Sideroad, Innisfil Beach Road west of 20th Sideroad, and Highway 89 at Cookstown. Several intersections throughout the Town, such as the Innisfil Beach Road and 20th Sideroad near Alcona, and King St. and Queen St. in Cookstown, are also approaching or at capacity under existing conditions. In addition, there are trends of an increasing number of vehicles per household and population growth. This may place further pressures on Innisfil's road network unless additional measures are in place to encourage the use of active modes and public transportation.

Speeding and intersection queuing concerns were also identified from the background research and existing conditions documentation. These concerns were gathered from the TMP online survey, traffic analysis, and discussions with the Town, Council and the public.

C. Future Growth

The Town of Innisfil's population is projected to grow significantly from approximately 36,600 people today to about 71,400 people by 2041. This growth presents the Town with a set of issues, challenges and opportunities in planning for the future.

The projected population growth includes significant planned developments in the short-term including Big Bay Point, Sandy Cove, Alcona, and Lefroy. Major employment growth is also expected in the Town, specifically in the Innisfil Heights Expansion Area and the 6th Line Hospital Campus. The future Innisfil GO station, located on 6th Line east of 20th Sideroad, is also expected to have an impact on the Town as shown in **Exhibit B**.

In addition, the City of Barrie has plans to grow significantly in the Annexed Lands, which are projected to grow from greenfield today to approximately 40,800 population and 10,400 employment by 2031. The Town's various existing and potential future settlement and employment areas and the Barrie Annexed Lands are illustrated in **Exhibit B.**

Exhibit B: Future Growth Areas

D. A Transportation Vision for Innisfil

The Town of Innisfil is characterized by **distinct communities** which are **spread out** and **not well connected**. The majority of travel in the Town is by car. By 2041, the Town's population and employment numbers are expected to double. Without a balanced transportation strategy,

Innisfil residents will experience increases in traffic congestion which will impact their quality of life.

Future opportunities to improve the transportation network have been identified in the Town through the recently completed Trails Master Plan, new GO station planned at 6th Line, and a new demand-responsive transit service. By capitalizing on these needs and opportunities, the Town can achieve its transportation vision:

Innisfil's transportation system connects people and communities, fosters healthy living, and operates innovatively and efficiently across the Town as an environmentally and financially sustainable, resilient system ready for the future.

E. Planning Alternatives

Planning Alternatives were developed in accordance with Phase 2 of the Environmental Assessment process to address the problem statement and to support the transportation vision for the Town.

Four planning alternatives were defined:

1. Base Case: incorporates planned road improvements by the Ministry of Transportation Ontario and Simcoe County only;
2. Current Plans: further to Alternative 1, includes building the planned Town improvements from the 2013 TMP and the Trails Master Plan;
3. Balanced Approach: further to Alternative 2, it invests in new roads and road improvement projects, and Travel Demand Management (TDM) measures including Demand Responsive Transit, Bike-share, EcoMobility[1] hubs and Zoning by-law revisions; and
4. Aggressive Approach: further to Alternative 3, invests in fixed-route transit.

The evaluation of these alternatives is based on evaluation criteria which included transportation service, social equity in mobility, natural environment, policy, socio-economic, and financial implications. These criteria were presented at the second public open house and Technical Agency Committee meetings regarding the evaluation of alternatives and a draft preferred alternative. Following consultation with the public, external agencies and Town staff, **Alternative 3 – Balanced Approach** and **Alternative 4 – Aggressive Approach** are the preferred planning alternatives recommended to be carried forward. Both options were carried forward to provide the flexibility to consider fixed route transit services in the future.

[1] [1] Karim D. M., Innovative Mobility Master Plan: Connecting Multimodal Systems with Smart Technologies, Disrupting Mobility Conference, MIT Media Lab, Cambridge, USA, November 11~13, 2015.

[1] Karim D. M., Creating an Innovative Mobility Ecosystem for Urban Planning Areas, Disrupting Mobility - Impacts of Sharing Economy and Innovative Transportation on Cities, Springer Book, Lectures in Mobility, ISBN: 978-3-319-51601-1, pages 21-47, 2017.

F. Recommended Transportation Strategy

Following the selection of the preferred alternative, further plan development was undertaken to identify key opportunities moving forward. The key opportunities include:

1. Construct key road connections, including Webster South Extension, Webster North Extension, Highway 89 East-west connecting link improvement, 20th Sideroad Bypass, Alcona North collector network, and Alcona south collector network.
2. Implement active transportation improvements throughout the Town, building on the Town's Trails Master Plan.
3. Plan for subsequent zoning by-law study to consider reduced minimum parking standards and the addition of Electric Vehicle parking space and carpool parking space requirements.
4. Implement an EcoMobility Hub pilot program to provide designated safe waiting areas for demand-responsive services at key locations.
5. Integrate dockless bike share services at EcoMobility hub locations and at key locations within settlement areas, along the waterfront and at park areas.
6. Plan for fixed route transit building on the demand-responsive transit service and as the Town continues to grow and develop.

Road and Intersection Improvements

To support the proposed active transportation and transit opportunities, road improvements remain an integral component of a balanced transportation strategy to support the Town's development targets. Based on the findings of the travel demand modelling and input from Town staff, a road improvement plan and high-level implementation schedule has been developed.

The proposed short-term (before 2021), medium-term (2022 to 2031) and long-term (after 2031) road improvements are summarized in **Table A, Table B,** and **Table C**, respectively and illustrated in **Exhibit C**. It is noted that all projects in the Town's Trails Master Plan (2016) are included in **Tables A to C** but not **Exhibit C**. When multiple projects are planned for the same road segment for the short-term, medium-term, or long-term, the ultimate project type is shown on the map.

The following recommendations are highlighted as they are critical to the strategy:

- Realignment of 20th Sideroad at Innisfil Beach Road;
- Innisfil Beach Road grade-separation over the railway;
- Highway 89 east-west connecting road improvement (new provincial road or provincial road improvement);
- New interchange at Highway 400 / 6th Line; and
- Webster Boulevard Extension from 5th Line to 6th Line

Select intersections were also assessed in the TMP and recommendations for installation of signals and geometric (turning lane) improvements for 2041 are also highlighted in **Exhibit D**.

Where intersection analysis indicates a need for traffic signals, the TMP supports the policy of evaluating roundabouts to determine the best traffic control for the intersection.

Based on the transportation network improvements and recommendations noted, the TMP Update supports changes to the Draft Official Plan - Our Place Schedule C (January 2017) as illustrated in **Exhibit E**. More information about the identified improvement types can be found in **Section 8.1**.

Table A: Recommended Transportation Improvements by 2021

ID	Road	From	To	Improvement Type
Short-term Improvements (before 2021)				
1	Big Bay Point Road	20th Sideroad	25th Sideroad / 13th Line	Reconstruction
2	Big Bay Point Road	25th Sideroad / 13th Line	Friday Drive	Reconstruction
3	Big Bay Point Road	Friday Drive	Lake Simcoe	Reconstruction
4	Big Bay Point Road	20th Sideroad	West St	Paved Shoulders
5	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Reconstruction
6	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Multi-use trail
7	13th Line	Friday Drive	Lake Simcoe	Paved Shoulders
8	Lockhart Road	20th Sideroad	Lake Simcoe	Reconstruction
10	10th Line	west extent of boundary of Sandy Cove settlement area	25th Sideroad	Urbanization
11	10th Line	25th Sideroad	Purvis St	Urbanization
12	25th Sideroad	Big Bay Point Rd	Mapleview Dr	Reconstruction
13	25th Sideroad	Mapleview Dr	Innisfil Beach Road	Urbanization
14	25th Sideroad	Big Bay Point Rd	Innisfil Beach Road	Multi-use trail
15	7th Line	Yonge Street	St Johns Road	Multi-use trail
16	Webster Blvd South Extension	Quarry Dr	6th Line	New Construction
17	Webster Blvd	Existing north limit of Webster Blvd	6th Line	Bike lanes
18	Jans Blvd North Extension	North extent of Jans Blvd	9th Line	New Construction
19	Jans Blvd	North extent of Jans Blvd	Webster Blvd	Bike lanes
20	6th Line	20th Sideroad	St Johns Road	Multi-use trail
21	6th Line	Bridge Expansion over Railway		New Structure
22	6th Line	20 Sideroad	Angus St	Widening
23	6th Line	Angus St	St Johns Road	Urbanization
24	Killarney Beach Road	Yonge Street	20th Sideroad	Reconstruction
25	Killarney Beach Road	Yonge Street	20th Sideroad	Paved Shoulders
26	Various EA studies for local road upgrade to minor collectors (Anna Maria, Westmount, Willard, Adullam, 3rd Line, 2nd Line, Shore Acres east of 20th, Gilford Road, 20th between Gilford and Shore Acres, 13th Line 25th to Friday Drive)			Studies

ID	Road	From	To	From
Short-term Improvements (before 2021)				
80	10th Sideroad [1]	Innisfil Beach Road	Centennial Park	Multi-use trail
81	Innisfil Beach Road / County Road 21 [1]	5th Sideroad	10th Sideroad	Multi-use trail
82	Innisfil Beach Road / County Road 21 [1]	10th Sideroad	20th Sideroad	Multi-use trail
68	Other Multi-Use Trail (MUT) (IRC Loop, Innisfil Beach Park Trail, Sleeping Lion Loop), location can be found in Appendix E			Multi-use trail
70	Secondary Trail, location can be found in Appendix E			Secondary Trail
73	Sidewalk (within established areas), location can be found in Appendix E			Sidewalk
75	Sharrows, location can be found in Appendix E			Sharrows
77	Cycling Lane, location can be found in Appendix E			Bike Lanes

Table B: Recommended Transportation Improvements by 2031

ID	Road	From	To	Improvement Type
Medium-term Improvements (2022 to 2031)				
9	9th Line	25th Sideroad	Leonard Street	Paved Shoulders
27	20th Sideroad	Big Bay Point Road	9th Line	Reconstruction
28	20th Sideroad	Big Bay Point Road	9th Line	Paved Shoulders
29	20th Sideroad	9th Line	5th Line	Multi-use trail
30	20th Sideroad	5th Line	3rd Line	Multi-use trail
31	20th Sideroad	3rd Line	Innisfil / Bradford Boundary	Paved Shoulders
32	Killarney Beach Road / 4th Line	John Street	Yonge Street	Urbanization
33	Killarney Beach Road	20th Sideroad	Ewart Street	Urbanization
34	Killarney Beach Road	Ewart St	Lake Simcoe	Paved Shoulders
35	Willard Ave	Leslie Drive	Innisfil Beach Road	Urbanization
36	Adullam Ave	Lebanon Drive	Innisfil Beach Road	Urbanization
37	6th Line	County Road 27	County Road 53 / 5th Sideroad	Reconstruction
38	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Reconstruction
39	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Paved Shoulders
40	7th Line	10 Sideroad	Yonge Street	Reconstruction
41	7th Line	Yonge Street	20 Sideroad	Reconstruction
42	7th Line	20th Sideroad	Webster Blvd	Urbanization
66	7th Line	Webster Blvd	St Johns Road	Urbanization
43	Webster Blvd North Extension	Existing north limit of Webster Blvd	20th Sideroad	New Construction
45	Innisfil Beach Road Grade Separation			New Construction
46	20th Sideroad (bypass) with Grade Separation			Studies

ID	Road	From	To	Improvement Type
Medium-term Improvements (2022 to 2031)				
47	20th Sideroad (bypass) with Grade Separation	Leslie Drive	South of Innisfil Beach Rd	New Construction
48	Webster Blvd South Extension	6th Line	5th Line	New Construction
49	Highway 89 East-west Link Improvement	West of Cookstown	East to Cookstown	New Construction
50	10th Line	20th Sideroad	Sandy Cove boundary	Reconstruction
52	Transportation Planning Studies (TMP)			Studies
90	Yonge Street & 9th Line [1]			Signalized Intersection
91	Yonge Street & 7th Line [1]			Signalized Intersection
92	Yonge Street & 6th Line (Refer to 6th Line EA) [1]			Signalized Intersection
93	Yonge Street & 5th Line [1]			Signalized Intersection
94	Yonge Street & 4th Line / Killarney Beach Road [1]			Signalized Intersection
95	20th Sideroad & Lockhart Road			Roundabout
96	20th Sideroad & 9th Line			Roundabout
97	20th Sideroad and 6th Line (Refer to 6th Line EA)			Roundabout
98	Innisfil Beach Road & 20th Sideroad Bypass [1]			Signalized Intersection
99	20th Sideroad & 5th Line			Roundabout
100	25th Sideroad & Big Bay Point Road / 13th Line			Roundabout
101	25th Sideroad & 9th Line			Roundabout
83	Innisfil Beach Road / County Road 21 [1]	Essa Road / County Road 27	5th Sideroad	Paved Shoulders
67	Other paved shoulders (Roberts Road, Crystal Beach Road / Goodfellow Avenue), location can be found in Appendix E			Paved Shoulders
69	Other MUT (20th Sideroad proposed realignment), location can be found in Appendix E			Multi-use trail
71	Secondary Trail, location can be found in Appendix E			Secondary Trail
74	Sidewalk (within established areas), location can be found in Appendix E			Sidewalk
78	Cycling Lane, location can be found in Appendix E			Bike Lanes
63	Transit feasibility study			Studies
64	EcoMobility Hub			Other Improvements
65	Bike-share program			Other Improvements
66	Zoning by-law study to consider reduced minimum parking standards and the addition of Electric Vehicle parking space and carpool parking space requirements			Studies

[1] County or Provincial Jurisdiction

Table C: Recommended Transportation Improvements beyond 2031

ID	Road	From	To	Improvement Type
Long-term Improvements (after 2031)				
51	Innisfil Beach Road	20th Sideroad	25th Sideroad	Reconstruction
54	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Widening
55	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Multi-use trail
44	Innisfil Beach Road Grade Separation	20th Sideroad	East of railway tracks	Studies
56	Belle Aire Beach Road	Willow Street	Maple Road	Urbanization
57	Ewart Street	Killarney Beach Road	300 metres north of Killarney Beach Road	Urbanization
58	Ewart Street	300 metres north of Killarney Beach Road	Lake Simcoe	Paved Shoulders
59	9th Line	Yonge Street	20 Sideroad	Reconstruction
60	9th Line	20 Sideroad	25th Sideroad	Urbanization
61	Mapleview Drive	25th Sideroad	20th Sideroad	Reconstruction
62	St. John's Road	Innisfil Beach Road	Nantyr Drive	Urbanization
88	Highway 89 / Shore Acres	Yonge Street	20 Sideroad	Paved Shoulders
84	5th Sideroad / County Road 53 [1]	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Paved Shoulders
85	Yonge Street / County Road 4 [1]	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Multi-use trail
86	Highway 89 [1]	Cookstown Boundary	Highway 400	Paved Shoulders
87	Highway 89 [1]	Highway 400	Yonge Street	Paved Shoulders
72	Secondary Trail, location can be found in Appendix E			Secondary Trail
76	Sharrows, location can be found in Appendix E			Sharrows

Exhibit C: Recommended 2041 Road Network Improvements

Projects marked with an asterisk (*) are not mapped (as they are not the recommended projects within the time frame of this study to 2041).

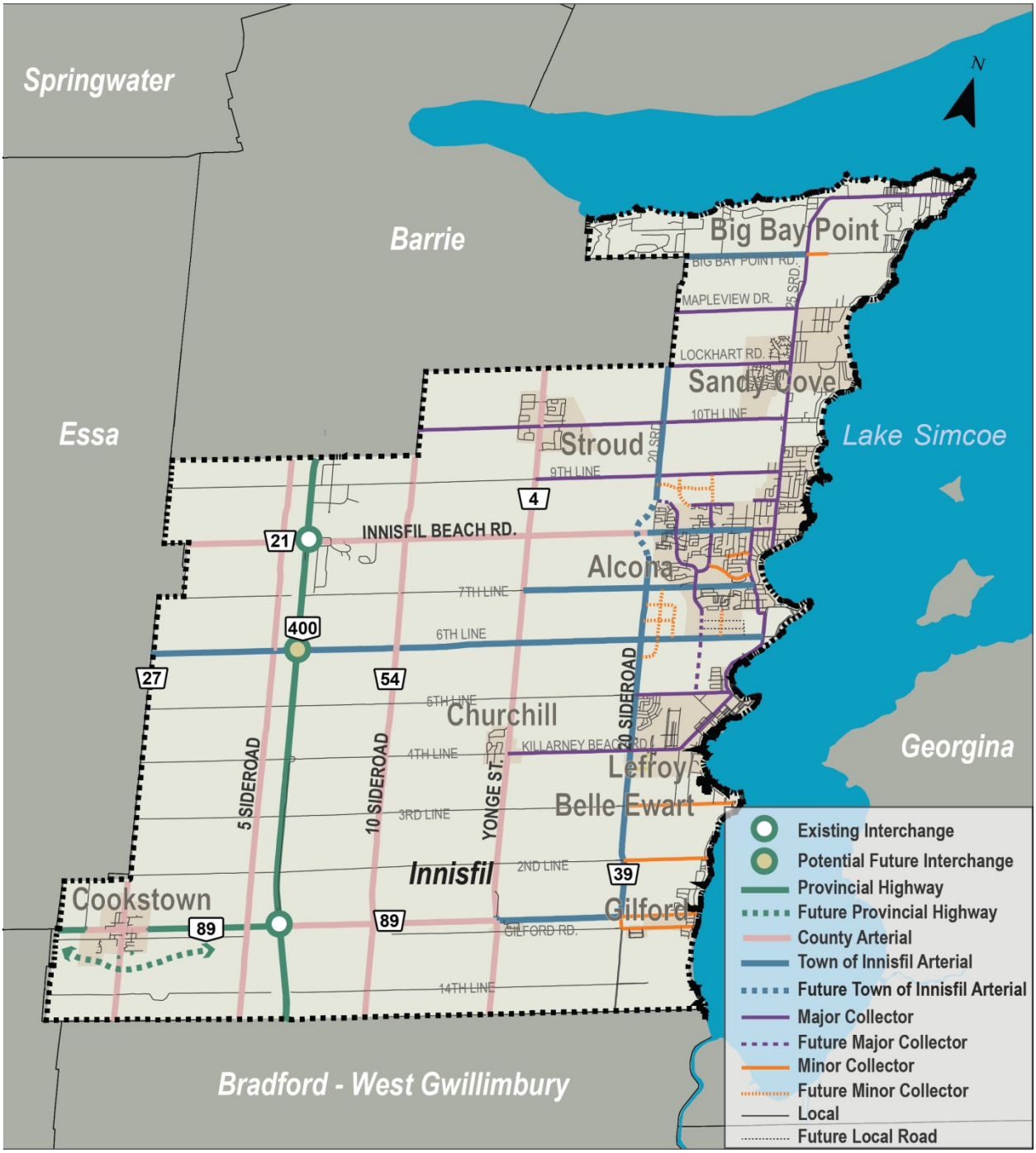

Exhibit D: Recommended Revisions to Official Plan Schedule C – Transportation Network

Active Transportation Network – Improving Connections

Projects identified in the Trails Master Plan (shown in **Exhibit E**), should be implemented to improve safety and comfort for those who walk and cycle, and to promote sustainable and healthy travel habits. Given the current population densities in the Town and the construction costs for the active transportation network, including sidewalks and trails, it is reasonable for the

Town to take an incremental approach and follow the phasing recommendations in the Trails Master Plan. In addition, the timings of these projects can be combined with major road projects, including reconstruction, to improve project and resource efficiency, and minimize impacts to local residents.

It is recommended that the Town participate in coordinating the development and implementation of proposed trails in Simcoe County, along key corridors in the Town, including Innisfil Beach Road, Yonge Street, and 5th Sideroad.

New active transportation facilities, if permitted, should follow standards and best practices. Details regarding the design standards can be found in the Complete Streets Guideline in **Appendix D**.

Fixed Route Transit Opportunities for Innisfil

In May 2017, the Town launched Stage 1 of the demand-responsive transit implementation, which provides a Town subsidized ride-sharing transit service in partnership with Uber. Data collected from the Stage 1 demand-responsive transit service should be used to assess travel patterns, usage and potential locations for fixed-route transit services. Based on the data collected between May 15 and September 30, 2017 by Uber, the top destinations are:

- Innisfil Heights Employment Area,
- Barrie South GO Station,
- Innisfil Recreation Complex (IRC), located at Yonge Street and Innisfil Beach Road, and
- Innisfil GO Bus Stops.

Leveraging Emerging Mobility Technologies

Emerging social megatrends such as increased green and sustainability awareness are pushing the population towards more sustainable travel behaviours via the rapidly developing pay-per-use economy. Transportation services through car-sharing, ride-sharing, and bike-sharing (discussed in **Section 2.5**) have been and should continue to be facilitated by Town policies, initiatives, infrastructure, and partnerships. These innovative solutions have the potential to address the “first and last mile” problem and the challenges faced by the Town in providing a conventional yet costly traditional transit system.

Benefits to Climate Change and Sustainability

The majority of the TMP recommendations offer direct and indirect benefits to climate change by reducing car use and thereby decreasing greenhouse gas emissions. The Town of Innisfil is working towards a number of objectives that share this outcome, including:

- A focus on growing the active transportation mode share;
- Integration between transportation modes through EcoMobility Hubs;
- Electric vehicle (EV) charging stations to promote alternative fuel sources;
- Travel Demand Management initiatives to curb driving and alter travel behaviour; and
- Moving towards green infrastructure that mitigates impacts on the natural environment.

Exhibit E: Proposed Active Transportation Connections (Source: Trails Master Plan, 2016)

G. Transportation Policies

The TMP process typically develops comprehensive policies, principles and guidelines to support and implement the preferred transportation strategy. These supporting polices and guidelines assist Town staff in implementing the TMP, responding to citizens' requests and concerns, guiding future decisions pertaining to traffic operations and implementation of traffic measures for years to come. In this regard, Town policies have been developed and updated for the following:

- Complete Streets;
- Traffic Calming;
- Speed Limits;
- Sidewalk Prioritization;
- Pedestrian Crossing;
- Gravel Road;
- Slurry Seal Prioritization; and
- Roundabouts.

These policies build on existing guidelines and policies from the Town and other sources, such as the Ontario Traffic Manuals (OTM), and the Transportation Association of Canada (TAC) Geometric Design Guide of Canadian Roads. These policies also helped inform the "Made in Innisfil" solutions to handle issues common to smaller communities with a mix of urban and rural conditions. Detailed policies can be found in **Appendix D**.

H. Financing Requirements and Development Charges (DC) Bylaw Input

The recommended transportation strategy identifies a number of transportation improvements under Town jurisdiction including road widenings, new construction, urbanization and reconstruction, intersection improvements, multi-use and off-road trails, and on-road cycling lanes. The capital cost of the program over the next 23 years (by 2041) is estimated to be approximately $481 million, to be carried forward to the Town's Development Charges By-Law update.

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1.0 Introduction

1.1 What is a Transportation Master Plan?

A Transportation Master Plan (TMP) is a long-range strategic plan that identifies transportation infrastructure requirements to address existing challenges and support growth, and policies to guide transportation and land use decisions. Transportation Master Plans are integrated with environmental planning and sustainability principles, and provide the framework and "blueprint" to implementing coordinated improvements on an area-wide or town-wide basis. A TMP avoids the pitfalls of piece-meal planning and "band-aid" solutions and provides a vision for the Town to strive for. A TMP provides the unique opportunity for proactive thinking, anticipating community needs, and preparing for emerging trends in transportation solutions.

1.2 Why is the Transportation Master Plan Update Needed?

The Town of Innisfil (Town) is a community in transition. Community needs and aspirations are changing, while lifestyle expectations remain firm. Continuing the mission of the Town's first TMP, this TMP update will balance the need to support and manage growth with the desire to encourage more sustainable travel. To this end, the TMP update builds upon "Our Place", the Town's Draft Official Plan Update (2017), and serves to advance Innisfil's Community Strategic Plan, *Inspiring Innisfil 2020.*

The TMP is also the Town's response to the latest planning initiatives set forth by the Province, Simcoe County (County), and adjacent municipalities. Since the completion of the Town's first TMP in 2013, the province released a Growth Plan update (2017) with population and employment projections to 2041. As well in 2016 Metrolinx announced that it is planning for a new Innisfil GO Station and Simcoe County updated its Transportation Master Plan (2014).

The TMP Update also responds to changes in growth, both within the Town and in adjacent municipalities. Fragmented connections between communities, lack of alternative travel choices, changing demographics, and residents' societal values are some of the key factors that support the desire for more sustainable travel modes and infrastructure in the Town. The TMP will provide solutions to preserve the quality of life supported by an effective transportation system.

1.3 Goals and Scope of the Study

The intent of the TMP Update study is to develop a pragmatic, long-term plan to the year 2041. It will assist the Town in identifying how infrastructure improvements should be prioritized (short-term, medium-term, and long-term), allowing for managed growth while mitigating impacts to the extent possible on existing development.

The main purpose of the TMP Update study is to identify gaps and opportunities in the transportation network. This will help develop a well-integrated, multimodal, and sustainable transportation system.

This TMP Update study will:

- Update the Town's 2013 TMP to align with the Town's future growth, servicing, and infrastructure plans
- Develop new and/or revise policies for complete streets, traffic calming, speed limits, sidewalk prioritization, pedestrian crossings, gravel road prioritization, slurry seal policy and roundabout implementation policy
- Enhance the Town's connectivity to Simcoe County and the inter-regional transportation network
- Serve as a blueprint for the Town to develop its future transportation network

1.4 Sustainable Transportation Planning

As noted in the previous section, developing a sustainable transportation system for the Town of Innisfil is one of the primary objectives of this study. The TMP Update's relationship to federal sustainability goals and its alignment with a sustainable transportation planning approach are outlined below.

1.4.1 Responding to Federal Sustainability Goals

Further to its alignment with provincial and county plans, the TMP Update also builds on sustainable transportation policies identified by the Federal Government, in particular the *2017-2020 Federal Sustainable Development Strategy (FSDS)* by Transport Canada. Transport Canada's vision is for "a transportation system in Canada that is recognized worldwide as safe, secure, efficient and environmentally responsible", and identifies three guiding principles to work towards:

- Social: the highest possible safety and security of life and property, supported by performance based standards and regulations
- Economic: the efficient movement of people and goods to support economic prosperity and a sustainable quality of life, based on competitive markets
- Environmental: respect of the environmental legacy for future generations of Canadians, guided by environmental assessment and planning processes in transportation decisions and selective use of regulation and government funding

The FSDS further identifies a number of specific long-term goals - three of which are directly applicable to local municipalities such as the Town of Innisfil.

Effective Action on Climate Change - reducing greenhouse gas emissions is a key priority for the federal government as outlined in the *Pan-Canadian Framework on Clean Growth and Climate Change* including supporting emissions reductions from the on-road sector. The Town's TMP can support this goal by planning for more sustainable transportation options in the Town and reducing reliance on the automobile.

Modern and Resilient Infrastructure - the impacts of the changing climate and extreme weather are damaging and disrupting transportation systems, services and operations. The TMP update will support on-road infrastructure resiliency through the implementation of Low Impact

Development (LID) measures where feasible. More information on this is provided in **Appendix D1 - Complete Streets Guidelines**.

1.4.2 The Sustainable Transportation Planning Approach

The TMP update is being developed in accordance with approaches and ideas conveyed in the *Sustainable Planning Guidelines* report (developed by Transport Canada and the Transportation Association of Canada), is supported by the Province of Ontario's *Places to Grow Act,* and adheres to the *Municipal Class Environmental Assessment process*. This multilayered planning process ensures that the appropriate transportation investments, policies, and actions can be verified, proposed, accepted, and implemented both to accommodate the Town's growth and to support goals of sustainability, economic vitality, and healthy communities.

The TMP Update process incorporates, to various degrees, the 12 key principles identified by Transport Canada for sustainable transportation planning as featured in **Exhibit 1-1**.

Key principles for Sustainable Transportation Planning	
Sustainable Communities & Transportation Systems	**Sustainable & Effective Transportation Planning**
Principle 1: Integration with land use planning	*Principle 7:* Strategic approach
Principle 2: Environmental health	*Principle 8:* Implementation guidance
Principle 3: Economic and social objectives	*Principle 9:* Financial guidance
Principle 4: Modal sustainability	*Principle 10:* Performance measurement
Principle 5: Transportation demand management	*Principle 11:* Public involvement
Principle 6: Transportation supply management	*Principle 12: Plan maintenance*

Exhibit 1-1: Key Principles for Sustainable Transportation Planning, Transport Canada

Sustainability is an overarching principle guiding the development of the TMP Update and its recommendations.

1.5 TMP Study Initiation, Process, and Consultation

This TMP study was carried out under the Municipal Class Environmental Assessment process (October 2000, as amended in 2007, 2011 & 2015). It included a public consultation component so that the study results could serve as direct input to subsequent EA studies for specific infrastructure projects. The study satisfies Phases 1 and 2 of the five-phase Municipal Class EA process. Phase 1 defines the problem and/or opportunity, whereas, Phase 2 identifies alternative solutions to the problem, considers environmental implications, and consults with the public and affected agencies. The TMP process is illustrated in **Exhibit 1-2.**

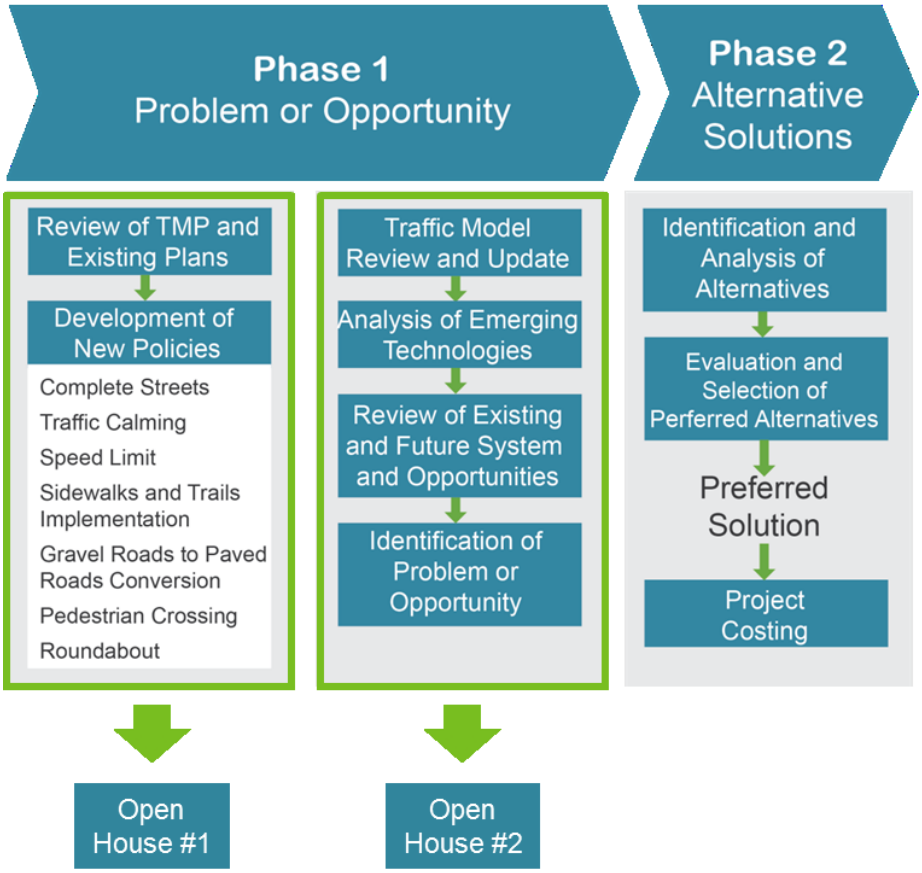


Exhibit 1-2: Transportation Master Plan Process

The TMP study was initiated in March 2017 through a Notice of Commencement published on the Town's website. Two rounds of public consultation are required for a TMP study. The interaction could be in the form of notifications, open houses, presentations, and Council meetings. The first consultation occurs at the onset of the study so the scope and purpose of the study are understood and the second consultation occurs at the selection of the preferred set of alternatives.

An online public opinion survey was also administered to provide an opportunity to engage the public and obtain the latest public views on the transportation system and travel choices within Innisfil. The online survey was posted to the project website and hard copies of the survey were available at the Town Hall and public libraries. Additional details of the public consultation and survey carried out for the TMP study are provided in **Section 3**.

A study website, www.innisfil.ca/tmp was created to provide information about upcoming public events, display materials for public meetings, council presentations, comment forms and opportunities to submit feedback to the public. Contact information for the Town and Consultant Project Managers was also provided so the public could reach the study team to provide input and comment.

1.6 Agency Consultation: Technical Agencies Committee (TAC)

A Technical Agencies Committee was formed to consult with adjacent municipalities and key agencies during the two phases of the TMP identified in **Exhibit 1-2.**

The TAC included representatives from:

- Ministry of Transportation;
- Metrolinx;
- Simcoe County;
- City of Barrie;
- Town of Bradford West Gwillimbury;
- Town of New Tecumseth;
- Township of Essa;
- First Nation Groups, identified by the Ministry of Environment and Climate Change (MOECC), for the project:
    - Chippewas of Georgina Island First Nation
    - Beausoleil First Nation
    - Chippewas of Rama First Nation
    - Moon River Métis council
    - Georgian Bay Métis council

The intent of the TAC consultation was to identify a broad range of input and issues for the TMP to consider. It also provided the opportunity for the Town and project team to be informed of other studies undertaken that could impact the TMP recommendations. Three external TAC meetings were held on April 19, 2017, May 29, 2017, and September 5, 2017 with the stakeholders outlined above. Two internal TAC meetings were held with Town of Innisfil Staff on October 3, 2017 and November 6, 2017. Additional details on the agency consultation are provided in **Section 3**.

1.7 Future Updates to the TMP

Through the TMP study process, many existing local issues may be identified by the public; however, a TMP is a strategic long-term plan that cannot address every issue within the Town. While short-term recommendations and new policies have been identified, the TMP is a living document that requires 5-year updates. Land use growth, community needs and travel patterns change over time, and as a result new transportation challenges and opportunities arise from these changes.

2.0 The Planning Context

The Town of Innisfil TMP Update is informed by provincial, county, and municipal planning policies and initiatives. The following section highlights the key planning documents which influenced and shaped the policies recommended for the Town's TMP Update.

2.1 Provincial Planning Context

2.1.1 Growth Plan for the Greater Golden Horseshoe (2006, 2012, 2013, 2017)

The Places to Grow *Growth Plan for the Greater Golden Horseshoe* ("Growth Plan") came into effect in 2006, with an amendment released in January 2012 to specifically guide the growth of the "Simcoe Sub-area" – the County of Simcoe and the cities of Barrie and Orillia. A second amendment was released in June 2013 to establish a vision for 2041, including identification of Urban Growth Centres (UGCs) across the Greater Toronto Area (GTA), Major Transit Station Areas, and Intensification Corridors. The latest amendment, released in draft in 2016, was reviewed following public input and feedback, and then approved in spring 2017.

The 2012 Growth Plan amendment introduced Chapter 6, which provides definitions, policies, and schedules that affect the Simcoe Sub-area by addressing urban sprawl. Schedule 7 of the Growth Plan provides population and employment forecasts for a horizon year of 2031. The population of the Town is projected to increase to 56,000, with 13,100 forecasted jobs by 2031. By 2041, the town's population is anticipated to reach 67,100 residents while the County is expected to have a population of 497,000, and 152,000 jobs. The County has not yet allocated these 2041 forecasts to the lower-tier municipalities within the County.

The Growth Plan highlights two specific areas in the Town as foci for population and employment growth: the Alcona Primary Settlement Area and the Innisfil Heights Strategic Settlement Employment Area. Most of the Town's population growth will be directed to the Alcona Primary Settlement Area, while the majority of the Town's employment growth will be directed to the Innisfil Heights Strategic Settlement Employment Area. As stated in the Growth Plan, the Minister of Infrastructure has determined the boundary and employment uses that are to be permitted within the Innisfil Heights Strategic Settlement Employment Area.

Impact on the Town's TMP Update:

It is recognized that additional planning work has been undertaken by the Town which identifies growth beyond the Growth Plan, including the Official Plan Amendment (OPA) 1 for Alcona North and South. Although the County has not yet allocated 2041 growth, the TMP should still have an outlook to 2041 based on a population target of 76,000. This target is based on the Town maintaining the same percentage of the County's population in 2041 as allocated in the forecast for 2031, plus additional residential units in Friday Harbour which were not factored into the 2031 allocation.

2.1.2 Metrolinx 10-Year Program and GO Rail Station Access Plan

Metrolinx's 10-year Regional Express Rail (RER) program aims to provide improved service by running trains more frequently, providing all-day service, and using faster electric trains. This program will provide the Town with frequent two-way, all-day service to Barrie and Toronto, including 30 minute service during weekday peak periods in the peak direction and 60 minute service in both directions during midday, evenings, and weekends. In June 2016, Metrolinx announced that a GO Station will be constructed in the Town as part of the RER capital program. In October 2016, the Town confirmed 6th Line as the preferred GO Station location.

The *GO Rail Station Access Plan* was released in December 2016 and provides details for each GO Station in regards to the target mode shares for station access. Based on 2031 travel demand forecasts, nearly 1,000 daily riders are projected to board the system at the Innisfil GO Station. This projection, along with target modal shares, helped identify target and potential infrastructure needs which are shown in **Table 2-1**. Travel modes considered include driving, walking, cycling, carpooling and micro-transit.

Micro-transit mirrors the operations of traditional public transit and responds to user demands through online ridesharing platforms, and the Town is well positioned to support micro-transit access to the future GO station. In May 2017, the Town of Innisfil launched a micro-transit service that partnered with Uber (for general rides) and with the local taxi companies (for accessible rides) to connect drivers with passengers travelling in the same direction. This micro-transit service is subsidized by the Town, and Town residents only need to pay a set rate between $3 to $5 to certain key destinations, such as Barrie South GO train station and the Innisfil Recreational Complex. The initiative is discussed in further detail in **Section 2.5.1.2.2**.

Table 2-1: Innisfil GO Station Target Modal Split

Station Access Mode	Target Modal Split (2031) %	Target Infrastructure Needs
Walking	10 – 12	Encourage the Town to provide an inter-connected and connected local street network that facilitates movement of pedestrians in different directions. Implement sidewalks on both sides of the GO rail corridor.
Local Transit	Not Applicable	None identified
Micro-Transit*	16 – 18	6 vehicle passenger loading areas (shared with pick up / drop off spaces)
Cycling	3 – 5	Total of 96 bike parking spaces; encourage Town to incorporate cycling infrastructure along 7th Line and along the rail corridor
Pick Up / Drop Off	16 – 18	36 vehicle waiting area
Drive & Park	50 – 52	350-700 surface parking spaces
Carpool Passengers	5 – 7	n/a

* The Town of Innisfil launched an on-demand/micro-transit service in the summer of 2017. Detailed description can be found in Section 2.5.1.2.2.
Town of Innisfil Staff Report – Demand-Responsive Transit Implementation Stage 1 (March 2017)
Source: GO Rail Station Access Plan, Final Report (December 12, 2016)

Impact on the Town's TMP Update:

The Town should support the vision for multimodal access to the Innisfil GO Station through the policies and infrastructure requirements identified in the 2018 TMP Update.

2.1.3 York-Simcoe Boundary Area Transportation Needs Study (June 2012)

The *York-Simcoe Boundary Area Transportation Needs Study* reconfirmed the need for the Bradford Bypass corridor connecting Highways 404 and 400 by 2031. Due to the findings of this study, the Ministry of Transportation is completing the second phase of their Simcoe Area Transportation Study in support of the 2012 Growth Plan.

Impact on the Town's TMP Update:

The implications of this corridor on the Town are minor but may minimally affect future travel patterns by decreasing traffic on County Road 89 and increasing goods and service movements through Innisfil particularly on Yonge Street. The study illustrates the forecast travel demand shifting away from County Road 89 and onto Yonge Street with the Bradford Bypass.

2.1.4 Simcoe Area Multi-Modal Transportation Strategy Needs Assessment

In March 2014, the MTO released the *Simcoe Area Multi-Modal Transportation Strategy Needs Assessment*. The study identified transportation projects in the County that are required to adequately serve transportation needs and to develop a multi-modal transportation action plan for northern Ontario. Potential projects were evaluated based on six criteria to determine which projects to carry forward. Recommended projects from the study that affect the Town include:

- The Bradford Bypass;
- Highway 89 widening;
- Widening of County Roads;
- High Occupancy Vehicle (HOV)/Transit lanes on Highway 400;
- Truck climbing lanes on Highway 400;
- Expanded Park and Ride lots; and
- Frequent GO Train service.

Impact on the Town's TMP Update:

The 2014 report highlights the overall transportation needs, specific projects that could address these needs, and three scenarios, that could be considered for the Simcoe Area for 2041. Scenarios included a transit-based solution, a road capacity optimization solution, and a new highway corridor solution. The testing of these scenarios informs the Town's TMP update regarding the abilities of different strategies to address transportation needs and to aid the development of the preferred direction. To that end, the report proposes next steps to guide the TMP update in developing a transportation strategy, including:

- For the Town to present the Needs assessment for feedback from the public;

- For the Town to engage with upper-tier municipalities and provincial partners on TMP Update policy and strategy recommendations; and,

- For the TMP to outline the specific elements of the preferred strategy, including actions by mode and corridor along with details on timing, financing and potential roles and responsibilities

2.1.5 Highway 400 Improvements

Several improvements have been identified for Highway 400 including new interchanges, interchange reconstructions, widening, and expansion of the HOV network along its length. Although outside the Town, these major improvements to the overall transportation network should be identified and considered, as they may impact travel patterns within the Town.

The MTO *Southern Highways Program* (2017 – 2021) outlines several planned improvements to Highway 400 including:

- Resurfacing / median barrier from Innisfil Beach Road to Essa Road
- Rehabilitation of the underpass at Innisfil 6th Line, Gwillimbury Township;
- Bridge rehabilitations at Innisfil Beach Road
- Bridge replacements at Innisfil Township CNR overhead
- Bridge replacement at 4th Line (Planned completion 2017)

Other planned work includes resurfacing and bridge replacements or rehabilitation. Most of this work will be occurring in the County, with several projects currently underway.

In addition to the *Southern Highways Program*, in December 2017 MTO has completed a Preliminary Design Study and Class Environment Assessment for Highway 400 improvements from 1km south of Highway 89 to the junction at Highway 11. The study analyzed this 30km stretch of Highway 400 to determine capacity, traffic operations, and safety needs. For the Town, the study recommends advancing the structure replacement for the bridge at 6th Line.

Impact on the Town's TMP Update:

Incorporate MTO improvement plans in future travel demand forecasting.

2.2 County Planning Context

2.2.1 County of Simcoe Official Plan (OP) (January 2013)

In November 2008, the *Official Plan* for Simcoe County was released. This document provides a policy context for land use planning and development decisions. An updated version was endorsed by County Council on January 22, 2013 and was approved by the Ontario Municipal Board in 2016.

The *Official Plan* provides detailed guidance for the following transportation topics:

- Transportation Planning Policies;
- Road Network;
- County Roads;

- Design of Development;
- Corridors, Pathways, and Trails;
- Transportation Demand Management; and
- Transit.

Section 4.8 of the *Official Plan* outlines Transportation related Policy Statements for:

- Long-term transportation planning;
- Improving roads, intersections and traffic control devices;
- Constructing new road sections and widening existing road sections where warranted;
- Employing traffic management techniques to achieve more efficient use of roads;
- Requiring appropriate conditions of approval for development applications; and
- Considering the needs of pedestrians and cyclists in road design.

Building on the Growth Plan, the County's OP also directs most growth and development to settlements. From the 2016 Census of Canada population of 479,650, the Simcoe County Sub-Area is projected to grow to 667,000 (up 39%) by 2031 and to 796,000 (up 66%) by 2041. The County's OP is consistent with the Growth Plan and projects a population of 56,000 and 13,100 jobs for the Town of Innisfil by 2031.

Impact on the Town's TMP Update:

Town planning shall be in accordance with Simcoe County plans.

2.2.2 Simcoe County Transportation Master Plan Update (2014)

The County conducted a *Regional Transportation Master Plan Update* in October 2014 to create a future vision for all modes of transportation.

The goals of the transportation strategy, summarized as follows, promote a balanced approach to transportation that:

- Emphasizes the need to provide connectivity between all modes of travel;
- Builds a sustainable multi-modal transportation network that promotes active transportation;
- Focuses on partnerships with local municipalities, the provincial government, and private interests to build on existing best practices to enhance services; and
- Establishes long-term strategies and policies to address growth by protecting transportation corridors for all travel modes.

Transportation improvements anticipated for implementation by 2031 and beyond are illustrated in **Exhibit 2-1**. The Town's TMP will build on the recommendations of the County TMP for improvements within the Town boundaries, including the following projects for consideration:

- Widening from two to four lanes for Hwy 27 from Innisfil Beach Road to Mill Street (by 2031)
- Widening from two to four lanes for Yonge Street from Hwy 89 to Barrie City Limit (by 2031)

- Widening from two to four lanes for 5th Sideroad from Innisfil Beach Road to Barrie City Limit (post 2031)
- The upgrade of 4th Line from a local to a county road between 5th Sideroad and 20th Sideroad
- The upgrade of Hwy 89 / Shore Acres Drive from a local to a county road between 5th Line and CR 39
- The upgrade of 10th Sideroad from a local to a county road between Innisfil Beach Road and the Barrie City limits

Impact on the Town's TMP Update:

Confirm the Town's response to the identified improvements, including the Town's desire to plan for a Highway 400 interchange at 6th Line and associated road improvements in this study.

Exhibit 2-1: Simcoe County TMP – Future Road Network
Source: Simcoe County Transportation Master Plan Update, October 2014

2.2.3 Simcoe County Transit Feasibility and Implementation Study

In 2015, the County conducted a study on the feasibility of supporting transit in and between the smaller urban communities and the larger centres of the County. The study focused on how to:

- Provide transit service to local communities;
- Improve connectivity between urban centres;
- Improve and support commuter travel on the local, regional, and inter-regional levels
- Support the social, environmental, and economic objectives of the County.

A presentation to the Simcoe County Committee of the Whole on September 7, 2016 documented a proposed short-term service network, which is illustrated in **Exhibit 2-2**. The first phase will begin with the implementation of a bus route between Midland and Barrie. The last phase (Phase 3) will see the implementation of a bus route between Alliston and Bradford which will run through Cookstown.

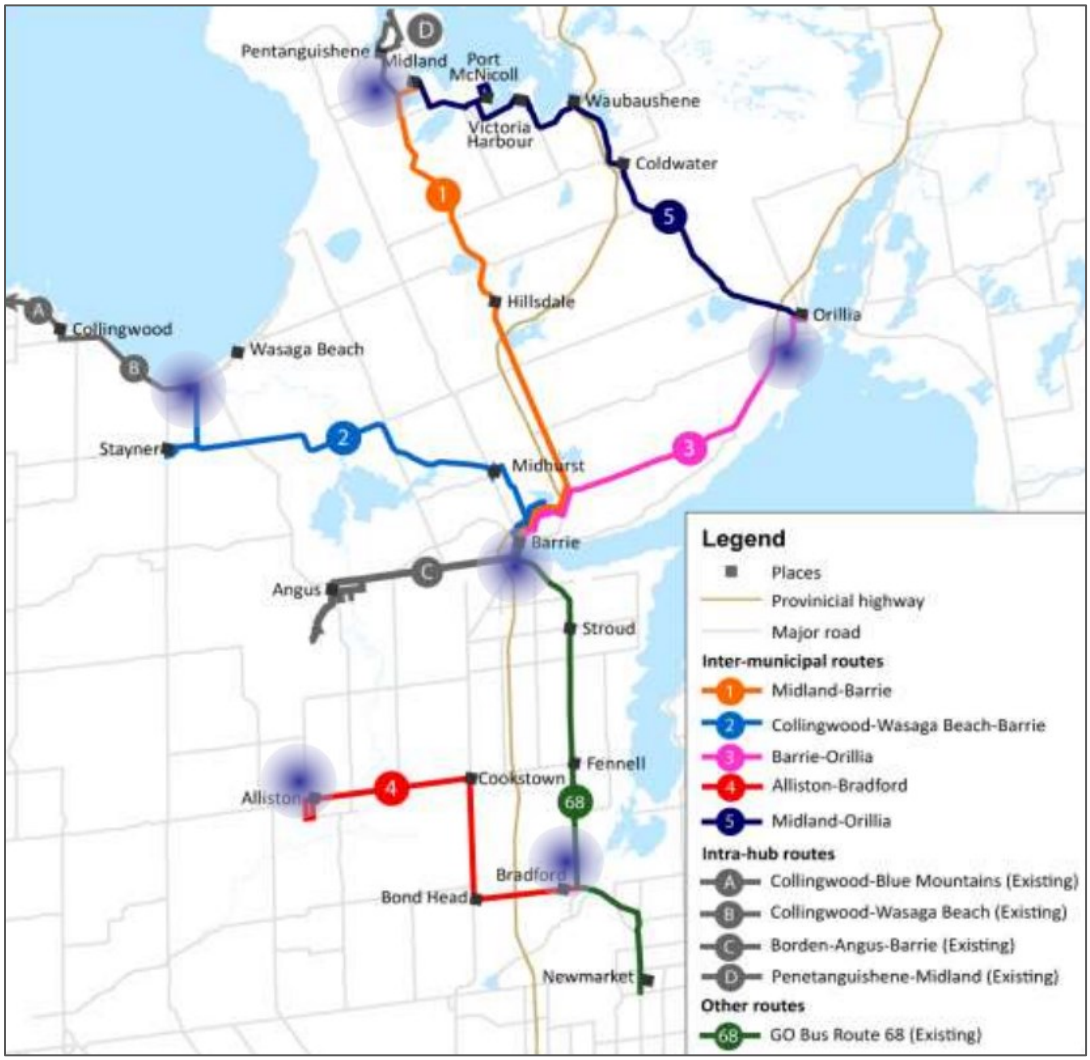


Exhibit 2-2: Proposed Short-Term Service Network
Source: Simcoe County Committee of the Whole Transit Roundtable Discussion, September 7, 2016

No additional transit routes are identified within the Town beyond the existing GO Bus Route 68 which has stops in Stroud and Churchill (at 4th Line), at County Road 89 and Yonge Street, and at Innisfil Beach Road and Yonge Street. From the Town's perspective, good connectivity and accessibility should be planned for to link Town residents to the broader County transit system, including designated, safe and accessible waiting areas at the transit stops.

Impact on the Town's TMP Update*:*

Confirms that the County-wide plan is in concert with the Town's vision. Allows planning for good connectivity between the broader County transit system and Metrolinx bus routes. Supports enhancements such as designated, safe and accessible waiting areas at the existing GO Bus stops in the Town as well as at the future 6th Line GO Station.

2.3 External Municipality Planning Context

2.3.1 City of Barrie Multi-Modal Active Transportation Master Plan (2014)

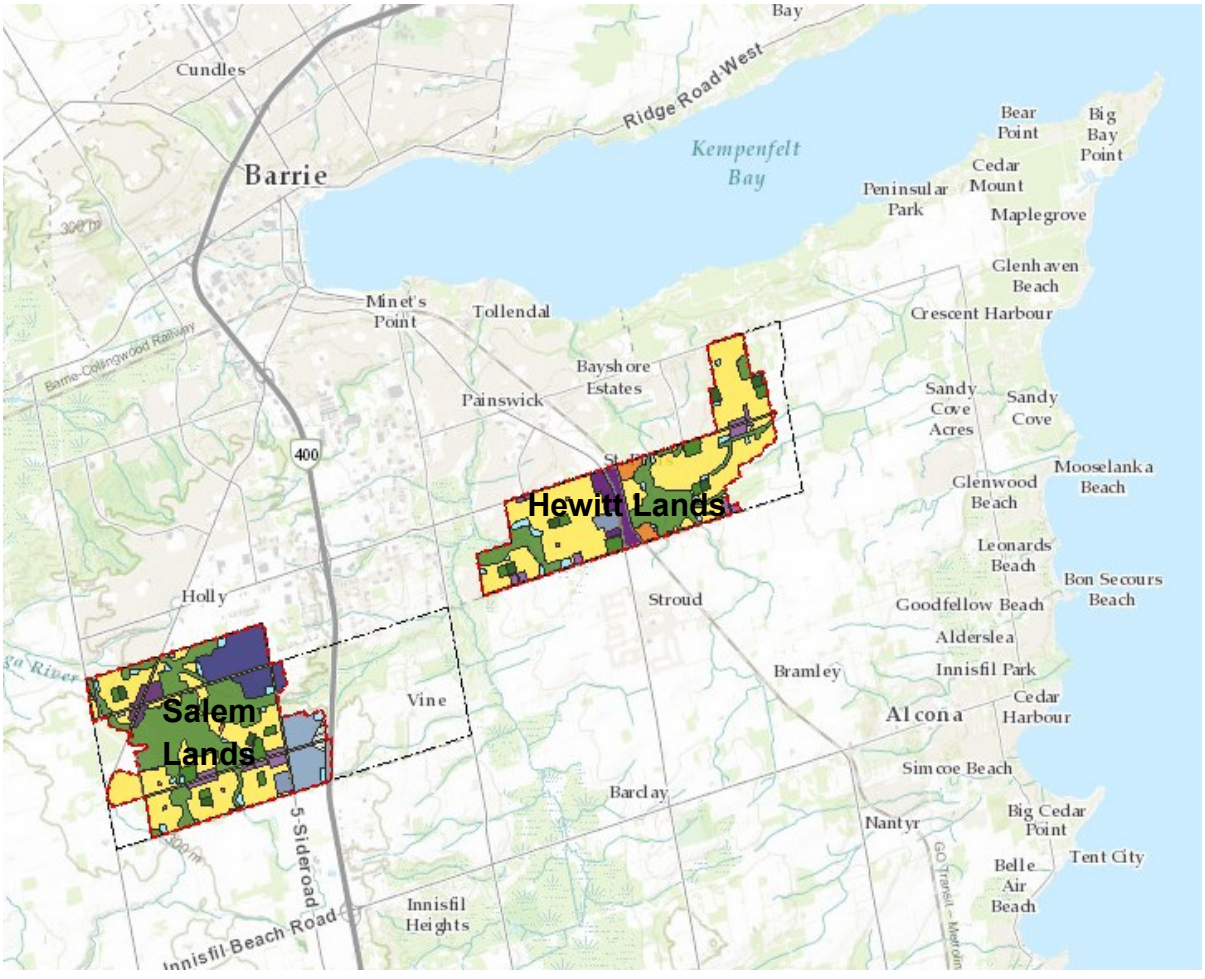


Exhibit 2-3: Barrie East and West Annexed Lands

In 2014 the City of Barrie completed a Transportation Master Plan for the Annexed Lands which were previously part of the Town of Innisfil. The Annexed Lands are a 5,700 acre extension of the City's southern boundary into the Town of Innisfil and can be seen in **Exhibit 2-3**.

The *Salem Secondary Plan* (West Annexed Lands) and the *Hewitt's Secondary Plan* (East Annexed Lands) are part of the City's *Official Plan*.

Impact on the Town's TMP Update:

The significant growth in the Barrie Annexed Lands has implications on the Town's transportation network needs and must be reflected in the Town's TMP update.

2.3.2 Bradford-West Gwillimbury Trails Master Plan (2010)

The Town of Bradford-West Gwillimbury identified potential trail connections with the Town of Innisfil. One potential on-street cycling route was identified on County Road 27, and another connection was identified as a potential "Rails with Trails" corridor alongside the Barrie GO Rail line.

2.3.3 Other External Municipalities

Planning documents from the Township of Essa and Town of New Tecumseth were reviewed, but no major plans influencing the Town of Innisfil were identified.

2.4 Town of Innisfil Planning Context

Town planning documents which will influence and provide policy direction on the TMP update are summarized in the following sections.

2.4.1 Inspiring Innisfil 2020 (2016)

Inspiring Innisfil 2020 is a Community Strategic Plan which outlines the goals and vision for the communities within the Town. A collaborative process brought together residents and business owners to study future development opportunities for the Town of Innisfil. From this, a set of community values were identified which informed a vision for the future, and an implementation plan was developed to achieve this vision. Residents and businesses were asked to contribute ideas and feedback throughout the process. The final report provided strategies in three areas: economy, community, and culture and tourism.

After gathering feedback from the community and stakeholders over the course of a year, the Town incorporated the following key priorities into its strategic plan:

- Complete a review of the Town's Official Plan;
- Identify an urban core;
- Complete strategic infrastructure servicing plan;
- Develop a long-range financial plan;
- Form a Community and Economic Development unit; and
- Develop tourism infrastructure.

Three goals were developed as part of the community strategic plan: grow, connect and sustain.

- The GROW pillar focuses on planning for growth, developing the community, and promoting economic development.
- The CONNECT pillar emphasizes providing transportation options for all modes, promoting access to health services, creating opportunities for youth, enhancing cultural programs, growing recreation opportunities, and promoting tourism.
- The SUSTAIN pillar stresses the importance of ensuring financial sustainability, enhancing partnerships with governments and other organizations, supporting community sustainability, promoting environmental sustainability, and maintaining infrastructure in good repair.

The Transportation Master Plan Update develops the strategy to better CONNECT the Town, while supporting the GROW and SUSTAIN pillars. It does so by identifying the connections needed to support growth while addressing the infrastructure needed to maintain a state of good repair.

2.4.2 Town of Innisfil Official Plan (2018)

The Town released the final Official Plan titled *Our Place* to Council in January 2018 to signify the importance of place-making and sense of place in Innisfil. *Our Place* aims to make Innisfil an even greater place by ensuring that place-making becomes a primary focus for all land use decisions, the programming of public spaces, and investment decisions in the municipality.

The Official Plan projects that the Town's population will reach 56,000 people by 2031 with 13,100 jobs. It also states that the majority of the population growth will occur within the Primary and Urban Settlements, while the majority of the employment growth will occur within the Innisfil Heights Strategic Settlement Employment Area.

2.4.3 Secondary Plans

2.4.3.1 ALCONA NORTH SECONDARY PLAN

The Alcona North Secondary Plan will guide future growth in the lands between 20th Sideroad to the west, 9th Line to the north, the natural areas north of Spring Street to the east, and north of the existing lots along Leslie Drive to the south. The Secondary Plan calls for two compact, walkable neighbourhoods, bisected by a large natural area, to be developed on what is presently farmland. The western neighbourhood will be a mix of commercial and residential uses, and the eastern primarily residential. Commercial uses will serve both the neighbourhood and Alcona more broadly. The neighbourhood is planned to have an overall gross density of 67 persons and jobs per hectare. Fifty-two percent (52%) of residential development will be single and semi-detached housing and 48% will be townhouses and apartment units.

The neighbourhood will incorporate a road system consisting of collector and local roads that create a modified grid system of connected streets as shown in **Exhibit 2-4**. It will be designed to facilitate efficient automobile and bicycle travel and comfortable and walkable pedestrian travel while accommodating future transit. Dedicated cycle lanes shall be provided on all

collector roads. The road network will be supported by a trail system that takes advantage of the natural environmental feature to connect to the rest of Alcona.

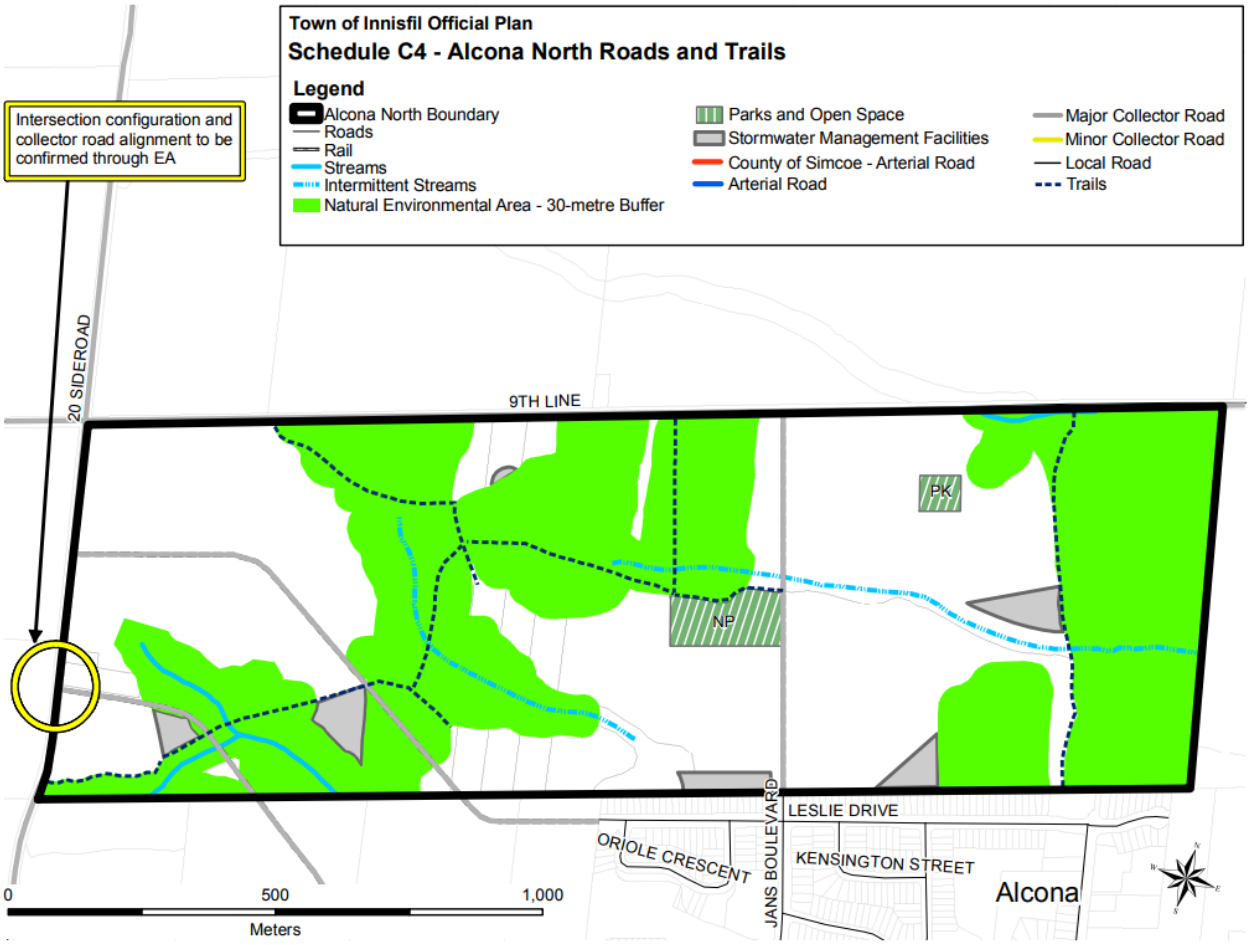


Exhibit 2-4: Alcona North Secondary Plan Proposed Roads and Trails
Source: Alcona North Secondary Plan, 2011

2.4.3.2 ALCONA SOUTH SECONDARY PLAN

The Alcona South Secondary Plan (2011) will guide future growth in the lands shown in **Exhibit 2-5**. The Secondary Plan calls for five neighbourhoods to be constructed on what is presently farmland. The plan includes a central mixed-use node along 6th Line between 20th Sideroad and the railway, and a neighbourhood commercial node at 7th Line and 20th Sideroad. The Secondary Plan Area is designed to achieve an overall gross density of 67 persons and jobs per hectare, incorporating a mix of low- and medium-density housing.

The neighbourhood will be designed to be compact and walkable, and able to support fixed-route transit in the future. The road system will consist of collector and local roads that create a modified grid system of connected streets as shown in **Exhibit 2-4**. It will be designed to facilitate efficient automobile and bicycle travel and comfortable and walkable pedestrian travel while accommodating future transit. Dedicated cycle lanes shall be provided on all collector

roads. The road network will be supported by a trail system that incorporates the natural environmental features to connect to the rest of Alcona.

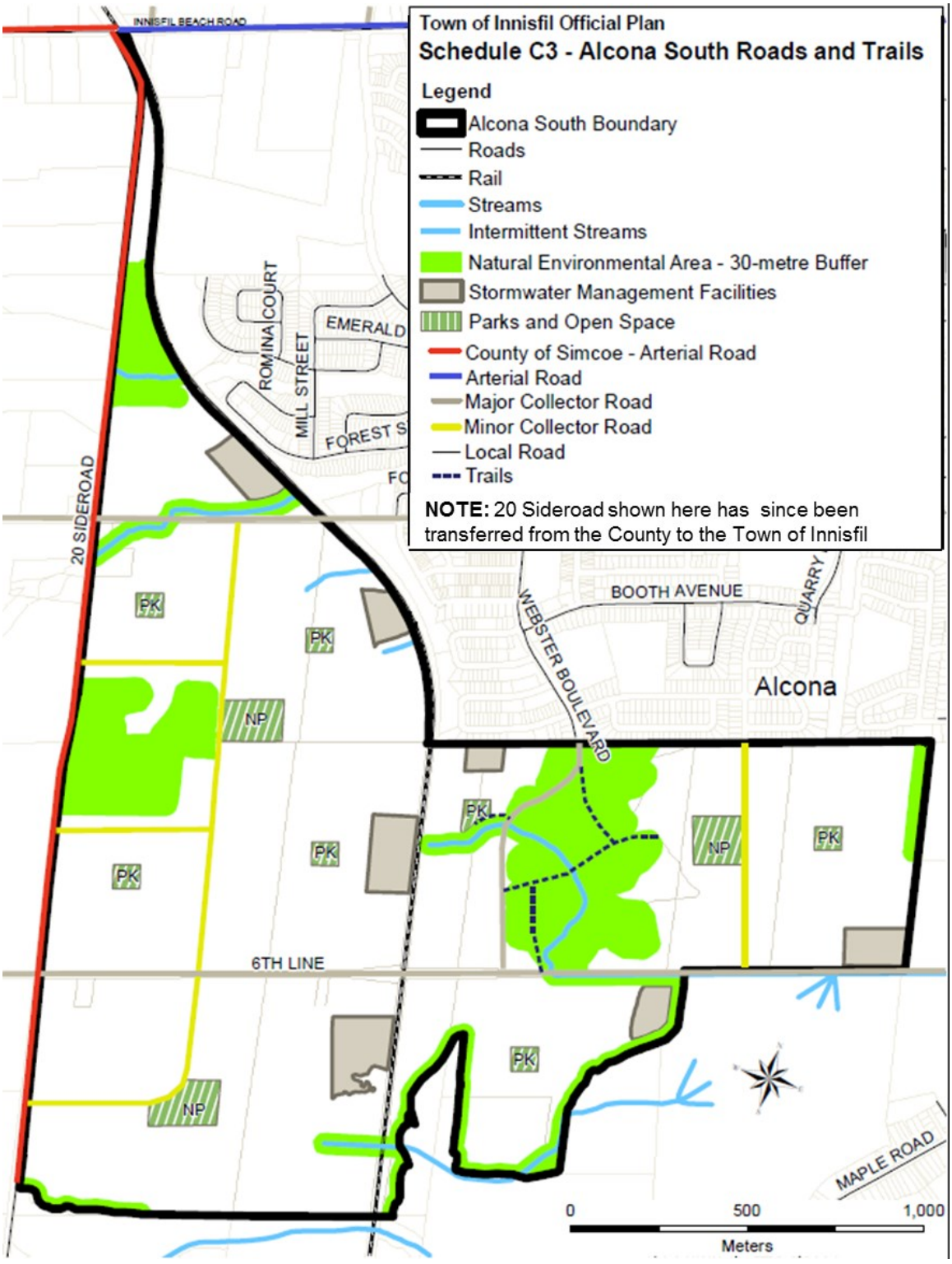


Exhibit 2-5: Alcona South Secondary Plan Proposed Roads and Trails
Source: Alcona South Secondary Plan, 2011

2.4.3.3 SLEEPING LION DEVELOPMENT

The Sleeping Lion Development is one of the blocks to be developed within the Alcona South Secondary Plan Area as shown in **Exhibit 2-6**. The proposed development is primarily residential, with some commercial mixed-use lands located along 6th Line between the GO Rail Corridor and Webster Boulevard. The development is planned to achieve a density of 53 persons and jobs per hectare.

Exhibit 2-6: Sleeping Lion Proposed Development Plan
Source: Town of Innisfil, Sleeping Lion Proposed Plan of Subdivision and Zoning By-Law Amendment Presentation, 2014

The plan includes two north-south collector roads, one of which is an extension of Webster Boulevard, and a modified grid system of local roads. The trail network shown in **Exhibit 2-7** will be supported by on-street bicycle lanes on the collector roads and a comprehensive network of sidewalks.

Exhibit 2-7: Sleeping Lion Master Trails Plan
Source: Town of Innisfil, Sleeping Lion Proposed Plan of Subdivision and Zoning By-Law Amendment Presentation, 2014

2.4.4 Transportation Master Plan (2013)

The Innisfil 2013 TMP identified policies on a number of transportation decisions (including all-way stops, speed limits, traffic calming, parking, and Community Safety Zones). Moreover, it recommendations regarding multimodal infrastructure in response to planned growth in the Town to 2031, and provided input to the Our Place Official Plan update. The intent of the 2017 TMP update is to revise and refine the previous TMP to reflect advancements in planning work undertaken since that time. This includes the draft *Our Place* Official Plan update, Metrolinx's announcement of the Innisfil GO station, the 6th Line Interchange EA, and the Town's demand-responsive transit system.

2.4.5 Trails Master Plan (2016)

Released in June 2016, the *Town of Innisfil Trails Master Plan* acts as a guide for growing the Town's trail network for the future. The Town's existing trail network consists of 20 km of off-road walking trails and 70 km of sidewalks. Several guiding principles were developed to support the Town's vision for the Trails Master Plan:

- Ensure network connectivity to major attractions and regional trail networks;
- Prioritize safety;
- Promote visibility and awareness of trails to the general public;
- Establish multi-modal trails that promote active modes of transportation;
- Ensure that all trails are accessible;
- Support a lively and vibrant community;
- Ensure that trails are cost-effective; and
- Focus on partnerships with the local community.

Approximately 218 km of new pedestrian and cycling facilities are recommended for the ultimate active transportation network as shown in **Exhibit 2-8**. The network would include new multi-use paths (65 km), secondary paths (33.5 km), sidewalks (12.1 km), paved shoulders (67.8 km), shared roadways (29.3 km), and dedicated cycling lanes (9.9 km). The Plan also recommends that the Town incorporate Complete Streets principles when redeveloping or constructing new roads, and that the OP should include policies and design guidelines on Complete Streets for each street type.

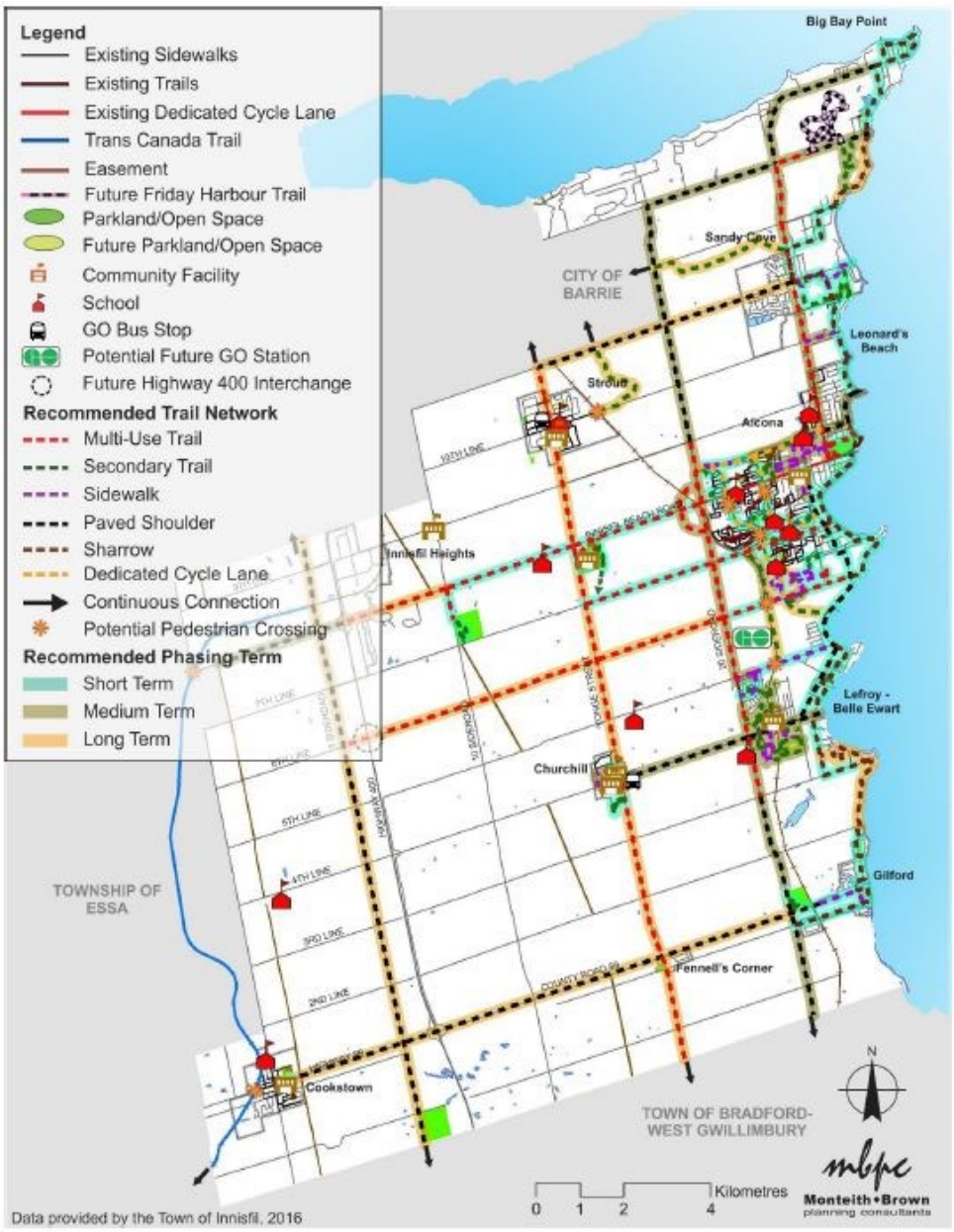


Exhibit 2-8: Recommended Trails Network
Source: Town of Innisfil Trails Master Plan, November 2016

2.4.6 Parks and Recreation Master Plan (2016)

The Town of Innisfil developed a *Parks and Recreation Master Plan* in June 2016 to identify the parks and recreation services that are needed to support growth to 2031. The plan recommends a total of 71 projects.

The main objectives of the plan include:

- Obtaining a minimum of 35 hectares of new parkland to support development occurring with the Town;
- Identifying policies and strategies to reduce the intensity of use of Innisfil Beach Park during the summer season;
- Establishing strategies to address access points to Lake Simcoe and municipal road ends;
- Evaluating the long-term needs of ice pads located within the Town;
- Focusing on partnerships with local community organizations including the Y.M.C.A.;
- Emphasizing the need to provide a new community space at a new library branch in Lefroy;
- Establishing policies for Sports Field Allocation; and
- Providing adequate level of service for all parks and recreation service.

2.4.7 Roads Needs Study (2017)

In 2017, the Town initiated an updated *Roads Needs Study*, which will identify a 10-year road improvement plan for all Town owned roads. The study will take inventory of all Town roads and indicate their environment, surface type, road class, and traffic loading, and propose improvements. For each proposed improvement, the study will identify cost and phasing.

2.4.8 Water and Wastewater Master Servicing Plan (2012, update 2017)

The *Town-wide Water and Wastewater Master Servicing Plan* is a town-wide servicing plan that was completed in 2012 and currently being updated in parallel to the TMP update. The plan was developed in accordance with the service area defined by the Town of Innisfil Official Plan (OPA #1), the 6th Line Campus Node, and the mixed industrial and commercial area located at the intersection of Highway 400 and Highway 89.

2.4.9 6th Line Environmental Assessment (2016)

The Town recently completed an Environmental Assessment for 15 km of 6th Line between County Road 27 and St. John's Road for transportation improvements. The study assessed the short-term and long-term needs of the corridor for all modes of transportation. The corridor is expected to experience significant growth by 2031 due to several submitted development applications and the new Innisfil GO Station. It was determined that a combination of operational and physical improvements is recommended for the corridor. The corridor will vary between 2 and 4 lanes and will contain different cross sections depending on the area. More developed areas along 6th Line will contain a multi-use path and sidewalk within the road right-of-way, while other rural areas of 6th Line will only require paved shoulders.

2.4.10 7th Line Environmental Assessment (On-going)

At the time of writing of this report, the Town is conducting an EA for 7th Line between 20th Side Road to Lake Simcoe in order to accommodate growth in Alcona. The EA will look into improving the existing road cross-section and intersections, municipal servicing, and will incorporate active transportation facilities.

The Town's TMP Update will confirm the timing of the recommendations to 7th Line from the EA and analyze the intersections of 7th Line at Webster Boulevard and St. John's Road, to determine if any intersection improvements are required.

2.4.11 Highway 400 / 6th Line Interchange Environmental Assessment (2017)

MTO's *Southern Highways Program* (2017-2021) identified the current underpass structure at 6th Line and Highway 400 for replacement by 2019 to facilitate future highway widening. In January 2017, the Town completed a Schedule 'C' Municipal Class Environmental Assessment for a new interchange, including a four lane girder bridge located at 6th Line and Highway 400, as identified in the Town's Official Plan and the TMP.

The immediate need for the project is to confirm that the Ministry of Transportation's (MTO's) planned replacement of the existing 6th Line and Highway 400 overpass will accommodate the future interchange. The existing bridge provides substandard vertical clearance, its condition is deteriorating, and it is approaching the end of its service life. MTO have identified that the existing bridge will need to be replaced to accommodate a future 10-lane cross section on Highway 400.

The justification and need for the proposed interchange was established in the Town's 2013 TMP and the County's 2014 TMP. The Town 2013 TMP recommended improvements to 6th Line and protection for an interchange on Highway 400 at 6th Line to help accommodate the increased traffic demands between the growth areas and Highway 400.

The interim plan for the interchange is limited to the reconstruction and realignment of the 6th Line Bridge to the north of the existing structure as well as the provision of a lane-separated multi-use path. The recommended plan avoids traffic staging costs associated with Highway 400, thereby improving the project's cost effectiveness. The new alignment for 6th Line also allows the project to be implemented in a green-field and maintains traffic operation on both Highway 400 and the 6th Line. In light of stakeholders' differing time horizons, the project may be implemented in phases to accommodate MTO's immediate need to replace the bridge and the Town's subsequent need for the addition of interchange ramps. However, the interim plan includes Right-of-Way (ROW) protection for the interchange.

The ultimate recommended plan is illustrated in **Exhibit 2-9**. On-ramps and off-ramps connecting 6th Line and Highway 400 are to be accessed via two roundabouts, located east and west of the new bridge.

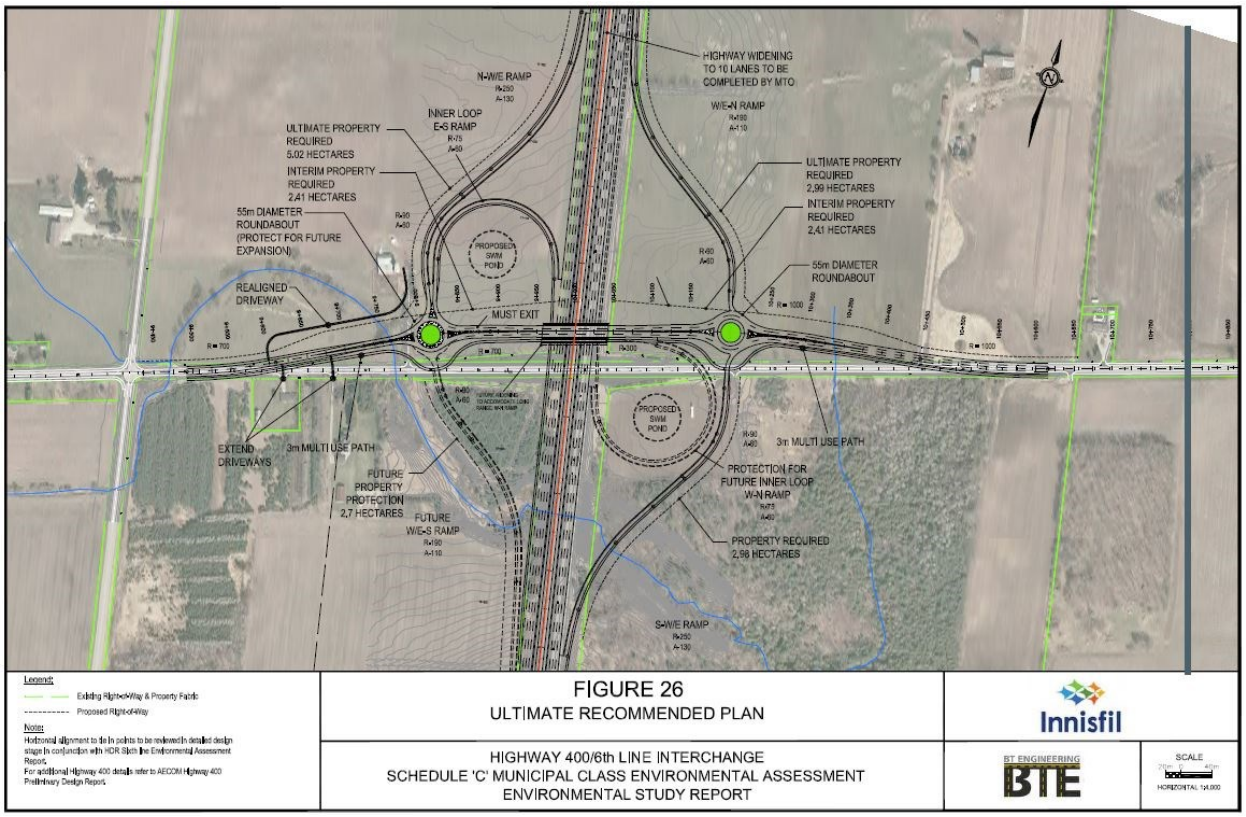


Exhibit 2-9: Ultimate Interchange at Highway 400 and 6th Line
Source: Highway 400/6th Line Interchange Environmental Assessment (January 2017)

2.5 Emerging Technologies

In the past two to three years, new mobility models and technologies have been emerging as new ways for people to travel which provide increased choice, convenience and flexibility. These emerging technologies are based on the pay-per-use and have disrupted a number of traditional industries within the transportation sector. These technologies capitalize on social trends towards increased sustainability, environmental awareness, and efficiency. In the transportation field, car-sharing, ride-sharing, and bike-sharing have become popular methods of travel which reduce the financial burden of ownership. In the near future, autonomous and connected vehicles will also impact transportation as well as how we plan and build our towns and cities.

The following subsections identify emerging transportation technologies and mobility models. They also identify how these mobility models and other emerging trends might affect the Town of Innisfil, and how the Town might respond or prepare for it, be it through policies, initiatives, or infrastructure.

2.5.1 Emerging Mobility Models

Emerging mobility models generally fall within two distinct categories: individual-based mobility and group-based mobility. Individual-based mobility is centered on the automobile and a private

transportation experience while group-based mobility includes shared services of several vehicle types, including automobiles, mini-buses, and full-size buses.

2.5.1.1 INDIVIDUAL-BASED MOBILITY

There are numerous emerging individual-based mobility options that are operating within the Greater Golden Horseshoe (GGH). These include car sharing services, ride-sourcing services, and bike share.

2.5.1.1.1 Car Sharing: Fleet Operator

Typically owned and operated by a single organization, fleet car sharing models offer several enhancements over the traditional car rental business model. Fleet car sharing models provide increased flexibility as vehicles are located throughout a city instead of at a centralized rental location. By having several locations throughout a city, users can pick up a car in one location and leave it at another. The model provides improved accessibility via an automated unlocking system that is accessed using a Radio-Frequency Identification (RFID) card or smartphone. The automated unlocking system allows for the fleet to be accessed at any time of day across a certain service area, enabling short-term rentals.

There are several car sharing fleets operating across the Greater Golden Horseshoe (GGH), including Enterprise CarShare, Zipcar, and Car2Go, with the latter operator offering the most service flexibility. While Enterprise and Zipcar require users to make a reservation for a car, Car2Go allows users to take any available car closest to them. Car2Go also allows users to park the vehicle in any approved legal spot in its designated boundary area whereas the majority of other fleet operators require users to leave a vehicle in any of its designated parking spaces. Conversely, Enterprise CarShare requires users to drop off the vehicle in the same spot where they picked it up. **Exhibit 2-10** illustrates available Car2Go vehicles scattered throughout the fleet operator's service area boundaries. The Toronto boundary area for Car2Go services spans from Eglinton Avenue in the north to Lake Ontario in the south and from Jane Street in the west to Victoria Park Avenue in the east.

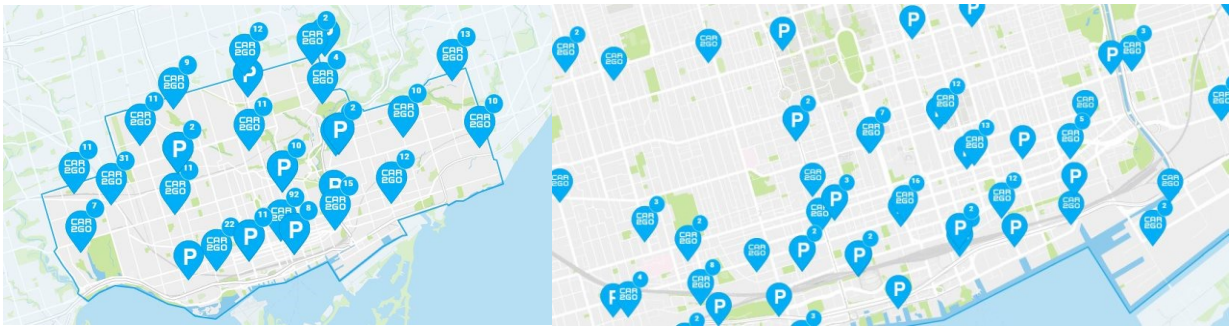


Exhibit 2-10: Car2Go Designated Boundary (left) and Detailed Locations of Available Vehicles (Right)
Source: Car2Go (https://www.car2go.com/CA/en/toronto – May 2017)

Opportunities for Innisfil

Investigate the viability of a local car-sharing service throughout the Town. Such a service could provide Town residents with more flexibility as users do not have to own a vehicle. Users of car sharing fleet operators tend to make fewer car trips than those who own a private vehicle, as private vehicles are more convenient for shorter trips.

2.5.1.1.2 Car-Sharing Peer-to-Peer Platforms

Peer-to-peer car sharing allows individual car owners to rent their vehicles to members for a pre-determined time period and price. Turo is the only peer-to-peer car sharing platform operating in the GGH. Users can browse cars on their website and find the vehicle that suits their needs, make a reservation, and can either meet the owner at the car's location or have the keys delivered. There is also the option to book a car instantly without waiting for the owner's approval and to have a vehicle delivered directly to the user.

As seen in **Exhibit 2-11,** there are currently three listings in the neighbouring City of Barrie. Listings within the Town would provide flexibility for residents who wish to rent a car for specific trip purposes (for example: over a long weekend).

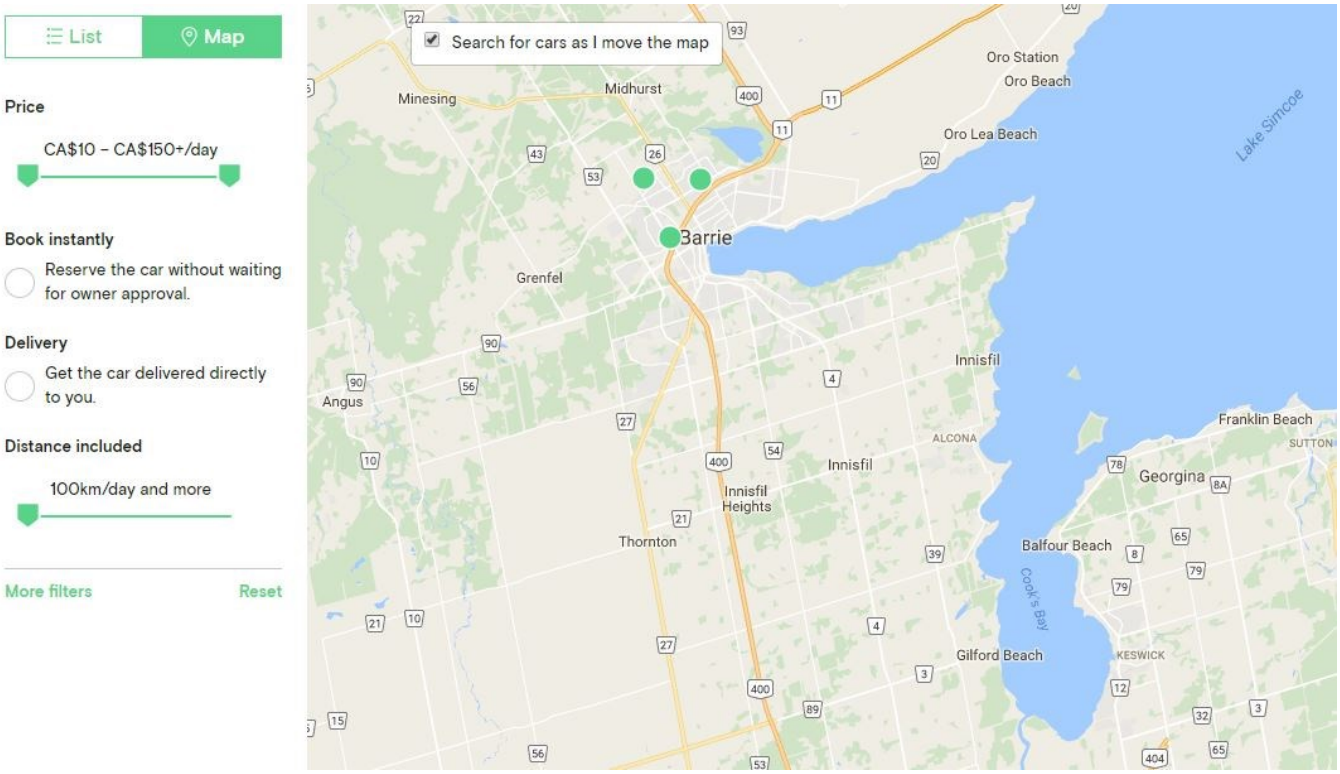


Exhibit 2-11: Turo Website Vehicle Search Application
Source: Turo (https://turo.com – May 2017)

2.5.1.1.3 Ride- share/Sourcing

Ride-sharing is currently one of the most popular trends in the GGH and is considered an evolution of the traditional taxi dispatch model. It provides a category of services which allows customers to access private transportation services, including taxis, via a computer or mobile device. Vehicles are typically equipped with GPS allowing for automated ride matching and deployment. Lyft and Uber are two of the major ride-sharing companies in North America, but in Canada specifically, Uber is the primary service provider.

Uber offers several different options for users dependent on their need. There are seven options for ride sourcing operating in the GGH:

- UberX is the basic low-cost option;
- UberXL is generally the same as UberX, however it is used by large groups as it can seat more than 4 passengers;
- UberSELECT provides users with a luxury vehicle;
- UberBLACK provides users with professionally driven black cars;
- UberSUV is similar to UberXL as it is meant for large groups (4 or more passengers), however it provides users with a high-end SUV;
- UberASSIST is similar to the service provided by UberX with the addition of helping those in need with door-to-door service; and
- UberWAV provides wheelchair accessible vehicles.

The Town of Innisfil has partnered with Uber to bring safe and convenient, on-demand transportation to the Town– Canada's first ridesharing and transit partnership. This pilot project is making rides affordable and accessible to Innisfil residents through flat-fares and is detailed further in **Section 2.5.1.2.2**.

2.5.1.1.4 Bike Share

Bike sharing services enable users to access and rent bicycles for short trips within a designated service area. One model of this service, already widespread in Canada, relies on a series of fixed stations located across the designated service area for users to rent and return their bicycles. Users are able to retrieve a bicycle from one location and drop it off at any other available location in the network, within a limited timeframe. Another model, common in Germany and China, is "dockless", which allows users to find and check out bikes using an app, and leave them anywhere within a designated boundary area (similar in principle to Car2Go).

Bike Share Toronto is a bike sharing service using the "fixed station" model. It allows users to pick up and return a bike at any of the 200 stations located across the City. The service comes with three pricing options: an annual fee ($90), a three-day pass, or a day pass. Dropbike, a "dockless" system, will be rolled out in Toronto this summer, and will allow bikes to be left at designated "havens" – bike posts and racks marked in the app. The initial price for rentals will be $1 per hour[2]. SoBi Hamilton offers a hybrid version of the two models as bikes can be picked up and returned at a station, or locked at a regular bike rack for an additional service fee.

[2] Hains, D. New Bike Sharing System Will Debut in Toronto Later This Summer. Metro, May 17, 2017.

Opportunities for Innisfil

Investigate the viability of a local bike sharing program. A bike share program in the Town has the ability to increase cycling mode share within the Town. The program can be used to bike to work, between communities, or for recreational trips along the waterfront. Integrating bike share services with the existing demand-responsive transit initiative provides Town residents and employees with multiple mobility options that decrease the need for private automobile ownership.

2.5.1.2 GROUP-BASED MOBILITY

There are several group-based mobility services that have emerged, some of which operate within the GGH.

2.5.1.2.1 Shared Ride-Sourcing

Shared ride-sourcing services allow riders travelling in the same direction to share a vehicle and thus reduce the cost. Ride matching is done using algorithms hosted on the company's server, finding users who also request a ride and a price is calculated automatically.

UberPOOL is an on-demand shared ride-sourcing program operating in Canada. Users can request the service on their mobile device and the algorithm will match them with other users heading in the same direction, however there is a maximum of 2 riders per pickup.

2.5.1.2.2 Micro-Transit / Demand Responsive Transit

Micro-transit or demand responsive transit bridges the gap between single user transportation (car, Uber, taxi) and fixed-route public transit. Micro-transit's on-demand rider pick-up allows for underserved routes to be serviced and for a more flexible schedule that is based on user needs. Microtransit is typically cheaper than taxi service and has the opportunity to incur cost savings (to both the Town and the end user) while also being more predictable than traditional transit. It provides savings in fuel and vehicle operating costs as it allows groups of people to share a ride similar to a carpool. People share the ride from home or one or more common meeting location, and travel together to a work center or common destination. Vehicles are usually provided through a program operated by, or on behalf of, an element of the government.

The Town of Milton and Metrolinx launched the first micro-transit program in the Greater Golden Horseshoe in 2016. They each invested $125,000 for an on-demand transit service project to allow GO Transit customers to share taxi rides to and from Milton GO Station through the use of an app. Among the initiative's objectives was to offer transit services to remote areas, encourage switching from solo car rides to shared mobility, and increase the ridership of the GO train line. Over the one-year period, the pilot project saw over 230 regular riders, of which 7% were net new riders to the rail line. In addition, 105 riders switched from solo automobile use to using the shared-ride service and over 85% of trips involved the sharing of vans between 3 and 6 riders. Considering the service's 95% on-time record and its cost savings over traditional fixed-route bus service, the micro-transit program was deemed a success overall.

The Town of Innisfil carried out a Transit Feasibility Study that was completed in September 2015. The study concluded that the options for fixed-route bus service would be too costly for the limited level of service that they would provide. In June of 2016, Town Staff presented a new report to Council that suggested looking into an on-demand transit option. Following a Request for Expressions of Interest (RFEOI), Uber emerged as the only company with an app-based platform (i.e. UberPool) that would facilitate ridesharing and the matching of 2 or more passengers on trips across the entire Town. This partnership between the Town and the private company came to be known as Innisfil Transit.

Details regarding the implementation of Stages 1 and 2 of Innisfil Transit can be found in **Section 4.1.4.3**.

2.5.1.2.3 Private Buses / Vanpool Services

Private buses or vanpools are typically operated by a private company either for a fee or offered at no cost for employees. Similar to demand responsive transit, employees share the ride from one or more common meeting locations and travel together to work.

The Aerocentre shuttle is an example of a private bus that operates from Mississauga's Airport Corporate Centre. During the peak periods, the shuttle provides direct service to Toronto's Kipling subway station, in addition to lunch time service between the Corporate Centre to local area eateries.

Opportunities for Innisfil

Innisfil Heights is an employment area located within the Town off of Highway 400. As there are several employers located in a defined area, a private vanpool service should be considered to service the area. By organizing pickups from major nodes in communities, a private vanpool service has the ability to decrease the number of single auto trips. For example, a vanpool service could arrange pickups from several parking lots in Alcona including the Sobeys and Dollarama, before heading to Innisfil Heights.

2.5.2 EcoMobility Hubs

An EcoMobility hub is a multi-modal one-stop point intended to facilitate smart and easy access to mobility services[3] [4] . The concept of EcoMobility hubs was identified in the City of Toronto's ConsumersNext Transportation Master Plan which recommended that the City form a strategic partnership with Smart Commute North Toronto Vaughan and the Toronto Parking Authority to develop a pilot program. EcoMobility hubs are popping up around the world including in several

[3] Karim D. M., Innovative Mobility Master Plan: Connecting Multimodal Systems with Smart Technologies, Disrupting Mobility Conference, MIT Media Lab, Cambridge, USA, November 11~13, 2015.

[4] Karim D. M., Creating an Innovative Mobility Ecosystem for Urban Planning Areas, Disrupting Mobility - Impacts of Sharing Economy and Innovative Transportation on Cities, Springer Book, Lectures in Mobility, ISBN: 978-3-319-51601-1, pages 21-47, 2017.

cities in Germany, and are essentially one-stop service points for multimodal systems including car sharing, ride sharing and bike sharing. These hubs may vary in scale from major transit station areas to smaller scale integrated bus-stops. Specific types of infrastructure may include dedicated car-share parking spaces with charging stations, parking lay-bys for ride sharing, bike share stations, comfortable and safe waiting areas with displays for real-time data for all modes, benches, open space, free Wi-Fi, wayfinding information, and food truck parking or other retail support depending on scale of the node. **Exhibit 2-12** illustrates a large scale EcoMobility hub.

Exhibit 2-12: EcoMobility Hub Concept
Source: Multi Mobility, Sophia von Berg, 2014

Opportunities for Innisfil

Consideration may be warranted, in the immediate future, for providing small scale EcoMobility hubs in popular areas such as the Recreational Complex, Town Hall, Tanger Outlets, Friday Harbour, 6th Line GO and other major attractions within the Town. A small scale EcoMobility hub would have designated safe waiting areas for ride sharing and a small bike share or car share station.

2.5.3 Autonomous and Connected Vehicles

Vehicle automation is an emerging technology that will drastically change the transportation network and travel behaviour, particularly to facilitate and accelerate the adoption of emergent mobility models discussed previously, including car sharing, ride-sharing and sourcing, and micro-transit and demand responsive transit.

RethinkX, an independent think tank, has analyzed and forecasted the speed and scale of technology-driven disruption and its implications across society. In its Rethinking Transportation report, RethinkX predicts that by 2030, 95% of US passenger miles travelled will be in on-demand autonomous vehicles (AVs), owned by fleets, in a business model they call "transport-as-a-service" (TaaS). [5] A new model for passengers to access transportation on-demand, TaaS provides a level of service equivalent to or higher than current car-ownership models without the need to own a vehicle. TaaS refers to services based only on AV technology, delivered by vehicles that are owned by fleet operators and that are used with a higher frequency per day than individually owned vehicles.

Research is indicating that automated vehicles will improve road safety, enhance the mobility of youths, seniors, and users with disabilities, reduce the need for parking at major destinations as vehicles will be able to park off-site, and increase road capacity as they are able to travel closer together. This will also allow more flexibility and reduce costs as one vehicle can be shared between several users. As predicted by RethinkX, this may lead to a merging of public and private transportation, where municipalities will shift from owning and managing transportation assets to managing TaaS providers – a progression of the existing situation in Innisfil, as discussed previously.

Vehicle automation will create new opportunities for optimizing the transportation system, including increasing highway-related freight movements by reducing the cognitive workload of operators, allowing them longer hours-of-service. It also enhances safety through roll-over detection, run-off-road detection, advanced braking, and forward collision detection.

A further advancement directly related to vehicle automation is Connected Vehicle technology, which provides inner-connectivity between infrastructure components and vehicles. Connected Vehicle technology has the ability to improve mobility and capacity due to the interaction between vehicles and the transportation system.

Connected Vehicle and Autonomous Vehicle (CV/AV) technology is rapidly emerging. Deployments and first-adoption will go to those locations that are "technology friendly" and have policies and standards in place for utilization of the technology. In many jurisdictions, such as in California, it may be illegal to operate an autonomous vehicle without first receiving an exemption to State law. Conversely, other states, such as Nevada, have more lenient legislation and policies to facilitate autonomous vehicles. Beyond the policies and legislation regarding the development, testing, deployment and pricing of autonomous vehicles, there are policy and infrastructure needs requiring change that are likely to go unforeseen. For example, the majority of autonomous vehicle technologies rely on clear lane demarcations to identify lanes. Current construction practices for the reconstruction or resurfacing of roadways may have a several day delay between finishing the reconstruction or resurfacing and the painting / striping of the lane.

On January 1, 2016, the Ontario government gave permission for the testing of automated vehicles on-road to support deployment.

[5] Arbib, J. & Seba, T., Rethinking Transportation 2020-2030: The Disruption of Transportation and the Collapse of the Internal-Combustion Vehicle and Oil Industries. RethinkX, May 2017.

The pilot brings together a range of expertise from the research, manufacturing and technology sectors to advance innovation and capability in Ontario's AV sector. On November 28, 2016, further advancements were made as MTO announced the first of three participants approved to participate in Ontario's Automated Vehicle Pilot. The participants include:

- **The WATCar Project at the University of Waterloo's Centre for Automotive Research**, which will monitor a Lincoln MKZ for performance and test it on-road at different levels of automation
- **The Erwin Hymer Group**, an international auto manufacturer active in the Kitchener-Waterloo tech and innovation corridor, which will test and monitor a Roadtrek E-trek at different levels of automation
- **BlackBerry QNX**, a Canadian global software development leader, which will test a 2017 Lincoln with automated features.

Opportunities for Innisfil

To continue the Town's leadership in this field, established by its partnership with Uber, the following recommendations derived from RethinkX could be implemented:

- Permit the testing and adoptions of AVs
- Launch an open-data initiative to make road and traffic information available to the public and entrepreneurs
- Develop planning strategies for the eventual repurposing of unneeded transportation infrastructure, parking lots, and roadside parking spaces
- Ease regulations to facilitate the conversion of unneeded commercial garages to social and productive uses like affordable housing or co-working spaces
- Anticipate and mitigate the negative impacts associated with the shift (including job losses), by providing social and financial safety nets, including retraining programs
- Invest in public education campaigns to communicate the benefits of the shift to AVs and new mobility models

The deployment of automated vehicles in the Town has the potential to drastically change travel behaviour. It is generally believed that autonomous vehicles can either significantly increase or decrease the number of trips by residents. For example, if an automated vehicle is owned by a single family, it could be used for several individual trips to service each individual's needs. However, if an automated vehicle is shared between several families, some of whom work in the same area or attend the same school, trips are shared between several users. The extent of the impact of autonomous vehicles on travel behaviour is currently being explored as there are many possibilities to consider.

2.5.4 TransitScreen

Launched in 2013, TransitScreen shares information on the local transportation network by providing a real-time display of transportation options. The screen is able to convey the arrival

times of subways, trains, streetcars, and buses in the area. It also illustrates nearby ride sharing services, the location of the nearest car share and bike share, and the number of vehicles available at the car share and bike share station. Screens can be stationed in high density residential development, government offices, universities, retail and commercial spaces, at corporate centres, arenas, and hotels. **Exhibit 2-13** illustrates an example of a TransitScreen.

The City of Toronto installed several TransitScreens throughout the City in 2015, including City Hall and Metro Hall. The screens connect to all TTC services (subway, streetcar, bus, and alerts), GO Transit train and bus services, Zipcar, Car2Go, and Bike Share Toronto.

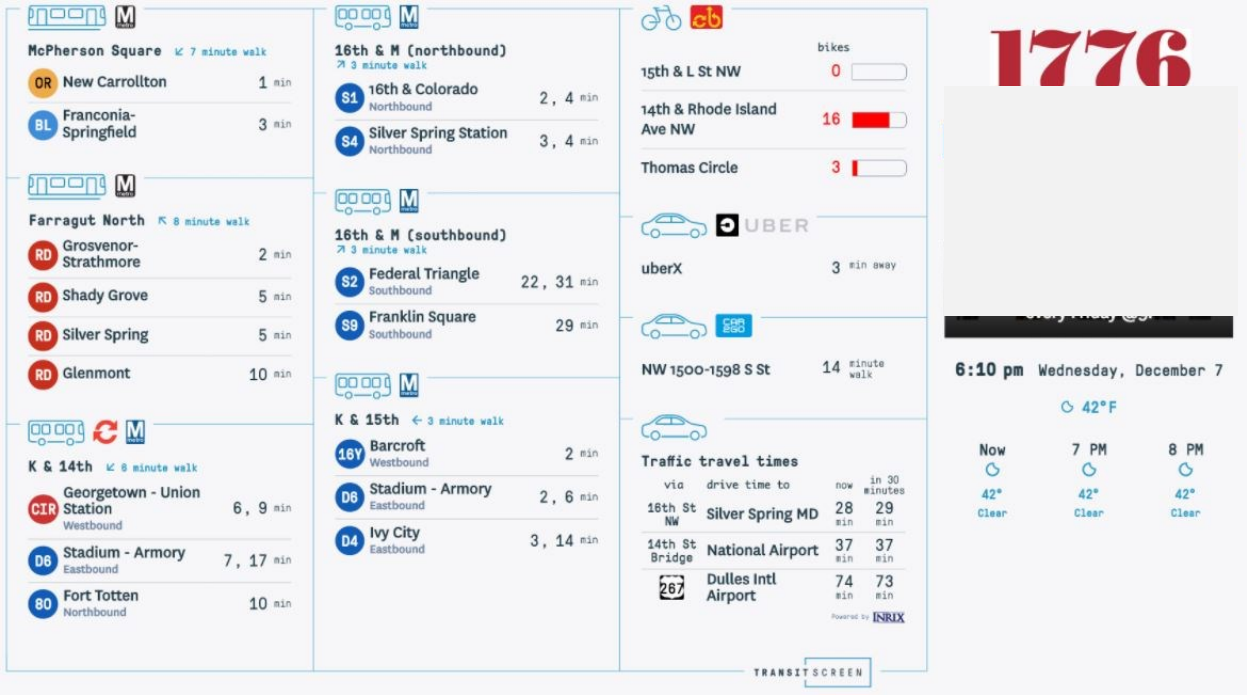


Exhibit 2-13: Example of a Transit Screen
Source: Transit Screen (https://transitscreen.com/)

Implications and opportunities for Innisfil

The TransitScreen can be used by the Town at mobility hubs, including the future Innisfil GO Station, to inform users, such as tourists, of the local transportation network. They can also be used at main recreational areas along the waterfront to encourage use of alternative modes of transportation, such as bike share.

2.5.5 Smart Cities

Although there are a variety of ways to define the “Smart City”, it is essentially an overarching development vision where digital technologies are integrated with physical and human systems in the urban environment to improve the quality of life. Recognizing the potential benefits of initiatives associated with this concept, including the technologies described previously, cities,

higher levels of government, non-governmental organizations (NGOs) and industry are dedicating increased attention and resources to the field.

In Canada, municipalities large and small are taking steps to harness technology and intelligent designs to improve the quality of life and attract economic development. In 2014, Montreal created a "Smart and Digital City Office" to help make Montreal a leader in Smart Cities, focusing on nine areas of activity: developing the telecommunications network, championing open data, upgrading technological architecture, co-developing solutions with the community, optimizing travel, growing available digital services, developing sites for innovation and learning, reinforcing a culture of transparency and accountability, and promoting a state-of-the-art sector[6].

Sidewalk Labs LLC, the urban innovation unit of Alphabet Inc., Google's parent firm, recently applied to redevelop a 12-acre site in downtown Toronto.[7] The neighbourhood, Quayside, would become a testing site for emerging technologies, materials, and processes which could be replicated in cities around the world.

Stratford, Ontario, has invested in a municipally-owned fiber broadband network and city-wide Wi-Fi, which was a key contributor to it being the first Canadian city to test self-driving cars.[8] St. Albert, Alberta, introduced a Smart City Master Plan in 2016 which set out a vision for the community as a Smart City, including by implementing electric vehicle charging stations, centralized traffic and intersection management, and open data.[9]

Higher levels of government are making funding available to support cities in adopting innovative approaches to city-building. The Government of Canada, in its 2017 budget, proposes providing Infrastructure Canada with $300 million over 11 years to launch a Smart Cities Challenge Fund. [10]The Challenge would invite cities, together with citizens, businesses, and civil society, to develop Smart Cities Plans – ambitious plans to improve the quality of life for urban residents through improved city planning and the implementation of new technologies. Winning cities would be selected through a merit-based competition.

There are also a number of ways the industry is contributing to this process, from traditional servicing agreements, to using open data to develop apps to meet the needs of citizens at little or no cost to the city, to providing grants and expertise to cities. IBM's Smarter City Challenge is an example of the latter, where winning cities receive a team of five or six IBM experts that work closely with the city for three weeks to solve a particular challenge.

[6] Montréal, Ville de. Montreal Ville Intelligente et Numérique: Stratégie Montréalaise 2014-2017. Retrieved May 23, 2017 from http://villeintelligente.montreal.ca/sites/villeintelligente.montreal.ca/files/strategie-montrealaise-2014-2017-ville-intelligente-et-numerique-fr-amendee.pdf
[7] Bergen, M. Alphabet's Sidewalk Labs Eyes Toronto for Its Digital City. Bloomberg News, May 8, 2017.
[8] Nowak, P. H., How Stratford, Ontario is Luring Global Startups with its Smart-City Plan. Canadian Business, June 20, 2016.
[9] City of St. Albert. What are St. Albert's Smart City Projects? May 10, 2017. Retrieved May 23, 2017 from https://stalbert.ca/dev/smart/projects/
[10] Government of Canada, Budget 2017, Chapter 2: Communities Built for Change. March 2017.

Opportunities for Innisfil

There is an opportunity to continue the Town's leadership in this field, by leveraging available funding and developing partnerships with the industry. The Town should consider developing a Smart City strategy to guide its actions in this area. Attention should be paid to the availability of federal and provincial funding, which could be applied to the initiatives described previously, and to opportunities to develop partnerships with industry, as the Town did with Uber. In addition to improving mobility in Innisfil, these initiatives can have significant economic and reputational benefits.

3.0 Public Consultation

3.1 TMP Survey

A key component of the Transportation Master Plan study is consultation with stakeholders, regulatory agencies, and the general public. In regards to consultation with the public, a public opinion survey was conducted to understand the transportation needs and concerns of Town residents, particularly with respect to current issues with the transportation network and opportunities for active transportation and public transit improvements.

The following sections outline the survey methodology, present the results, and discuss the findings. The full report can be found under **Appendix A**.

3.1.1 Survey Methodology

The Transportation Master Plan Survey was designed jointly by HDR and the Town of Innisfil. Residents of Innisfil were first notified of the survey through the Town's website, but were also notified by Town staff when they visited the Town Hall or when they contacted the Town by phone. Hard copies of the survey were available at public libraries and at the Town Hall. The survey was available from March 2017 to May 2017. The surveys were self-enumerated, with the choice of completing an internet-based survey or a paper-based survey.

The purpose of the survey was to understand people's travel behaviour and attitudes towards transportation needs within the Town of Innisfil. Survey questions focused on finding out how respondents currently travel, how important they perceive potential improvements to the transportation system, and how their travel behaviour would change, if at all, if certain initiatives were implemented.

The survey was not intended to be statistically reliable, and the results were used to support the recommendations in this TMP update.

3.1.2 Survey Findings and Discussions

3.1.2.1 ACTIVE TRANSPORTATION

The survey results indicated significant enthusiasm for cycling and walking in Innisfil. Respondents consider improved active transportation infrastructure important. More people would consider walking or cycling if it was safer and if more accessible infrastructure was provided.

Respondents also consider the areas around the Innisfil Recreational Complex (IRC), schools, and residential neighbourhoods to be priority areas for new sidewalks. Respondents also proposed a number of specific locations for improvements including new sidewalks, trails, and marked crossings, which should be reviewed in future stages of the TMP Update. Respondents suggested that sidewalk construction be incorporated into road re-surfacing projects and that new developments should incorporate sidewalks. Some noted problems using paved shoulders

as pedestrian routes, particularly when vehicles park on them and pedestrians are forced into traffic. Other issues identified by respondents with respect to paved shoulders were that they are narrow, in poor repair, or poorly maintained during the winter and as such unsuitable for persons with mobility devices.

3.1.2.2 PUBLIC TRANSPORTATION

Nearly two thirds of respondents would consider using the new demand responsive transportation system. Several comments reflect enthusiasm for the service to start, and others recognize the practicality of providing such a service in a low-density community. Most would use it for non-work and non-school trips, such as shopping, personal trips or social trips. However, comments also reflect a significant ongoing demand for traditional bus-based transportation service. This feedback, in consideration with a relatively low priority ranking compared to other general interventions, may suggest that while respondents may be willing to use the service, they continue to view it as a taxi service rather than public transit practical for commuting. As previously noted, respondents also have concerns about aspects of the demand-responsive transit service, most notably the cost and waiting time or availability of drivers. Comments also reflect concerns with the safety of the service, the cost to taxpayers, accessibility to persons with mobility aids and parents with small children, its impact on local taxi companies, and Uber's corporate ethics.

Supporters of traditional bus-based transit proposed a number of locations that would be priorities for bus service, including connections to Cookstown, Alcona, Newmarket, and Barrie. They also propose ideas for service provision, including using school buses when they are not reserved for students or contracting Barrie Transit.

In terms of GO Transit, few respondents use GO regularly, which is likely due to the lack of a GO Rail station in the Town and limited service along the Barrie GO Line. However, enthusiasm for the proposed Innisfil GO Rail station is evident through the comments, and it is possible that the convenience of a new station, combined with the Metrolinx GO Regional Express Rail (RER) plan to include all-day, two-way service to the Barrie Line, may increase GO's appeal for residents in the Town. In addition, most survey respondents (68%) indicated that they would drive to the new GO station, followed by use of a taxi service or carpool. There are opportunities for the Town to encourage residents to walk, cycle, Uber/transit, and carpool to the station.

3.1.2.3 ROAD NETWORK

In general respondents consider improving road safety to be their top priority, followed by providing safe, accessible, and comfortable roads for all users. Upgrading gravel roads is the lowest priority. Many comments reflect respondents' concerns with safety for all users. Speeding was repeatedly mentioned as a concern and many respondents requested increased enforcement of traffic laws and implementation of traffic calming measures such as speed bumps. School zones and lower speed limits were also suggested.

Road maintenance is another issue for numerous respondents. Several comments reflect dissatisfaction with the state of pavement condition and pavement markings on Innisfil's roads, noting specific problem locations, while others requested improved winter road maintenance.

There was some concern with congestion, particularly on Innisfil Beach Road. Respondents expressed concerns that existing roads would not be able to handle pressure placed on them by new development. Several comments proposed road widenings, diverting traffic around Cookstown and connecting Highway 404 to 400. Parking was a relatively minor concern for respondents.

3.1.3 Conclusion

The survey was successful in obtaining detailed information on the transportation needs of residents in the Town of Innisfil. A wide variety of comments were received pertaining to improving mobility for people who walk, cycle, take public transportation and drive within the Town.

It is understood that improving road safety; providing safe, accessible, and comfortable roads for all users; and installing more sidewalks, cycling paths, and trails are the top three priorities for respondents. However over 50% of respondents also consider reducing congestion, providing efficient and affordable micro-transit services, and upgrading more gravel roads to paved roads to be important or very important. Respondents would also walk or cycle more if safer and more accessible infrastructure was provided. They also suggested considering areas around the IRC, schools, and residential neighbourhoods as priorities for new sidewalks. The majority of respondents would consider using the new demand responsive transit system, however they had concerns regarding its safety, cost, and convenience, and did not appear to see it as beneficial or attractive for work or school trips. Overall, there was a lack of support for a demand responsive, Uber-like system and there was an interest in maintaining the traditional bus transportation system.

The survey had several limitations that should be taken into account when applying its findings. Residents of certain settlement communities and in certain age groups may be over- and under-represented. Respondents do not represent a random cross-section of the population as participation was voluntary and a silent majority may not be represented. Restrictions that applied to the online survey (e.g. only being allowed to select a certain number of preferences) could not be applied to the paper survey. As well some questions can be clarified through re-wording or re-structuring. For example, Question 3 "*Please select how important the items below are to you*" did not set the maximum items a respondent could choose to be "very important" or "important". As a result some respondents chose either all or almost all of the items as important, which did not provide information to indicate relative importance which was the intent of the question. For Question 10, "*What might be your biggest concern (if any) with a potential Uber-style, on demand, micro-transit service?*" an option of safety concern could be added since it was mentioned by many respondents. As well the response "the cost of the service" to this question might have raised some confusion since it could be interpreted as cost to individual users or concern about taxpayer subsidies.

3.2 Public Open House Consultation

Public engagement is important for developing a vision and determining future directions to meet the needs in the community. Public input was sought through two Public Open Houses

(POH). For both Public Open Houses a variety of opinions and ideas were expressed. It is important that the synthesis of key messages heard be reviewed together with the verbatim detailed comments provided by the public, as well as the results of individual activities, found in **Appendix B.**

3.2.1 Purpose of Open Houses 1 and 2

Public Open Houses 1 and 2 provided opportunities to share information about the project and engage residents and stakeholders in discussions about the TMP update. Two notices were sent out to notify residents and stakeholders of the events in order to ensure attendance and input.

Public Open House 1 (POH1) was held on June 14, 2017 at Innisfil Town Hall. Specifically, POH1 was meant to:

- Provide an introduction to the TMP and information on the planning context;
- Illustrate existing conditions;
- Present and obtain feedback on draft policies;
- Provide an opportunity for the public to share their experiences and contribute suggestions for improving transportation in Innisfil; and
- Discuss next steps.

Public Open House 2 (POH2) was held on September 13, 2017 at the Innisfil Recreation Centre. POH2 was intended to:

- Recognize feedback from residents from POH1 and the TMP survey;
- Present the problem and opportunity statement and vision statement;
- Present and obtain feedback on alternative solutions;
- Present and obtain feedback on draft policies, with a focus on the Complete Streets policy; and
- Provide an opportunity for the public to share their experiences and contribute suggestions for improving transportation in Innisfil.

3.2.2 Engagement Strategies

POH1 and POH2 allowed the public to provide their input through interactive activities, including:

- **A Pins and Strings Exercise:** Participants were encouraged to mark their origins and destinations on boards using string colour-coded to represent work, school, and other trips. Different boards were provided for automobile, GO Transit, microtransit, pedestrian, and cycling trips.
- **A Create your own Cross-Section station:** Participants were able to “redesign” cross-sections of St. John’s Road and Webster Boulevard using a selection of common street element tiles (e.g. through-lanes, multi-use paths, medians) scaled to the road right-of-way.
- **Post-it notes:** Post-it notes were provided so participants could mark any board with their comments.

- **Dots:** Green and red dots were provided to participants as they entered so that they could easily mark a statement, image, or figure with green, if they agreed or liked the idea, or red, if they disagreed or disliked the idea. Red dots were also used to show perceived congestion in the road network, and gaps in the pedestrian and cycling networks, and green dots to mark places where participants thought there could be improvement.

3.2.3 Open House Findings

Nineteen (19) people signed in to POH1 and 18 people signed in to POH2. Approximately 10 to 20 additional people visited each open house without completing the sign in sheet. The combination of relatively low turn-out, the absence of completed comment forms, and observation that a significant proportion of attendees are affiliated with the Town means that caution should be taken when drawing broad conclusions from the feedback. Furthermore, while attendees did participate enthusiastically, the opinions and ideas expressed were diverse, with little obvious overlap. That said, the following themes emerged and are worth highlighting following Public Open Houses 1 and 2:

Support for an expanded sidewalk and trail network was clear as a result of the interactive activities facilitated at the Open Houses such as the “Create your own Cross-section” station. Every completed cross-section included some combination of dedicated infrastructure for cyclists and pedestrians (e.g. cycling facilities and sidewalks, multi-use paths). Most participants were in favour of policies to install more sidewalks and trails in the Town. Participants generally did not consider additional lanes for automobile movements a priority, but instead would prefer additional greenery and infrastructure for active modes.

Congestion along Innisfil Beach Road was identified as an issue, particularly at the intersection with Yonge Street.

Support was exhibited for the EcoMobility Hub Pilot Program. Details regarding the pilot program are to be finalized. An EcoMobility Hub would implement a single service point for multiple mobility operations and integrate designated waiting areas for demand responsive transit, transit screens, car share stations, bike share stations and potentially fixed-route transit.

Opposition was demonstrated for rubber speed cushions for traffic calming based on the large number of red dots placed on the boards. Speed cushions are designed to slow traffic but were not preferred by the residents and public as their implementation requires drilling into the road pavement.

There was support for installing radar speed signs and reducing speed limits on residential streets to 40km/h, based on the green and red dots placed on the boards.

There was support for the Aggressive Approach to road improvement projects, travel demand management (TDM) measures, and investment in conventional transit, based on the green and red dots placed on the boards. The Aggressive approach is one of the four planning strategies considered as part of this TMP, including the Base Case, Current Plans, the Balanced Approach and the Aggressive Approach discussed in **Section 7.0**.

3.3 Summary of Key Issues and Findings from the Public

Findings from the TMP survey and feedback from Public Open Houses reiterated community support for the improvement of road safety in Innisfil. The role of active transportation facilities in establishing safe streets was a key breakthrough of the consultation process. Policies to install sidewalks, cycling paths and trails was deemed essential by the public for the creation of a safe, connected and accessible transportation system that residents and visitors would use. Road maintenance and speeding also had implications on road safety within Innisfil. Community members hoped to see improved road conditions, increased enforcement of traffic laws, and the implementation of traffic calming measures and lower speed limits.

The public also supported more sustainable transportation alternatives. This includes continuing to invest in demand responsive transit, fixed-route transit to more effectively move people, as well as the concept of EcoMobility Hubs, which are essentially one-stop service points for multimodal systems including transit, car sharing, ride sharing and bike sharing. Overall, the community was open to innovative alternatives to a conventional transit network. Residents were receptive to a demand responsive transit system despite some hesitations concerning its safety, cost, and accessibility to the older demographic.

Due to the limited survey responses and POH attendance, these findings are only used to support the recommendations in this TMP.

4.0 The Current Transportation System

4.1 Transportation Network

The Town of Innisfil's transportation network includes provincial, county and local highways and roads, sidewalks and trails, commuter transit service via GO Rail and GO Bus, and local demand-responsive transit service provided by Innisfil Transit. The network is described in greater detail in the following sections.

4.1.1 Roads

The Town of Innisfil is serviced by a grid-based road network comprising provincial freeways, County arterial roads, and the Town's system of arterial, major and minor collector, and local roads. Concession roads are approximately 1.4 km apart for east-west roads and 3.1 km apart for north-south roads. Jurisdiction for different elements of Innisfil's road network is illustrated in **Exhibit 4-1**.

Highway 400 passes through the western part of the Town providing a high-speed, high-capacity route to Barrie and other municipalities to the north, and to Bradford-West Gwillimbury and the Greater Toronto Area (GTA) to the south. Outside of Cookstown, Highway 89 is a rural highway maintained by the province which provides a connection to towns to the west including New Tecumseth. Within Cookstown it is under the Town's jurisdiction, and it continues as Simcoe County Road 89 from Highway 400 to 20th Sideroad.

Other arterial roads in Innisfil maintained by the County include Simcoe Road 27 along the western boundary of the Town, 5th Sideroad, 10th Sideroad, and Yonge Street, all which run north-south. East-west County roads include Innisfil Beach Road between 5th Sideroad and 20th Sideroad.

In 2017 the Town had jurisdiction of approximately 382 road kilometres, with 49% of roadways located in rural areas, 36% in semi-urban areas and 15% in urban areas. In 2009 the Town had jurisdiction of over 398 road kilometres with 59% of roadways located in rural areas, 31% in semi-urban areas and 10% in urban areas. The decline in road kilometres under Town jurisdiction and the shift in the percentage of roads located in urban, semi-urban, and rural areas can be attributed to two things. The first being the County's assumption of several major roads, including 5th and 10th Sideroad outside of settlement areas, and the second being the construction of new local roads within settlement areas.

As shown in **Exhibit 4-1**, roadways under Town jurisdiction include major and local roads, consisting of both asphalt and gravel surfacing. In 2017, 80% of roads are surfaced with high class bituminous hot mix asphalt (HCB), 11% with intermediate to low bituminous surface treated roads (LCB), and 9% with gravel. This represents an improvement in the number of surfaced roads from 2013, when 50% of roadways were HCB, 32% LCB, and 17% gravel.

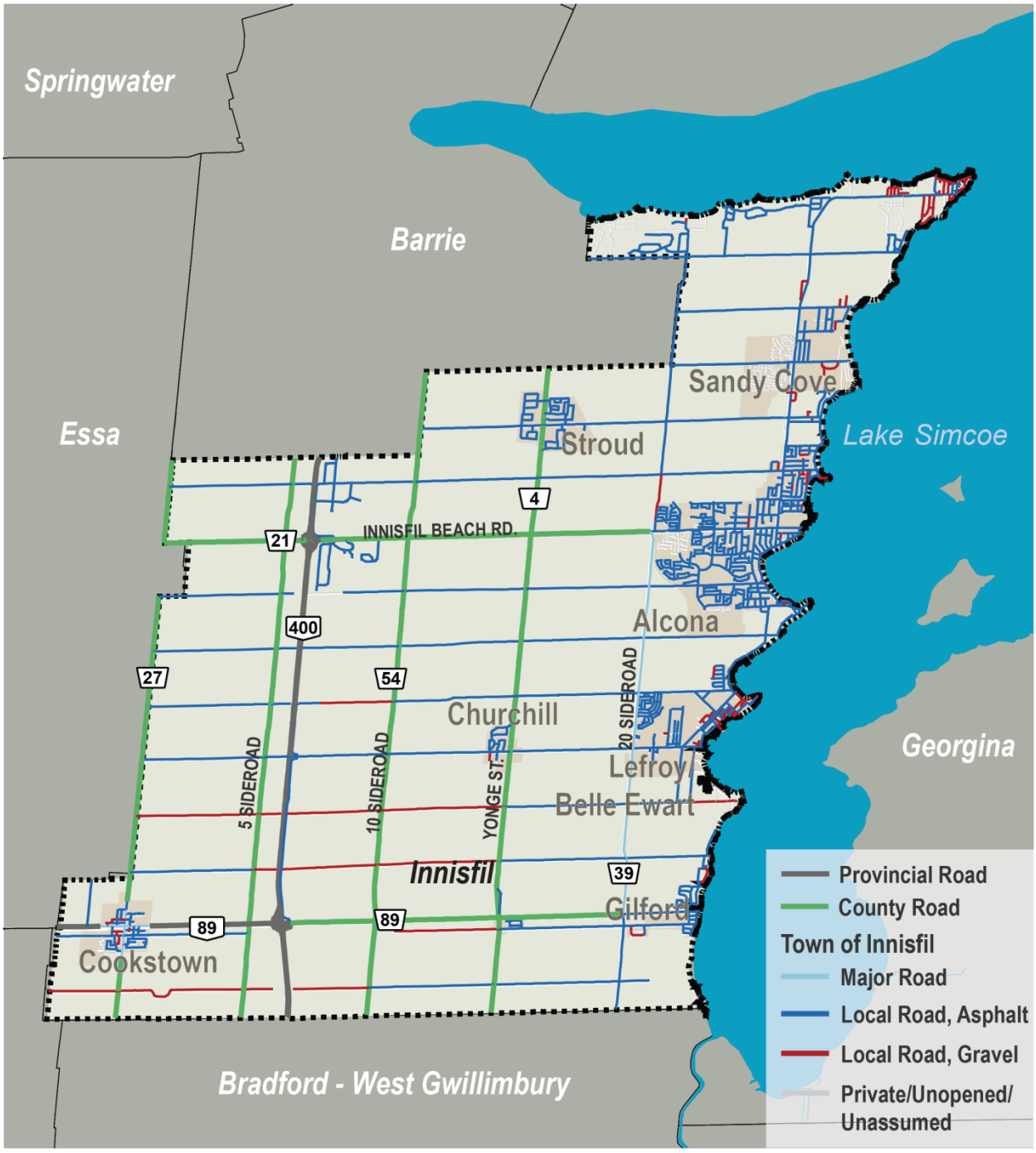


Exhibit 4-1: Existing Road Network and Classification
Source: Town of Innisfil, Received 2017

4.1.2 Intersection Traffic Controls

The majority of rural road intersections in the Town are stop-controlled on the minor road when intersecting with a major road. This is due to the rural environment for many of the Town roads, low volumes on these rural roads, and road hierarchy within Innisfil. Within settlement areas and along major arterial corridors, traffic signals, all-way stops, and flashing beacons at intersections

are provided to control traffic. Signalized intersections and solar stop beacon control within the Town of Innisfil are illustrated in **Exhibit 4-2**.

Exhibit 4-2: Signalized Intersections in Innisfil
Source: Town of Innisfil, Received 2017

4.1.3 Existing Active Transportation Facilities

The Town's designated active transportation facilities include sidewalks for pedestrians, trails for cyclists and pedestrians, on-street bicycle lanes, and paved shoulders. GIS data on the existing sidewalk and trail network were obtained from the Town in spring 2017 and combined with

information on existing bicycle infrastructure from the Innisfil Trails Master Plan. The active transportation network is shown in **Exhibit 4-3**.

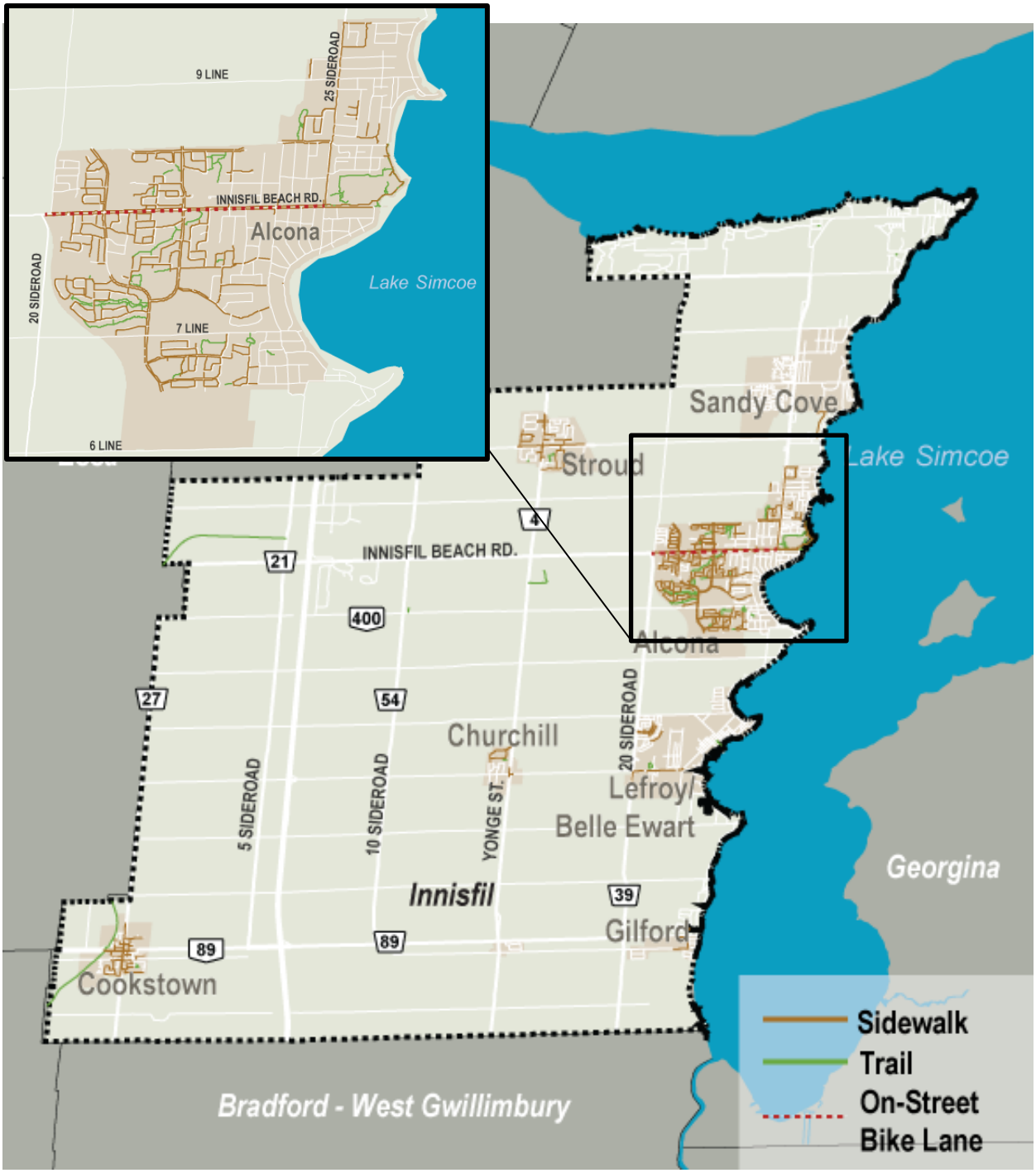


Exhibit 4-3: Existing Sidewalks and Trails
Source: Town of Innisfil, Received 2017

Sidewalks are provided in certain neighbourhoods of settlement areas including Stroud, Alcona, Churchill, Lefroy-Belle Ewart, Cookstown and Gilford. There is little sidewalk connectivity between communities, within smaller communities, and in older areas of Alcona and Lefroy/ Belle Ewart. While in some circumstances, such as on quiet residential roads, road shoulders are suitable for use by most pedestrians, the lack of sidewalk connectivity can present difficulties for pedestrians travelling within and between settlement areas, particularly in periods with snow and ice when slippery roads can be dangerous to walk on. Gaps in the sidewalk network are especially problematic for persons with disabilities. There are also a number of natural environmental areas, open spaces, and parks within Innisfil that lack active transportation connections.

Similar to the sidewalk inventory, there are some existing trails in Alcona, Stroud, Lefroy, and Cookstown, but they are discontinuous and provide limited connectivity with other pedestrian or cycling infrastructure.

The Thornton-Cookstown Trans Canada Trail is a 14 km trail located along the abandoned rail line west of Simcoe County Road 27 for most of its length. Within Innisfil boundaries, starting from the south, the trail passes through Cookstown and crosses Highway 89 and then crosses into Essa Township. The trail appears again in the northwest quadrant of the Town, crossing the hamlet of Thornton and travelling eastwardly north of Innisfil Beach Road where it currently terminates at 5 Sideroad near Georgian Downs. East of 5 Sideroad, the rail line is active and used by trains travelling to and from Barrie. The trail surface is gravel and is primarily used for hiking, mountain biking, trail running and walking. Within Innisfil, there is no trail connectivity with other communities within the Town, making it difficult for cyclists and trail users to travel east-west across the Town.

There is one segment of on-road bicycle lanes in Innisfil, along Innisfil Beach Road between 20th Sideroad and 25th Sideroad. This segment is made up of conventional painted curbside bike lanes without bicycle-specific intersection treatments. It provides good east-west connectivity across Alcona, although its placement on an arterial road likely limits its utility to confident cyclists. Additionally, while not formally designated as on-road cycling facilities, quiet local roads are often suitable for most cyclists and should be accounted for when considering overall cycling network connectivity.

Paved shoulders exist on many roads throughout Innisfil and are often used informally by pedestrians and cyclists. The Town recently implemented an enhanced shoulder pilot project on St. Johns Road in Alcona, for two kilometres between Innisfil Beach Road and Moyer Avenue. The shoulders have been painted green to draw attention to their designation as a space for active modes.

4.1.4 Public Transit within Innisfil

Inter-regional public transit service for the Town of Innisfil is currently provided by GO Transit's bus services. Local transit service in Innisfil operates on a demand responsive model, operated by Innisfil Transit, a partnership between the Town and Uber. Local fixed-route transit service is not provided in the Town or in adjacent municipalities except for the City of Barrie.

More information on these transit services is provided in the following sections.

4.1.4.1 GO TRANSIT

GO Transit services are illustrated in **Exhibit 4-4.** GO Bus Route 68 serves County Road 4 (Yonge Street), connecting East Gwillimbury to the south and Barrie to the north with stops in Stroud (Yonge Street & Victoria Street) and Churchill (Yonge Street & Killarney Beach Road) and at the intersections of Yonge Street and County Road 21 (Innisfil Beach Road) and Yonge Street and County Road 89. Additional GO Bus connections in East Gwillimbury allow passengers to continue south into Newmarket, Aurora, and Toronto.

GO Transit's Barrie Line passes through Innisfil with no stops in the Town. The closest stations for Innisfil commuters traveling south to York Region and Toronto are Barrie South and Bradford. Metrolinx has identified 6th Line where it meets the existing rail corridor as the site for a planned new GO Rail Station for Innisfil.

There are currently (as of November 2017) seven southbound trains operating from Barrie during the weekday AM peak period and seven northbound trains to Barrie operating during PM peak period. On weekends there are three southbound trains from Barrie in the morning, and three northbound trains to Barrie in the evening. More frequent weekend service is available to and from Aurora GO Station.

The following summarizes the GO Transit Bus service that serves Innisfil:

Southbound (towards Newmarket, Aurora)

Weekday (4:50 AM to 10:10 PM)

- Service approximately every hour to East Gwillimbury GO Station, beginning at 4:50 AM with a final bus at 10:10 PM

Weekends

- Departures to Aurora GO Station approximately every 45 minutes to every one hour fifteen minutes, beginning at 7:20 AM with a final bus at 9:15 PM

Northbound (towards Barrie)

Weekday Service

- Service approximately every hour from East Gwillimbury GO Station, beginning at 7:00 AM with a final bus at midnight

Weekends

- Departures from Aurora GO Station approximately every one to two hours, beginning at approximately 9:45 AM with a final bus at approximately 12:30 AM.

Exhibit 4-4: GO Transit Services in Innisfil
Source: Metrolinx, Received 2017

Weekday service levels represent a slight decrease from 2013 service. The coverage offered is not adequate for meeting local resident and business needs in Innisfil throughout the day since GO bus service is limited to County Road 4 (Yonge Street). A significant portion of Innisfil's population resides along Lake Simcoe and essentially has no access to public transit and limited opportunities to connect with the GO bus service.

4.1.4.2 BARRIE TRANSIT

Barrie Transit provides transit service within the City of Barrie, with two transit routes operating on roads that abut Innisfil, routes 4 and 11.

Transit routes in southeast Barrie are illustrated in **Exhibit 4-5.** Route 4 connects north-east Innisfil with Downtown Barrie and Barrie South and Allandale Waterfront GO Stations, and Route 11 connects northern Innisfil with Park Place in southern Barrie.

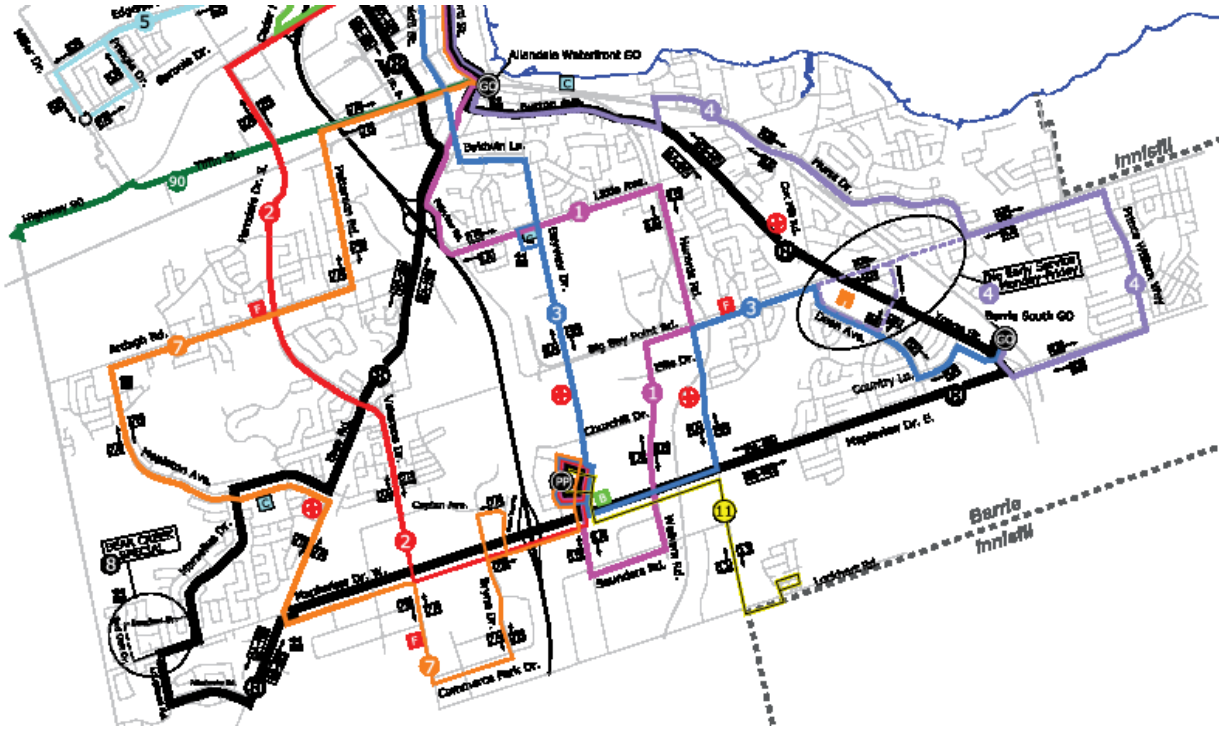


Exhibit 4-5: South Barrie Transit Services
Source: Barrie Transit, City of Barrie, May 2016

4.1.4.3 DEMAND-RESPONSIVE TRANSIT

Microtransit or demand-responsive transit provides a flexible routing and scheduling service marketed as cheaper than taxi service, but more affordable (to both the Town and the end user) and convenient than traditional transit. It provides savings in fuel and vehicle operating costs as it allows groups of people to share a ride similar to a carpool. People share the ride from home or one or more common meeting locations and travel together to a work centre or common destination.

Due to the high costs of providing a fixed-route bus service in the Town of Innisfil, the Town assessed alternative demand-responsive transit solutions. As a result, the Town launched Stage 1 of a ridesharing transit service on May 1, 2017.

As part of Stage 1, the Town partnered with Uber (for general rides) and with the local taxi companies (for accessible rides). The partnership came to be known as Innisfil Transit. Residents use the UberPool on-demand ridesharing platform, which connects drivers with

passengers travelling in the same direction. The Town covers the difference between the set fare paid by the resident and the Uber or taxi fare. Several flat fares (ranging from $3-5) have also been established for key destinations such as the Barrie South GO Station and GO Bus stops within the Town.

Stage 1 of Innisfil Transit ran until the end of 2017. The ridership data retrieved was used to shape Stage 2 and future implementation stages on matters such as fare structure, hours of operation and the consideration of any fixed routes. The Town is investing about $125,000 to subsidize fares for Stage 2, which has begun as of January 2018.

4.1.5 Taxi Service within Innisfil

Private taxi service in addition to Uber is currently offered by several firms and provides an additional mobility choice for Innisfil residents. Key trip purposes and destinations for taxi service include recreational trips to Georgian Downs, shopping trips to Tanger Outlets in Cookstown and the No Frills grocery store in Alcona, and medical trips to hospitals and medical centres in Barrie.

As UberPool vehicles are not always able to transfer people with wheelchairs or other mobility devices, the Town currently partners with local taxi companies to provide accessible trips at the same rates as for general trips using the UberPool service. The plan is for Uber to expand their UberWAV (wheelchair accessible vehicle) and UberASSIST (door-to-door assisted transportation) services.

4.1.6 Bike Share Service within Innisfil

The Town launched a bike share program, ShareCycle at the Great Trail Event on August 26, 2017, where 12 bicycles were distributed throughout the community. With a Culture Master Plan (CMP) currently underway, the bike share program was a way of keeping Innisfil culture on the community's mind while exploring a new way for Innisfil residents to get around. The ShareCycle initiative was a free service that allowed residents to openly use and drop off the bikes anywhere in the community for new riders to find and keep the journey going. Both the ShareCycle and CMP projects aimed to explore Innisfil's amenities and connect people to new opportunities and each other.

The project also strengthened various partnerships in the community as the bicycles were donated by South Simcoe Police, serviced for safety by a local volunteer, and revitalized and decorated by Innisfil youth. Tracking systems were installed on the bikes, indicating popular destinations, while an online map was regularly updated with bike locations. The program also encouraged riders to share photos of their adventures and tell us why they love Innisfil. Media attention mixed with word of mouth reiterated the success and appreciation of a bike share concept. The program came to a close on Thanksgiving 2017 with an overwhelming amount of interest in whether the bikes would be brought back in 2018.

4.2 Demographic and Travel Trends

This section summarizes historic trends in population, travel growth and travel patterns.

4.2.1 Historic Population Growth

Census information was extracted from Statistics Canada, including the most recent 2016 Census, to identify demographic trends for the Town.

As shown in **Exhibit 4-6**, Innisfil's population grew to 36,566 persons in 2016 from 31,175 in 2006, representing overall growth of 17% over the ten-year period, or 1.7% *per annum*. Most of this growth occurred between 2011 and 2016, when the Town's population increased by approximately 3,800 persons, as opposed to between 2006 and 2011, when the population increased by only 1,552.

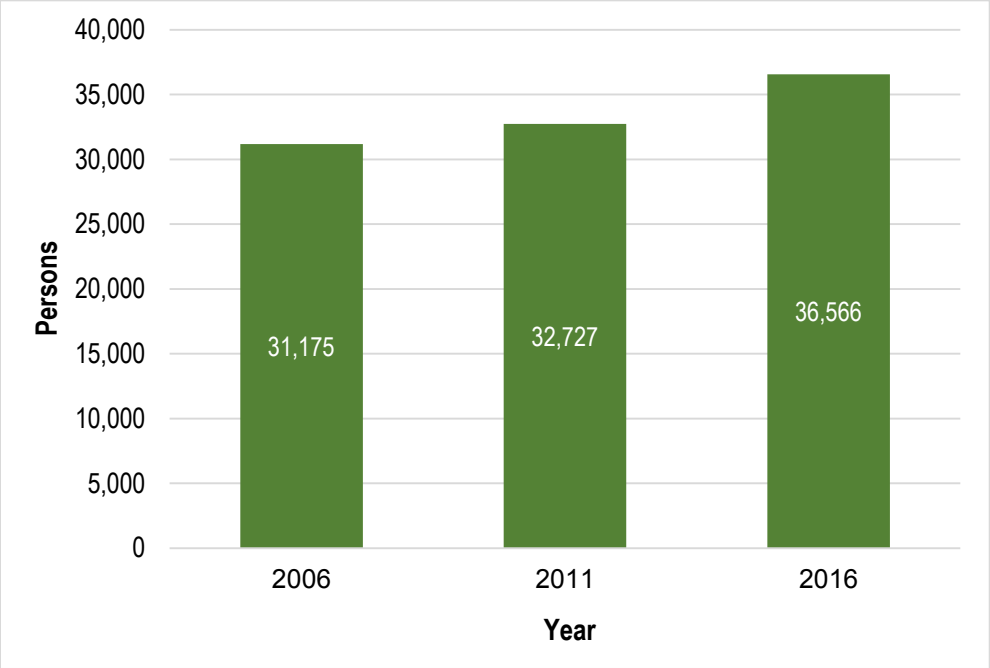


Exhibit 4-6: 2006-2016 Population Growth
Source: Statistics Canada, 2017

Innisfil's population density (persons per square kilometre) shows a similar growth pattern to population, as shown in **Exhibit 4-7**. Density increased from 101.5 persons/km^2 to 139.2 persons/km^2 between 2006 and 2016, with most of the increase occurring after 2011. A portion of this increase may be attributable to Barrie's annexation of 2,293 hectares of land previously forming part of the Town of Innisfil in 2010. The annexed land was primarily farmland and did not include any settlement areas, so this process did not result in a significant corresponding population decrease.

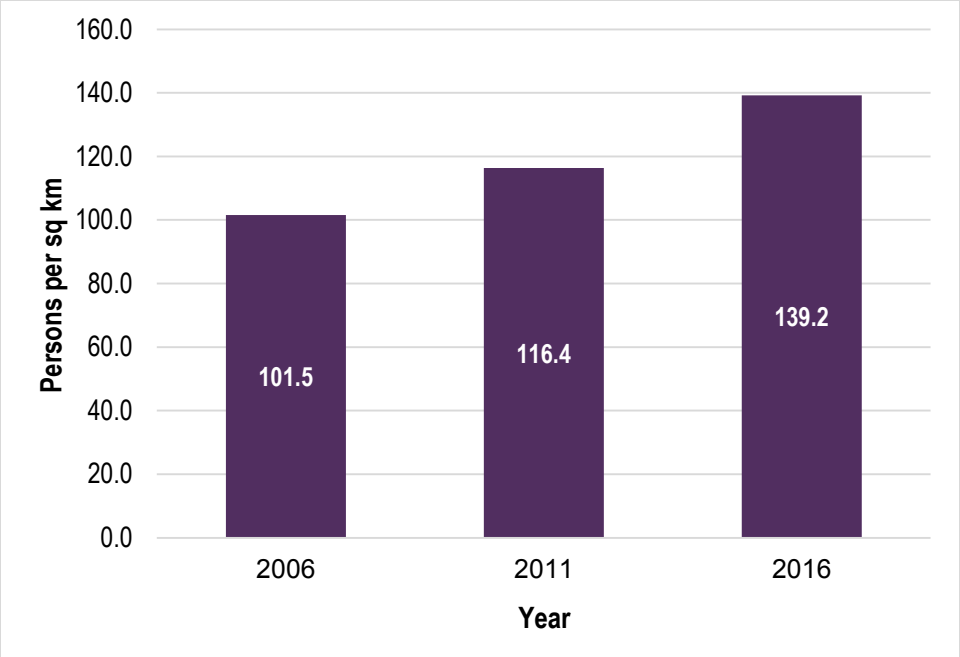


Exhibit 4-7: 2006-2016 Population Density
Note: Density for 2006 was calculated using Innisfil's pre-annexation land area, 307.11 km^2
Source: Statistics Canada, 2017

The increase in number of households in Innisfil is comparable to that seen for population. As shown in **Exhibit 4-8**, there are 13,364 households in Innisfil as of 2016, an increase of 17% compared to 2006 levels.

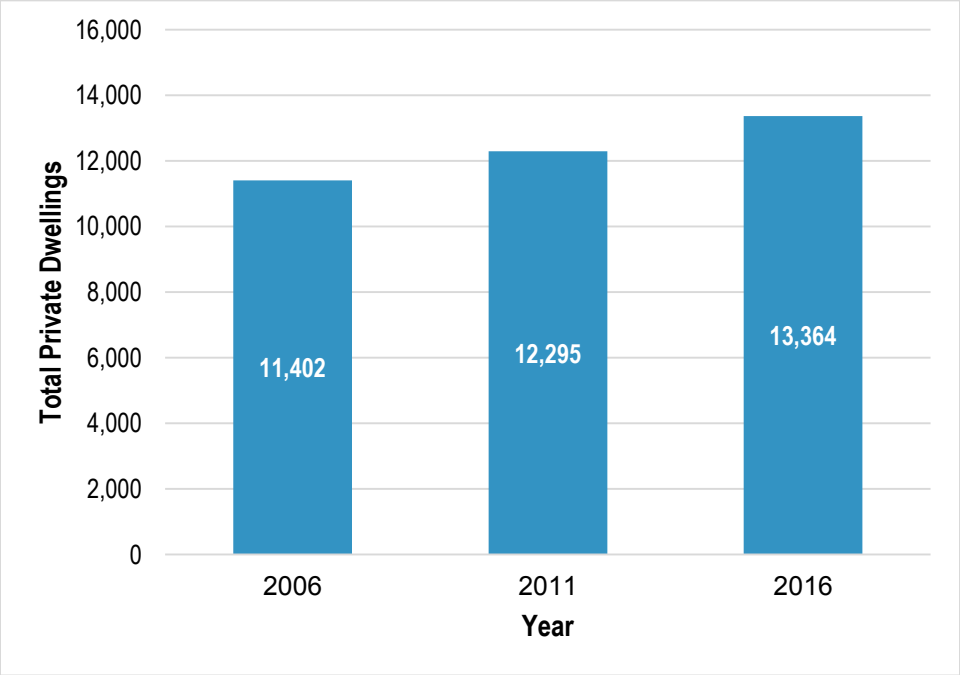


Exhibit 4-8: 2006-2016 Household Growth
Source: Statistics Canada, 2017

There has been a slight shift in the Town's demographic breakdown over the last decade as seen in **Exhibit 4-9**. The proportion of the population older than 65 has increased by approximately 2%, and the proportion of the population under 24 has decreased by 2.5%. This trend is consistent over the last 10 years and may indicate that the Town's average population is aging; however, if the increase in the proportion of residents younger than 5 continues, this trend may be countered to some degree in the future.

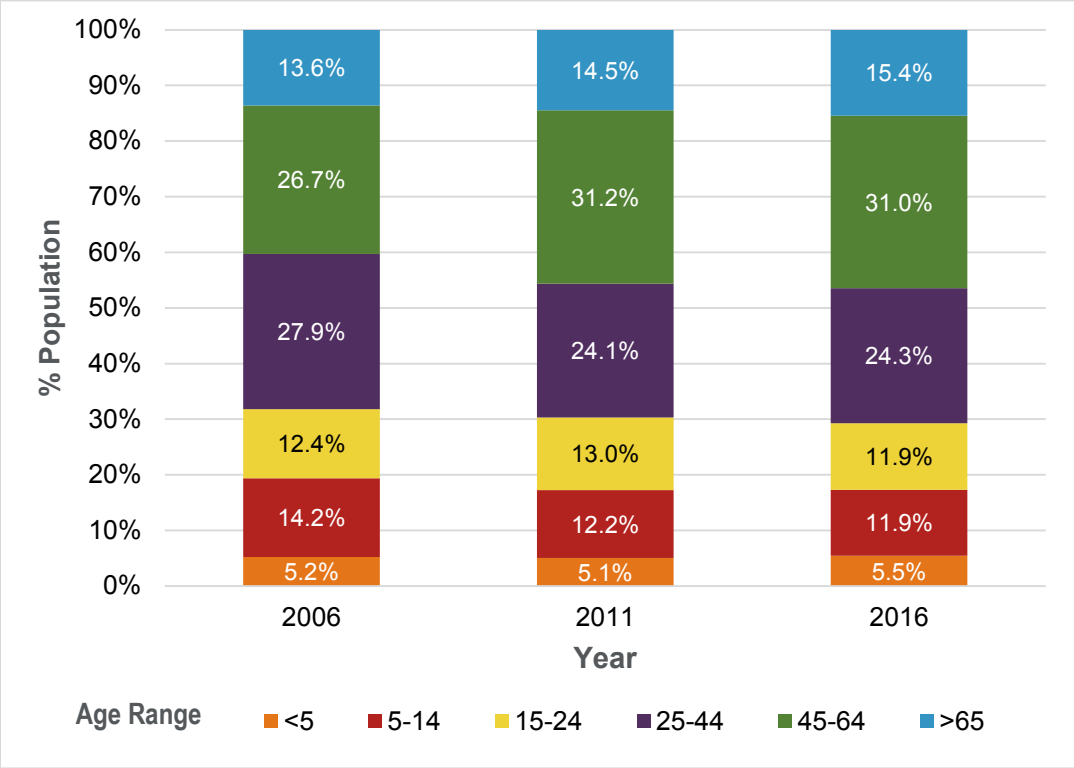


Exhibit 4-9: 2006-2016 Percentage of Population in Selected Age Groups
Source: Statistics Canada, 2017

4.2.2 Historic Travel Trends

The Transportation Tomorrow Survey (TTS) is a household travel survey conducted every 5 years in conjunction with the Census. Data from the 2006 and 2011 TTS has been extracted to establish travel trend and pattern information for the Town.

The data collection phase for the 2016 TTS was completed at the end of 2016. Results would not be available until the end of 2017 and as such could not be used to inform the Innisfil Transportation Master Plan Update.

4.2.2.1 VEHICLE OWNERSHIP

Innisfil households owned an average of 2.0 vehicles in 2011, a slight increase from 1.8 vehicles in 2001 as shown in **Exhibit 4-10.** This value is comparable to similar geographic areas, such as the rest of Simcoe County, excluding the City of Barrie, which share the same rural characteristics of Innisfil. It is slightly lower than the average number of vehicles per

household in East Gwillimbury, 2.3. The Cities of Newmarket and Barrie exhibit slightly lower average vehicle per household rates than Innisfil, with 1.7 and 1.6 vehicles per household respectively. As average household size is similar across the three municipalities, ranging between 2.7 and 2.8 persons per household in 2011, this can likely be attributed to a higher level of urbanization and more developed public transit options.

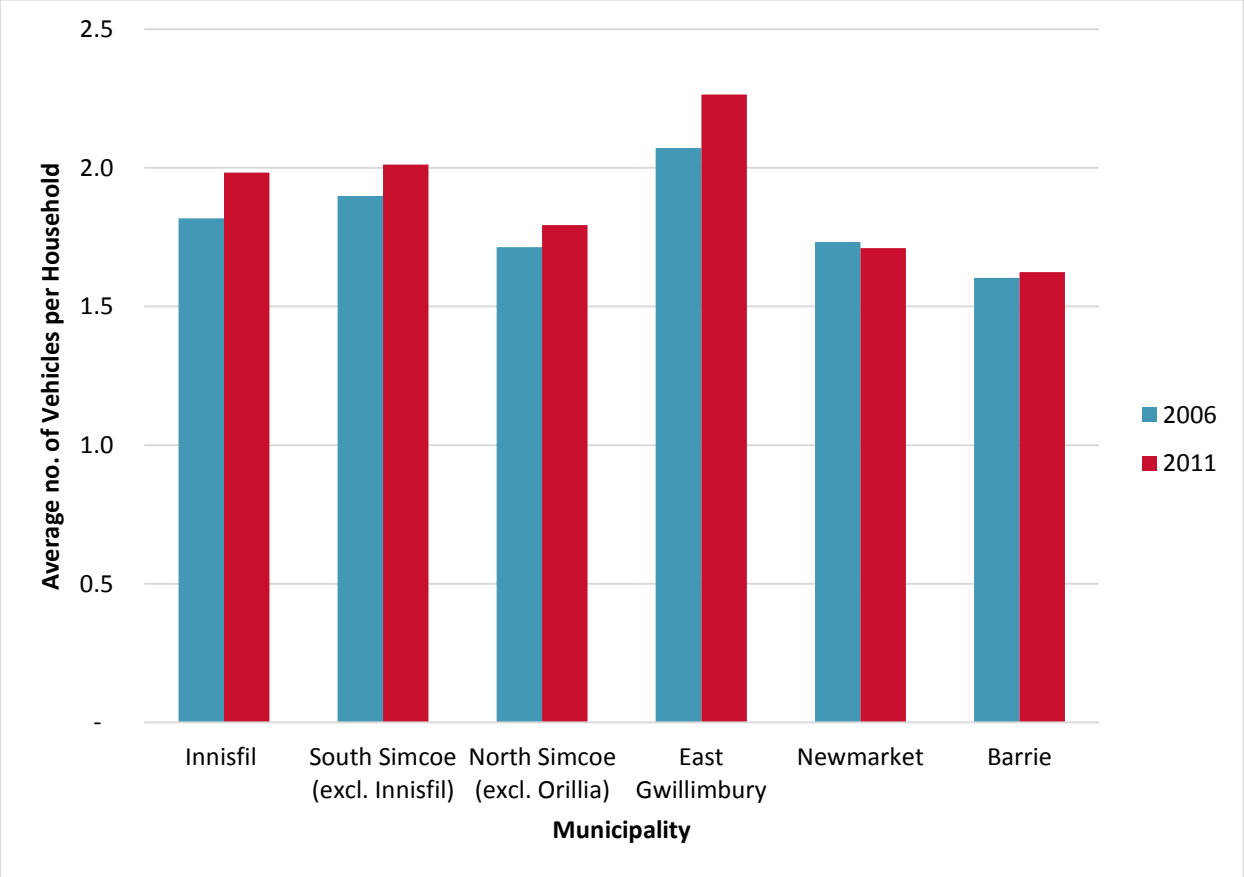


Exhibit 4-10: Comparison of Vehicle Ownership in Innisfil with Surrounding Municipalities for the Years 2006 and 2011
Source: 2006 and 2011 Transportation Tomorrow Survey

As seen in **Exhibit 4-11,** the total number of trips to or from Innisfil during the PM peak period increased from 19,500 in 2006 to 23,300 in 2011, representing a 19% increase during the five-year period.

PM peak period (3:30-6:30 PM) trips were used for travel pattern analysis throughout this report instead of the AM peak period. This was because there are more trips taken in the PM peak period, the PM peak period is longer, and the PM peak tends to capture a greater variety of trip purposes.

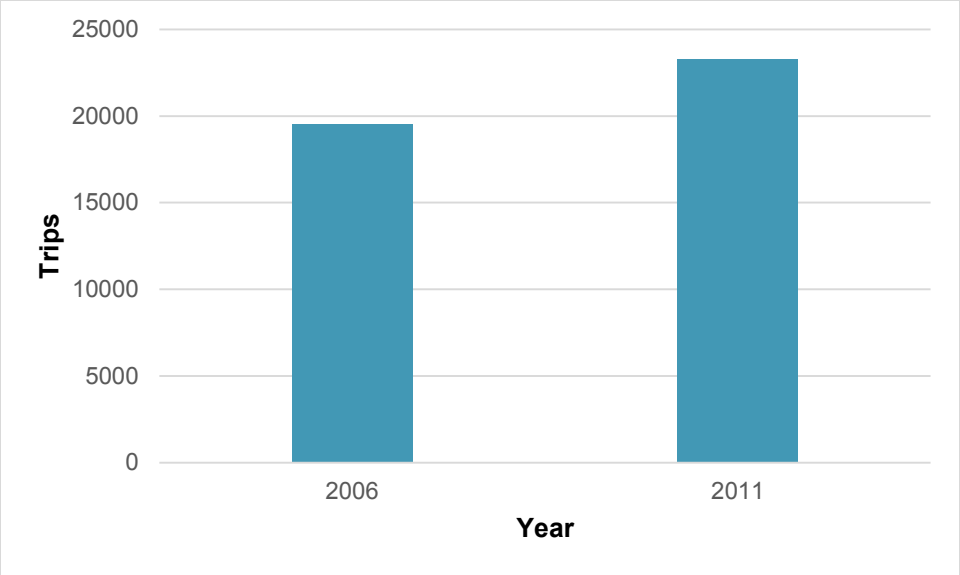


Exhibit 4-11: 2006 and 2011 PM Peak Period Total Trips to or from Innisfil
Source: 2006 and 2011 Transportation Tomorrow Survey

4.2.2.2 MODE SPLIT (PM PEAK PERIOD)

As seen in **Exhibit 4-12**, 94% of trips made to or from Innisfil during the PM Peak are made as auto drivers or passengers. Only 1.4% of trips are made by walking or cycling, and 1% by transit. Transit trips were a combination of GO Rail only trips (which typically include an auto access component given the location of stations) and GO Rail and local transit trips.

This modal split has remained relatively constant between 2001 and 2011, however the TTS shows a slight increase in the percentage of trips made as an auto driver or passenger, from 91% to 94%. There has been a corresponding decrease in the percentage of trips made by walking or cycling and school bus. Transit mode share increased from 0.9% in 2001 to 1.5% in 2006, but decreased to 1.0 in 2011. It is possible, however, that the recent decline in captured walking, cycling, and transit trips may be attributable to an identified issue in TTS methodology rather than an actual increase in auto mobility. The TTS's reliance on landline telephone directories to contact respondents means that in recent years it has struggled with getting a representative set of respondents as the number of households with landlines drastically decreases. Underrepresented groups include young adults, who are more likely to walk, cycle, or take transit.

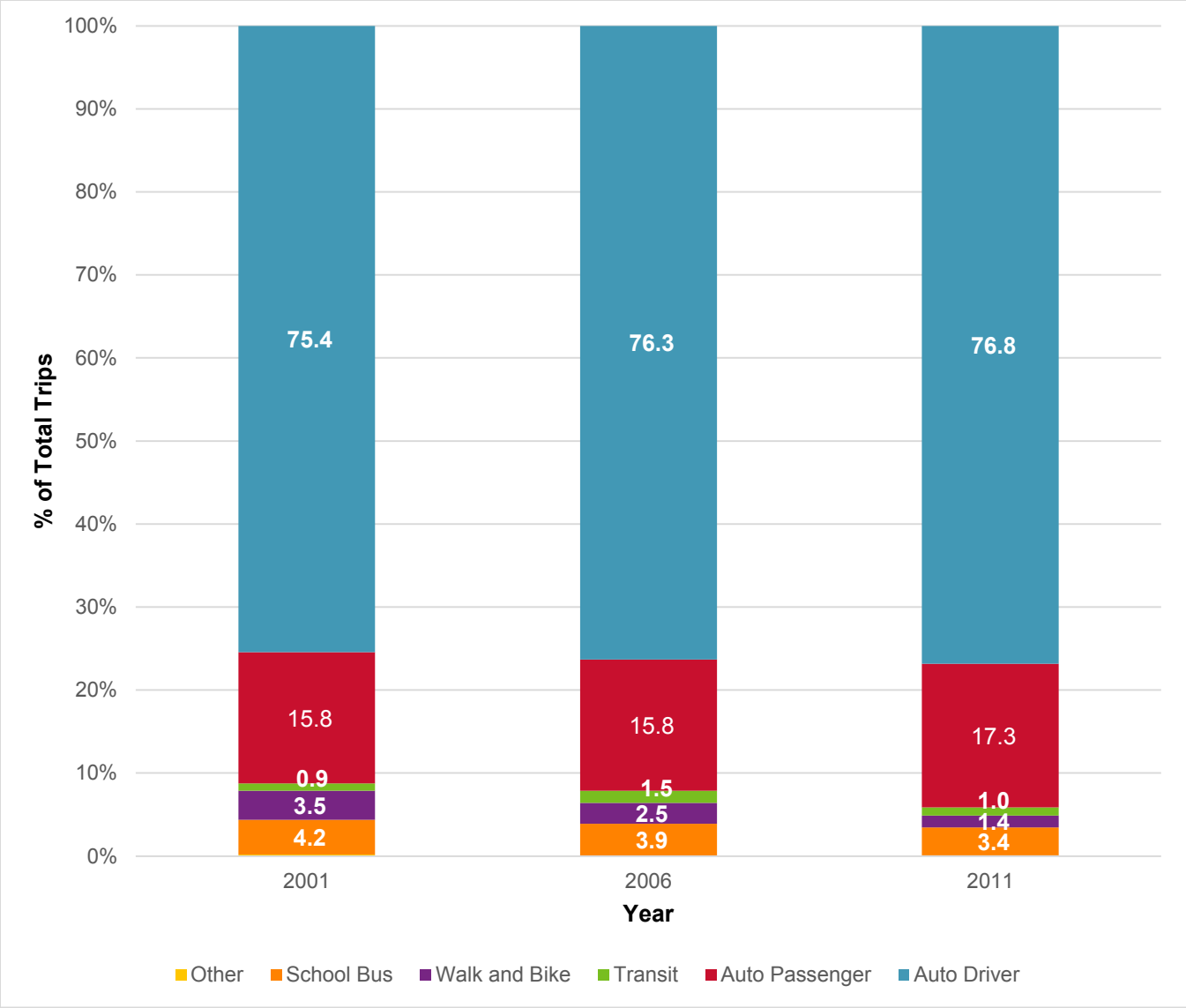


Exhibit 4-12: Historic PM Peak Period (3:30-6:30 PM) Mode Split
Source: 2006 and 2011 Transportation Tomorrow Survey

As shown in **Exhibit 4-13,** levels of personal automobile use in Innisfil are similar to to neighbouring communities, which all range between roughly 75% and 80% auto driver mode share. Unsurprisingly, higher rates of transit usage and walking and biking are observed in more urban areas like Newmarket and Barrie, however, East Gwillimbury has a transit usage rate over 3 times that of Innisfil despite having a comparatively low 2016 population density (97.9 persons/km^2 compared to 139.2 persons/km^2 in Innisfil). This difference may be because East Gwillimbury has established local fixed-route transit service provided by York Region Transit and comparatively easy access to GO Rail.

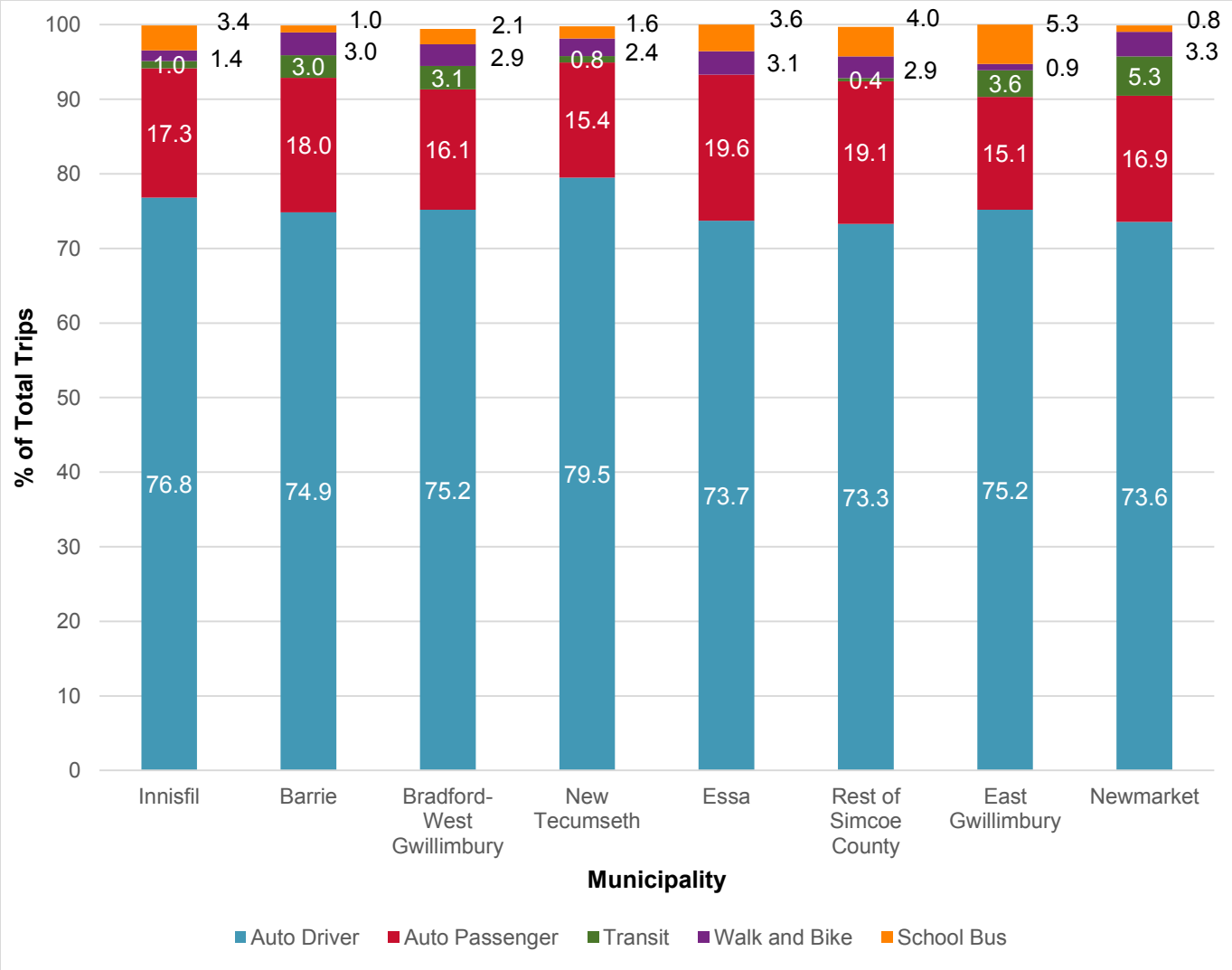


Exhibit 4-13: 2011 PM Peak Period (3:30-6:30 PM) Mode Split in Innisfil and Neighbouring Municipalities
Source: 2011 Transportation Tomorrow Survey

4.2.2.3 DAILY TRIP RATE

As demonstrated in **Exhibit 4-14**, the daily trip rate per person in Innisfil is comparable to nearby geographic areas with 2.1 trips per person per day in both 2006 and 2011.

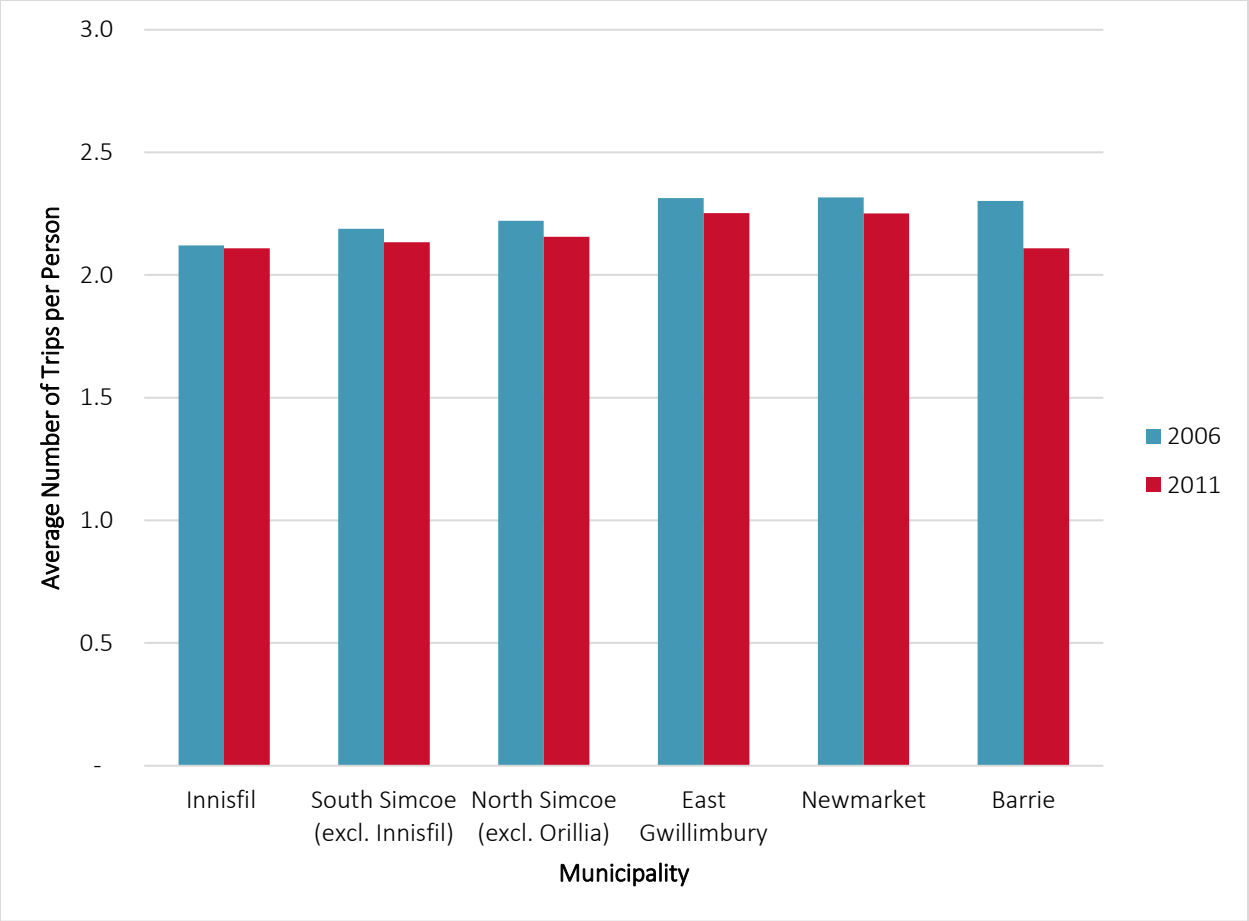


Exhibit 4-14: Daily Trip Rate per Person in Innisfil and Neighbouring Municipalities
Source: 2006 and 2011 Transportation Tomorrow Survey

The daily trip rate per household in Innisfil, 5.7, is comparable to that of nearby geographic areas in 2011, which have household trip rates ranging between 5.4 and 6.5 as shown in **Exhibit 4-15.** The average of the geographic areas shown was 5.7 trips per household per day in 2011. The daily trip rate per household decreased slightly for Innisfil and the surrounding municipalities between 2006 and 2011.

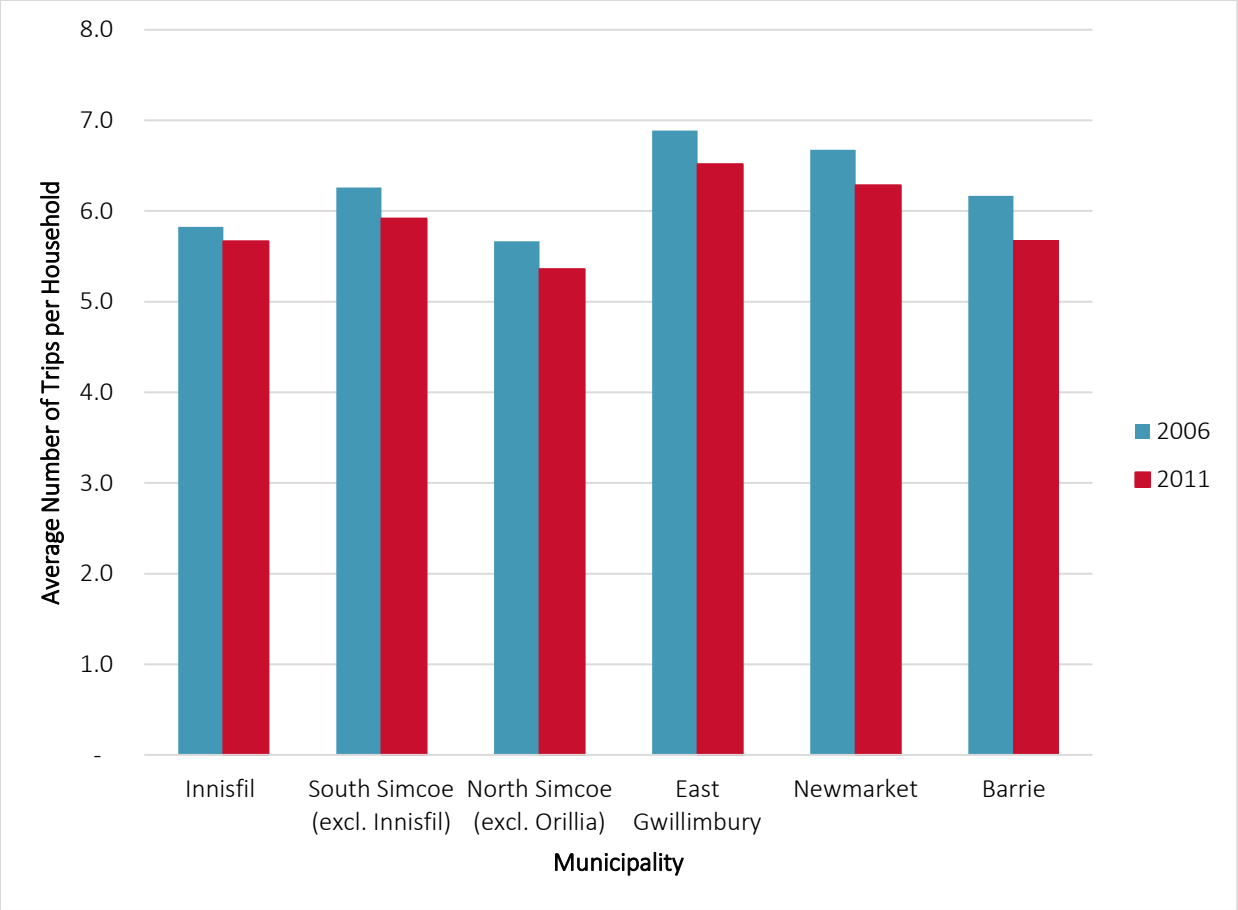


Exhibit 4-15: Comparison of Daily Trip Rate per Household in Innisfil with Surrounding Municipalities
Source: 2006 and 2011 Transportation Tomorrow Survey

4.2.3 PM Peak Period Travel Patterns

As illustrated by **Exhibit 4-16**, more trips, including internal trips, are destined for Innisfil in the PM Peak (16,900 or 72% of all trips) than begin in Innisfil (12,400 or 53% of all trips), reflecting Innisfil's primarily residential makeup (for example: residents are returning home from work. Innisfil today has strong commuter ties with the City of Barrie, York Region, and the City of Toronto, as shown in the breakdown of work trips in **Table 4-1.**

When all trips are considered (including recreational, medical, shopping, etc.), the destination percentages significantly change as the internal trip portion increases from 18% to 35%. This indicates there are many short-distance local trips made by Innisfil residents for non-work purposes.

Exhibit 4-16 demonstrates that the majority of trips beginning in Innisfil during the PM peak period stay in the Town. About 48% of trips beginning in the Town of Innisfil also stay in the Town, while just over 25% go to Barrie. Only 18% of trips that are leaving Innisfil are destined to municipalities to the south including the rest of South Simcoe County, York Region, and Toronto.

Table 4-1: 2011 PM Peak Origins and Destinations

	Ending in Innisfil (Inbound)				Beginning in Innisfil (Outbound)			
	All		Work		All		Work	
	Total	% of All	Total	% of Work	Total	% of All	Total	% of Work
City of Toronto	1,280	8%	822	13%	423	3%	107	4%
York Region	2,433	14%	1,348	22%	956	8%	381	13%
City of Barrie	4,627	27%	1,668	27%	3,128	25%	832	28%
Innisfil	5,956	35%	1,096	18%	5,956	48%	1,096	37%
The Rest of South Simcoe County	1,412	8%	569	9%	849	7%	114	4%
North Simcoe (excl. Barrie)	420	2%	221	4%	448	4%	234	8%

Source: 2006 and 2011 Transportation Tomorrow Survey

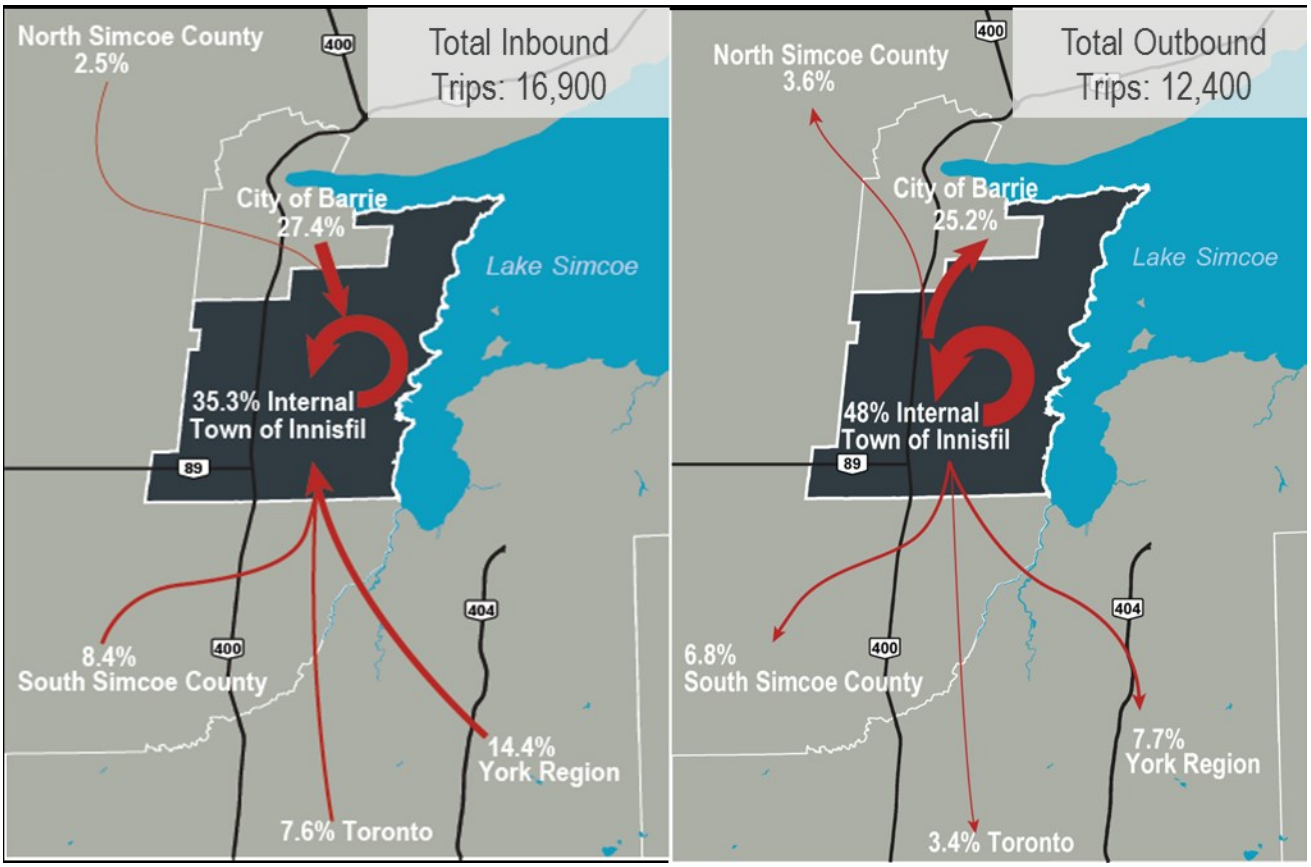


Exhibit 4-16: 2011 PM Peak Period (3:30 – 6:30 PM) Trip Origins and Destinations
Source: 2011 Transportation Tomorrow Survey

As shown in **Exhibit 4-17**, the majority of internal travel occurs between areas of the Alcona settlement area, the most populous area of Innisfil. There is relatively little travel between different settlement areas during the PM peak.

Exhibit 4-17: 2011 PM Peak Period (3:30 – 6:30 PM) Internal Travel Patterns
Note: Origin-Destination Trip Percentages less than 2% are not shown
Source: 2011 Transportation Tomorrow Survey

4.3 Existing Travel Demand

4.3.1 Existing Travel Demand Model

To assess existing and future traffic conditions of the Town, a PM peak period travel demand model has been developed using EMME4, which is a macro travel demand modelling platform. This model is based on the daily travel demand TransCAD model from the 2013 TMP, which was first developed by the Simcoe County for the 2008 Simcoe TMP. Compared to the daily model that was previously used, this model is able to assess the peak traffic volumes in the Town and thus provide more detailed and critical information for the needs of the Town's transportation system. A PM peak model was developed instead of the AM peak since the PM peak hour tends to have higher traffic volumes on the Town's local roads. The PM peak period

also tends to capture a wider range of trip purposes, including home-based work, shopping, and recreational trips, rather than the AM peak period, which is dominated by work-purpose trips. A summary of the key features of the model is in **Table 4-2**.

The model covers all of Innisfil with multiple external zones and connectors representing adjacent municipalities. The model is comprised of 33 internal zones, 31 external zones, and three additional zones representing the existing and future GO Rail stations: Barrie South, Innisfil (future), and Bradford stations. The road network and zone system coding is shown in **Exhibit 4-18.** It is noted that the "connectors" shown in the map do not represent actual roadway alignments, and only allow for the distribution of trips from a specific trip generator in the model. The model considers four different trip generation purposes, including:

- Home-based work (HBW): Home-to-work or work-to-home trips
- Home-based other (HBO): Home-to-other or other-to-home trips. "Other" trips include shopping, recreational, and social trips
- Non-home based (NHB): Neither the origin nor destination is home
- Home-based school (HBS): Home-to-school or school-to-home trips

Table 4-2: Summary of the Town of Innisfil Model

Time period	PM peak period (3:30 - 6:30 p.m.) Peak hour auto assignment
Forecast year	Base year 2016 Future year 2021 Future year 2041
Geographic Scope	Town of Innisfil and external gateways to surrounding municipalities in the GGH
Trip generation purposes	HBW (home-based work) HBO (home-based other) NHB (non-home based) HBS (home-based school)
Modes	Auto, GO Rail, GO Bus, micro-transit (for future years only), and active transportation (walk and cycle) trips Auto mode is assigned to the network
Trip distribution	Gravity models for each trip purpose (HBW, HBO, NHB, HBS)
Trip assignment	Standard auto assignment after application of auto occupancy & peak hour factors

Key inputs to the model, such as the existing population and employment and transportation network assumptions, were discussed earlier in this chapter. The 2011 *Transportation Tomorrow Survey* was used for a variety of purposes, including calculating the trip rates and mode shares as base year inputs to the model.

Various counts were used to calibrate the model, such as hourly vehicle counts on provincial roads from MTO and Turning Movement Counts (TMCs) received from Simcoe County and in

the Town's recent Traffic Impact Studies (TIS). Additional TMC surveys were conducted in the spring 2017, mostly focusing on the Alcona settlement area. A summary of the count locations is shown in **Exhibit 4-19.**

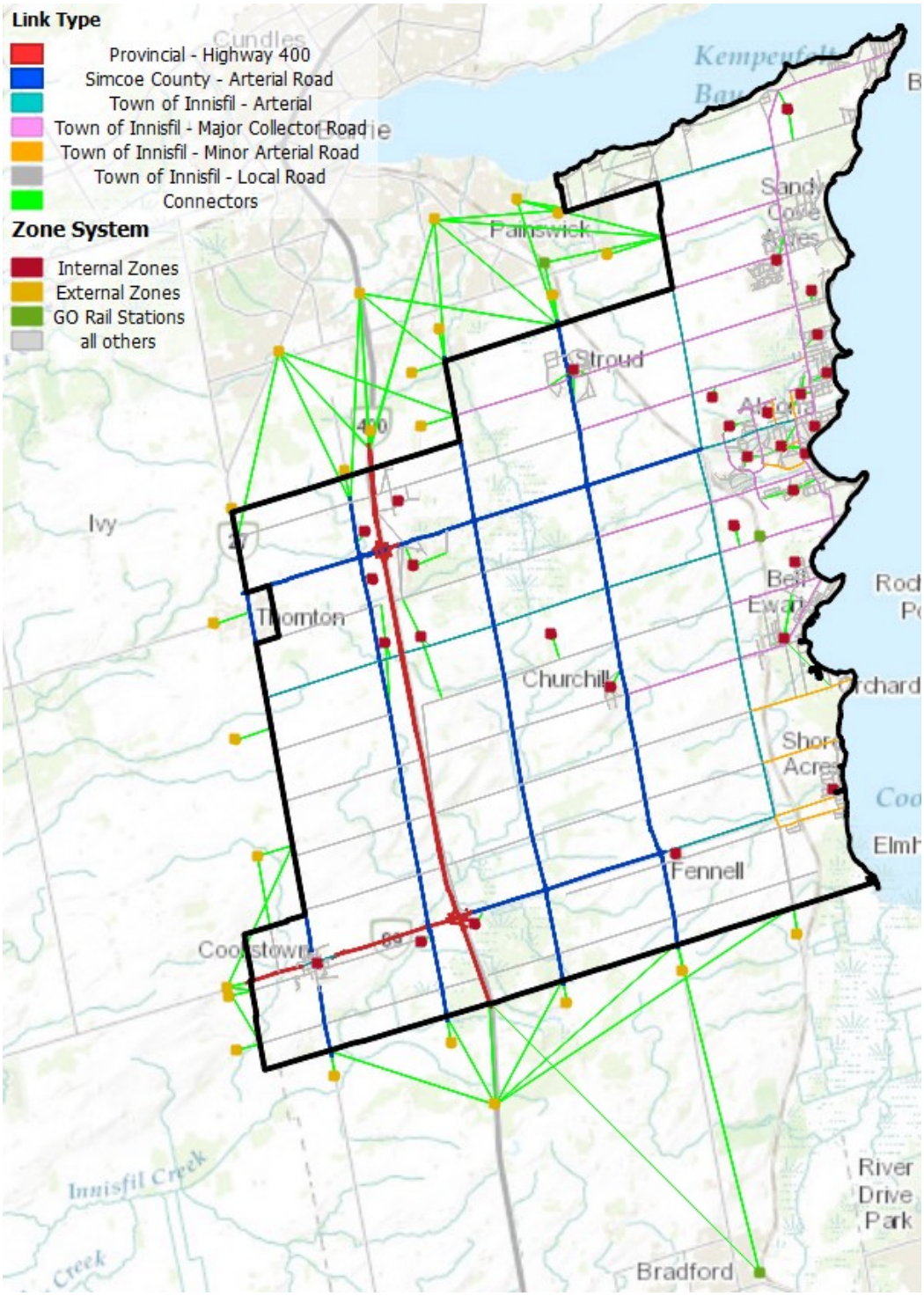


Exhibit 4-18: Network and Zone System in the Town of Innisfil Model

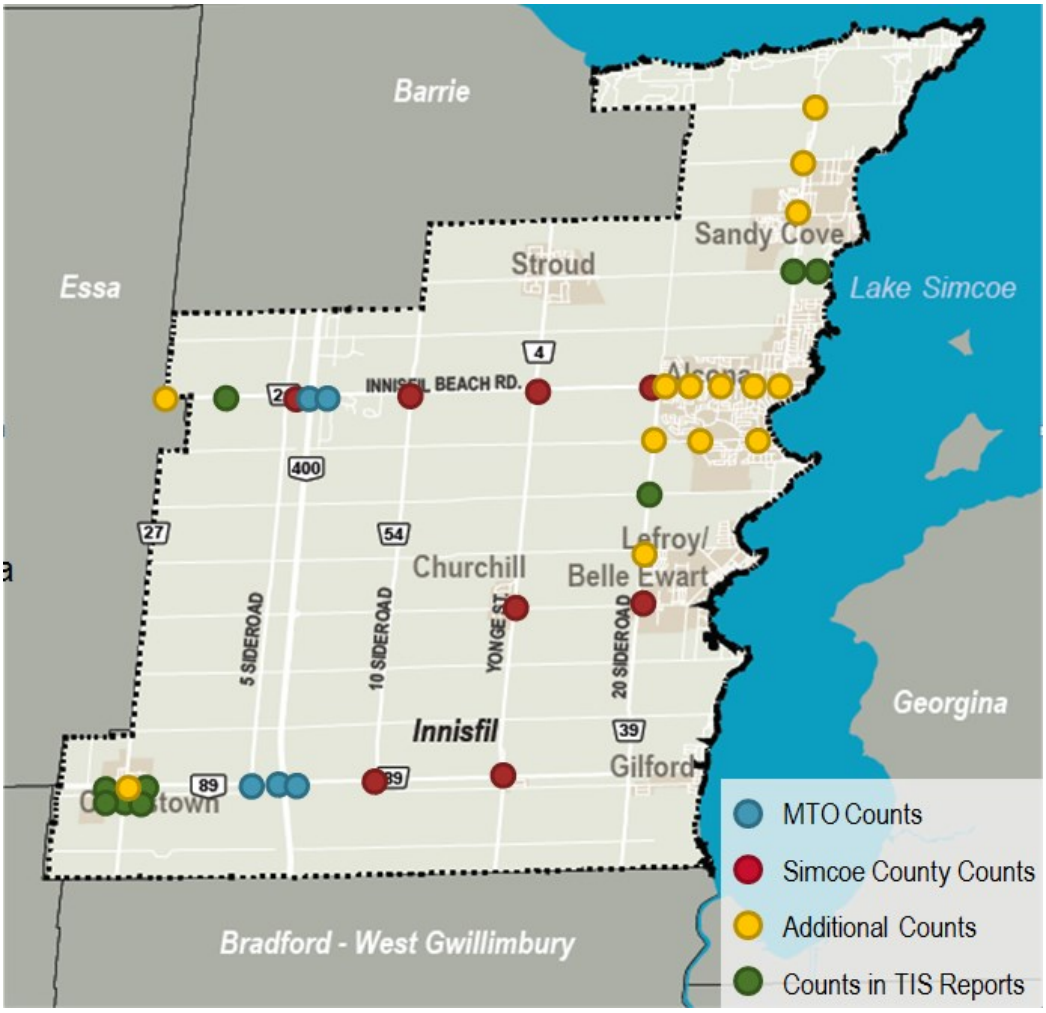


Exhibit 4-19: Traffic Count Location

To confirm the accuracy of the model, nine screenlines were selected to compare the modelled and observed peak hour traffic, as shown in **Table 4-3** and **Exhibit 4-20**. The screenlines are able to capture the total demand to and from the Town, crossing the Town boundaries and highways. Two short screenlines were also selected, located at the northern boundary of the Alcona settlement area (at Innisfil Beach Road), in order to ensure the accuracy of the model for the Town's most populated settlement area.

Two criteria are used in the validation: modelled and observed volume ratio, and the GEH statistic. The GEH statistic is able to address both absolute and relative difference between the modelled and observed volume. It avoids some pitfalls that occur when using simply the relative difference. It is calculated as:

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

where M is modelled hourly traffic volume, and C is the equivalent observed volume (count)

Typically a GEH value less than 5 is considered a good match between the modelled and observed volume; a value between 5 and 10 is acceptable; and a value higher than 10 usually requires further attention for model calibration.

The modelled volumes are able to match the observed volumes (counts) reasonably well. All GEH statistics are within 5, indicating a good match between the modelled and observed volume. Only two screenlines have 10% or more difference between the modelled and observed volumes, partially due to the low traffic volumes at the screenlines.

Table 4-3: Comparison of Observed and Modelled Traffic Volumes at Screenlines (2011, PM Peak Hour)

Screenline #	Screenline Description	Direction	Observed	Modelled	Modelled/ Observed	GEH
1	North of Hwy 89	NB	5,970	5,760	0.97	2.7
		SB	3,230	3,140	0.97	1.6
2	South of Innisfil Beach Road	NB	6,520	6,690	1.03	2.1
		SB	4,060	4,170	1.03	1.7
3	North of Innisfil Beach Road	NB	6,580	6,730	1.02	1.8
		SB	3,960	4,210	1.06	3.9
4	West of 5th Sideroad	EB	1,070	1,090	1.02	0.6
		WB	1,050	980	0.93	2.2
5	East of Hwy 400	EB	1,470	1,360	0.93	2.9
		WB	780	850	1.09	2.5
6	West of Yonge St	EB	1,040	1,130	1.08	2.7
		WB	600	640	1.07	1.6
7	East of Yonge St	EB	1,440	1,310	0.91	3.5
		WB	590	590	1.00	0.0
8	North of Innisfil Beach Road, east of the CN Rail (Alcona)	NB	850	830	0.98	0.7
		SB	570	490	0.86	3.5
9	South of Innisfil Beach Road, east of the CN Rail (Alcona)	NB	870	730	0.84	4.9
		SB	600	640	1.06	1.6

Legend

Difference between Modelled and Observed Volume	< 10%	10-20%	>20%
GEH	<5 (good)	5-10 (acceptable)	>10 (needs improvement)

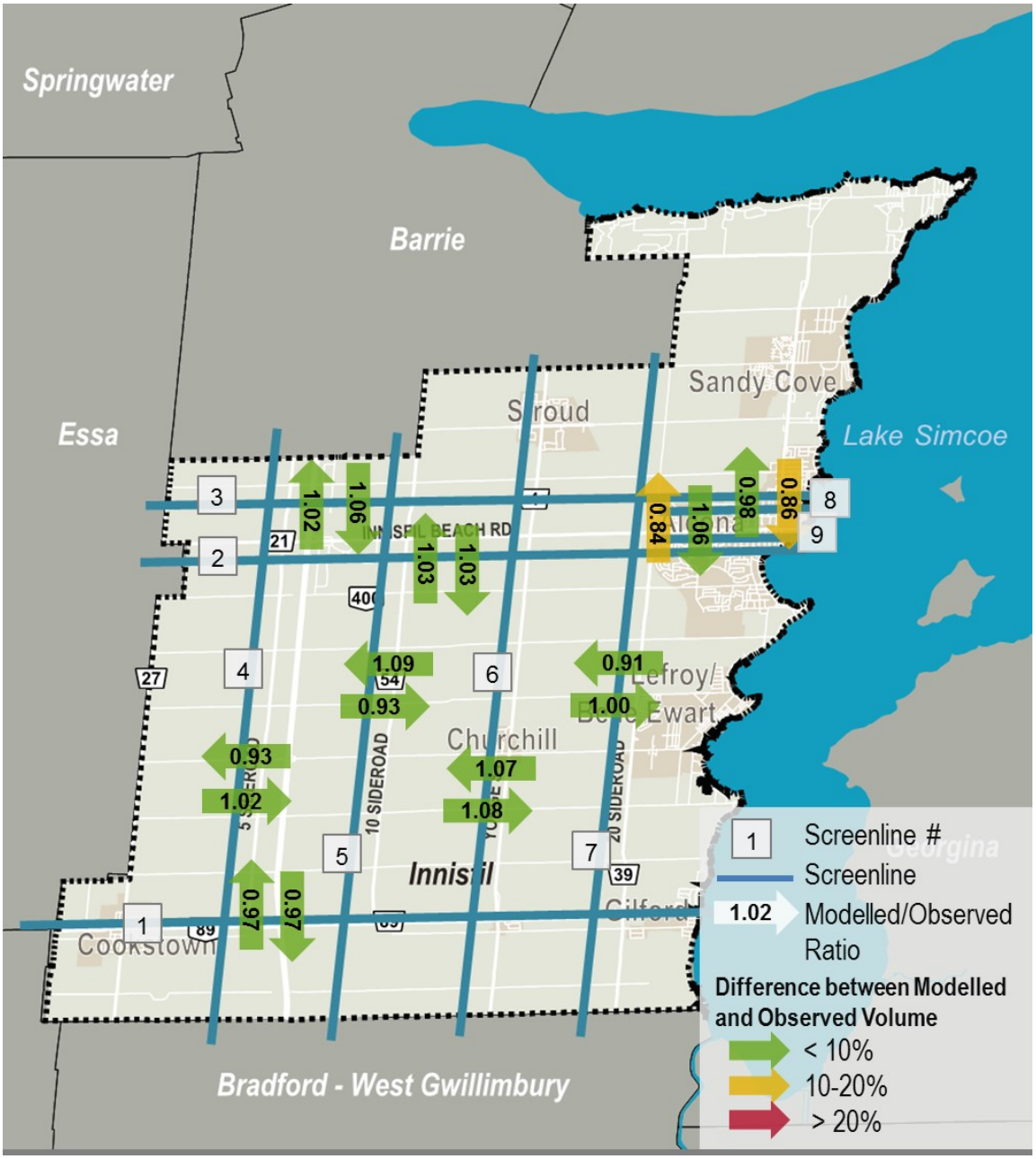


Exhibit 4-20: Modelled and Observed Volume to Capacity Ratios at Screenlines (2011 PM Peak Hour)

4.3.2 Traffic Volumes

The modelled existing PM peak hour traffic volumes are shown in **Exhibit 4-21**. For long distance north-south traffic, Highway 400 is the obvious choice followed by County Road 4 / Yonge Street. Highway 89 and County Road 21 / Innisfil Beach Road accommodate the heaviest east-west traffic in the Town comprising a mix of local and through traffic and serves as the main corridor connecting Highway 400 and Alcona.

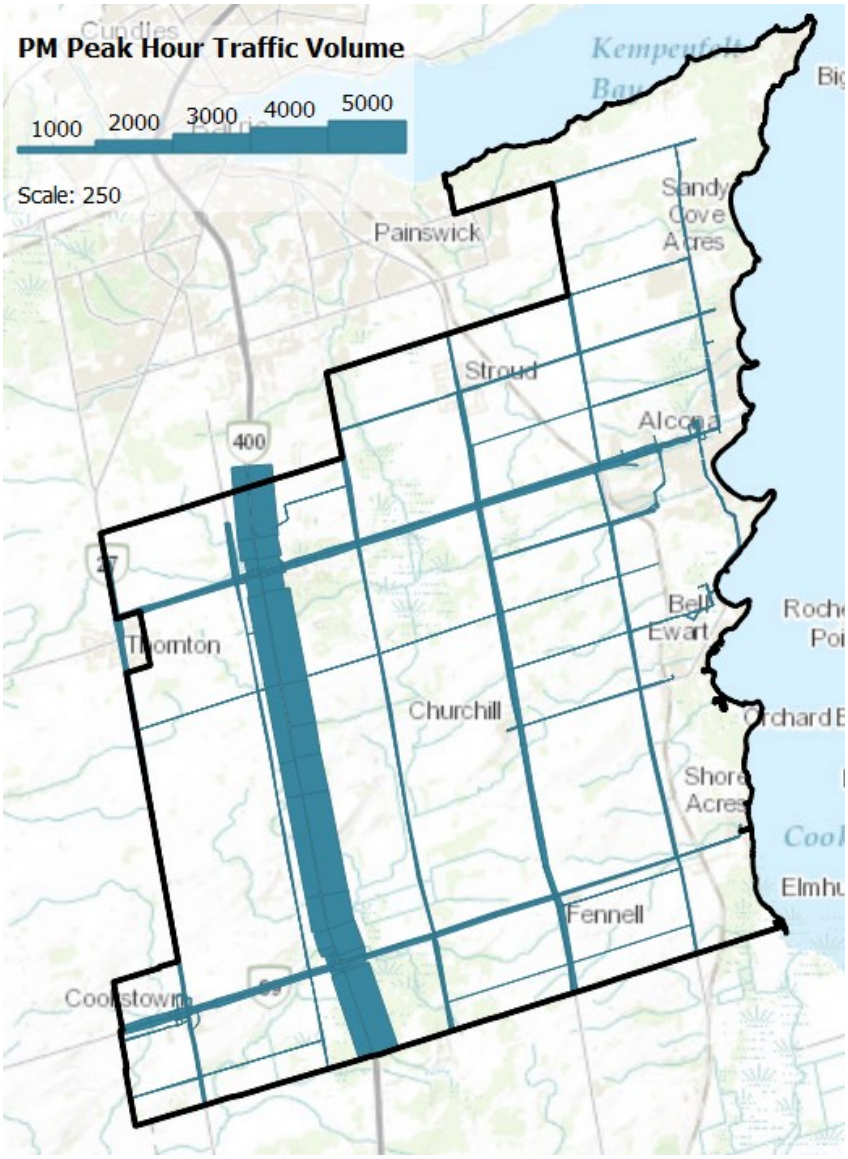


Exhibit 4-21: Existing Travel Demand (2011 PM Peak Hour)

4.3.3 Transit Demand

4.3.3.1 GO RAIL AND GO BUS

GO Rail station passenger counts were extracted for the Barrie South and Bradford GO stations from the 2015 MTO GO Rail Passenger Survey, which was carried out prior to the introduction of off-peak service on the Barrie Line. The usage count information identified the number and origins of daily trips originating from Innisfil using these two GO stations, as illustrated in **Exhibit 4-22**. Each green dot in the Exhibit represents a surveyed trip origin. Approximately 200 passengers from Innisfil use GO Rail per day, most boarding at Barrie South Station. Most passengers come from Alcona.

GO Bus passenger counts were extracted from the 2016 MTO GO Bus Passenger Survey. Approximately 200 passengers from Innisfil use GO Bus Services per day, with most beginning their trips relatively close to the bus stop as shown in **Exhibit 4-23**. Each green dot in the Exhibit represents a surveyed trip origin. GO Bus Service is provided in both the peak and off peak periods.

Exhibit 4-22: 2015 GO Rail Trip Origins
Source: 2015 Metrolinx GO Rail Passenger Survey

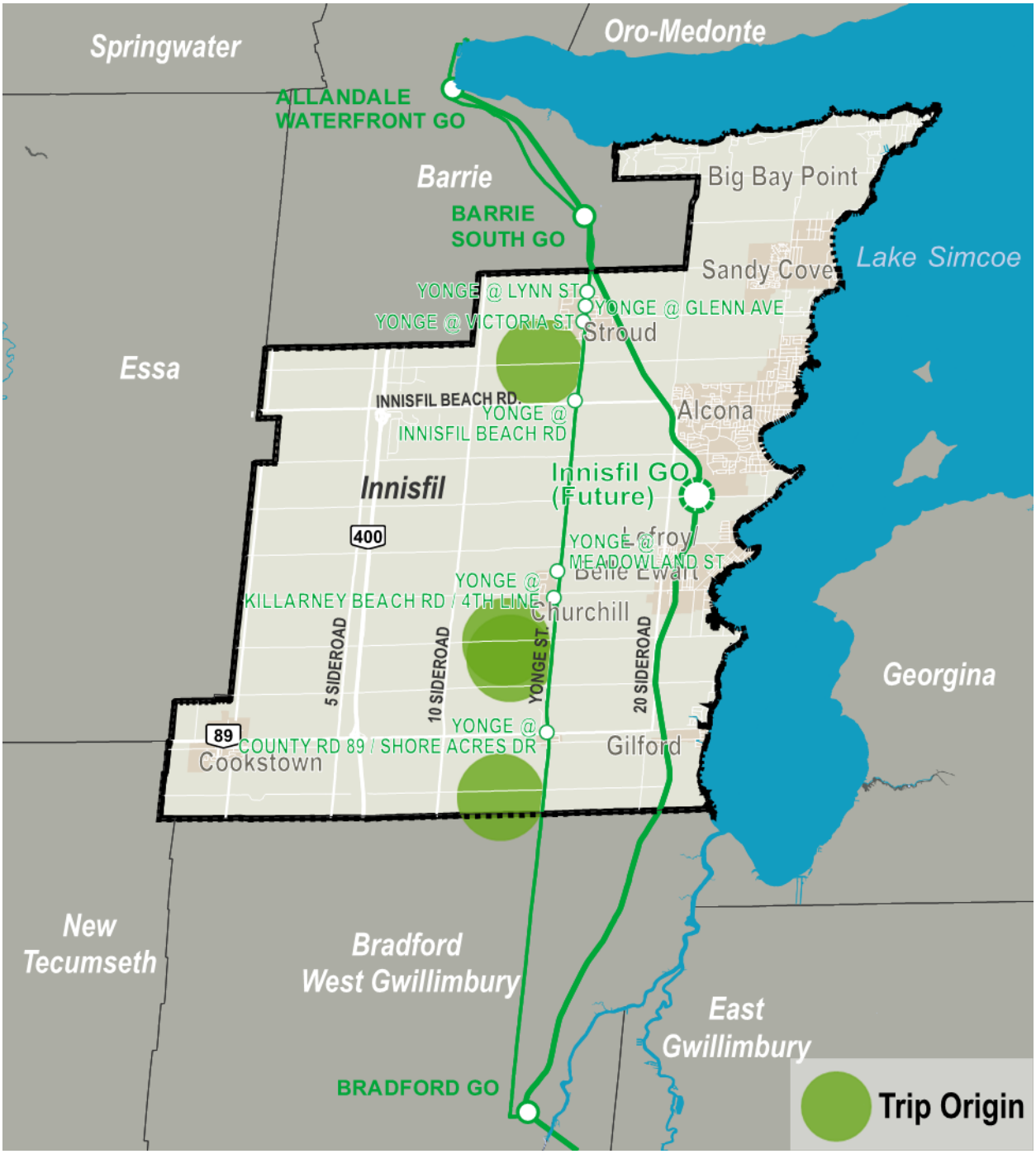


Exhibit 4-23: GO Bus Trip Origins
Source: 2016 Metrolinx GO Bus Passenger Survey

4.3.3.2 DEMAND-RESPONSIVE TRANSIT

Data was collected for Innisfil's new demand-responsive transit system, provided in partnership with Uber, for the period from May 15 to September 30, 2017. During this time 12,393 trips were

taken by 2,366 unique riders and 10% of these trips were matched, meaning two or more riders were in the vehicle. Between May 15 and September 30, 2017, they were:

- Innisfil Employment Area: 640 drop-offs
- Barrie South GO: 515 drop-offs
- Innisfil Recreation Complex (located at Yonge Street and Innisfil Beach Road): 457 drop-offs
- Innisfil GO Bus Stops: 262 drop-offs

The peak hours for the service, from most to least busy were:

- 3-5pm on Weekdays
- 4-10pm on Fridays
- 7-9am on Weekdays

4.4 Transportation Deficiencies and Opportunities

4.4.1 Existing Traffic Volume Analysis

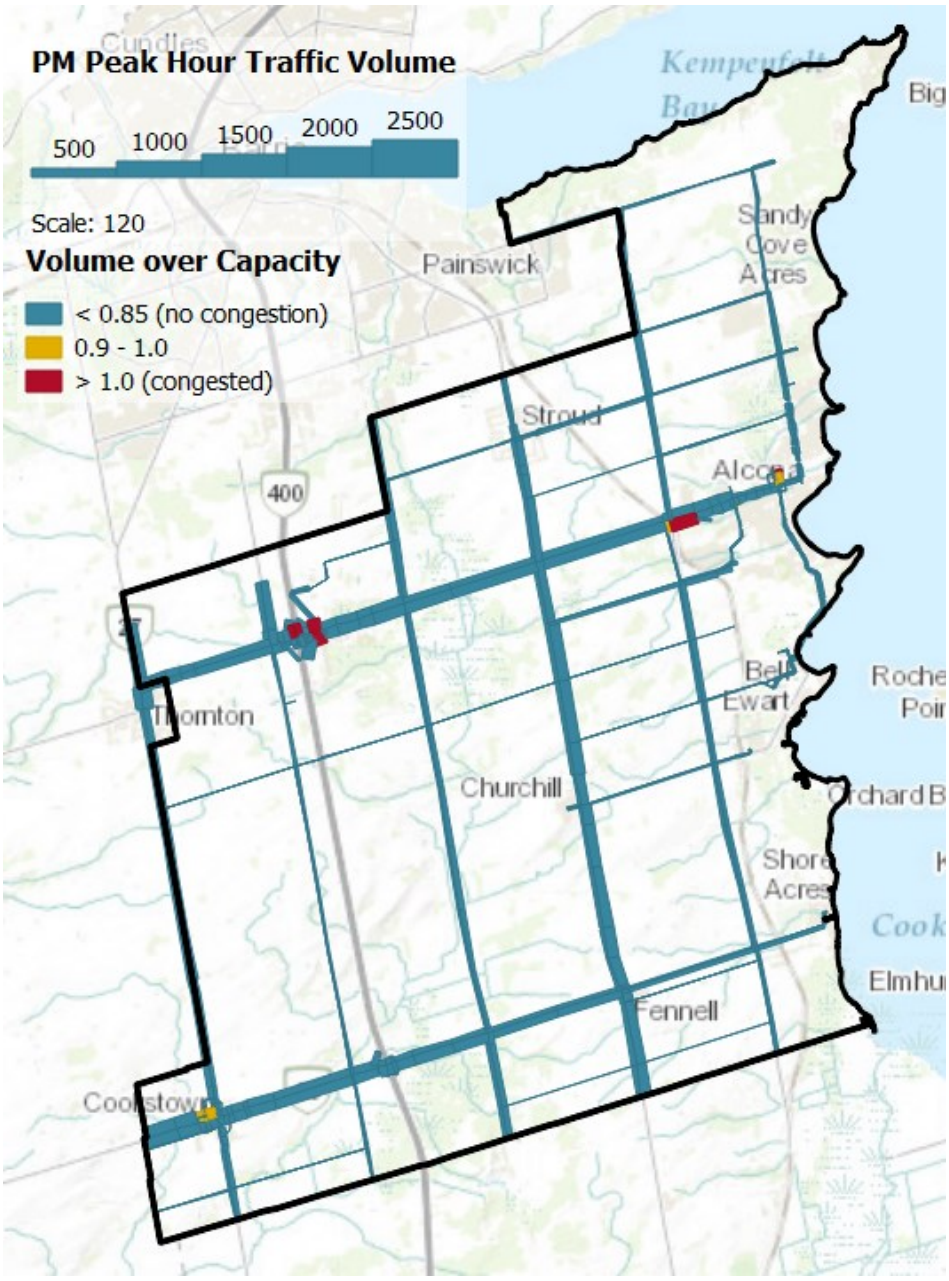
The key performance measure for this analysis is the volume to capacity (V/C) ratio. The roadway capacities (expressed in vehicles per hour per lane) are based on the hourly capacities used by the Data Management Group at the University of Toronto for the GTA Model Network Coding Standard.

The V/C ratio indicates the travel demand versus the travel supply (i.e., road capacity). The V/C ratio can also be described in terms of level of service, as summarized in **Table 4-4**.

Table 4-4: Link Volume to Capacity (V/C) Ratio Definitions

V/C Ratio	Level of Service	Operating Condition
Less than 0.85	LOS A-C	Free-flow, very little to moderate delay
Between 0.85 and 0.99	LOS D-E	Approaching or at capacity, users experience delays and queuing
Greater than 1.00	LOS F	Over capacity, severe delays and queuing

Exhibit 4-24 shows the existing PM peak hour traffic volume and the volume over capacity (V/C) ratio. The network has a few congestion hot spots, including at the Innisfil Beach Road on or off-ramps to Highway 400, Innisfil Beach Road, east of 20th Sideroad, and on Highway 89 at Cookstown.



Note: Highway 400 volumes not shown

Exhibit 4-24: Existing Travel Demand Models

4.4.2 Existing Intersection Analysis

For this study, key locations were identified for detailed intersection level of service and capacity analysis. The analysis used the turning movement counts (TMCs) listed in **Exhibit 4-19**. A capacity analysis was completed using the Synchro 9 software platform. The overall level of service for each intersection is defined by the Highway Capacity Manual (HCM) for signalized and unsignalized intersections as a function of the average vehicle delay. HCM LOS definitions are summarized in **Table 4-5**.

Table 4-5: Highway Capacity Manual Level of Service Definitions for Intersections

LOS	Signalized Intersection Average Vehicle Control Delay	Unsignalized Intersection Average Vehicle Control Delay	LOS Recommendation
A	≤10 sec	≤10 sec	Acceptable
B	10-20 sec	10-15 sec	Acceptable
C	20-35 sec	15-25 sec	Acceptable
D	35-55 sec	25-35 sec	Somewhat undesirable
E	55-80 sec	35-50 sec	Undesirable
F	≥80 sec	≥50 sec	Unacceptable

The PM peak hour intersection levels of service (LOS) for the Town and for the Alcona settlement area are illustrated in **Exhibit 4-25**. Most intersections are operating with acceptable LOS, with the exception of the following locations:

- County Road 27 and Innisfil Beach Road (LOS D)
- 5th Sideroad and Highway 89 (LOS D)
- 10th Sideroad and Highway 89 (LOS D)
- 9th Line and Yonge St (LOS F)
- Innisfil Beach Road and Yonge Street (LOS D)
- 4th Line / Killarney Beach Road and Yonge Street (LOS E)
- Highway 89 and Yonge Street (LOS D)
- The jogged intersection at 20th Sideroad and Innisfil Beach Road (LOS E for intersection connecting to segment to the south and LOS F for intersection connecting to segment to the north)

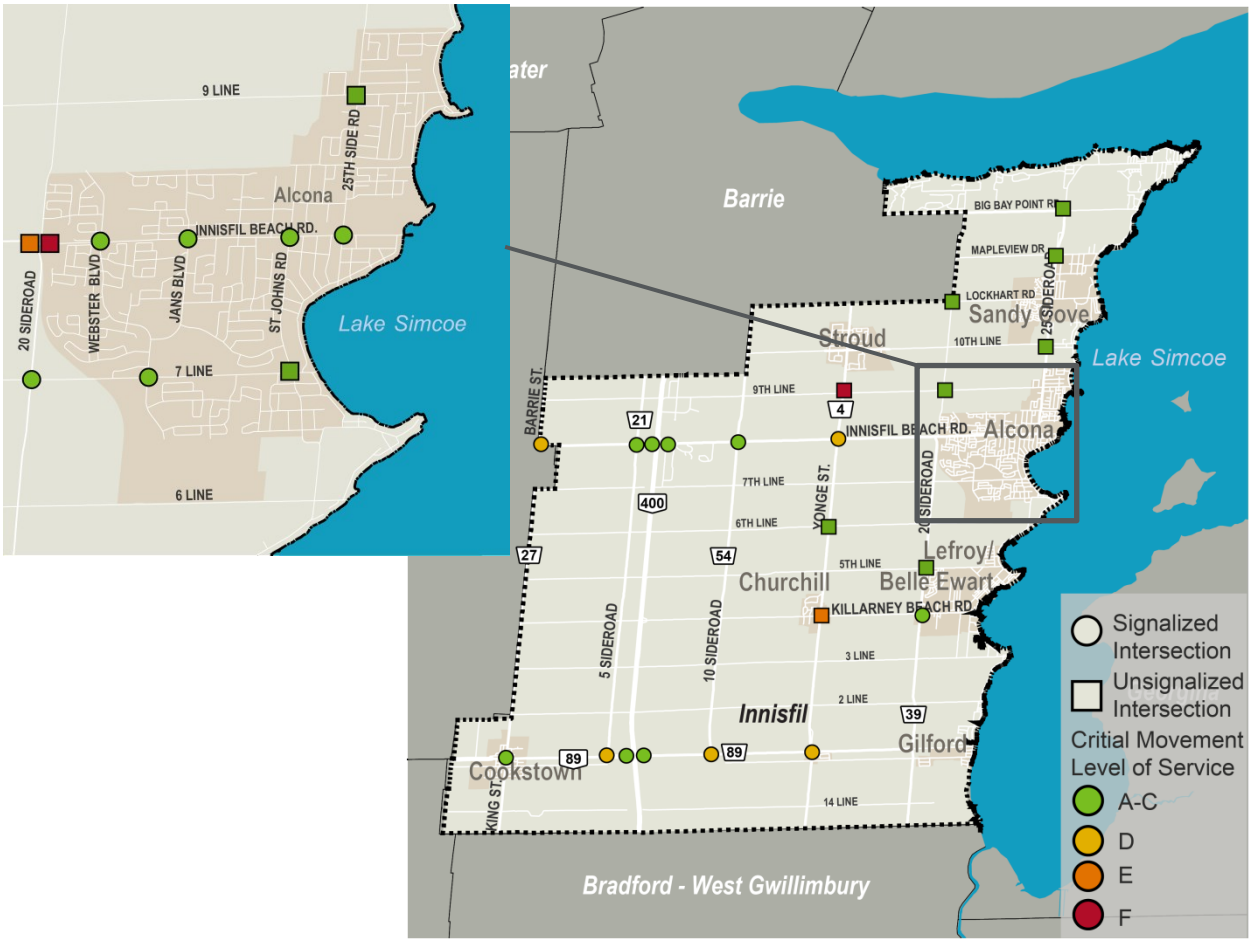


Exhibit 4-25: Existing (2016) PM Peak Hour Traffic Level of Service

4.5 Summary of Key Transportation Issues

A summary map highlighting all of the key transportation issues is shown in **Exhibit 4-26**. The map highlights a wide range of regional, town, and local road issues, gathered from the TMP online survey, traffic analysis, discussions with the Town, TAC meetings, and from the public.

This study has addressed these issues and the findings are presented from **Section 5** onwards. Several inter-regional and provincial issues are not addressed in the TMP, namely, the existing and future capacity deficiencies on Highway 400, which are identified as part of the “Planning for the Future” projects in MTO’s 2017-2022 Southern Highways Program.

Exhibit 4-26: Existing Key Transportation Issues

5.0 Future Growth and Travel Demand

The Town of Innisfil is projected to grow significantly by 2041, in addition to current transportation issues identified in the previous chapter. This presents the Town with a new set of issues and challenges, but also opportunities for the future. This chapter summarizes projected population and employment growth, current plans for transportation improvements within Innisfil and adjacent municipalities, and potential future issues and constraints.

5.1 Population and Employment Growth

Population and employment growth is a direct cause of growth in travel demand. The following section summarizes population and employment growth within Innisfil, and examines the growth assumptions in the surrounding municipalities, especially in the City of Barrie.

5.1.1 Town of Innisfil Growth

The land use forecast is based upon the Provincial Growth Plan targets and Simcoe County 2041 targets, and allocated amongst the various settlement areas based on the 2012 Innisfil Town-Wide Water and Wastewater Master Servicing Plan.

The Provincial Growth Plan projects a population of 56,000 people and an employment of 13,100 jobs in 2031. For 2041, the Town assumes that Innisfil will maintain the same share (13.5%) of Simcoe County's forecast population of 497,000, which leads to a total population of 67,100 people. The majority of the growth from 2041 is directed to Alcona, particularly to the area near the future GO Rail station at 6th Line. Specifically, the Sleeping Lion Town Settlement lands within the Alcona South expansion area are assumed to have a population of 5,000 to be developed by 2031. The population growth areas are illustrated in **Exhibit 5-1**.

Further to these totals, with 1600 residential units proposed in Friday Harbour (located in Big Bay Point) and assuming 2.65 persons per unit, another 4,240 persons were added to the 2031 and 2041 population forecasts. In the 2041 population forecast, another 1,000 residential units are included, and with an assumption of 2.55 persons per unit, 2,550 persons were added to the 2041 population. Based on proposed redevelopment to intensify Innisfil Beach Road east Jans Boulevard, which includes an 11.5 hectares area, additional 2,300 people are added to Alcona Existing Settlement Area. Additional population projections lead to approximately 60,300 population in 2031 and 76,400 population in 2041.

Employment remains unchanged from the Provincial Growth Plan at 13,100 jobs in 2031 and 15,070 jobs in 2041. Additional employment from 2031 was assigned to Alcona South Expansion Area and Innisfil Heights Expansion Area. The population and employment projections from 2011 to 2041 by each area are summarized in **Table 5-1**.The location and magnitude of growth of population and employment from 2011 to 2041 are shown in **Exhibit 5-2**.

Exhibit 5-1: Future Growth Areas

Table 5-1: Population and Employment Forecast, 2011-2041

Location	Population				Employment			
	2011	2021	2031	2041	2011	2021	2031	2041
Big Bay Point	2,743	4,383	6,983	9,911	205	346	1,233	1,233
Sandy Cove	3,405	8,404	8,404	9,551	255	319	303	303
Leonard's Beach	1,232	1,232	1,238	1,238	-	-	-	-
Alcona North Expansion Area	-	-	-	4,000	-	-	-	-
Alcona North Existing Settlement	7,237	10,904	10,904	13,075	900	1,226	974	974
Alcona South Existing Settlement	7,797	10,904	10,904	13,075	730	1,056	755	755
Alcona South Expansion Area	-	-	5,000	7,150	-	-	-	770
Big Cedar Point	806	806	819	819	-	-	-	-
Lefroy - Belle Ewart	3,063	3,330	8,218	8,218	269	269	534	534
Gilford -	1,826	1,826	1,826	2,141	161	161	139	139
Fennel's Corners	196	196	196	196	-	-	-	-
Churchill	620	620	761	761	114	114	155	155
Campus Node	-	-	-	-	-	-	-	-
Stroud	2,239	2,239	2,239	2,494	413	413	509	509
Hwy 400 & 89 Employment	-	-	-	-	-	-	-	-
Cookstown	1,431	2,422	2,494	3,477	264	264	709	709
Innisfil Heights Expansion	-	-	-	-	-	-	2,400	3,600
Innisfil Heights	321	321	321	321	2,888	4,388	5,388	5,388
SUM	**32,900**	**47,600**	**60,300**	**76,400**	**6,200**	**8,600**	**13,100**	**15,100**
TARGET*	33,079	48,000	56,000	67,100	7,945	8,402	13,100	15,070

* Target: 2011 Target – Census; 2021, 2031 and 2041 Target = Provincial Growth Plan

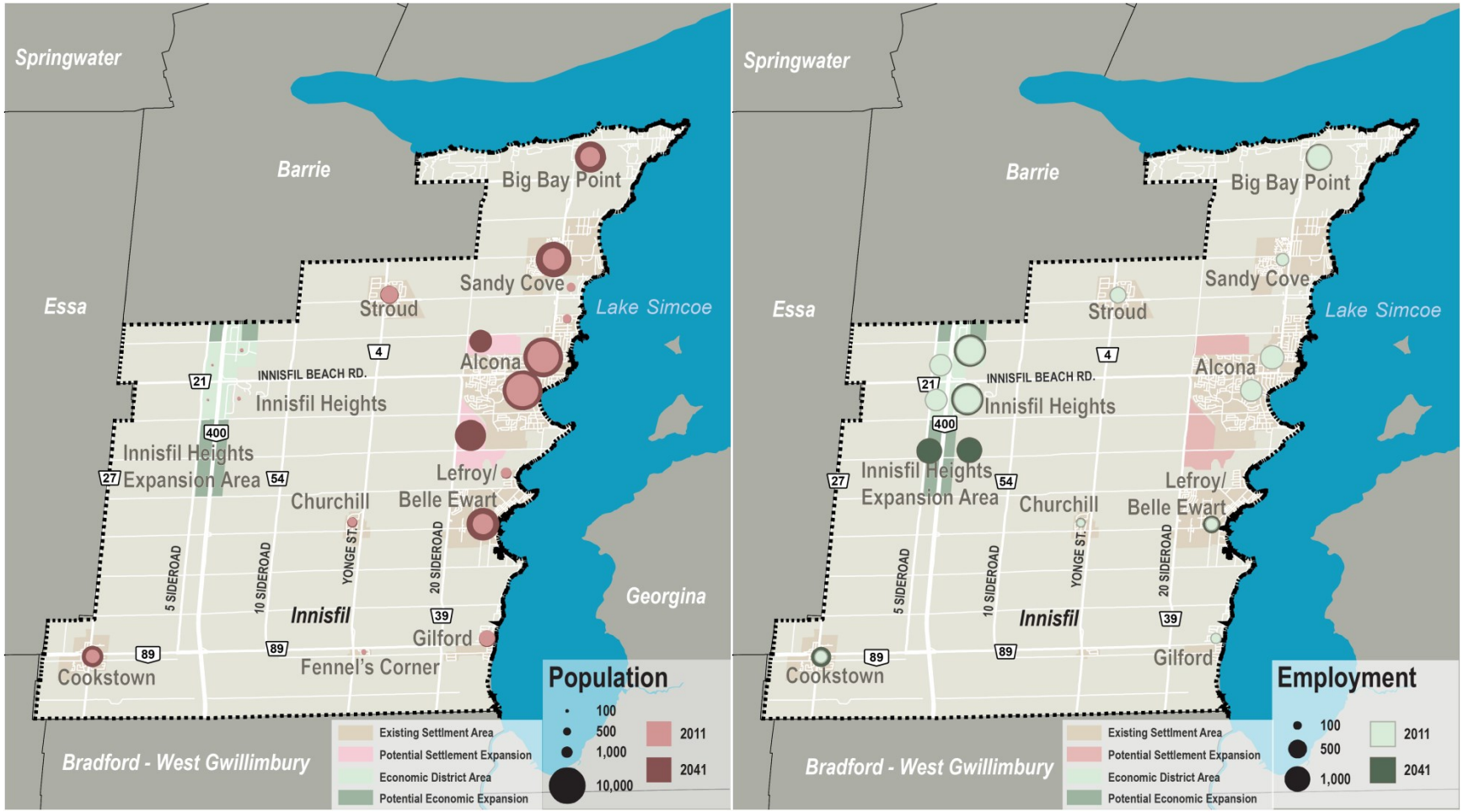


Exhibit 5-2: Existing (2011) and 2041 Population and Employment Growth

5.1.2 City of Barrie Growth

The City of Barrie is projected to grow from 141,000 to 253,000 residents between 2011 and 2041 and from 67,700 to 129,000 jobs during the same period.

A large portion of the growth to 2031 is expected in the "Annexed Lands" - two large parcels totalling 2,300 hectares were annexed from the Town of Innisfil in 2009. These lands are located directly north of the existing border between the City of Barrie and Town of Innisfil, and were illustrated previously in **Exhibit 5-1**. The City is projecting significant growth in these lands by 2031 – over 40,000 residents and 10,400 jobs, which will have a significant impact on County of Simcoe and Town of Innisfil roads connected to and serving the annexed lands. Generally north-south roads in the Town of Innisfil are expected to face additional through traffic originating in and destined to Barrie and this will place additional pressures on the Town to manage this growth.

A summary of the projections is provided in **Table 5-2**.

Table 5-2: Barrie Population and Employment Projections

Year	Population [1]			Employment [2]		
	Former City of Barrie Municipal Boundary	Annexed Lands	Total	Former City of Barrie Municipal Boundary	Annexed Lands	Total
2011	141,000	-	141,000	67,700	-	67,700
2021	150,700	15,900	166,600	80,000	3,400	83,400
2031	169,200	40,800	210,000	90,600	10,400	101,000
2041[3]	189,971	63,029	253,000	102,605	29,396	129,000

[1] Population including net census undercount
[2] Employment including no fixed place of work and work at home
[3] Official land use allocation is still not available. Within the former City of Barrie boundary, the growth rate from 2031 to 2041 was assumed to be the same as 2021 to 2031, and the remaining population and employment were assigned to the Annexed Lands.

This level of development directly adjacent to the Town's northern border will undoubtedly have a significant impact on traffic conditions within the Town Travel demands is expected to grow significantly for trips to or through Innisfil for work, home, or other purposes.

5.1.3 Growth in Other Municipalities

The population of Simcoe County is projected to grow from 440,063 to 796,000 residents between 2011 and 2041, while employment will grow from 165,840 to 304,000 jobs. The municipalities directly adjacent to Innisfil other than Barrie are also projected for strong growth. **Table 5-3** summarizes 2011 to 2041 growth for the Town of Bradford West Gwillimbury, the Township of Essa, the Town of New Tecumseth, and the Simcoe County total (including Innisfil, Barrie, and Orillia).

Table 5-3: Provincial Growth Plan Population and Employment Estimates for Adjacent Municipalities

	Population			Employment		
	2011 [1]	2031 [2]	2041 [2, 3]	2011 [2]	2031 [2]	2041 [2 3]
Town of Bradford West Gwillimbury	28,077	50,500	60,267	8,948	18,000	21,543
Township of Essa	18,505	21,500	25,658	7,335	9,000	10,772
Town of New Tecumseth	30,234	56,000	66,831	15,864	26,500	31,717
Simcoe County Total (including Barrie and Orillia)	446,063	667,000	796,000	165,841	254,000	304,000

[1] Source: Census
[2] Source: Places to Grow – Growth Plan 2017
[3] Source: 2011 Transportation Tomorrow Survey (TTS) Data
[3] Official allocation not available, same allocation as 2031 was assumed.

5.2 Currently Planned Improvements

5.2.1 Roadway Improvements

The planned provincial and county road projects that are relevant to the Town are summarized in **Table 5-4**. Highway 400 widening, the Bradford Bypass (located outside of Innisfil), and the Highway 89 Improvement have been identified as “Planning for the Future” projects in the 2017-2022 MTO Southern Highways Programs for improvements with a timeline that is beyond 2021. These projects have not been assigned a delivery year or funding, for either design or construction. Simcoe County’s 2014 TMP update recommended short, medium and long-term (beyond the 2031 horizon year) projects.

The project locations and the timing are illustrated in **Exhibit 5-3.** It is noted that the Bradford Bypass, which is a proposed highway that would travel near Bradford as a connector between Highway 400 and Highway 404, is located outside of the Town of Innisfil and not shown on the map.

Table 5-4: Currently Planned Provincial and County Road Projects

Road	From	To	Length (km)	Improvement Type
MTO Planned Improvements				
Highway 400	Highway 9	Highway 11	51.2	6 to 8 lane widening
Bradford Bypass	Highway 400	Highway 404	Approximately 16.2	New highway
Highway 89	Highway 400	Rosemont	N/A (depending on the detailed alignment)	New highway
Simcoe County Planned Improvements				
Short-term				
CR 53 (5th Side Rd)	CR 21 (Innisfil Beach Rd)	Barrie City Limit	4.1	2 to 4 lane widening
CR 27 (Barrie St)	CR 21 (Innisfil Beach Rd)	CR 90 (Hwy 90 / Dunlop St W)	9.7	2 to 4 lane widening
CR 21 (Innisfil Beach Rd)	CR 27	CR 39 (20th Sideroad)	12.2	2 to 4 lane widening
Medium-term, to be implemented by 2031				
CR 4 (Yonge St)	CR 89	Barrie City Limit	13.7	2 to 4 lane widening
Long-term, to be considered after 2031				
CR 54 (10 Sideroad)	CR 21 (Innisfil Beach Rd)	Barrie City Limit	4.2	2 to 4 lane widening
CR 89 / Shore Acres Road	CR 53 (5th Side Rd)	CR 39 (20th Sideroad)	9.4	2 to 4 lane widening
4th Line	CR 53 (5th Side Rd)	CR 39 (20th Sideroad)	9.4	Local road to county road upgrade

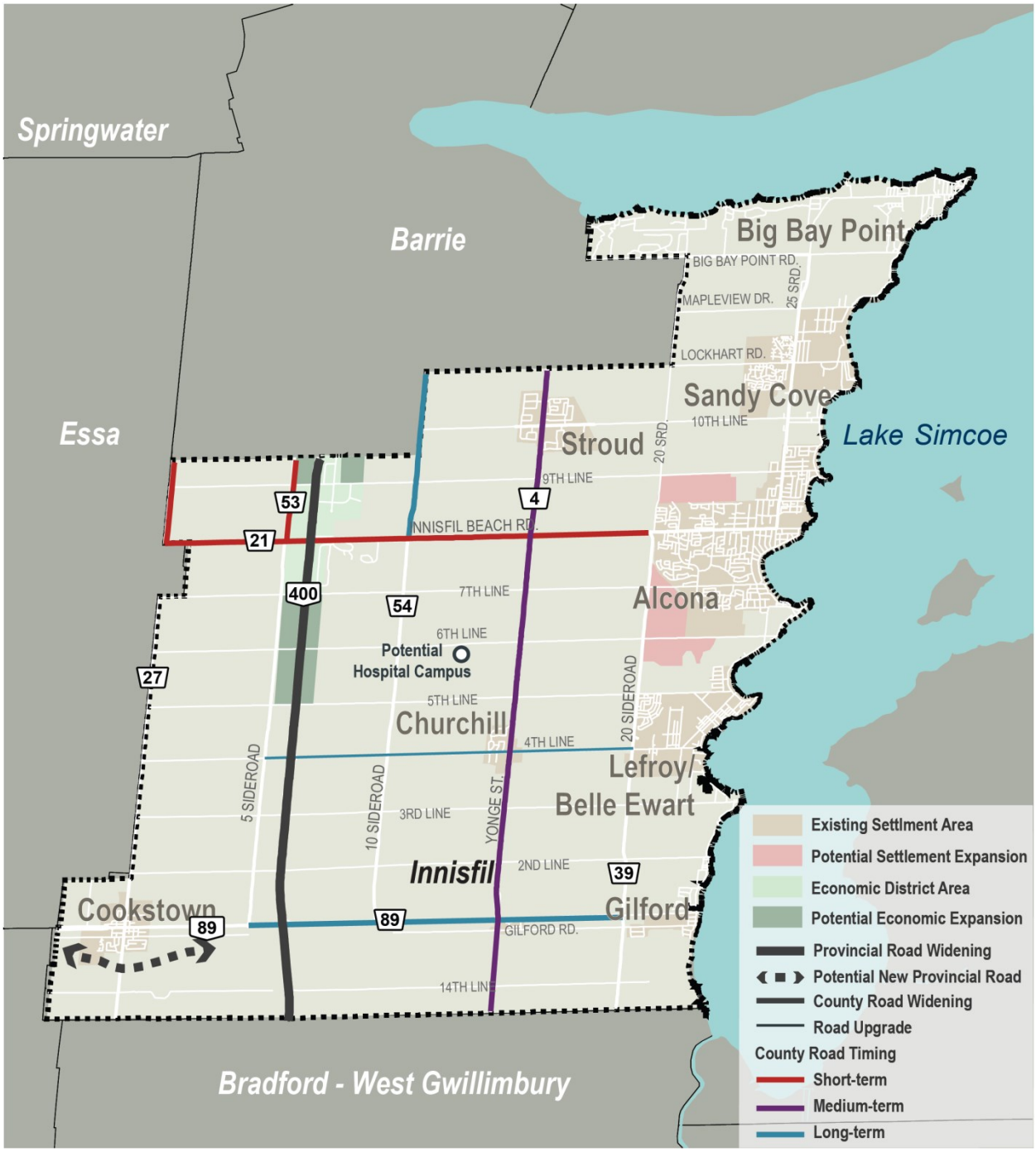


Exhibit 5-3: Planned MTO and Simcoe County Improvement Projects
Note: Bradford Bypass not shown

The Town of Innisfil's currently planned projects were identified in the Town's previous TMP, including new roads, reconstruction, urbanization, paved shoulders, intersection improvement, and planned interchange or major structure. In this TMP, projects completed since the 2013 TMP are removed from the list, and improvement types are updated based on more recent

information and the Town's more recent recommendations, such as the Trails Master Plan, where applicable. The project list and location can be found in **Appendix F**.

5.2.2 Transit Improvements

The Town of Innisfil is currently implementing the demand-responsive transit to provide local transit service within the Town. In addition, the province, Simcoe County, and the City of Barrie have plans in place which will influence Innisfil's future.

5.2.2.1 DEMAND-RESPONSIVE TRANSIT

Launched in May 2017, Innisfil Transit is the demand-responsive transit providing the Town with a subsidized ride-sharing transit service in partnership with Uber. Compared to fixed-route transit, it does not require significant upfront capital costs for items such as buses or additional operational and maintenance costs. Rather, the Town simply provides funding to cover or contribute to the difference between the Uber fare and a traditional bus transit fare. Users of this service pay $3-$5 for trips anywhere within the Town and to the Barrie South GO train station.

The purpose of Stage 1 of this service is to give opportunity to assess patterns of use. Based on the results, Stage 2 will confirm or optimize matters such as the optimal hours of operation, fare structure, and locations that may sustain fixed routes.

5.2.2.2 GO TRANSIT PLANS

Regional Express Rail (RER)

Metrolinx's 10-year Regional Express Rail (RER) program aims to provide improved service by running trains more frequently, providing all-day service, and using faster electric trains. This program will provide the Town with frequent two-way, all-day service to Barrie and Toronto, including 30 minute service during weekday peak periods in the peak direction and 60 minute service in both directions during midday, evenings, and weekends.

Future Innisfil Station

In June 2016, Metrolinx announced that the Innisfil GO Station will be constructed between 2024 to 2025 as part of the RER capital program. The Town confirmed the 6th Line as the preferred GO Station location in October 2016. The future station location is shown in **Exhibit 5-4**.

The Metrolinx *GO Rail Station Access Plan* was released in December 2016 and provides details for each GO Station in regards to the target mode shared for station access. Based on 2031 travel demand forecasts, nearly 1,000 daily riders are projected to board the system at the Innisfil GO Station. This projection, along with target modal shares, helped identify target and potential infrastructure needs which are shown in **Table 5-5**.

The vision for multimodal access to the Innisfil GO Station should be supported through the policies and infrastructure requirements identified in the 2017 TMP Update.

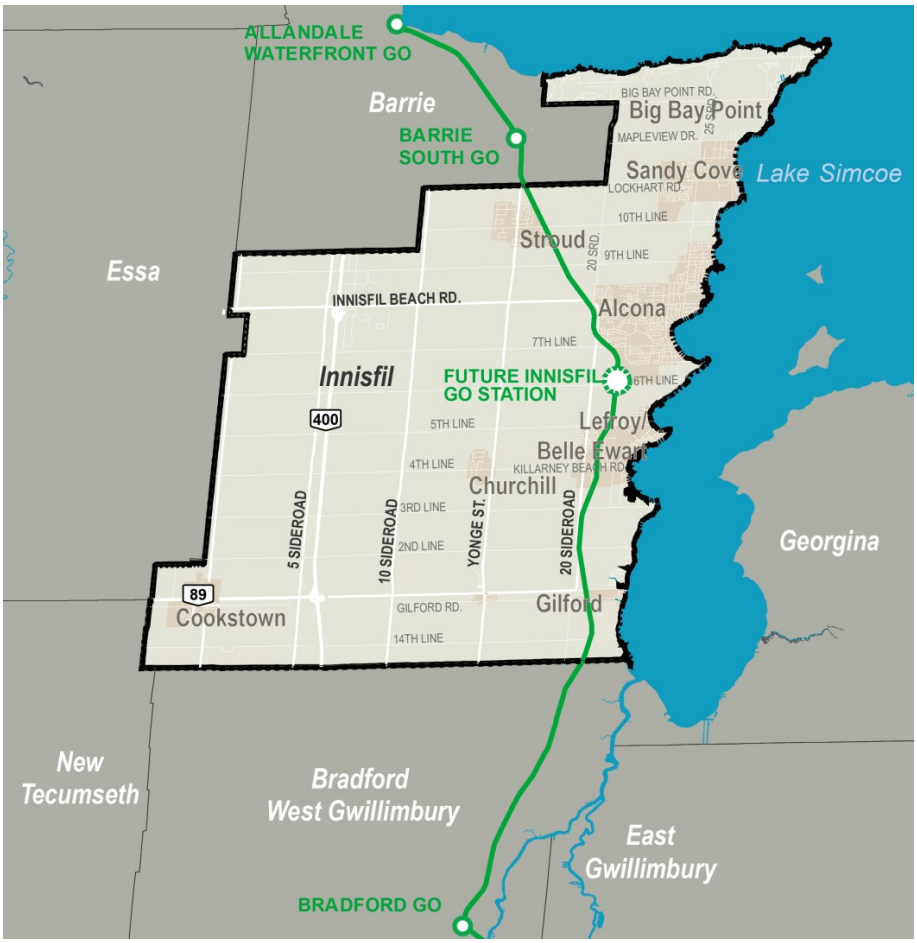


Exhibit 5-4: Future Innisfil GO Station

Table 5-5: Innisfil GO Station Target Modal Split

Station Access Mode	Target Modal Split (2031) %	Target Infrastructure needs
Walking	10 – 12	Encourage Town to provide connected local street network with sidewalks on both sides of GO rail corridor
Local Transit	Not Applicable	None identified
Micro-Transit*	16 – 18	6 vehicle passenger loading area (share with pick up / drop off spaces)
Cycling	3 – 5	Total of 96 bike parking spaces; encourage Town to incorporate cycling infrastructure along 7th Line and along the rail corridor
Pick Up / Drop Off	16 – 18	36 vehicle waiting area
Drive & Park	50 – 52	350-700 surface parking spaces
Carpool Passengers	5 – 7	n/a

* The Town of Innisfil launched an on-demand/micro-transit service in the summer of 2017. Detailed description can be found in earlier Section – Town of Innisfil Staff Report – Demand-Responsive Transit Implementation Stage 1 (March 2017)

Source: GO Rail Station Access Plan, Final Report (December 12, 2016)

5.2.2.3 COUNTY OF SIMCOE'S LONG TERM TRANSIT VISION

The Simcoe County Transit Feasibility Study proposed a number of short-term inter-municipal routes and intra-hub routes as shown in **Exhibit 5-5**. This plan includes the Alliston-Bradford route, which includes a stop at Cookstown in Innisfil.

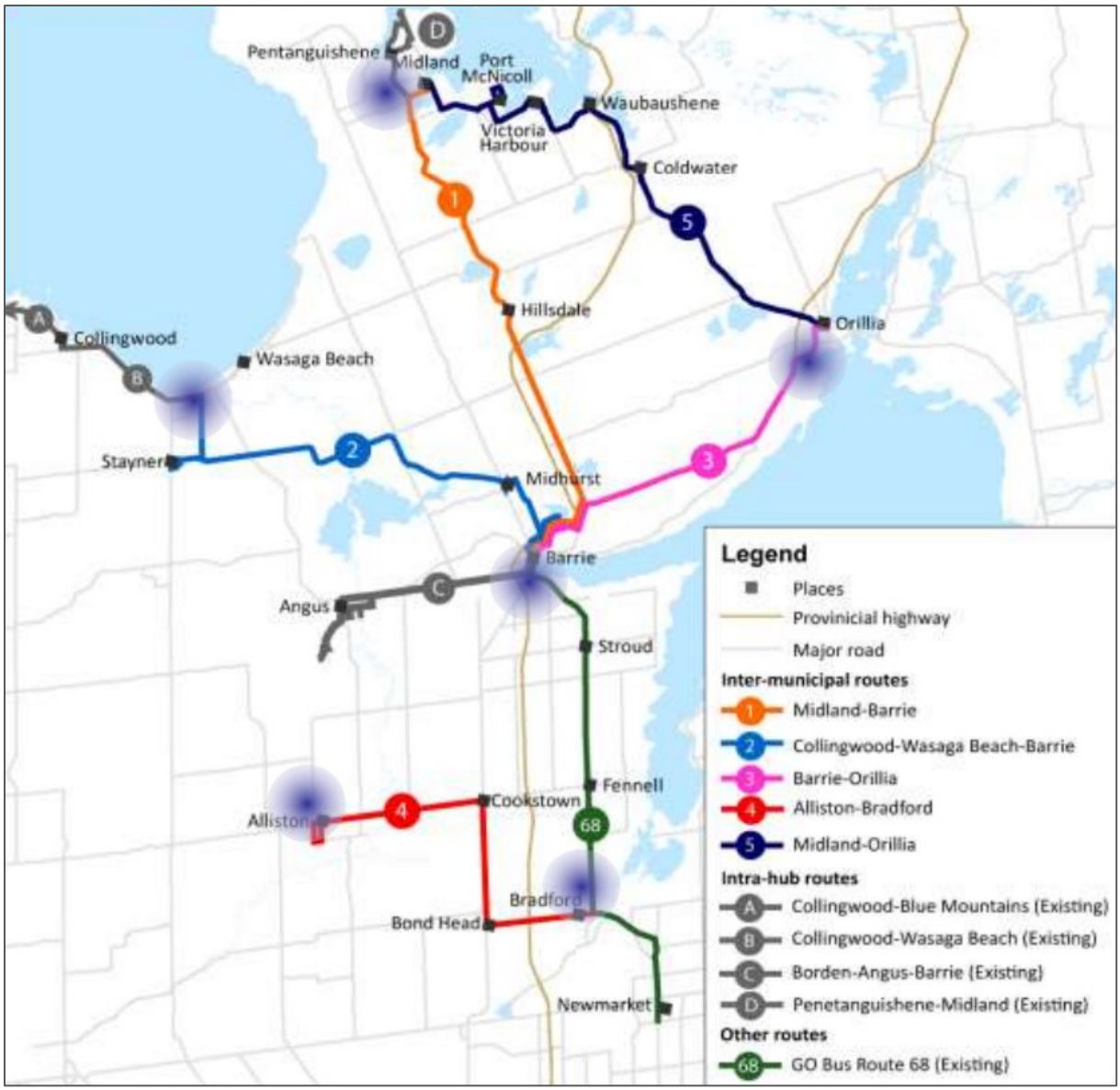


Exhibit 5-5: Simcoe County Proposed Short-term Transit Service Network

5.2.2.4 BARRIE TRANSIT

Barrie Transit currently provides service up to the border with Innisfil, but there are no current plans to extend its service into Innisfil.

5.2.3 Active Transit Improvements

Recognizing the importance of local leisure opportunities, the Town of Innisfil has spearheaded the 'Active Innisfil' project. As a separate but closely related component to the *Parks, Recreation, and Culture Master Plan*, the Town commissioned the development of the *Trails Master Plan*. The *Trails Master Plan* acts as a guiding document to advance the Town's trail network over the next 10 years and beyond. The Trails Master Plan recommended on-road bicycle facilities and sidewalks, as well as off-road linkages, including multi-use trails and pathways in key areas. Currently, the Town offers approximately 20 km of off-road walking trails, including the Trans Canada Trail and the Innisfil Beach Park trail, as well as over 70 km of sidewalks.

The recommended active transportation network identified approximately 217 km of new pedestrian and cycling routes to be developed, designated, or formalized in Innisfil. This includes nearly 100 km of off-road multi-use and secondary trails, with the remainder consisting of paved shoulders, sharrow routes, and sidewalks. A summary of the recommended active transportation network is provided in **Table 5-6.**

Table 5-6: Summary of Recommended Active Transportation Network

Type	Proposed Length (km)
Multi-Use	65.0
Secondary	33.5
Sidewalk	12.1
Paved Shoulder	67.8*
Sharrows	29.3
Dedicated Cycling Lane	9.9
Total Length (km)	217.6

*Length of road to have paved shoulders in both directions

With regards to the implementation of the proposed trail network, timing and phasing is based on the identification of routes as short, medium, and long term in priority. Routes which have been identified as short-term trails are those which are located in high demand areas as identified in the Trails Master Plan, as well as those within various stages of the land development process, which provides an opportunity to build a pedestrian friendly community. The timing of constructing or expanding each trail is organized as follows:

- Short-term (1-5 years) – before 2023
- Medium-term (6-13 years) – 2024 to 2031
- Long-term (beyond 14 years) – 2032 +

A summary of the implementation schedule for each type of facility is provided in **Table 5-7**.

Table 5-7: Summary of Active Transportation Implementation

Term	Short Term (km)	Medium Term (km)	Long Term (km)	Total (km)
Multi-Use Trail	20	17.1	27.9	65
Secondary Trail	12.1	12.6	8.8	33.5
Sidewalk	4	8.1	-	12.1
Paved Shoulder	7.3	28.4	32.1	67.8
Sharrow	24	-	5.3	29.3
Cycling Lane	8.2	1.7	-	9.9
Total (km)	75.6	67.9	74.1	217.6

A map showing the recommended trail network as well as the phasing term is shown in **Exhibit 5-6.**

Costing, funding, and timing are subject to change by the Town based on factors including budget pressures, timing of residential development, and coordination with public works or roadway projects.

Exhibit 5-6: Recommended Trails Master Plan Phasing – Town-wide

5.3 Estimating 2041 Travel Demand

5.3.1 Travel Demand Forecast Model

Key inputs to the model, such as the population and employment forecasts and transportation network assumptions, were discussed earlier in this chapter. The base case network includes the planned short-term and medium-term provincial projects, which are County Road 53 (5th Sideroad), County Road 27, County Road 21 (Innisfil Beach Road), and County Road 4 (Yonge Street) widening. The long-term county projects are not included as they are indicated as projects to be *considered* after 2031. From the list of MTO's planned road improvements, only Highway 400 widening is included in the model. Bradford Bypass and the Highway 89 east-west connection improvement would involve major new road construction and would require a Class EA to proceed to the construction stage. For this reason, these two projects are not included in the model.

5.3.2 2041 Base Case Travel Demand Forecast

The base case 2041 travel demand forecast is based on the planned population and employment growth, and planned road network improvements as discussed earlier in this chapter. The PM peak hour volume over capacity is shown in **Exhibit 5-7**. With significant population and employment growth, some road segments are expected to experience significant congestion. These segments are highlighted in the list below:

- The majority of north-south road segments connecting to the City of Barrie and Bradford;
- Along Yonge Street, especially for the segment north of Innisfil Beach Road that provides connecting to Stroud and Alcona;
- Almost all road segments approaching Alcona, including Innisfil Beach Road, 7th Line, and 6th Line;
- Segments approaching Lefroy / Belle Ewart, such as Belle Aire Beach Road;
- Innisfil Beach Road, especially at the interchange; and
- Along Highway 89 west of Yonge Street, especially on segments near Cookstown and near the highway interchange.

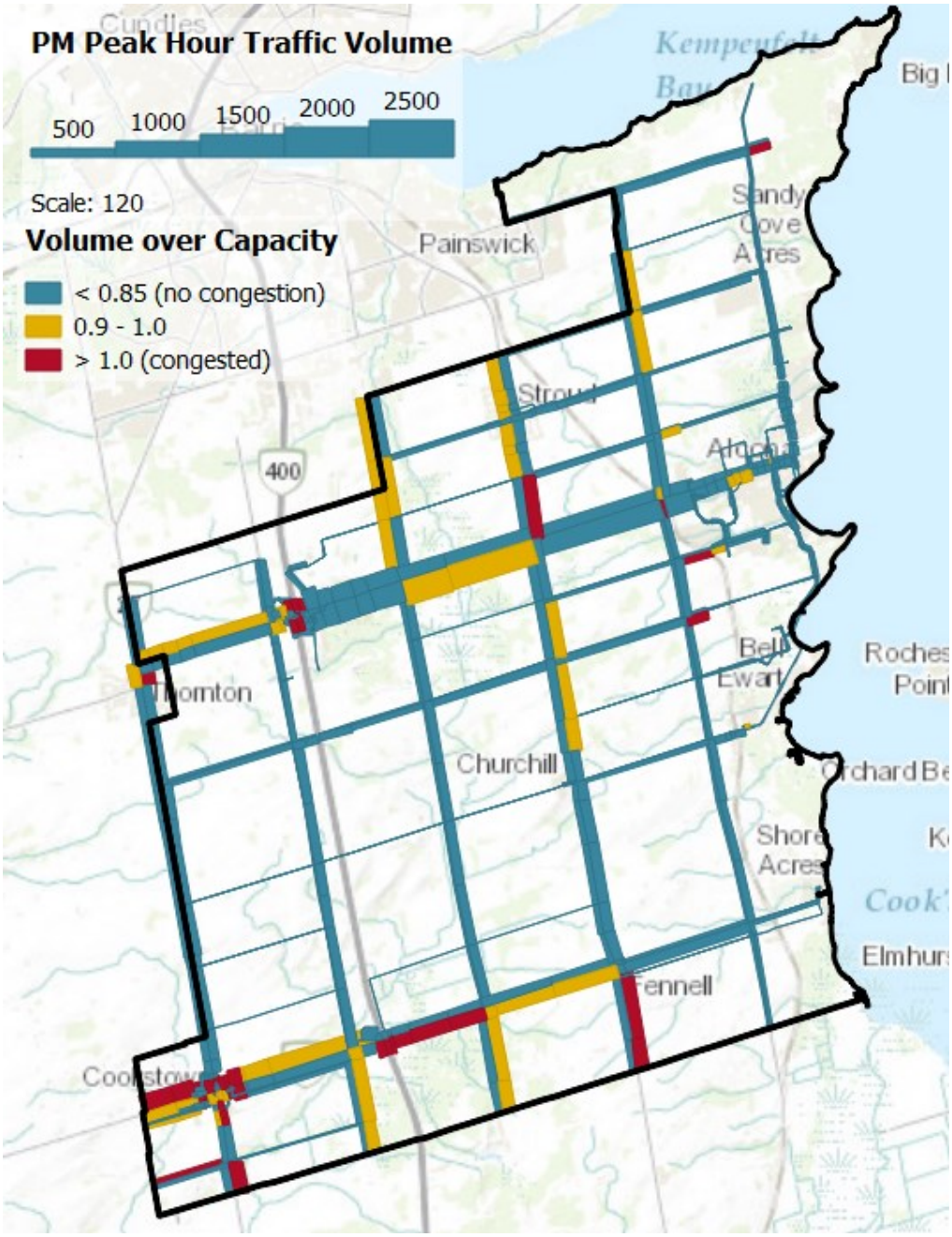


Exhibit 5-7: 2041 Base Case PM Peak Hour Forecasted Volume
Note: Highway 400 volumes not shown in map

5.3.3 2041 Intersection Analysis

Following a similar methodology to the existing intersection analysis, a list of key intersections was identified and the intersection LOS was examined closely. The focus of the 2041 intersection analysis was near areas that are expecting significant growth, such as Sandy Cove, Alcona, and Lefroy / Belle Ewart. The results are shown in **Exhibit 5-8**.

The following intersections are expected to be operating over capacity:

- Lockhart and 20th Sideroad: LOS F (existing LOS A-C)
- 9th Line and 20th Sideroad: LOS E (existing LOS A-C)
- The jogged intersection at Innisfil Beach Road and 20th Sideroad: LOS E and F (same as existing)

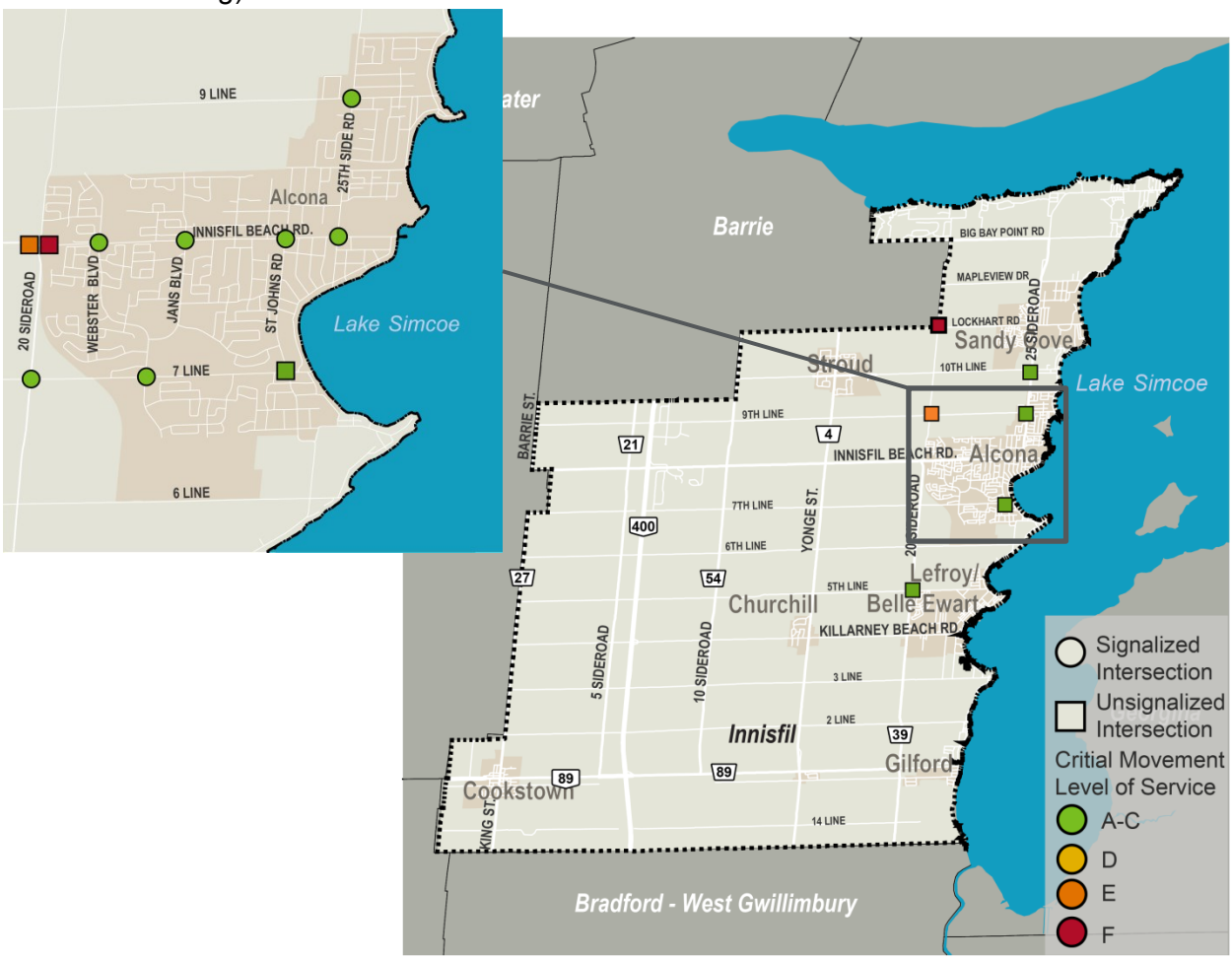


Exhibit 5-8: 2041 Base Case Intersection Analysis

5.3.4 Other Intersections with Anticipated Deficiencies

To supplement the analysis carried out for the TMP, other background studies were relied upon to identify other intersection deficiencies.

Previous studies such as the South Simcoe TMP (2013) and the previous Innisfil TMP (2013) had identified that the need for improvement of the signalized intersection of CR 27 (King Street) and Highway 89 (Queen Street / Church Street) in Cookstown. This intersection currently has single lane approaches with left-turn lanes to be installed in the near future but cannot be further widened due to property constraints. This intersection will continue to experience congestion until a potential east-west link improvement is implemented or until drivers change their travel patterns over time to avoid the congestion.

6.0 A Transportation Vision for the Town

6.1 Problem and Opportunity Statement

The Town of Innisfil is characterized by **distinct communities** which are **spread out** and **not well-connected**. The majority of travel in the Town is by car.

By 2041 the Town's population and employment numbers are expected to double. Without a balanced transportation strategy, Innisfil residents will experience increases in traffic congestion which will impact their quality of life.

Future opportunities to improve the transportation network have been identified in the Town, through the recently completed Trails Master Plan, new GO station planned at 6th Line and a new demand-responsive transit service.

6.2 The Transportation Vision

By capitalizing on the identified needs and opportunities, the Town will achieve its transportation vision:

Innisfil's transportation system connects people and communities, fosters healthy living, and operates innovatively and efficiently across the Town as an environmentally and financially sustainable, resilient system ready for the future.

7.0 Alternative Planning Strategies

Phase 2 of the Environmental Assessment process requires documentation and examination of all reasonable alternatives to address the problems and opportunities, referred to as Planning Alternatives. These Planning Alternatives were also developed to satisfy the selected transportation vision for the Town.

The four planning alternatives defined are shown in **Table 7-1**.

Table 7-1: Planning Alternatives

#	Alternative	Description	Goal
1	**Base Case**	Assumes no improvements undertaken by the Town, but considers planned road improvements by: • MTO (Highway 89 widening from six to eight lanes) • Simcoe County (short-term and medium-term projects only as described in **Section 5.2.1**	Confirm the need for the Town to make its own investments in transportation by reviewing conditions in isolation of the Town's current plans for new roadways and active transportation
2	**Current Plans**	Further to Alternative 1, build planned Town improvements identified in: • 2013 TMP, such as road reconstruction and urbanization, as described in **Section 5.2.1**. • Trails Master Plan	Assess conditions with current Town plans for investment in new roadways, active transportation
3	**Balanced Approach**	Further to Alternative 2, invest in: • New roads / road improvement projects • Travel Demand Management (TDM) measures: ○ Demand Responsive Transit ○ Bike-share program ○ EcoMobility hubs ○ Zoning by-law revisions	Assess benefits of investing in new roadways and mobility infrastructure including continuing investment in demand responsive transit
4	**Aggressive Approach**	Further to Alternative 3, invest in fixed-route transit	Consider benefits of conventional transit to move people

7.1 Alternative 1 – Do Nothing

Alternative 1 analyzes the 2041 transportation network performance assuming that the current provincial, county, and municipal plans are implemented, as shown in **Table 7-2** and illustrated in **Exhibit 7-1**, but excluding the implementation of any current Town transportation plans. Projected future traffic conditions resulting from the Alternative 1 scenario in the 2041 peak hour are shown in **Exhibit 7-1**. With these improvements, congestion is expected on Innisfil Beach Road, 9th Line, 10th Line, Highway 89 east of Yonge St, and east-west road segments approaching Alcona existing and potential future settlement areas.

Table 7-2: MTO and Simcoe County Planned Projects

Jurisdiction	Road	From	To	Improvement Type
MTO	Highway 400	Highway 9	Highway 11	6 to 8 lane widening
Simcoe County	CR 53 (5th Sideroad	CR 21 (Innisfil Beach Road)	Barrie City Limit	2 to 4 lane widening
Simcoe County	CR 27	CR 21 (Innisfil Beach Road)	CR 90 (Hwy 90 / Dunlop St W)	2 to 4 lane widening
Simcoe County	CR 21 (Innisfil Beach Road)	CR 27	CR 39 (20th Sideroad)	2 to 4 lane widening
Simcoe County	CR 4 (Yonge Street)	CR 89	Barrie City Limit	2 to 4 lane widening

7.2 Alternative 2 – Balanced Approach

In addition to the improvements identified in the current provincial, county, and municipal plans listed in Alternative 1, Alternative 2 includes all improvements recommended in the Town's 2013 TMP and improvements recommended in the Town of Innisfil Trails Master Plan (November, 2016) as shown in **Exhibit 7-2**. Projects completed since the 2013 TMP have been removed from the table, and improvement types have been updated based on the latest recommendations in the Town's Trails Master Plan where applicable.

One of the key improvements of this alternative is to include the 6th Line interchange, providing additional connections from Highway 400 to settlement areas such as Alcona and Lefroy / Belle Ewart, and to the future GO Train Station. Alternative 2 also includes many urbanization improvement projects, located in or adjacent to existing and potential future settlement areas.

In addition, a series of active transportation projects, such as paved shoulders, multi-use trails, and sidewalks, have been identified throughout the Town. These projects improve the walking and cycling environment and provide connectivity between settlement areas.

With the road improvement projects in Alternative 2, traffic conditions were slightly improved compared to Alternative 1. However, congestion is still expected near the Highway 89 / Cookstown area.

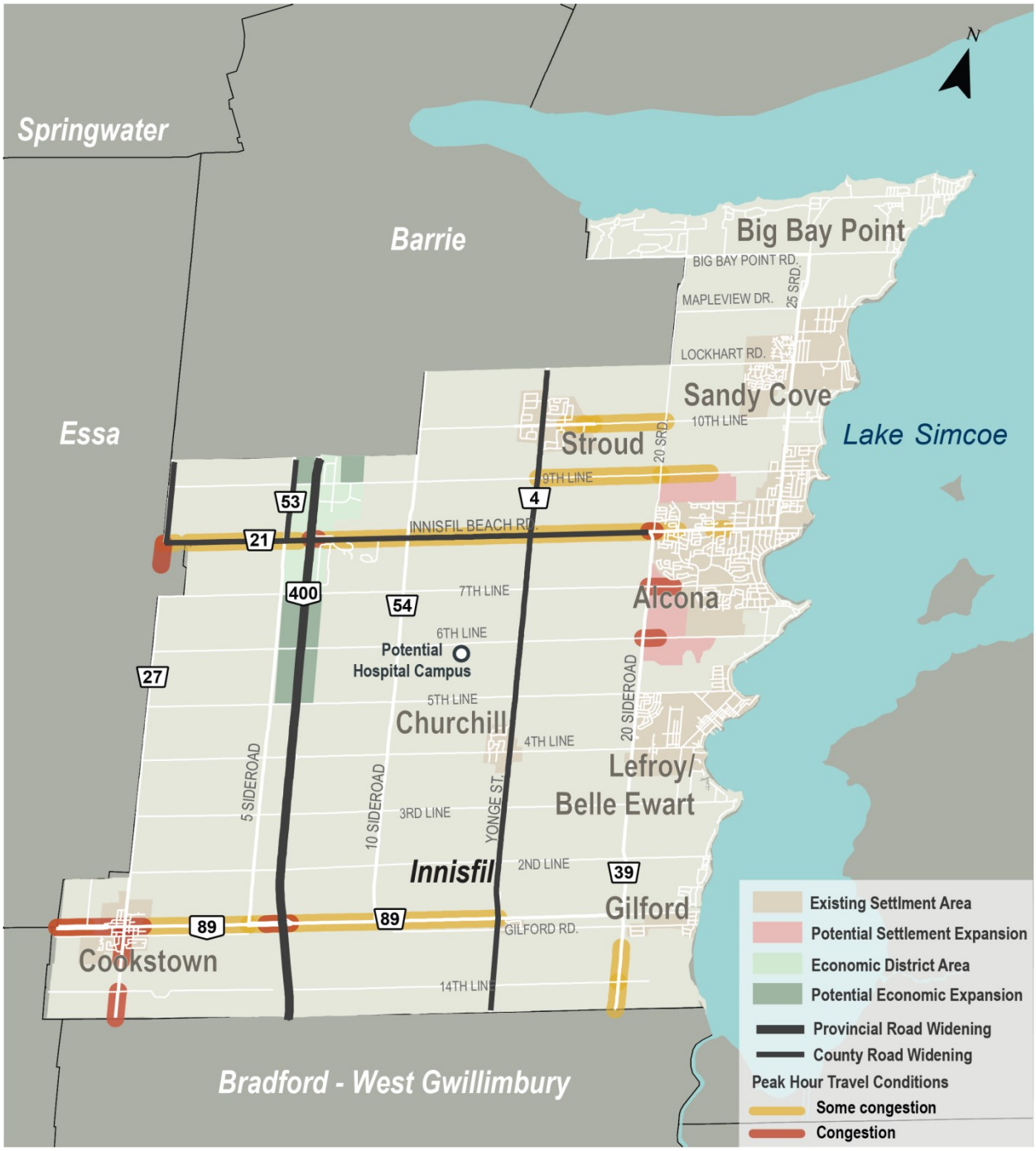


Exhibit 7-1: Road Improvements and Projected 2041 Peak Hour Traffic Conditions- Alternative 1

Exhibit 7-2: Road Improvements and Projected 2041 Peak Hour Traffic Conditions- Alternative 2

Note: Alternative 1 elements (provincial and county planned projects) are included as part of this alternative but not included in the map

7.3 Alternative 3 – Aggressive Approach

Alternative 3 includes all improvements identified in Alternative 2 with additional road, transit, and trails investment and Transportation Demand Management (TDM) in the Town, including:

- Extending Webster Boulevard further south to Belle Aire Beach Rd / 5th Line to provide an additional north-south connector to the future Innisfil GO station (at 6th Line);
- Alcona North collector road network development including:
  - Extending Webster Boulevard further northwest to 20th Sideroad;
  - Extending Leslie Drive westerly then northerly up to Ninth Line;
  - Extending Jans Boulevard up to Ninth Line; and
  - A new east-west collector road connecting 20th Sideroad to the Jans Boulevard Extension.
- Alcona South collector road network development as identified in the Secondary Plan plus an additional public road access adjacent to the potential GO station site (north west quadrant of 6th Line at the rail line);
- Highway 89 east-west link improvement for traffic to by-pass Cookstown to reduce congestion on the existing Highway 89 segments;
- Increasing investment in sidewalk implementation, applying a sidewalk prioritization policy;
- Identifying gravel road upgrades via the gravel road prioritization policy;
- Implementing EcoMobility hubs to facilitate demand responsive transit and bike share programs at key locations including Innisfil GO Station, Friday Harbour, Town Hall, Recreation Complex, Alcona, Sandy Cove, Stroud, Lefroy and Cookstown. Include electric vehicle (EV) charging stations at the EcoMobility hubs;
- Implementing TDM policies, including zoning by-law updates for parking policies. A subsequent parking zoning by-law study could be followed to recommend reduced minimum parking standards, EV parking space requirements, and car-pool parking lots; and
- Investing in demand responsive transit.

With these improvements, traffic conditions are expected to significantly improve, with some minor congestion on 6th Line between Yonge Street and 20th Sideroad, and on 20th Sideroad between Lockhart Drive and 10th Line, as shown in **Exhibit 7-3.**

Exhibit 7-3: Road Improvements and Projected 2041 Peak Hour Traffic Conditions- Alternative 3

Note: Alternative 1 and 2 elements are included as part of this alternative but not included in the map

7.4 Alternative 4 – An Aggressive Approach with Fixed-Route Transit

Alternative 4 includes all improvements from Alternative 3 with additional investment for a fixed-route transit service where significant demand is identified, recognizing the continued public support even with the implementation of the Town's demand-responsive transit service.

7.5 Evaluation of Alternatives

Selection of the preferred Planning Alternative is based on a detailed set of criteria that includes consideration for transportation service, social equity in mobility, impacts on the natural, policy, and socio-economic environments, and financial implications.

Table 7-3 summarizes the detailed evaluation criteria used to assess the benefits and disadvantages of each of the four planning alternatives considered for the Innisfil TMP.

Table 7-3: Evaluation Criteria

Transportation Service
Transportation network efficiently moves both people and goods
Transportation network provides access to all people and improve their safety
Transportation network provides better connection(s) within the Town and to/from surrounding municipalities
Improves opportunities to walk and cycle throughout the Town
Promotes diverse travel choices, including transit, walk, and cycle
Social Equity in Mobility
Improves the network connectivity and optimize the health and safety for all ages and users
Accommodates mobility for all ages and users
Natural Environment
Protects natural environmental areas, local streams, aquatic resources, and air quality
Policy Environment
Compatible with provincial Growth Plan and Simcoe County objectives
Supports Metrolinx Regional Express Rail (RER) plan, including the future Innisfil GO Station
Meets the Town's Official Plan, Our Place, the Draft Innisfil Official Plan (January 2017), and other planning policy objectives such as the Town's Trail Master Plan
Socio-Economic Environment
Minimizes property requirements
Supports the existing and potential business community
Maximizes land development potential and provides opportunities for planned growth
Financial Implications
Minimizes capital and maintenance costs, and impacts to the residential tax base

The findings of the evaluation based on the evaluation criteria are summarized in **Table 7-4**.

Table 7-4: Evaluation of Alternative

Planning Alternative	Transportation Service	Social Equity in Mobility	Natural Environment	Policy Environment	Socio-Economic Environment	Financial Implications	Overall Evaluation
Alternative 1: Base Case							
Alternative 2: Current Plans							
Alternative 3: Balanced Approach							
Alternative 4: Aggressive Approach							

Recommendation: Carry forward both
Alternative 3 Balanced Approach and
Alternative 4 Aggressive Approach

Alternative 1, while having the least impact on the natural environment and no financial implications with respect to additional capital costs, does not meet the objectives of the transportation service, social equity, policy environment, and socio-economic criteria and is thus screened out.

Alternative 2 provides additional capacity to the road network, but does not significantly improve transportation service. Furthermore, the growth objectives of the Town, County and Province are not met without additional improvements to support planned growth.

Alternative 3 provides strong transportation service while providing increased access and opportunities for walking and cycling, promoting key road connections between the various Innisfil communities, and maintaining the existing on-demand transit service. While the financial implications are high, the benefits to this alternative are strong, meeting the objectives of the Town's planning policies.

Alternative 4 builds on Alternative 3 by continuing to plan for fixed route transit services in the long-term. As the Town continues to grow and evolve, specific routes may be identified which may become more efficient than the on-demand service. The on-demand service will provide critical input to identify potential fixed routes. Based on public input, there is still a desire from a number of residents in the Town for fixed route services despite the financial implications. Due to the potential long-term benefits and public interest, it is recommended that Alternative 4 be carried forward.

Alternative 3 – Balanced Approach and **Alternative 4 – Aggressive Approach** are the preferred planning alternatives recommended to be carried forward.

8.0 Recommended Transportation Strategy

Following the second public open house and TAC meetings, and based on the evaluation of options and all feedback and comments received, a recommended multi-modal transportation strategy was developed for the Town. The details of the strategy and supporting justification for improvements for all travel modes are documented below. Potential implementation processes and prioritizations are also discussed.

Key opportunities include:

1. Construct key road connections, including Webster South Extension, Highway 89 East-west connecting link improvement, 20th Sideroad Bypass, Alcona North collector network, and Alcona south connector network.
2. Implement improved active transportation throughout the Town, building on the Town's Trails Master Plan.
3. Plan for subsequent zoning by-law study to consider reduced minimum parking standards and the addition of Electric Vehicle parking spaces and carpool parking spaces requirements.
4. Implement an EcoMobility Hub pilot program to provide designated safe waiting areas for demand-responsive services at key locations.
5. Integrate dockless bike share services at EcoMobility hub locations and at key locations within settlement areas, along the waterfront, and park areas.
6. Plan for fixed route transit building on the demand-responsive transit service and as the Town continues to grow and develop.

8.1 Road Improvements

To support the proposed active transportation and transit opportunities, road improvements remain an integral component of a balanced transportation strategy to support the Town's development targets. Based on the findings of the travel demand modelling and input from Town staff, a road improvement plan and high-level implementation schedule has been developed.

Similar to the implementation plan for active transportation, the proposed improvements have been categorized into short, medium and long term:

- Short-term: before 2021
- Medium-term: 2022-2031
- Long-term: after 2031

The proposed road improvements are summarized in **Table 8-1**, **Table 8-2**, **Table 8-3** for short, medium, and long-term, respectively. The location of the projects is shown in **Exhibit 8-1**. It is noted that paved shoulders and multi-use trails indicated in the Trails Master Plan have been added in the road improvement tables, as these projects should be coordinated with major road improvement construction.

Table 8-1: Short-term Road Improvement Projects (before 2021)

ID	Road	From	To	Improvement Type
1	Big Bay Point Road	20th Sideroad	25th Sideroad / 13th Line	Reconstruction
2	Big Bay Point Road	25th Sideroad / 13th Line	Friday Drive	Reconstruction
3	Big Bay Point Road	Friday Drive	Lake Simcoe	Reconstruction
4	Big Bay Point Road	20th Sideroad	West St	Paved Shoulders
5	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Reconstruction
6	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Multi-use trail
7	13th Line	Friday Drive	Lake Simcoe	Paved Shoulders
8	Lockhart Road	20th Sideroad	Lake Simcoe	Reconstruction
10	10th Line	west extent of boundary of Sandy Cove settlement area	25th Sideroad	Urbanization
11	10th Line	25th Sideroad	Purvis St	Urbanization
12	25th Sideroad	Big Bay Point Rd	Mapleview Dr	Reconstruction
13	25th Sideroad	Mapleview Dr	Innisfil Beach Road	Urbanization
14	25th Sideroad	Big Bay Point Rd	Innisfil Beach Road	Multi-use trail
15	7th Line	Yonge Street	St Johns Road	Multi-use trail
16	Webster Blvd South Extension	Quarry Dr	6th Line	New Construction
17	Webster Blvd	Existing north limit of Webster Blvd	6th Line	Bike lanes
18	Jans Blvd North Extension	North extent of Jans Blvd	9th Line	New Construction
19	Jans Blvd	North extent of Jans Blvd	Webster Blvd	Bike lanes
20	6th Line	20th Sideroad	St Johns Road	Multi-use trail
21	6th Line	Bridge Expansion over Railway		New Structure
22	6th Line	20 Sideroad	Angus St	Widening
23	6th Line	Angus St	St Johns Road	Urbanization
24	Killarney Beach Road	Yonge Street	20th Sideroad	Reconstruction
25	Killarney Beach Road	Yonge Street	20th Sideroad	Paved Shoulders
26	Various EA studies for local road upgrade to minor collectors (Anna Maria, Westmount, Willard, Adullam, 3rd Line, 2nd Line, Shore Acres east of 20th, Gilford Road, 20th between Gilford and Shore Acres, 13th Line 25th to Friday Drive)			Studies
80	10th Sideroad [1]	Innisfil Beach Road	Centennial Park	Multi-use trail
81	Innisfil Beach Road / County Road 21 [1]	5th Sideroad	10th Sideroad	Multi-use trail
82	Innisfil Beach Road / County Road 21 [1]	10th Sideroad	20th Sideroad	Multi-use trail
68	Other MUT (IRC Loop, Innisfil Beach Park Trail, Sleeping Lion Loop), location can be found in Appendix E			Multi-use trail
70	Secondary Trail, location can be found in Appendix E			Secondary Trail
73	Sidewalk (within established areas), location can be found in Appendix E			Sidewalk
75	Sharrows, location can be found in Appendix E			Sharrows
77	Cycling Lane, location can be found in Appendix E			Bike Lanes

[1] County or Provincial Jurisdiction

Table 8-2: Medium-term Road Improvement Projects

ID	Road	From	To	Improvement Type
9	9th Line	25th Sideroad	Leonard Street	Paved Shoulders
27	20th Sideroad	Big Bay Point Road	9th Line	Reconstruction
28	20th Sideroad	Big Bay Point Road	9th Line	Paved Shoulders
29	20th Sideroad	9th Line	5th Line	Multi-use trail
30	20th Sideroad	5th Line	3rd Line	Multi-use trail
31	20th Sideroad	3rd Line	Innisfil / Bradford Boundary	Paved Shoulders
32	Killarney Beach Road / 4th Line	John Street	Yonge Street	Urbanization
33	Killarney Beach Road	20th Sideroad	Ewart Street	Urbanization
34	Killarney Beach Road	Ewart St	Lake Simcoe	Paved Shoulders
35	Willard Ave	Leslie Drive	Innisfil Beach Road	Urbanization
36	Adullam Ave	Lebanon Drive	Innisfil Beach Road	Urbanization
37	6th Line	County Road 27	County Road 53 / 5th Sideroad	Reconstruction
38	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Reconstruction
39	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Paved Shoulders
40	7th Line	10 Sideroad	Yonge Street	Reconstruction
41	7th Line	Yonge Street	20 Sideroad	Reconstruction
42	7th Line	20th Sideroad	Webster Blvd	Urbanization
66	7th Line	Webster Blvd	St Johns Road	Urbanization
43	Webster Blvd North Extension	Existing north limit of Webster Blvd	20th Sideroad	New Construction
45	Innisfil Beach Road Grade Separation			New Construction
46	20th Sideroad (bypass) with Grade Separation			Studies
47	20th Sideroad (bypass) with Grade Separation	Leslie Drive	South of Innisfil Beach Rd	New Construction
48	Webster Blvd South Extension	6th Line	5th Line	New Construction
49	Highway 89 East-west Link Improvement	West of Cookstown	East to Cookstown	New Construction
50	10th Line	20th Sideroad	Sandy Cove boundary	Reconstruction
52	Transportation Planning Studies (TMP)			Studies
90	Yonge Street & 9th Line [1]			Signalized Intersection
91	Yonge Street & 7th Line [1]			Signalized Intersection
92	Yonge Street & 6th Line (Refer to 6th Line EA) [1]			Signalized Intersection
93	Yonge Street & 5th Line [1]			Signalized Intersection
94	Yonge Street & 4th Line / Killarney Beach Road [1]			Signalized Intersection
95	20th Sideroad & Lockhart Road			Roundabout
96	20th Sideroad & 9th Line			Roundabout
97	20th Sideroad and 6th Line (Refer to 6th Line EA)			Roundabout
98	Innisfil Beach Road & 20th Sideroad Bypass [1]			Signalized Intersection
99	20th Sideroad & 5th Line			Roundabout
100	25th Sideroad & Big Bay Point Road / 13th Line			Roundabout
101	25th Sideroad & 9th Line			Roundabout
102	St. John's Road & 7th Line (currently under study by 7th Line EA)			Roundabout

ID	Road	From	To	Improvement Type
83	Innisfil Beach Road / County Road 21 [1]	Essa Road / County Road 27	5th Sideroad	Paved Shoulders
67	Other paved shoulders (Roberts Road, Crystal Beach Road / Goodfellow Avenue), location can be found in Appendix E			Paved Shoulders
69	Other MUT (20th Sideroad proposed realignment), location can be found in Appendix E			Multi-use trail
71	Secondary Trail, location can be found in Appendix E			Secondary Trail
74	Sidewalk (within established areas), location can be found in Appendix E			Sidewalk
78	Cycling Lane, location can be found in Appendix E			Bike Lanes

[1] County or Provincial Jurisdiction

Table 8-3: Long-term Road Improvement Projects

ID	Road	From	To	Improvement Type
51	Innisfil Beach Road	20th Sideroad	25th Sideroad	Reconstruction
54	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Widening
55	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Multi-use trail
44	Belle Aire Beach Road	20th Sideroad	West of railway tracks	Urbanization
56	Belle Aire Beach Road	Willow Street	Maple Road	Urbanization
57	Ewart Street	Killarney Beach Road	300 metres north of Killarney Beach Road	Urbanization
58	Ewart Street	300 metres north of Killarney Beach Road	Lake Simcoe	Paved Shoulders
59	9th Line	Yonge Street	20 Sideroad	Reconstruction
60	9th Line	20 Sideroad	25th Sideroad	Urbanization
61	Mapleview Drive	25th Sideroad	20th Sideroad	Reconstruction
62	St. John's Road	Innisfil Beach Road	Nantyr Drive	Urbanization
88	Highway 89 / Shore Acres	Yonge Street	20 Sideroad	Paved Shoulders
63	Transit feasibility study			Studies
64	EcoMobility Hub			Other Improvements
65	Bike-share program			Other Improvements
65	Zoning by-law study to consider reduced minimum parking standards and the addition of Electric Vehicle parking space and carpool parking space requirements			Studies
84	5th Sideroad / County Road 53 [1]	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Paved Shoulders
85	Yonge Street / County Road 4 [1]	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Multi-use trail
86	Highway 89 [1]	Cookstown Boundary	Highway 400	Paved Shoulders
87	Highway 89 [1]	Highway 400	Yonge Street	Paved Shoulders
72	Secondary Trail, location can be found in Appendix E			Secondary Trail
76	Sharrows, location can be found in Appendix E			Sharrows

[1] County or Provincial Jurisdiction

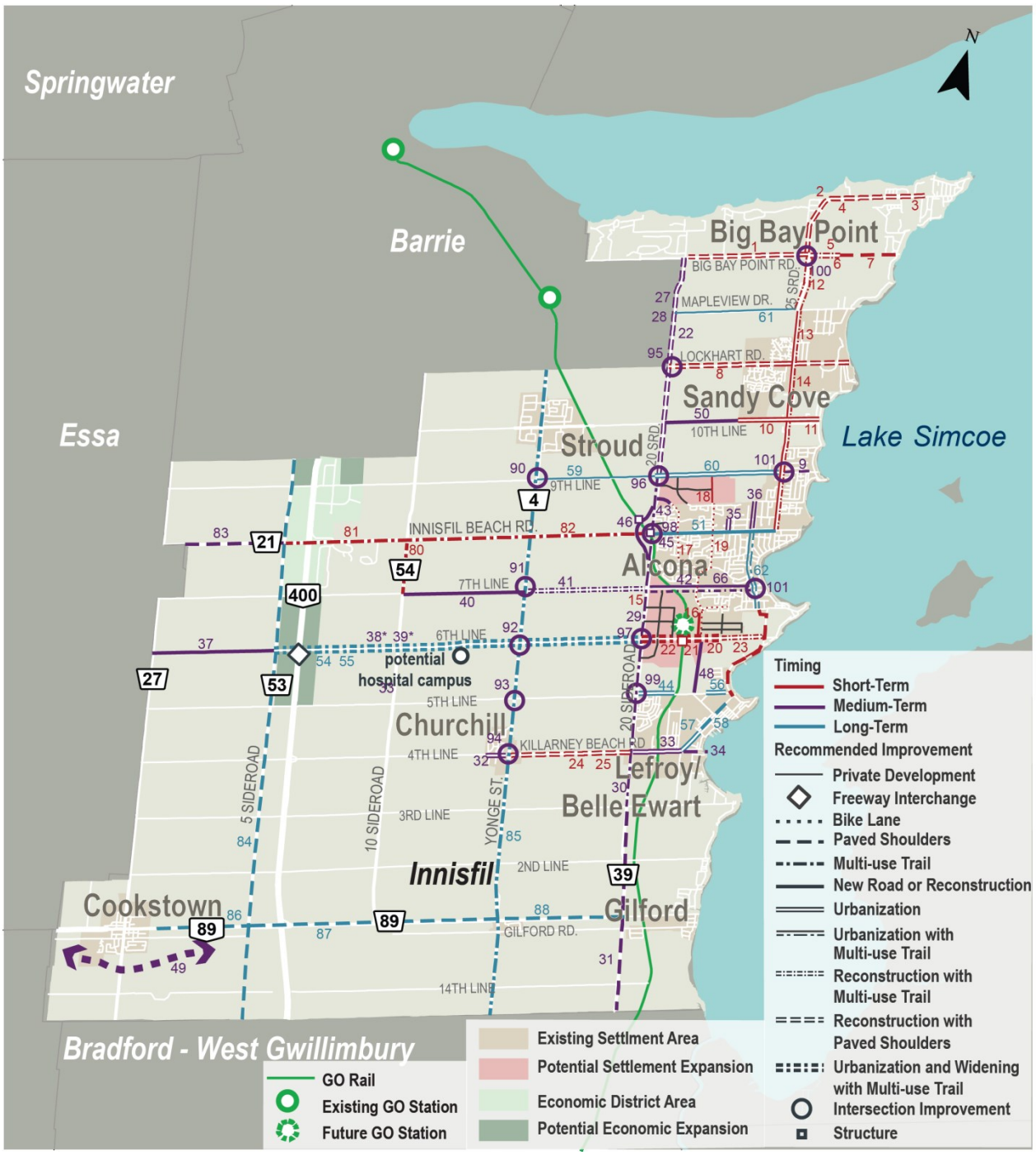


Exhibit 8-1: Recommended 2041 Road Network Improvements
Projects marked with an * are not mapped (as they are not the recommended projects within the time frame of this study to 2041).

With reference to these tables, the major improvements identified include urbanization, reconstruction, and multi-use trails or paved shoulders:

- Urbanization refers to reconstruction and widening to Town standards allowing for proper pavement width, curb & gutter, utilities, boulevards, and sidewalks.
- Reconstruction refers to pavement rehabilitation and widening of pavement width to Town standards (as necessary) but maintaining a rural cross section with shoulders (paved and unpaved) and ditches. Sidewalks, curbs, gutters, and boulevards are not provided.
- Multi-use trails or use of paved shoulders for active transportation needs can be accommodated depending on the planned right-of-way and pavement widths. They should follow the cross section requirements as indicated in **Section 8.2.2** when possible.

The following sections will discuss the improvements in Alcona North, Alcona South, and Highway 89 East-West connecting link improvement in further detail including an assessment and evaluation based on the following criteria:

- Network-wide Transportation Benefits: provides better network-wide connections and provide access to all users and improve their safety
- Community Benefits: provides better connections and improve safety for the community;
- Supports Future Growth Area: supports the projected growth in the area and in the Town;
- Environmental Impacts: protects natural environmental areas, local streams, aquatic resources, and air quality;
- Policy environment: compatible with the provincial, county, and Town's plans; and
- Financial implications: minimizes capital and maintenance costs.

8.1.1 New Road Improvements in Alcona North

New roads have been identified in the Alcona North Area to improve transportation connections, increase safety, and to support growth, including:

- 20th Sideroad Bypass
- Additional connections within potential settlement expansion areas:
    - Benson Street Extension to 20th Sideroad (currently planned road);
    - Jans Boulevard Extension to 9th Line (currently planned road);
    - North-south connection between Leslie Drive and 9th Line;
    - Additional east-west connection between 20th Sideroad and Jans Boulevard Extension; and
    - Additional secondary trail between Leslie Drive North Extension and Webster Boulevard to improve connectivity for pedestrians and cyclists.

In addition, two grade-separations have been identified to address potential queuing issues caused by all-day, two-way GO Rail service:

- Innisfil Beach Road grade-separation
- 20th Sideroad Bypass grade-separation. The projects above are illustrated in **Exhibit 8-2**.

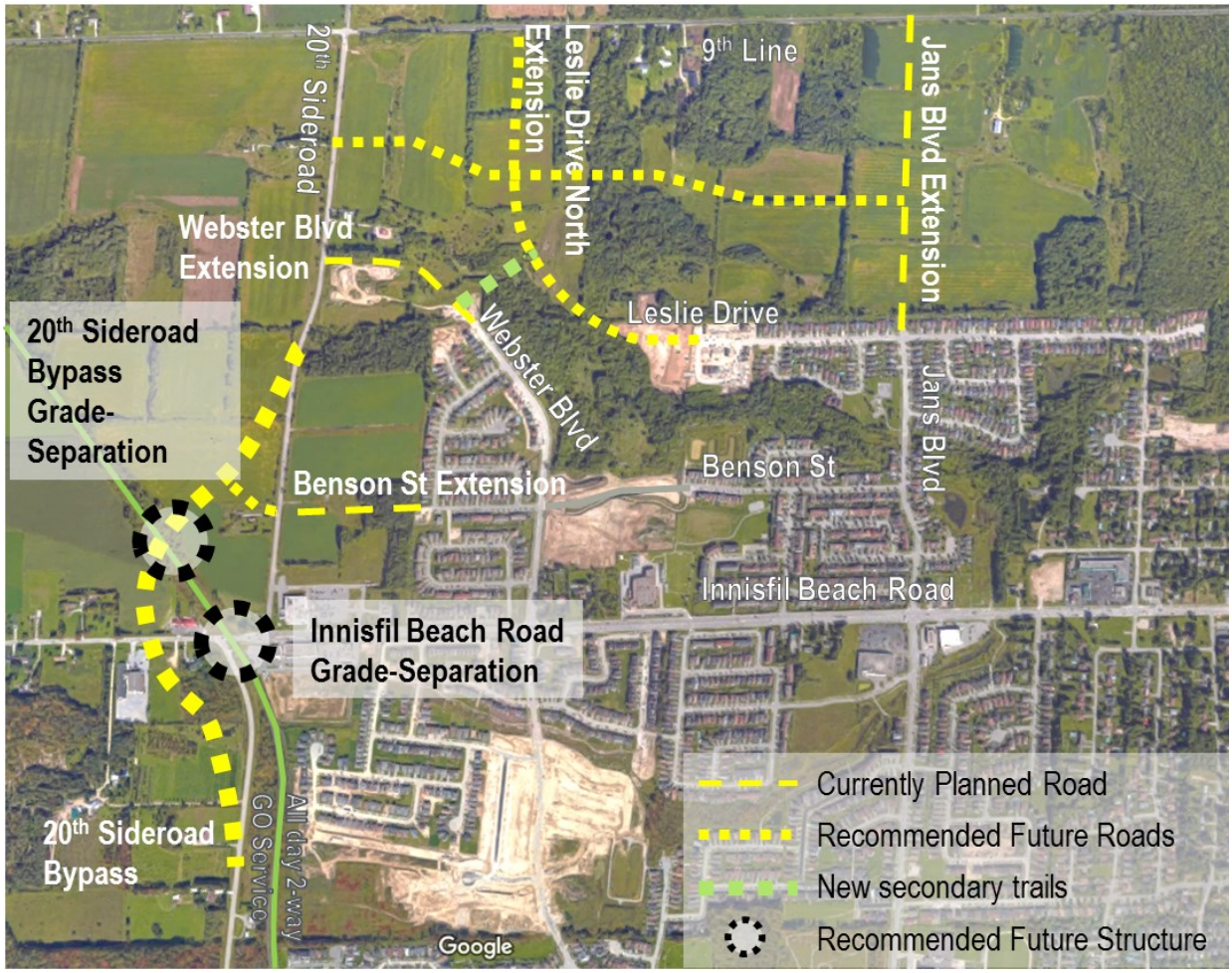


Exhibit 8-2: Road Improvements in Alcona North

8.1.1.1 CONNECTING ROADS IN ALCONA NORTH

Connecting roads, including the Webster Boulevard Extension to 20th Sideroad, Jans Boulevard Extension, Leslie Drive Extension, Benson Street, and the additional east-west and north-south connecting links, are recommended to improve the connectivity of local neighbourhoods. These roads also align with the residential design recommendations as indicated in the Town's Draft OP – Our Place to reduce block size and improve connectivity in neighbourhoods.

The evaluation summary of the local connecting roads in Alcona North is shown in **Exhibit 8-3** which recommends carrying forward the proposed road network for Alcona North.

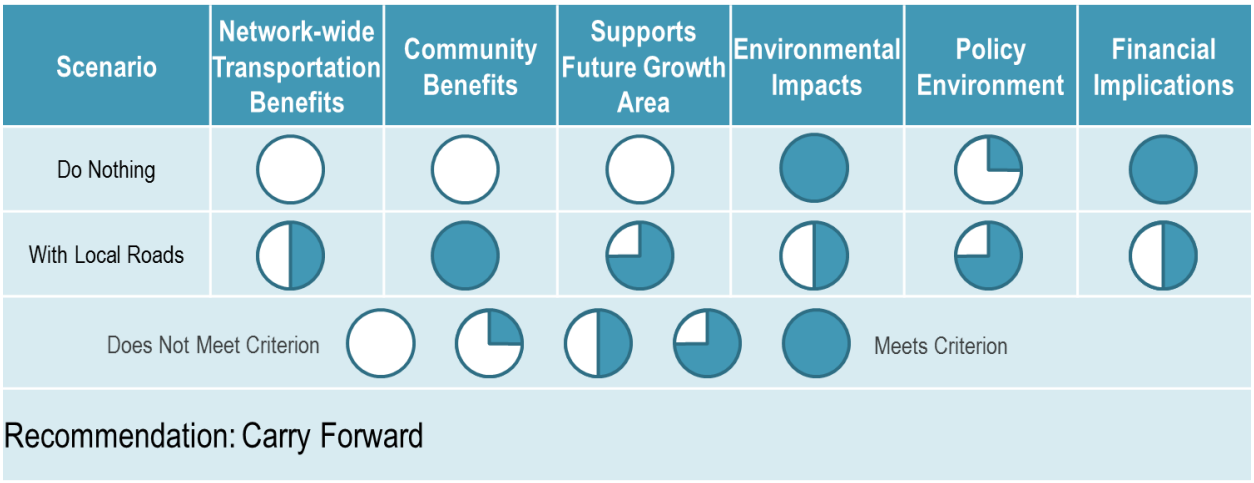


Exhibit 8-3: Alcona North Connecting Roads Evaluation Summary

8.1.1.2 INNISFIL BEACH ROAD GRADE-SEPARATION

The growth in Alcona is expected to bring significant traffic volume growth on Innisfil Beach Road. With the planned Metrolinx RER service, which will provide all-day, two-way GO Rail service to Barrie and Toronto with 30 min headway in the peak period and 60 min headway in the off-peak period, queuing issues are expected at the rail crossing with the existing configuration.

The Road Exposure Index is a measure typically used to assess the merit of grade separating a road and rail crossing. The index is calculated using the following formula:

$$Road\ Exposure\ Index = (Total\ number\ of\ Train\ Crossing\ per\ Day)\ x\ Average\ Annual\ Daily\ Traffic\ (AADT)$$

While there is no standard threshold to warrant a grade-separated crossing, most municipalities and agencies use a minimum Road Exposure Index of 200,000.

The following table (**Table 8-4**) summarized the expected AADT and the Road Exposure Index. The resulting Road Exposure Index is significantly higher than the grade-separation warrant (200,000), which indicates a need for grade-separation. An EA study should be initiated in the short-term to prepare for the implementation in the medium-term.

Table 8-4: Road Exposure Index for Innisfil Beach Road Grade-Separation

	PM Peak Hour Traffic Volumes (vehicles per hour per direction)		AADT [1]	Trains Per Day [2]	Road Exposure Index	Exceed the Grade Separation Warrant (>200,000)
	EB	WB				
Innisfil Beach Road	1321	478	18,000	46	828,000	Yes

[1] Estimated using a peak hour factor 10 to convert peak hour volumes to daily volumes
[2] Assuming RER service will run from 5 AM to 12 AM with a total of 4 hours of peak service in the morning and in the afternoon

The evaluation summary for the Innisfil Beach Road grade-separation is shown in **Exhibit 8-4**, which recommends carrying forward the Innisfil Beach Road Grade Separation.

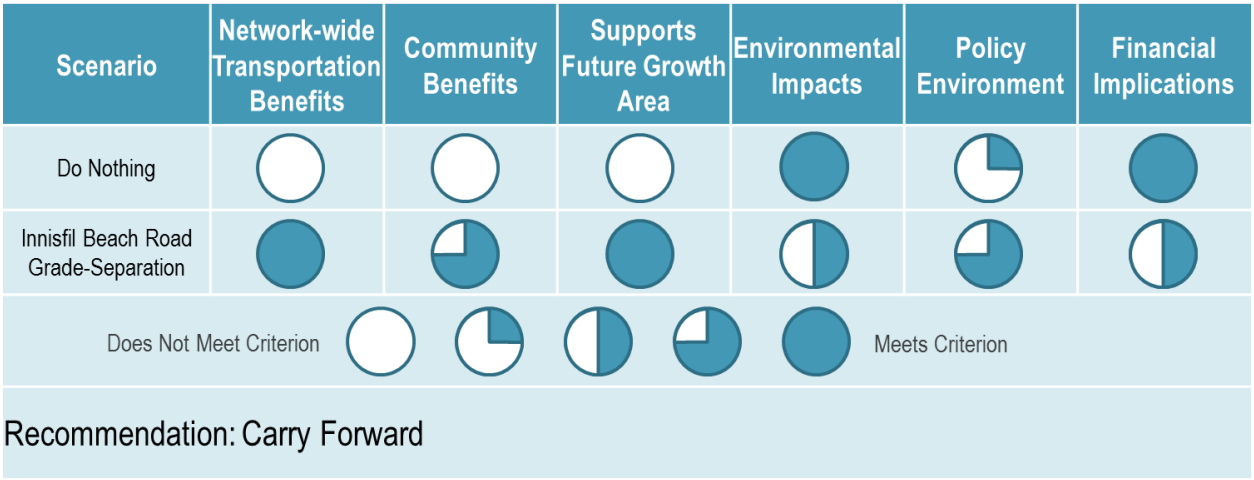


Exhibit 8-4: Innisfil Beach Road Grade-Separation Evaluation Summary

8.1.1.3 20TH SIDEROAD BYPASS AND GRADE-SEPARATION

The existing intersection of 20th Sideroad at Innisfil Beach Road is jogged due to the presence of the GO Rail tracks which cross Innisfil Beach Road at-grade between the north and south legs of 20th Sideroad. This configuration poses significant traffic and safety issues particularly with projected traffic growth on Innisfil Beach Road by 2031 and 2041 and the Metrolinx RER all-day, two-way GO Rail service. In addition, as shown in **Exhibit 8-5**, with the currently planned Webster Boulevard extension to 20th Sideroad project, vehicles are expected to cut through local neighbourhoods using the Webster Boulevard extension to avoid the intersection at 20th Sideroad and Innisfil Beach Road, causing additional safety issues for local residents.

To mitigate the safety issue, a continuous north-south corridor is recommended to provide an alternative route to Innisfil Beach Road and to provide access to Alcona. As shown in **Exhibit 8-5**, with the improved north-south road capacity and better connectivity at the intersection, traffic conditions improved without the 20th Sideroad Bypass. There are fewer vehicles using the Webster Boulevard Extension to cut through the Alcona neighbourhood, improving the safety for local residents. With the expected growth in Alcona before 2031, this project should be considered for a medium-term project.

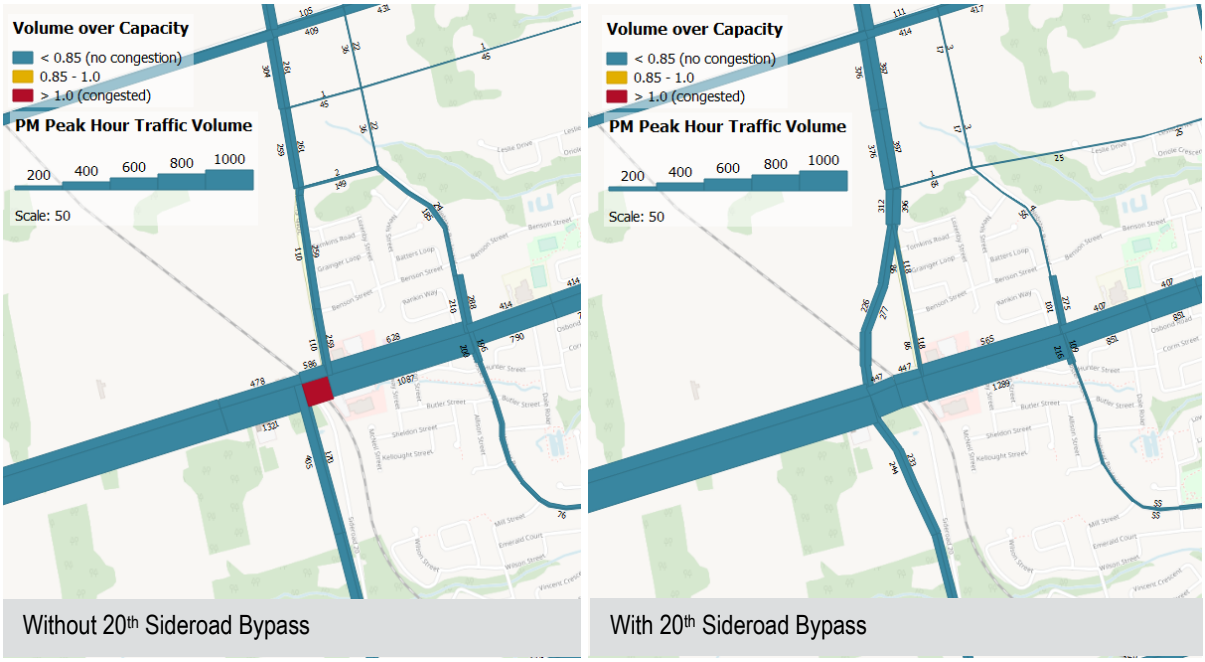


Exhibit 8-5: Comparison of the Projected 2041 PM Peak Hour Traffic Volumes at 20th Sideroad and Innisfil Beach Road with and without the 20th Sideroad Bypass

In addition to the continuous north-south corridor, a grade separated crossing is warranted for the corridor at rail crossing due to the planned Metrolinx RER service, which will provide all-day, two-way GO Rail service to Barrie. As shown in **Table 8-5**, the Road Exposure Index exceeds the warrant for a Grade Separation. This project should be given lower priority compared to the Innisfil Beach Road Grade-Separation and can be considered as a long-term project. However, this project can be combined with the 20th Sideroad Bypass project, which has a more urgent need for the medium-term, in order to maximize the construction efficiency.

Table 8-5: Road Exposure Index for 20th Sideroad Bypass Grade-Separation

	PM Peak Hour Traffic Volumes (vehicles per hour per direction)		AADT [1]	Trains Per Day [2]	Road Exposure Index	Exceed the Grade Separation Warrant (>200,000)
	NB	SB				
20th Sideroad	277	226	5,000	46	230,000	Yes

[1] Estimated using a peak hour factor 10 to convert peak hour volumes to daily volumes
[2] Assuming RER service will run from 5 AM to 12 AM with a total of 4 hours of peak service in the morning and in the afternoon

The evaluation summaries for the 20th Sideroad Bypass and grade-separation are shown in **Exhibit 8-6** and **Exhibit 8-7**, respectively.

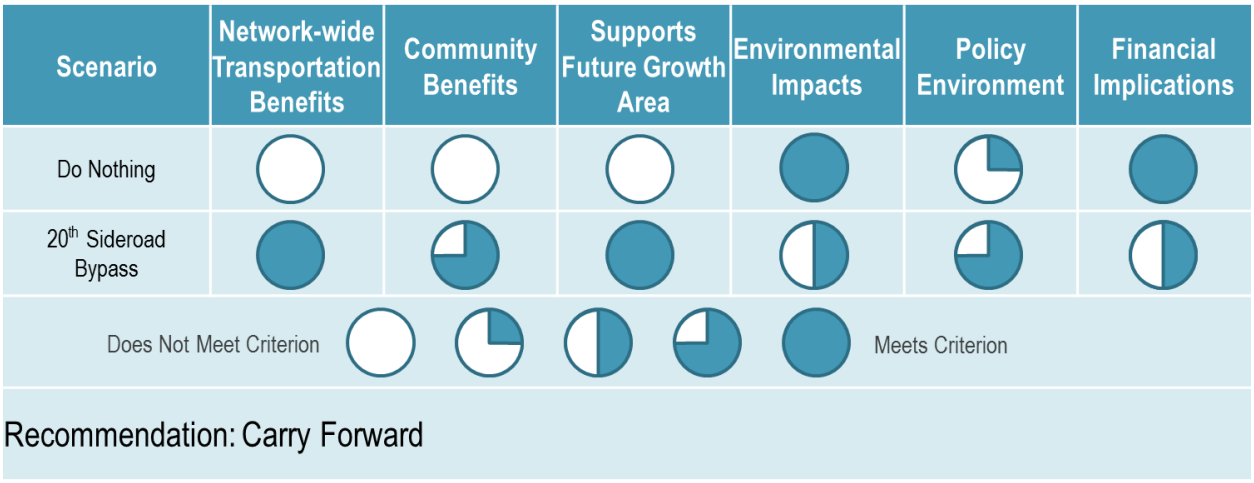


Exhibit 8-6: 20th Sideroad Bypass Evaluation Summary

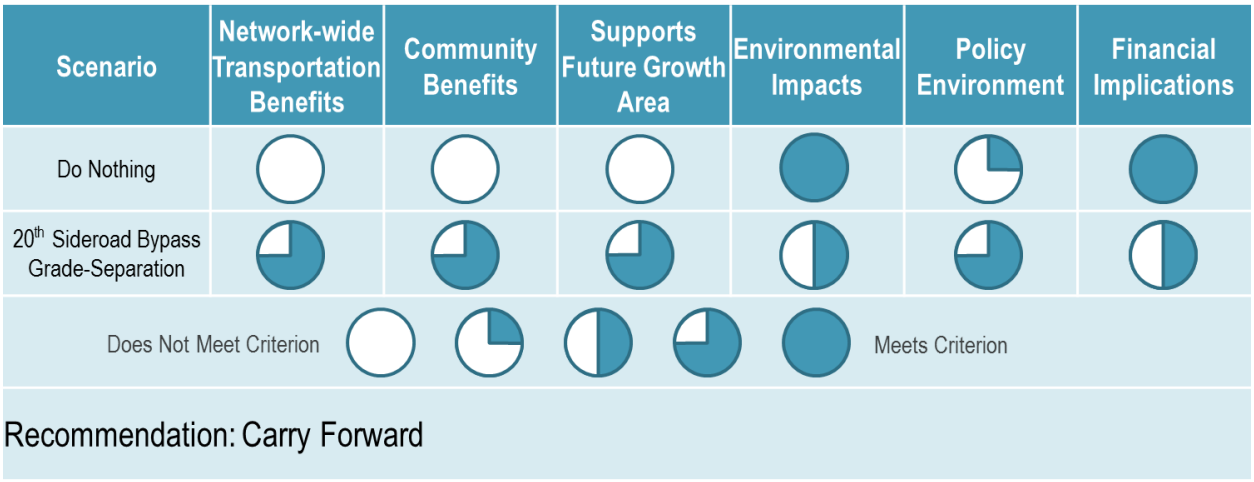


Exhibit 8-7: 20th Sideroad Bypass Grade-Separation Evaluation Summary

8.1.2 New Road Improvements in Alcona South

Similarly, to accommodate the expected growth brought by the future Innisfil GO Rail station at 6th Line and the Sleeping Lion Development, a list of road projects have been identified:

- New roads identified in the Alcona South Secondary Plan, as shown in **Exhibit 8-8**.
- New roads identified in the Sleeping Lion Draft Plan of Subdivision, as shown in **Exhibit 8-9**.
- Additional east-west and north-south connections to provide additional access to the future Innisfil GO Rail station.
- Webster Boulevard South Extension to 5th Line.

These projects are illustrated in **Exhibit 8-10**.

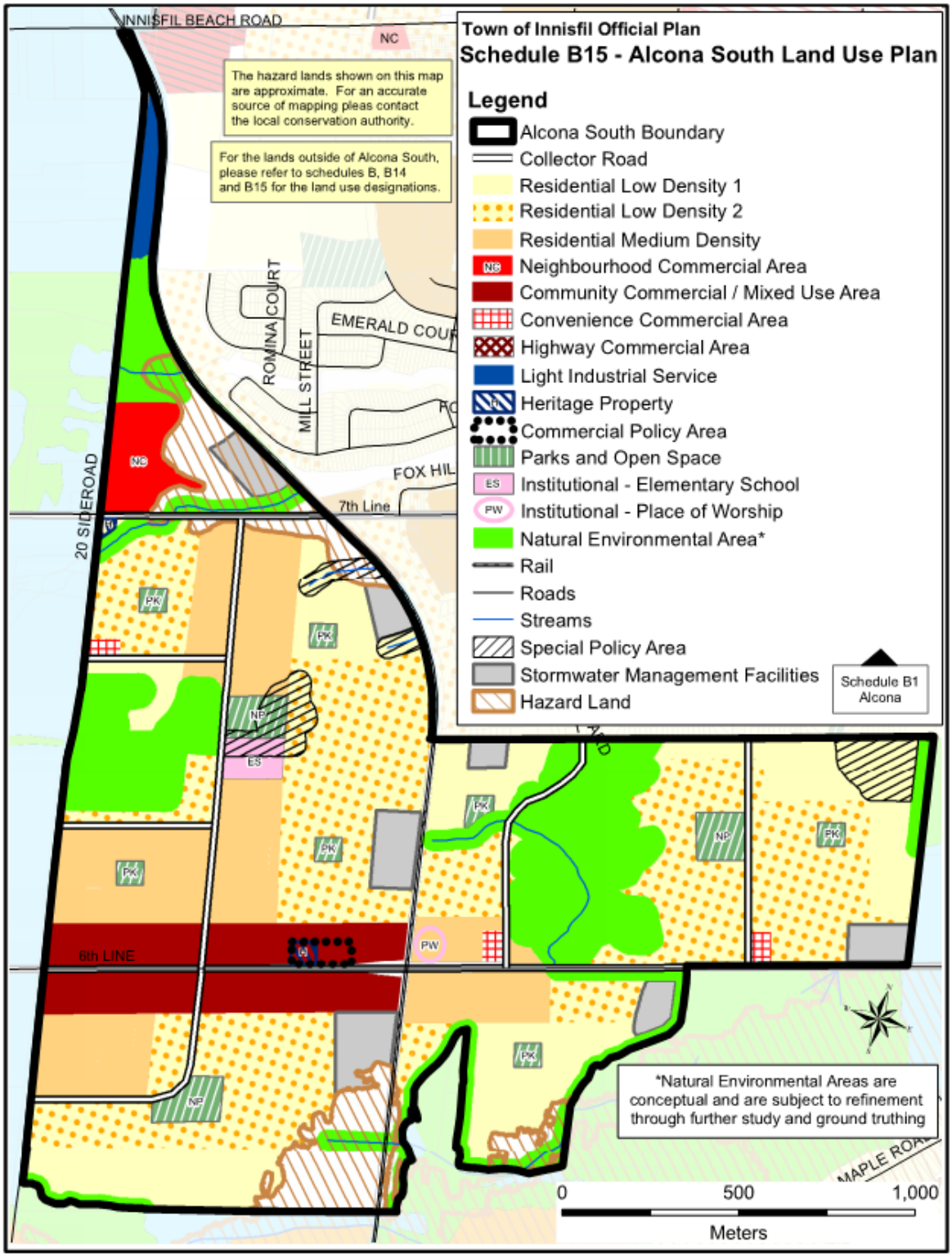


Exhibit 8-8: Alcona South Secondary Plan
Source: Official Plan Schedule B15

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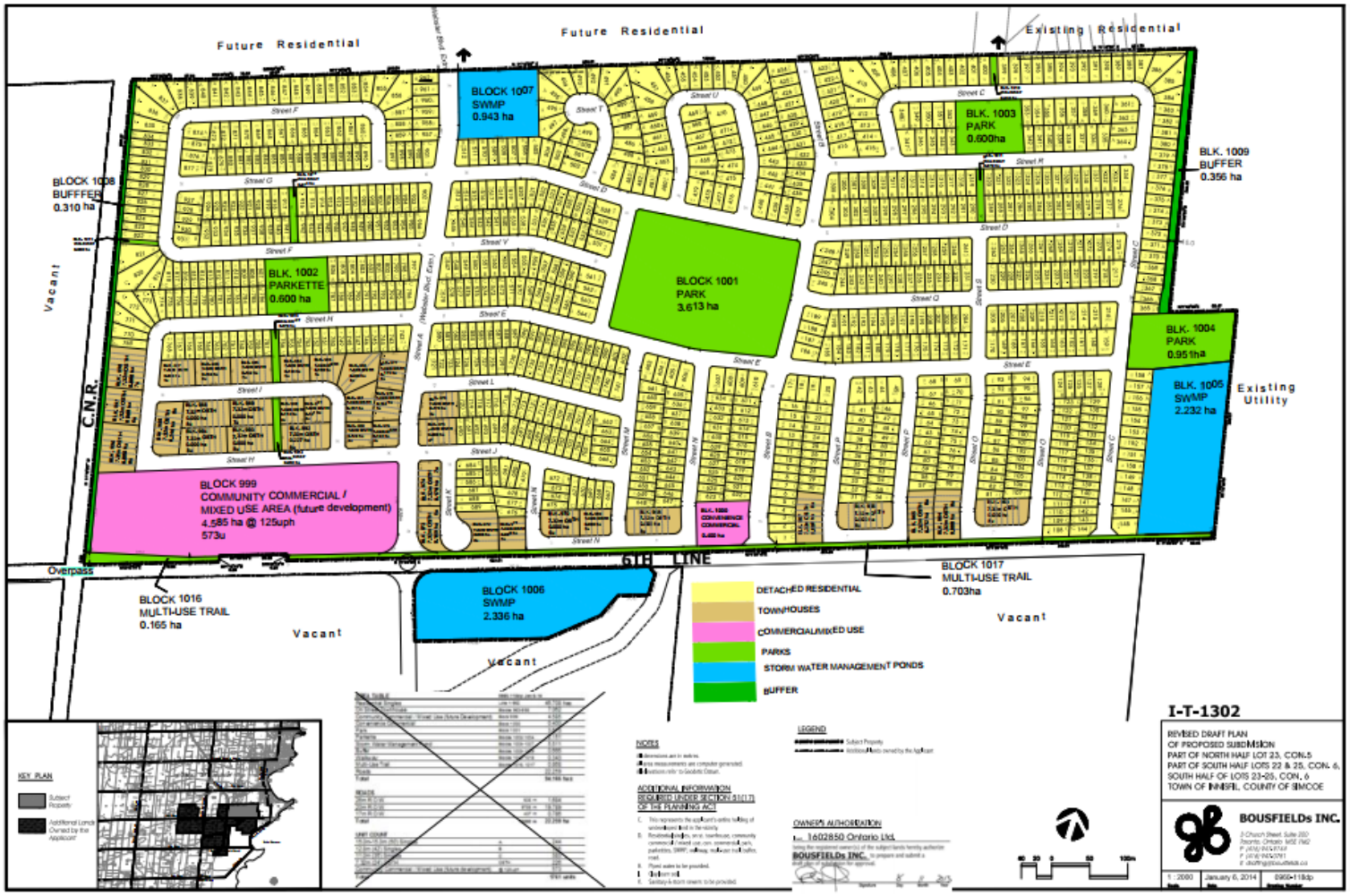


Exhibit 8-9: Sleeping Lion Draft Plan of Subdivision
Source: https://innisfil.ca/getFileByName/Town%20Staff%20Presentation%20Draft%20Plan.pdf

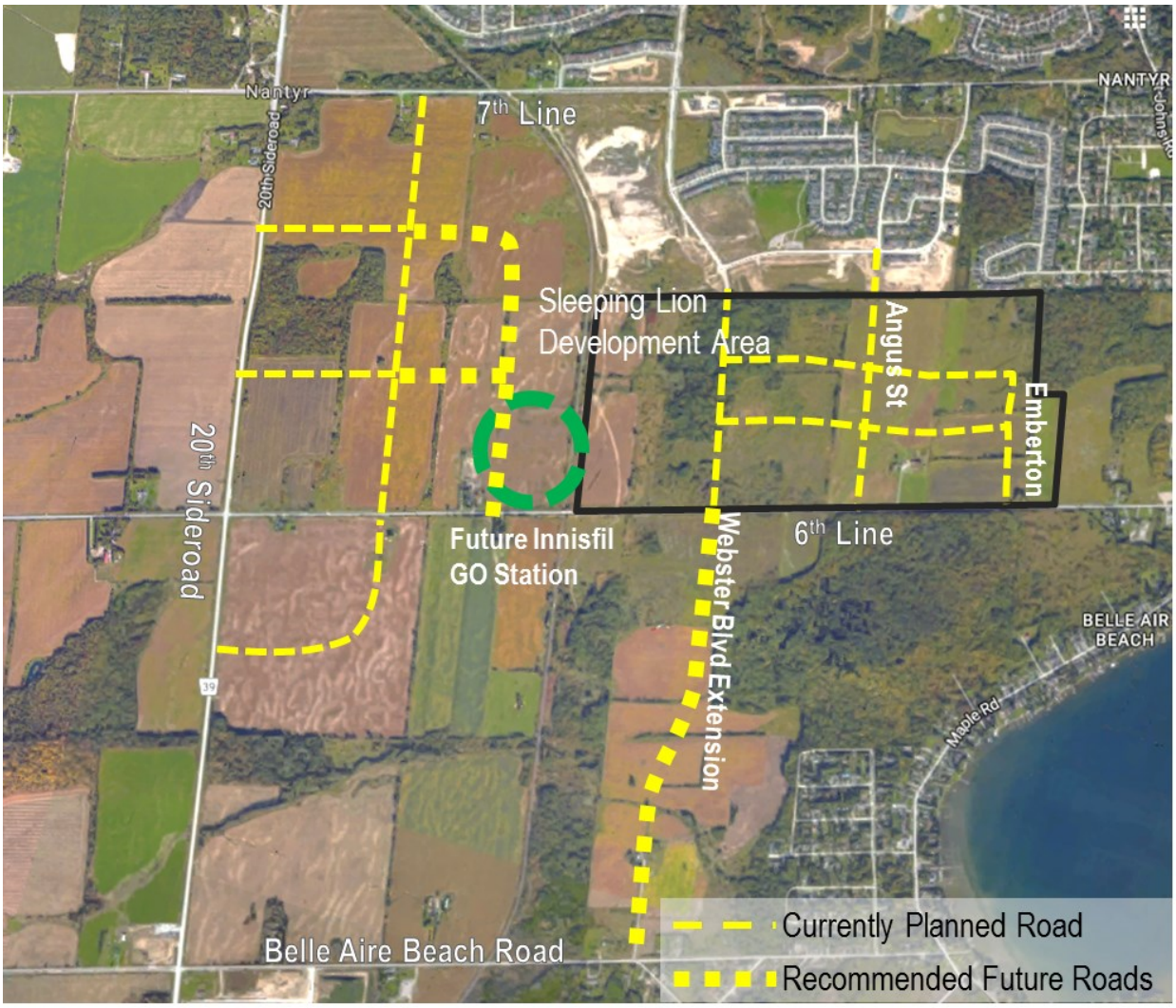


Exhibit 8-10: Road Improvements in Alcona South

8.1.2.1 CONNECTING ROADS IN ALCONA SOUTH

The local roads indicated in the Alcona Secondary Plan and the Sleeping Lion Draft Plan of Subdivision will improve the connectivity of the neighbourhood and support future growth. In addition, east-west and north-south connections are recommended to provide more access to the future Innisfil GO Station. These roads also align with the residential design recommendations as indicated in the Town's Draft OP – Our Place to reduce block size and improve connectivity in neighbourhoods.

The evaluation summary of these connecting roads is shown in

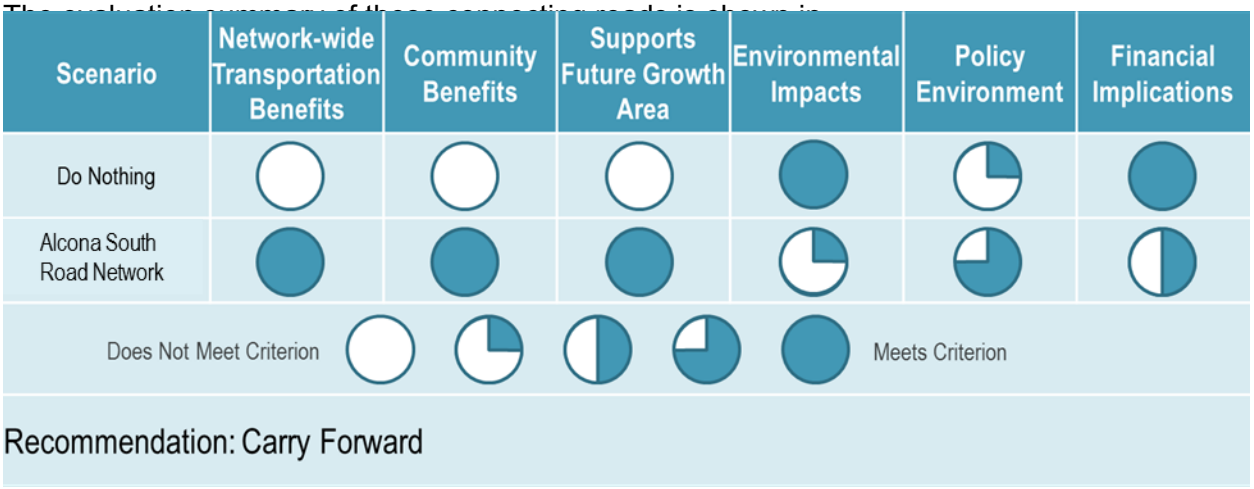


Exhibit 8-11, which recommends carrying forward the collector road network in Alcona South.

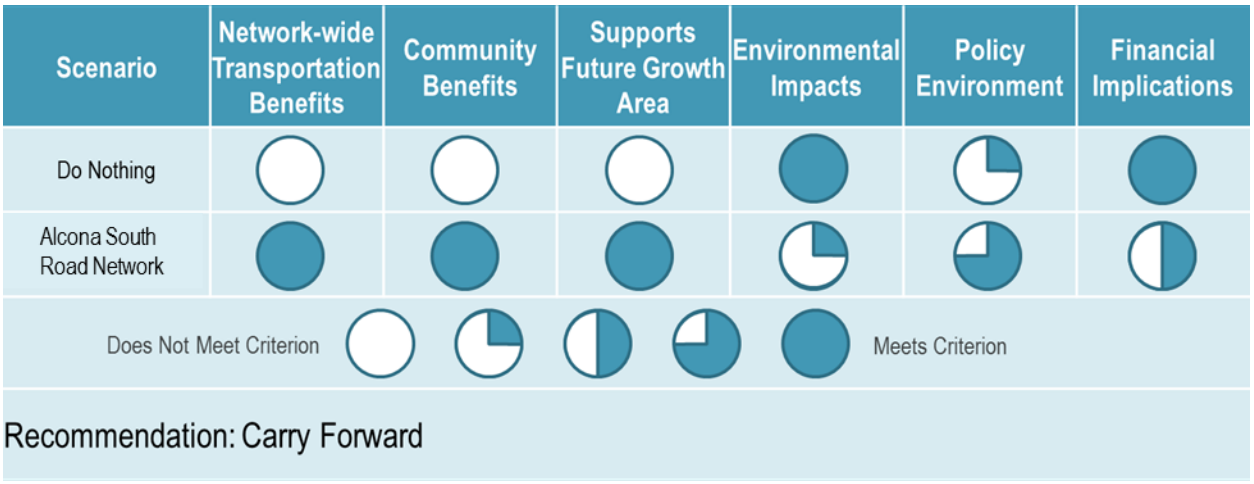


Exhibit 8-11: Alcona South Local Connecting Roads Evaluation Summary

8.1.2.2 WEBSTER BOULEVARD SOUTH EXTENSION

With the future GO Rail Station at 6th Line and planned developments in Alcona South and Lefroy / Belle Ewart, the communities have an increasing need for connections to one another and to the future GO Rail Station. Extending Webster Boulevard further south to 5th Line will not only provide an additional connection for vehicles, but also significantly improve the connectivity of walk and bicycle trips and the access to the future GO Rail Station. It is noted that this road extension will cross environmental sensitive area and a comprehensive EA study would be required. The evaluation summary of the Webster Boulevard South Extension is shown in **Exhibit 8-12**, which recommends carrying forward the Webster Boulevard South Extension.

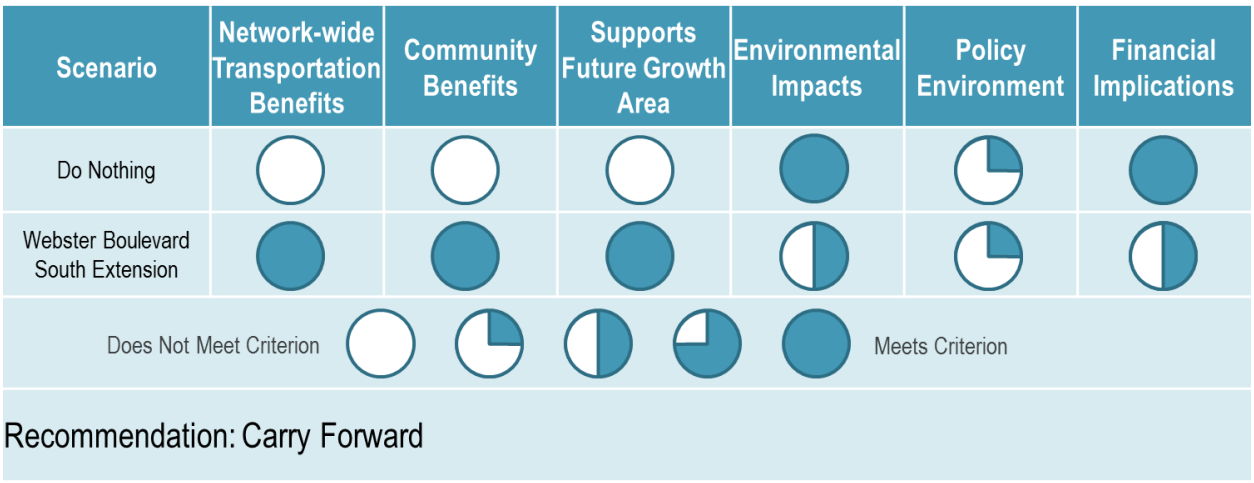


Exhibit 8-12: Webster Boulevard South Extension Evaluation Summary

8.1.3 Highway 89 East-West Connecting Link Improvement

Previous studies such as the Town's Draft OP – Our Plan (2017), South Simcoe TMP (2013), the previous Innisfil TMP (2013), and the MTO's Highway 89 Bypass study (2007) had all identified the need for improvement for Highway 89 near Cookstown.

Highway 89 near Cookstown carries traffic to and from the Town of Innisfil, as well as significant traffic to surround municipalities, such as New Tecumseth and Bradford. It currently faces safety issues such as speeding and high truck volumes through the Town. As shown in **Exhibit 8-14**, with the current road configuration, significant congestion is expected in 2041.The road currently has single lane approaches with a plan to install left-turn lanes in the near future and cannot be further widened due to property constraints through downtown Cookstown. This location will continue to experience congestion until a potential east-west link improvement is implemented or until drivers change their travel patterns over time to avoid the congestion.

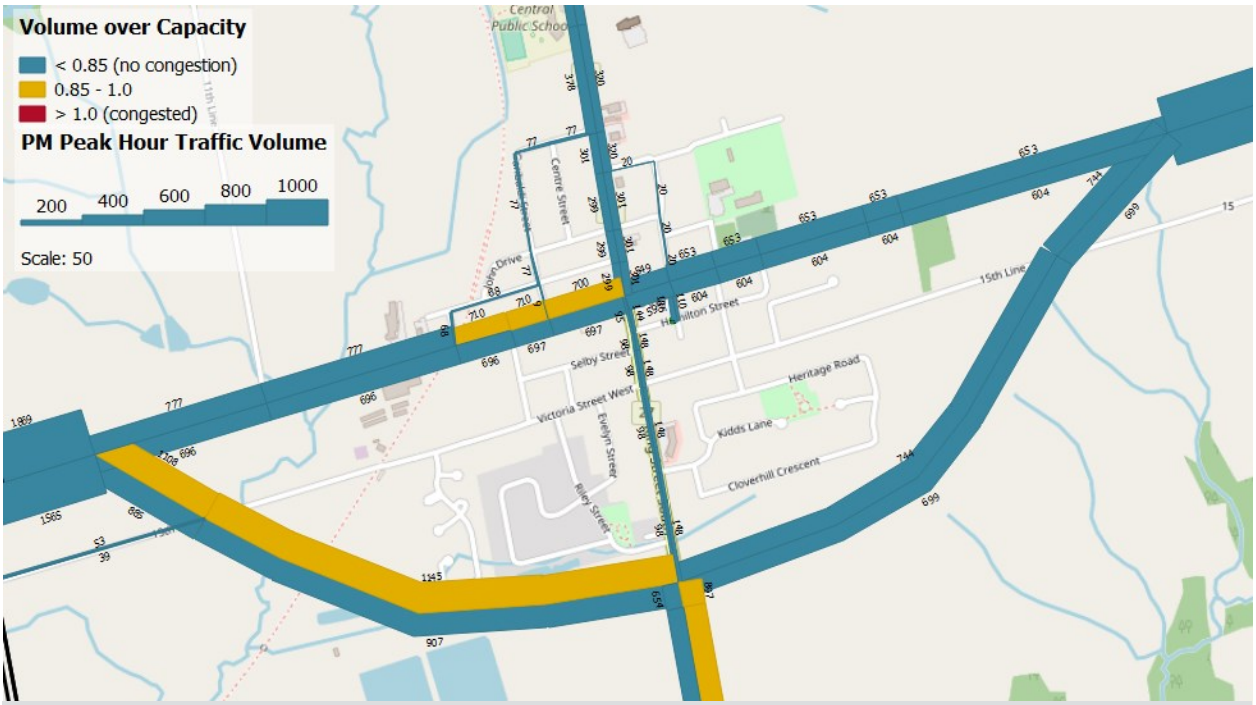
A conceptual alignment of the east-west link is shown in **Exhibit 8-13**. With this improvement, the traffic condition will be significantly reduced, as shown in **Exhibit 8-14**.

Exhibit 8-13: Concept Alignment Highway 89 East-West Connecting Link Improvement

A summary of the evaluation is shown in **Exhibit 8-15**.

This improvement was identified in MTO's 2017-2022 Southern Highways Program but as a "Planning for the Future" project, which means this project has not been assigned a delivery year of funding, for either design or construction. There is a strong need for the Town, in collaboration with surrounding municipalities, to initiate a Class Environmental Assessment for the Highway 89 east-west connecting link improvement, in order to move forward with construction and to address existing needs and support the growth in the area.

Current Configuration



With Highway 89 East-West Connecting Link Improvement

Exhibit 8-14: Comparison of the Projected 2041 PM Peak Hour Traffic Volumes near Cookstown with and without the Highway 89 East-West Connecting Link Improvement

Note: Highway 89 East-West Connecting Link Improvement assumes additional two-lane highway to the south of Cookstown and widening segments to the east and west (till Highway 400) to four-lane.

The alignment of the east-west link in image above is conception and not intended to reflect any potential location of such a link.

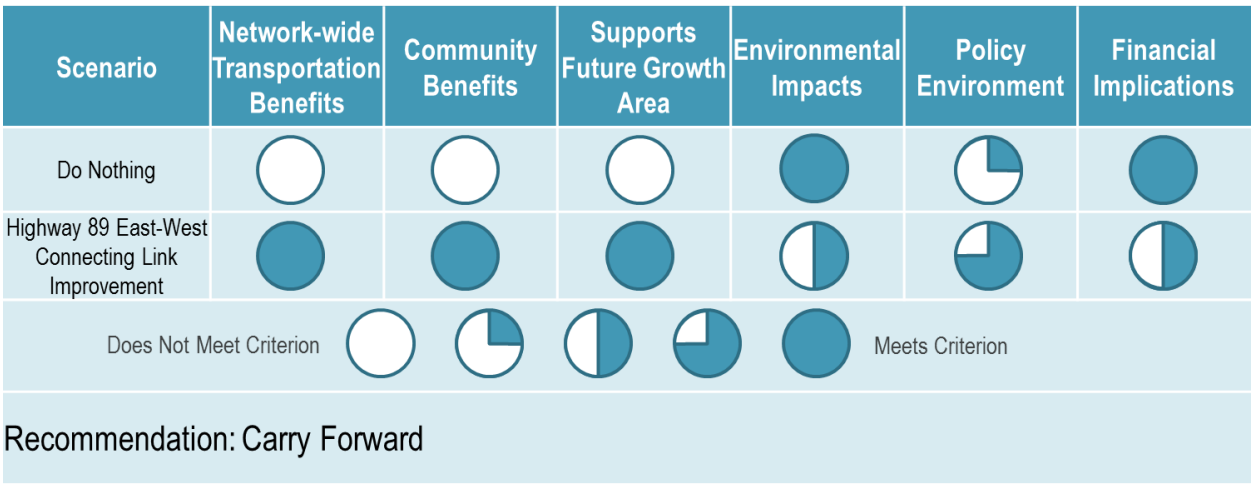


Exhibit 8-15: Highway 89 East-West Connecting Link Improvement Evaluation Summary

8.2 Active Transportation

8.2.1 Improving Connections

It is recommended that the Town implement projects identified in the Trails Master Plan in order to improve the safety and comfort level for people who walk and cycle and promote sustainable and healthy travel habits. Given the current population densities in the Town and the construction costs for the active transportation network such as sidewalks and trails, it is more reasonable for the Town to take an incremental approach, following the phasing recommendations in the Trails Master Plan.

8.2.1.1 REVISIONS TO THE TRAILS MASTER PLAN

It is recommended for the Town to participate in the coordination of the development and implementation of proposed trails in Simcoe County along key corridors in the Town, including Innisfil Beach Road, Yonge Street, and 5th Sideroad.

In addition, the timings of these projects can be combined with major road projects such as reconstruction in order to improve the project efficiency and minimize the impact on local residents.

Projects in the Trails Master Plan should also be revised based on the new road improvements as described in previous **Section 8.1**.

8.2.2 Potential Road Cross Section Requirement

Active transportation cross sections are recommended based on review of the best practices, National Association of City Transportation Officials (NACTO) Design Guide, OTM Book 18, and TAC Geometric Design Guide for Canadian Roads.

This section includes the cross sections for the following elements:

- Sidewalks
- Multi-use Trails
- Paved shoulders
- Bike facilities, including shared bike facilities (sharrows), painted bicycle lanes, protected bicycle lanes, and protected raised bicycle lanes.

Details of the potential road cross section requirements can be found in the Complete Streets Guidelines in **Appendix D.**

8.2.2.1 SIDEWALKS

Sidewalks provide a safe and accessible environment for pedestrians. They should be provided on at least one side of all streets in urban settings.

Sidewalks must be at least 1.5m wide in all cases, but designers should strive for a minimum width of 1.8m to ensure accessibility. All new sidewalk installations must comply with AODA requirements. Wider sidewalks should also be considered where ROW allows in areas where enhanced pedestrian facilities are warranted, especially on Downtown Commercial streets.

8.2.2.2 MULTI-USE TRAILS

Multi-use trails are off-road facilities, fully separated from motorized traffic by a boulevard or paved surface. They often serve a commuter and recreation function, often passing through parks and other natural spaces. They are typically shared between pedestrians, cyclists, roller-bladers, and skateboarders. The desired width of a multi-use trail is 4.0m, and the minimum width is 3.0m.

8.2.2.3 PAVED SHOULDERS

Paved shoulders can be shared between pedestrians and cyclists. Paved shoulders should be in the same direction as the adjacent outside travel lane. They should be indicated by road signs and pavement markings to ensure the visibility of the facility. The minimum width of paved shoulders that are intended to be active transportation facilities should be 2.0m, while the desirable minimum width by the Town is 3.0m. In constrained situations with speed limits lower or equal to 60 km/h, the minimum width can be reduced to 1.5m.

8.2.2.4 SHARED BIKE FACILITY (SHARROW)

A shared bike facility which requires a total curb lane width of 4.0m could be accommodated on any Town road including local road, minor collector, or major collector. The major collector road would require widening of the curb lane from 3.5m to 4m. The 0.5m required could be taken off the 6.0m boulevard. For minor collector roads, where there is a 12.0m pavement width to accommodate travel lanes and on-street parking, a widening of 0.5m could also be taken from the 7.0m boulevard.

8.2.2.5 BICYCLE LANES (PAINTED)

Bicycle lanes are on-road facilities designated by pavement markings and signage. Bicycle lanes are typically found on the right side of the street between the adjacent travel lane and curb or parking lane and flow in the same direction of traffic.

Buffered bicycle lanes offer an enhancement by using painted buffers to provide additional space between motor vehicles and cyclists.

Curbside bicycle lanes should be 1.8m wide, but may be reduced to 1.5m if necessary. Bicycle lanes adjacent to parking should be at least 2.5m wide (including 1.0m buffer), but may be as narrow as 2.0m (including 0.5m buffer). This guide recommends implementing on-street bicycle lanes immediately adjacent to parking only if desired buffer width is possible.

8.2.2.6 PROTECTED BICYCLE LANES

Protected bicycle lanes are an exclusive bicycle facility adjacent to and at the same level as the roadway, but separated from motorized traffic by a physical buffer (e.g. planters, bollards, curbs, or a parking lane). They can be bi- or uni-directional, and designed to accommodate cyclists on one or both sides of the street. **Table 8-6**, adopted from OTM Book 18, illustrates desired and minimum widths.

Table 8-6: Protected Bicycle Facility Width

Physical Buffer Separating Cycling Facility from Motorized Traffic	Cycling Facility Desired Width	Cycling Facility Suggested Minimum
Flexible bollards	2.0m lane + 1.2m buffer	1.5m lane + 0.5m buffer
Planters / Concrete curb	2.0m lane + 1.2m buffer	1.8m lane + 0.5m buffer
On-street parking	1.8m lane + 1.2m buffer	1.5m lane + 0.8m buffer

8.2.2.7 PROTECTED RAISED BICYCLE LANES

Raised cycle tracks are an exclusive bicycle facility similar to protected cycle tracks, but physically separated from motorized traffic by a height difference. They may be at the level of the adjacent sidewalk or at an intermediate level between the roadway and sidewalk. The desired width for a one-way raised cycle track is 2m, and the minimum 1.5m.

8.2.3 Implementation Schedule

The implementation schedule is based on the Town's Trails Master Plan. However, when other road improvement projects such as reconstruction are planned for the same road, the schedule can be shifted to coordinate with these projects, in order to improve efficiency and minimize the impact on local residents.

8.2.4 Supportive Programs for Walking and Cycling

8.2.4.1 EDUCATION

Aside from investments in walking and cycling infrastructure, education is an important component to helping road users understand the network in a way that supports a safe and inviting environment for walking and cycling in the Town. The education component may include:

- Educating residents on safe operating procedures for the different types of pedestrian and cycling facilities in the Town (e.g., a multi-use pathway versus a boulevard bike path);
- Enhancing and supporting walking and cycling advocacy, advisory and information groups and programs (e.g., Ontario Trails Council);
- Providing funding to existing and proposed pedestrian programs developed by the town or in partnership with the County and / or other private sector partners;
- Making a range of information related to cycling and walking (such as health, safety and community design information) available on the Town's website and social media pages such as Facebook, as well as including references to other walking and cycling websites;
- Developing a way-finding and information signage system that establishes an identity of all Town pedestrian and cycling facilities; and
- Participating in networks/coalitions/committees to increase stakeholder and community awareness.

8.2.4.2 PROMOTION

People will consider walking or cycling for recreational or commuter purposes if it is convenient, safe and comfortable. The following are some ways of encouraging walking and cycling.

- Engaging the community to encourage and support walking and cycling;
- Encouraging residents to share photos of where they have been through walking and cycling on social media, such as Facebook, Twitter, and Instagram;
- Developing cycling maps as promotional tools for informing individuals about travel choices and opportunities to walk or cycle;
- Attaching incentives and disincentives to various travel modes to encourage residents to make more sustainable choices;
- Establishing a Bike User Group within the Town; and
- Collaborating with Public Health and other stakeholders to develop cohesive and sustainable strategies for promoting active and healthy lifestyles.

8.3 Intersection Improvements

Intersection improvements will be required in addition to upgrades to the road network. Based on the analysis as discussed previously in **Section 5.3.3**, the following intersections warrant improvements:

- Yonge Street & 9th Line

- Yonge Street & 7th Line
- Yonge Street & 6th Line (Refer to 6th Line EA)
- Yonge Street & 5th Line
- Yonge Street & 4th Line / Killarney Beach Road
- 20th Sideroad & Lockhart Road
- 20th Sideroad & 9th Line
- 20th Sideroad and 6th Line (Refer to 6th Line EA)
- Innisfil Beach Road & 20th Sideroad (North Leg)
- Innisfil Beach Road & 20th Sideroad (South Leg)
- 20th Sideroad & 5th Line
- 25th Sideroad & Big Bay Point Road / 13th Line
- 25th Sideroad & 9th Line
- St. John's Road & 7th Line (currently under study by 7th Line EA)

The intersection at Yonge Street and 9th Line warrant exclusive turning lanes at all approaches.

Further to the Roundabout Implementation Policy (**Appendix D**), roundabouts should be considered at the following locations:

- 20th Sideroad & Lockhart Road
- 20th Sideroad & 9th Line
- 20th Sideroad and 6th Line
- 20th Sideroad & 5th Line
- 25th Sideroad & Big Bay Point Road / 13th Line
- 25th Sideroad & 9th Line
- St. John's Road & 7th Line

8.4 Zoning By-law Update

A subsequent zoning by-law study following the completion of the TMP is recommended and should consider reduced minimum parking standards and the addition of Electric Vehicle parking space and carpool parking space requirements.

As autonomous vehicles begin to enter the marketplace and become a viable option for transportation, towns, cities and regions are likely to see a reduction in the overall amount of parking needed to access developments, particularly in denser areas. Networks of shared autonomous vehicles that operate much like taxi companies could work to greatly reduce the need for parking, while individually-owned autonomous vehicles can facilitate pickup / drop-off somewhere separated from parking. The Town should have a framework in place that allows reduction in parking as autonomous trips increase, and allows for flexibility in creative parking solutions that the new technology will enable.

8.5 EcoMobility Hub Pilot Program

An EcoMobility Hub (concept described in **Section 2.5.2**) pilot program is recommended at key locations in the Town. The Hub can provide a designated, safe waiting area for persons waiting

to use the Town's on-demand transit service. Initially an indoor location within an existing building is recommended. This location can be staffed by the Town to facilitate persons wishing to use the service is recommended. In the future when shared mobility services (bike share, car share) become more prevalent in the Town, or where a fixed route transit stop would run, all of these services can be integrated in these hubs, in order to provide seamless connections to and from the transit service.

Potential locations for this concept can be at the future GO Train station (6th Line), Innisfil Recreational Complex, Friday Harbour, Lefroy, Churchill (especially with the location of two GO bus stops there). A central hub in Alcona or Innisfil Heights may also be warranted.

8.6 Bike Share

To complement the EcoMobility hub pilot, a bike-share pilot program should be implemented at the same time. Investigate the viability of a local bike sharing program. As identified in **Section 2.5.1.1.4**, a bike share program in the Town could increase cycling mode share within the Town. Users could use the program to bike to work, between communities, or for recreational trips along the waterfront. Integrating bike share services with the existing demand-responsive transit initiative provides Town residents and employees with multiple mobility options that decrease the need for private automobile ownership.

8.7 Fixed Route Transit Recommendations

While it is recognized that the Town has identified innovative on-demand micro-transit services to provide affordable mobility to its residents, Town residents remain supportive of fixed route transit services as long-term solution particularly as the Town continues to grow and develop. Further to the Town Staff Report on Demand-Responsive Transit Implementation - Stage 1 (March 15, 2017), data collected from the Stage 1 of the demand-responsive transit service should be used to assess patterns and potential locations for fixed-route transit services.

Preliminary data from Stage 1 is documented within this report for future consideration. Based on the data collected between May 15 and September 30, 2017, the top destinations included:

- Innisfil Employment Area;
- Barrie South GO;
- Innisfil Recreation Complex; and
- Innisfil GO Bus Stops.

Upon completion of Stage 1, further study is recommended through a **fixed route transit feasibility study** that identifies a potential business case for fixed route services relative to the continuation of on-demand services. Longer-term fixed route viability should also consider future key nodes including the Innisfil GO Station and the potential hospital campus, both planned along 6th Line.

8.7.1 Roadway Design Protection

While reduced lane widths are potential solutions on local roadways to reduce traffic speeding and increasing safety for cyclists and pedestrians, roadways designated as collector roads or arterial roads should continue to protect for a minimum 3.5m lane width to accommodate larger vehicles for potential fixed route transit services on these roadways. This recommendation is reflected in the **Complete Streets Guidelines** in **Appendix D**.

8.8 Subdivision Design

To provide continuous active transportation facilities on collector roads and arterial roads, minimizing conflict points is required to ensure the safety of users. The subdivision design should follow draft OP – Our Place, Section 10.1.12 to 10.1.16. They are summarized as follows:

- Neighbourhoods should be designed with a modified grid street pattern to provide high connectivity.
- Street system should also reflect the context of local existing street grids where appropriate and should be configured to promote retention of views, significant landforms, and other natural and heritage features.
- Street networks should offer alternative ways of moving through neighbourhoods, such as rear lanes, to enable comfortable and safe pedestrian and bicycle movements.
- Block patterns should be in a range of 140 to 230 metres generally. Mid-block pedestrian linkages are required for blocks longer than 230 metres.
- Driveways along arterial and collector roads should be minimized.

8.9 Proposed Revisions to Official Plan Schedule C

Based on a review of the anticipated 2041 travel demands using the model that was developed for the Town, the following road classification changes are recommended:

- 7th Line from Yonge Street to St Johns Road upgrade from Major Collector to Arterial Road.
- 6th Line from 20th Sideroad to St Johns Road, upgrade from Major Collector to Arterial Road.

With the future 6th Line interchange, the GO Rail station, and expected growth in Alcona South settlement expansion area (e.g. Sleeping Lion development) at 6th Line, there is a need to upgrade the road to arterial to accommodate future traffic growth.

Similarly, 7th Line is expected to be heavily used due to the future developments in Alcona and the future GO Rail station at 6th Line. It is also expected to off-load traffic from Innisfil Beach Road and 6th Line.

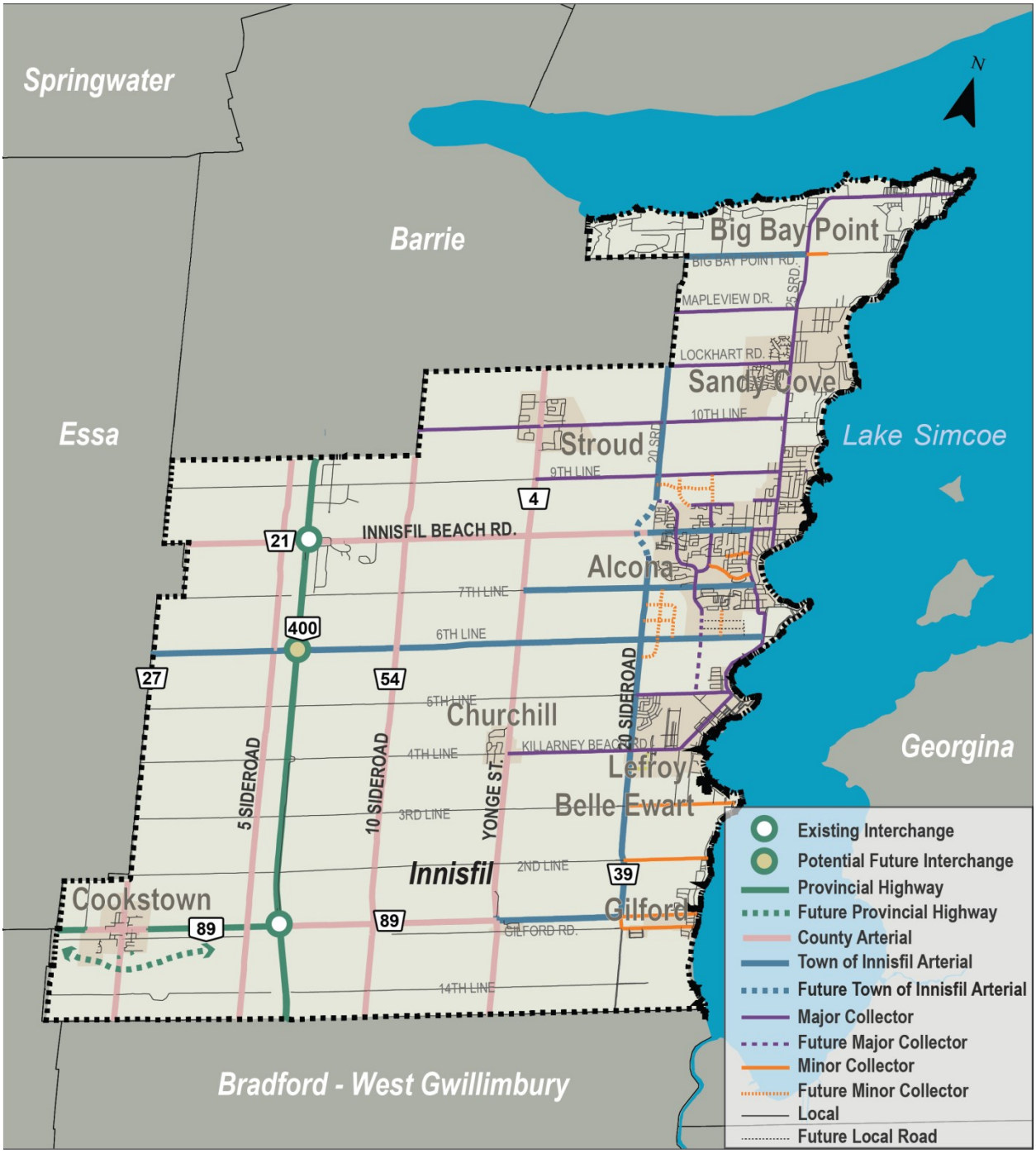


Exhibit 8-16: Recommended Revisions to Official Plan Schedule C – Transportation Network

9.0 Transportation Policies

The TMP process typically develops comprehensive support policies, principles and guidelines to support and implement the preferred transportation strategy. These supporting policies and guidelines assist Town staff in implementing the TMP, responding to citizens' requests and concerns, and guiding future decisions pertaining to traffic operations and implementation of traffic measures for the years to come. In this regard, the following policies have been developed and updated. Other policies, such as the All-Way Stop Policy and Parking / Stopping Regulations Policy, have not been updated and are maintained by the Town.

- Complete Streets Guidelines;
- Traffic Calming Policy;
- Sidewalk Prioritization Policy;
- Pedestrian Crossing Policy;
- Gravel Road Prioritization Policy;
- Slurry Seal Policy;
- Roundabout Implementation Policy;

Each of these policies includes guidance on handling concerns as well as a handy and transparent checklist to be used by Town staff.

It is noted that the policy frameworks identified in this Section are recommendations to the Town and are intended to provide inputs to formal policies that need Council approval.

A brief summary of each policy is provided in the following sections. Detailed policies can be found in **Appendix D**.

9.1 Complete Streets Policy

The TMP Update aims to further the development of a multimodal, multipurpose transportation network that serves people of all ages and abilities. The Complete Streets Guidelines (Guidelines) support this aim, by providing a toolkit for designers to integrate this vision into design of individual streets.

The recommendations contained within this policy are informed by two overarching goals:

- To improve accessibility, safety, and comfort for all users on Innisfil's streets; and
- To support and enhance the role of streets as places within Innisfil's neighbourhoods.

This policy identifies eight unique street typologies found in Innisfil by examining the two most fundamental roles of the streets: movement and place making. The street typologies reflect the relationship of surrounding development to the street, the land use context, and the street's primary purpose– taking into account existing functional classifications and Town engineering cross sections. To apply the recommendations included in the Guidelines, project designers will first need to identify what typology best fits the street being built or altered using the included descriptions.

Each typology includes a set of design objectives that should guide all design decisions for streets of this type, and a number of recommended elements. Design objectives vary between typologies, but include guidance on what modes to prioritize, speeds to design for, and activities unrelated to movement to plan for. Elements are broken into four categories which provide the flexibility to respond to context and competing aims within limited rights-of-way (ROW). Multiple options are provided, as there are often several ways of meeting the stated design objectives.

- Basic: these elements are essential for this type of street, are often mandated by the OP, and should only be excluded with justification.
- Enhanced Cycling and Enhanced Pedestrian: these elements are recommended to be included where warranted by contextual conditions.
- Additional: these elements are recommended to be included in appropriate locations to provide additional amenity or functionality to the street.

The Guidelines also provide a number of general recommendations for developing and maintaining a network of complete streets. This includes recommendations on intersection design for complete streets, designing for four-season use, and a list of “quick-fixes” that can be applied on most street types to improve the pedestrian and cycling realm.

The Complete Streets Guidelines are intended to be a resource to be applied to all projects on Town roads, large and small. They provide an overall approach to street design and are not a comprehensive design manual. They are meant to be used in conjunction with other plans and design resources, and rely on professional judgment.

9.1.1 Complete Streets Policy and Green Infrastructure

Street design is now considered an integral component in the built form, public realm, health, safety and vibrancy of communities. It is also considered a key mechanism through which to promote sustainability and protection of the environment by providing specific direction on how to allocate space in the street right-of-ways that account for all users. The recommendations outlined in this TMP Update strive to achieve sustainability goals through the re-imagining of streets for people and as spaces for social engagement and economic prosperity.

Moreover, initiatives to incorporate green infrastructure and other progressive stormwater management systems such as Low Impact Development (LID) are strongly encouraged. LIDs mimic the natural system by making use of vegetation and other “soft” techniques, such as strategically selected plantings and rain gardens, to convey and control stormwater runoff.

LID systems comprise components such as permeable pavements, stream buffers, bio-retention facilities, greenways, and green parking lots. Unlike traditional storm management infrastructure, they can provide attractive and aesthetically-pleasing greenspace that is publicly accessible or simply part of the streetscape. This aesthetic character in turn contributes to liveability, value, sense of place, and overall quality of life.

Because they emphasize conservation and use of on-site natural features to protect water quality, LIDs also result in cost-savings. Their cost-effectiveness and low maintenance

requirements help achieve environmental stewardship and have popularized their usage in municipal green design.

9.2 Traffic Calming Policy

Traffic calming is a tool available to the Town to address problematic traffic speeds and volumes on local and collector streets. The proposed traffic calming policy will allow the Town to evaluate the need for and implement traffic calming measures in an efficient, effective, and consistent manner.

The policy establishes methods for the initiation, implementation, and evaluation of traffic calming projects. It has been developed considering the experiences and practices of other jurisdictions, and is reflective of the current best practices in transportation planning. It is intended to be read alongside the Town of Innisfil Complete Streets Policy, Pedestrian Crossings Policy, Roundabout Implementation Policy, and Trails Master Plan. Together with the other policies outlined above, this policy will provide the Town with the tools it needs to enhance safety, liveability, and mobility within its neighbourhoods.

The primary goals of this policy are:

- To reduce traffic speeds and decrease through traffic to acceptable levels to enhance the liveability of residential neighbourhoods;
- Maintain access and mobility for all road users; and
- Improve safety for pedestrians, cyclists, and motorists

A secondary goal of this policy is to improve roadway aesthetics.

The main components of this policy are:

- A needs evaluation and approval process that incorporates the key requirements of resident participation and agency consultation;
- Warrant criteria against which traffic calming proposals will be assessed against. The proposal must satisfy each warrant to be implemented. This will ensure that traffic calming measures are assessed objectively and implemented in appropriate circumstances;
- A ranking process that is used to prioritize the most deserving streets for installation. Ranking is based on level of speeding, traffic volume, collision history, and pedestrian and bicycling factors;
- A description of various traffic calming measures, evaluation of their benefits and disadvantages, and recommendations for their application.

This policy is recommended to apply Town-wide to all locations eligible for the implementation of traffic calming measures, including local and collector roads. Traffic calming devices will generally not be considered for higher classification roads like minor and major arterials and expressways.

9.3 Speed Limits

The objective of the Speed Limits Policy is to implement consistent, enforceable and safe speed limits in urban areas; and in rural areas, to set speed limits consistent with driver expectation, roadway environment, road function, and in consideration of community needs.

Separate policies are recommended for the setting of speed limits on urban and rural roads as follows.

9.3.1 Urban Speed Limits

The Highway Traffic Act (HTA) of Ontario provides that roads within a city, town, village, police village or built-up area have a statutory speed limit of 50km/hr unless otherwise designated. Based on the Highway Traffic Act, signage is required on urban Town roads where the speed limit varies from the statutory 50km/hr.

The Made in Innisfil urban road speed limits policy endeavours to set speeds that are consistent with the HTA. In urban areas, posted speed limits will continue to be 60 km/h on urban arterial roads and 50 km/h on urban local and collector roads.

Reduced speed limit designation will be given to areas such as:

- School zones or proximity to schools which will be set at 40km/h during school hours where signed; and
- Locations with unfavourable geometric characteristics contributing to road elements with design speeds of 60km/h or less (sight distance, horizontal or vertical curvature). The speed limit shall be set at or below the speed indicated by the geometric restriction. Local roads located within settlement areas.
- Where Town roads are within the area of influence (1.5 km) of a County Road with lower posted speeds, a reduction of 10km/hr on the Town road speed limit is to be considered.
- Heritage Conservation Districts
- Locations with unprotected shared use pathways

Transitions between one speed limit and another shall be no less than 500m apart for arterial roads and 250m for collector and local roads.

9.3.2 Rural Speed Limits

The HTA of Ontario provides that roads outside of the above designation of roads are 80km/h. Based on the HTA, signage is required on a rural Town road where the speed limit varies from the statutory 80km/h.

Rural road speed limit designation will not divert from the HTA as the current speed limits are reasonable for the Town of Innisfil rural roads.

Rural roads shall have a speed limit of 80 km/h, unless reduced speed designation is appropriate due to:

- A school zone. In an 80 km/h zone, the speed limit may be reduced to 60 km/h in the vicinity of the school. In a 60 km/h zone, the speed limit may be reduced to 40km/h;
- Unfavourable geometric characteristics contributing to road elements with design speeds (sight distance, horizontal or vertical curvature) of 90 km/h or less. The speed limit shall be set at or below the speed indicated by the geometric restriction;
- Where Town roads are within the area of influence (1.5 km) of a County road with lower or higher posted speeds, the Town may consider increasing or decreasing the speed limit by 10 km/h on the Town road, bringing the Town road closer to the speed of the County road. Reduced speed limit designations may also be considered in locations with unprotected shared use pathways.

Transitions between one speed limit and another shall be no less than 1.0 km apart for arterial roads and 500m for collector and local roads. The speed differential between to speed limits within the transition shall be no greater than 20 km/h.

9.3.3 School Zone Speed Limits

Illuminated or flashing school zone signs are for use where reduced speed limits (40km/hr) only apply during certain hours of the day. The timing of the flashing lights shall be limited to the operating times of the adjacent school. These times are typically no earlier than 8:00am and no later than 5:00pm on weekdays. Such signs shall also be accompanied by signage stating that the lower speed limit is only in force while lights are flashing.

9.3.4 Heritage Conservation Districts

Speed limits lower than those identified in **Section 9.3.1** may at times be appropriate in a Heritage Conservation District. Speed limits in Heritage Conservation Districts should be compatible with the intent of the relevant Heritage Conservation District Plan and the *Ontario Heritage Act*, and should reflect the pedestrian focus of most Heritage Conservation Districts. However, traffic volumes, 85th percentile speed, speed limits on neighbouring road sections, and infiltration onto neighbourhood streets should be considered before enacting any speed limit adjustment.

For arterial roads in Heritage Conservation Districts, the designer shall consider 40 km/h and 50 km/h as well as the standard 60 km/h. For local and collector roads, the designer shall consider 40 km/h as well as the standard 50 km/h.

9.3.5 Unprotected Shared Use Pathways

In locations with unprotected shared use pathways, whether in urban or rural areas, the Town may consider decreasing the speed limit by 10 km/h to a speed no less than 40 km/h.

9.3.6 Local Residential Roads Located in Settlement Area Speed Limits

To further improve the safety of local residential roads in settlement areas for all users who walk, cycle, or drive, it is recommended that the speed limits should be no higher than 40 km/hr. Signage notifying of the speed reduction should be accompanied by flashing signal indications or radar speed signs, as well as road designs to reduce the speed of vehicles and traffic calming measures.

9.4 Sidewalk Prioritization Policy

There are many roads within the Town's jurisdiction that can be enhanced by adding sidewalks, but there are limited funds available for construction each year. The objective of this proposed policy is to establish a rational framework for prioritizing the construction of sidewalks in existing settlement areas that is consistent with achieving the objectives of the Transportation Master Plan (TMP, August 2013) and draft Official Plan (OP, 2017).

The criteria for Innisfil's sidewalk prioritization should align with the objectives identified in the TMP and draft OP, and should have data requirements that are readily met by the Town. The proposed approach comprises of assigning a point score to the set of criteria, which are generally grouped into the following categories:

- Land use/connectivity;
- Road characteristics;
- Public support;
- Constructability; and
- Cost.

The total score for each road/road segment is calculated and those with higher scores are given priority. In general, the draft point allocations have been estimated to prioritize safety and the needs of low-mobility and/or vulnerable pedestrians. Details with regards to the draft point allocation thresholds are included in **Appendix D**.

9.5 Pedestrian Crossing Guidelines

The Town of Innisfil has identified an objective to increase the walkability of the Town and strategic need for enhancing support of active transportation by improving its TMP and OP. This need has been further justified through review of the objectives identified in Section 10 of the draft OP, as well as findings from the Town's Trails Master Plan. In partnership with the sidewalk prioritization policy, this pedestrian crossing prioritization policy will provide the Town with the tools it needs to increase the safety and mobility of its residents. The proposed policy will apply Town-wide to all locations being considered for the implementation of new pedestrian crossings, and is detailed in **Appendix D**.

The Town currently has an existing Pedestrian Traffic Signal, School Areas Policy in effect that provides a financial impact assessment and priority rating with respect to the installation of unmanned signal crossings for pedestrians in the area of schools within the Town. This policy as well as a review of other jurisdictions' implementation policies helped to inform the proposed

implementation framework. As with the sidewalk prioritization framework, the total score for each road/road segment is calculated and those with higher scores are given priority. The criteria for the framework are grouped as follows:

- Traffic volume;
- Pedestrian volume (potential and real);
- Pedestrian crossover (PXO) replacement strategy;
- Supporting infrastructure and plans;
- Public support/number of requests;
- Zoning for community spaces; and
- Distance to closest signalized intersection.

In general, marked unprotected crosswalks should be discouraged to avoid confusing pedestrians and drivers. At locations where unprotected crosswalks are maintained on two lane, low speed roads (i.e. 50 km/h or less), it is recommended that accompanying signage be implemented appropriately. Measures such as pedestrian refuge islands or centre medians and reflective delineator poles will also be considered as a safety measure to draw the driver's attention to potential crossing activity.

9.6 Gravel Road and Slurry Seal Prioritization Policy

The Town of Innisfil's 2017 Road Needs Study (RNS) identifies road maintenance needs on all Town roads for 4 year and 10 year timeframes. As part of the current Transportation Master Plan (TMP) Update, the Town is establishing a framework and prioritization strategy for the paving of existing gravel roads and repaving of low-class bituminous (LCB) roads. The Gravel Road Prioritization Policy and the Slurry Seal Prioritization Policy provides input to the RNS with respect to prioritization of gravel to asphalt overlay and low-class bituminous (LCB) surface treatment (slurry seal) road projects.

Several policies and guidelines from municipalities in North America informed the proposed Pavement Prioritization Policy and Slurry Seal Prioritization Policy. The most comprehensive and commonly used approach in Ontario for prioritizing paving projects is from the MTO Inventory Manual for Municipal Roads and involves scoring each road segment to establish a priority rating, the formula for which is detailed in **Appendix D**

More recent literature, such as the Benton County, Oregon, Gravel Road Maintenance and Surfacing Priority Policy and the Strong Township Road Needs Study, recommends a two-stage approach. The two-stage approach enables the Town to separate reconstruction projects which typically have more intensive engineering and permit requirements from minor surfacing projects. Since the Town has an existing program in the RNS to monitor and update needs and treatment types, this approach is easily integrated with the Town's existing RNS program and is recommended.

The proposed decision framework consists of several criteria as well as a draft point scoring system to be used to develop a "Made in Innisfil" solution to the Town's gravel road upgrade needs. This framework is detailed in **Appendix D**. The prioritization criteria include:

- Ride quality;
- Traffic volume;
- Active transportation trip generators and accessibility;
- Existing settlement area;
- Continuity of paved surfaces;
- Maintenance;
- Maintenance access; and
- Cost.

Upon approval of the Gravel Road Prioritization Policy and Slurry Seal Prioritization Policy, it is recommended that the Town maintain a consistent schedule of assessing pavements for construction.

9.7 Roundabout Policy

Roundabouts are recommended as the primary intersection control along collector roads within the Town and should be the first consideration over traffic signals wherever traffic signals are warranted on Town roads. The detailed Roundabout Policy is included in **Appendix D** while the following subsections provide additional information on the benefits of roundabouts and an overview of implementation considerations.

9.7.1 Advantages and Disadvantages of Roundabouts

Roundabouts provide many benefits in comparison to other traffic control types. According to the *Canadian Roundabout Design Guide* (Transportation Association of Canada, 2017), roundabouts offer the following advantages:

Safety - Safety is often the primary reason for selecting this form of intersection control. Roundabouts are proven to reduce frequency and severity of collisions compared to both stop controlled and signalized intersections. Three main roundabout design features contributing to this benefit include a reduction in conflict points, a reduction in entering and circulating speed, and finally a reduction in angle of impact, reducing or eliminating more severe right-angle and head-on collisions.

Operations / Access Management - Stop and signal controlled intersections require vehicles to stop in at least one direction even when no other vehicles are present. Roundabouts use yield-at-entry control to eliminate stopping when it is not required and as a result tend to operate with lower delays and shorter queues particularly in lower volume situations. Roundabouts may also provide safer movements at intersections and driveways, reduce midblock left-turns and provide safe U-turn opportunities.

Traffic Management / Calming - The geometric design of a roundabout influences drivers to reduce speed compared to abrupt stopping and starting at stop and signal controlled intersections. It is noted that roundabouts are effective gateway treatments between rural and urban areas to encourage traffic to slow down.

Environment and Sustainability - The operational benefits from reduced delays and stopping also results in reduced fuel consumption and vehicle emissions. Forced stops also result in more noise from vehicles braking and accelerating. Finally, roundabouts also consume less energy than traffic signals and require little maintenance. Overall these factors minimize carbon footprint, enhance sustainability, and reduce life-cycle costs of operations and maintenance.

Economics - As noted under environmental benefits, reduced maintenance costs compared to traffic signals are noted along with time and fuel savings for users and societal costs savings from less severe and fewer collisions.

Aesthetics - Particularly within the central island, roundabouts offer landscaping opportunities to create a sense of place within the community or as a gateway feature to enhance and define a community.

While there are numerous benefits, a few disadvantages are noted:

Spatial requirements - Generally the shape of a roundabout requires more property beyond the limits of a typical road allowance compared to stop or signal controlled intersections. It is noted however that a reduction in auxiliary lane requirements may actually reduce the intersection foot print. Furthermore, a “mini-roundabout” design can potentially fit within typical roadway allowance and should be considered in retrofit applications to existing intersections.

Constructability / costs - Roundabouts typically have higher construction costs and longer construction period, particularly in retrofit applications.

Operational limitations - Based on research documented in the United States Department of Transportation (USDOT) Informational Guide on Roundabouts as well as the Transportation Association of Canada (TAC) Canadian Roundabouts Guide, roundabouts operate most efficiently when intersection traffic volumes are roughly equal between the two intersecting streets. Once main street traffic volumes start to reach approximately over 70% of total intersection volumes, the operational benefits of roundabouts compared to signalized intersections starts to decrease.

Active transportation - Roundabouts do not provide protected crossing opportunities for pedestrians and cyclists. This issue is particularly prominent in higher volume applications with limited gaps in traffic. Larger roundabouts also force pedestrians to divert from their natural preference to take the shortest path. The US and Canadian guidelines recommend incorporating zebra striping and splitter islands such that pedestrians only cross one direction of traffic at a time. With respect to cyclists, the best practice for on-street bike lanes is to for either the cyclist to share the roundabout with vehicular traffic or to provide a ramp off of the street prior to entering the roundabout to minimize potential conflicts. Depending on available space, cyclists exiting the roadway may need to dismount and cross the roundabout as pedestrians.

Public education - In communities where roundabouts are not a common form of intersection control, new installations may require public education prior to implementation.

9.7.2 Implementation Recommendations

Because of the advantages noted, it is recommended that single lane roundabouts be the first consideration for intersection controls for all new intersections or intersection improvements on minor and arterial collector roads in the Town. Further, it must be demonstrated to the Town's satisfaction that a single-lane roundabout is not desired. Specific circumstances where single lane roundabouts may not provide the best solution consider prohibitive costs, nearby traffic queuing impacts, proximity to vulnerable pedestrians, environmental impacts, and capacity constraints. **Appendix D** provides further recommendations and guidance.

Multilane roundabouts are not recommended at this time due to active transportation challenges, public acceptance and education. Mini roundabouts are not recommended at this time due to the limited enhancements to safety relative to implementation costs. Both multilane and mini roundabouts may be considered in the longer term future once the general public becomes increasingly comfortable with standard single lane roundabout design.

10.0 Financing Requirements and Options

This TMP Update conducts a costing exercise to establish the financing requirements of the recommended transportation strategy to 2041. Recognizing that the Town adopted the Roads and Stormwater Asset Management Plan in February 2014, it is recommended for the Town update this plan in the near future to incorporate the growth infrastructure needs identified in this TMP Update.

10.1 Cost Estimate Summary

The capital cost of the recommended transportation strategy over the next 24 years (until 2041), inclusive of road widenings, new construction, urbanization and reconstruction, intersection improvements, multi-use and off-road trails, and on-road cycling lanes will total approximately $481.9 million (2018$). Of the total, 32% or $155.7 million is needed for short-term improvements (before 2021), 41% or $197.0 million for medium term (2022-2031), and 27% or $129.2 million for long-term (beyond year 2031).

Certain transportation improvements will benefit current residents and would comprise the non-growth component of the Development Charges (also known as Benefit to Existing or BTE). The improvements required to accommodate higher volumes of traffic and increased demand on the existing infrastructure directly attributable to new developments (growth component also known as Benefit to Growth or BTG) are eligible for funding through Development Charges.

Approximately 79% of the capital improvement cost will be eligible for cost recovery through the DC mechanisms. The remaining 21% of expenditures could be financed from the residential tax base. A summary of the costs by timing and by BTE and BTG is provided in **Table 10-1**.

Table 10-1: Cost of Recommended Transportation Strategy by Timing and Growth

Timing	BTE+BTG	BTE	BTG	Distribution
Short-term (before 2021)	$155,707,723	$23,643,546	$130,304,661	32%
Medium-term (2022-2031)	$196,991,905	$46,900,872	$149,235,355	41%
Long-term (after 2031)	$129,174,460	$30,471,000	$90,365,672	27%
Total	**$481,874,088**	**$101,015,418**	**$369,905,688**	**100%**

The overall estimated cost of capital improvements specific to road infrastructure (excluding active transportation improvements) and inclusive of signalization and planning studies is $453.4 million. By treatment type, road reconstruction and urbanization is approximately $312.2 million and accounts for 69% of the road infrastructure costs. The Town will have to construct new roads at an estimated cost of $67.8 million. Costs of intersection improvements, including signalized intersections and roundabouts, are estimated to be $6.8 million with the Town's share being 2% of the total cost.

The summary of the investments in Town's road infrastructure is provided in **Table 10-2**.

Table 10-2: Road infrastructure costs by type, road class and existing cross-section

Type	Cost (2018 dollars)	Distribution
Improvement Type		
Urbanization	$182,680,288	40%
Reconstruction	$129,495,043	29%
Widening	$45,598,774	10%
New Construction	$67,793,224	15%
Paved Shoulders	$15,129,306	3%
Intersection	$6,824,719	2%
Studies	$5,900,000	1%
Total	**$452,581,353**	**100%**
Summary by road class (excluding intersection improvements and studies)		
Arterial Road	$195,382,928	45%
Major Collector	$206,696,383	48%
Minor Collector	$19,586,047	5%
County Road	$10,374,821	2%
Total	**$432,040,180**	**100%**
Summary by existing cross-section (excluding intersection improvements and studies)		
Urban	$29,427,263	7%
Rural	$416,852,224	93%
Total	**$446,279,488**	**100%**

Active transportation infrastructure is estimated to cost a total of $37.3 million, as presented in **Table 10-3**. These investments include construction of sidewalks, multi-use trails, on-road cycling lanes, and soft and hard surface off-secondary trails.

Table 10-3: Active Transportation Costs and Distribution

Active Transportation	Cost (2018 dollars)	Distribution
Sidewalks	$1,437,884	4%
Secondary Trail	$6,338,042	17%
Sharrows	$128,032	0%
Bike Lanes	$1,732,730	5%
Paved Shoulders	$15,129,306	41%
Multi-use trail	$12,543,647	34%
Total	**$37,309,641**	**100%**

Structures are anticipated to cost approximately $4.7 million. **Table 10-4** summarizes the capital program costs by type of improvement.

Table 10-4: Capital Program Summary

Improvement	Cost (2018 dollars)
Roads	$452,272,493
Active Transportation	$37,309,641
Structures	$3,767,400
Other Projects (EcoMobility Hub, Bike Share)	$2,505,000
Total	**$480,725,228**

10.2 Capital Cost Calculation

The capital cost calculations presented in this section are based on construction cost information extracted from the bid documents, the Town's Road Needs Study and information from Simcoe County.

Roadway benchmark costs reflect the typical cross sections and roadway design standards for the arterial and collector roads under the jurisdiction of the Town of Innisfil. Structure and culvert benchmark costs were derived from the RNS and from other municipal sources. All costs reflect the average costs from 2016 and 2017 contract bids. The construction unit price assumptions and the resulting benchmark cost by road type and treatment are documented in **Table 10-5.**

Table 10-5: Construction Unit Price Table

Construction Unit Cost	Unit	2018 Unit Price
Excavation	m3	$ 19.77
Hot Mix HL3	tonne	$ 65.01
Hot Mix HL4	tonne	$ 88.89
Granular A	tonne	$ 20.51
Granular B	tonne	$ 13.84
Concrete Curb & Gutter	m	$ 76.31
Catchbasin Leads	m	$ 281.54
Storm Sewer Pipes	m	$ 273.18
Manhole & Maintenance Holes	each	$ 7,655.32
Catchbasins	each	$ 2,764.24
Stormceptors	each	$ 61,938.93
Pavement Markings and Symbols	m	$ 45.17
Concrete Sidewalk (including Granular A)	m2	$ 93.00
Streetlighting	$/km	$ 420,879.08
Landscape	$/km	$ 398,589.39
Traffic Signal Poles (all sizes)	$/km	$ 132,913.07
Street Lighting	$/km	$ 420,879.08
Landscaping	$/km	$ 398,589.39
EA Study (reconstruction non-greenfield project)	each	$ 400,000.00
EA Study (new construction)	each	$ 500,000.00
EA Study (roundabout)	each	$ 100,000.00
Signalized Intersection	each	$ 287,171.42
Roundabout	each	$ 466,319.58
Culverts (average size)	each	$ 112,616.24
Multi-use pathway - soft surface	$/km	$ 157,662.74
Multi-use pathway - hard surface	$/km	$ 281,540.60
Utility relocation (urban environment)	$/km	$ 337,848.73
Structure	m2	$ 5,514.12
Green painted bike lanes	m2	$ 84.50
Solid white line	m	$ 2.00

The resulting benchmark cost assumptions by treatment are presented in **Table 10-6.**

Table 10-6: Benchmark Cost by Treatment

Improvement Type	Road Class	Environment	Roadwork cost (2018 dollars/km)
New Construction	Arterial	Urban	$3,045,318
New Construction	Major Collector	Urban	$3,002,994
New Construction	Minor Collector	Urban	$2,691,795
Urbanization	Arterial	Urban	$3,167,442
Widening	Arterial	Urban	$3,203,573
Reconstruction	Arterial	Rural	$1,188,773
Reconstruction	Collector	Rural	$1,162,892
Paved Shoulders	Arterial / Collector	Rural	$192,720
Multi-use Path	Collector	Urban/Rural	$157,663
Sharrows	Collector	Urban/Rural	$3,641
Painting bike lanes	Collector	Urban	$152,100

10.3 Benefit to Existing Development

The Town is entering a phase of rapid growth and most of the roadway infrastructure needs identified in this report are needed to accommodate that growth. However, certain improvements will benefit current residents and would comprise the non-growth component of the Development Charges (DC). The improvements required to accommodate higher volumes of traffic and increased demand on the existing infrastructure directly attributable to new developments are eligible for funding through Development Charges. Approximately 79% of the capital improvement cost is eligible for cost recovery through the Development Charges. The remaining 21% of expenditures could be financed from the residential tax base.

All new construction and road widening projects have been determined to be 100% triggered by growth and required to meet the needs of new development. Certain portions of future reconstruction and urbanization projects have recognized benefits to existing (non-growth) component. **Table 10-7** outlines the percentage allocation and the rationale behind attributing whole or a portion of an improvement type to existing development.

Table 10-7: Benefit to Existing Development Rationale

Improvement Type	Benefit to Existing Development (Non-Growth Component)	Benefit to Existing	Benefit to Growth
Road Urbanization	When a road needs to be urbanized due to higher population and employment densities from new developments. Assumed 10% deduction to cover the estimated cost of the rehabilitation of existing asset.	10%	90%
Road Reconstruction	When a road reaches the end of its regular service life based on existing traffic plus some growth-related traffic (no Development Charges required)	100%	0%
	When a road needs to be reconstructed to a higher standard (alignment, road reconfiguration, pavement structure) to accommodate anticipated traffic growth, in areas outside of settlement areas	75%	25%
	When a road needs to be reconstructed to a higher standard to accommodate anticipated traffic growth, within a settlement area	40%	60%
	When a road needs to be reconstructed to a higher standard to accommodate anticipated traffic growth, within or directly adjacent to a development	0%	100%
	When a road needs to be reconstructed to address road damage caused by heavy construction traffic.	0%	100%
New construction	No deduction understanding that the need for new construction is entirely driven by the need to accommodate new growth.	0%	100%
Widening	No deduction understanding that the need for road widening and additional capacity is entirely driven by the need to accommodate new growth.	0%	100%
Signalization	90% of the cost is allocated to growth understanding that the need for additional signalization is required to control increased traffic volumes at intersections. We acknowledge that the existing community will benefit from signal installation in certain locations and this is reflected in a 10% allocation to existing.	10%	90%
Paved Shoulders and Multi-Use Trails	Where shoulders are in, close to or leading to areas that are expecting significant growth, BTG should take same percentage of the projected new population. Locations with minimal growth will be attributed 80% BTE. This is ratio from the 2011/2041 population and grouped into:	40%	60%
		40%	60%
		45%	55%
		45%	55%
		40%	60%
		40%	60%
		80%	20%
	Road adjacent to secondary plan development area. Active transportation facilities required adjacent to a development.	0	100%
Studies		0%	100%

10.4 Capital Costs

Total road related investment needs forecasted up to the year 2041 include road widening, construction of new roadways, road urbanization, intersection signalization, construction of grade separated interchange with Highway 400 and other improvements. Investments such as regular maintenance works, road resurfacing, and reconstruction of local roads due to normal wear and tear are not included. Total road related investments by item are summarized in **Table 10-8.**

Table 10-8: Capital Projects by 2041

ID	Road	From	To	Improvement Type	TIMING	Road Class	Exist. Cross-section	Exist # of Lanes	Ultimate # of Lanes	Section length (km)	Length with inter-sections (km)	Benchmark cost ($ per km)	Roadwork subtotal ($)	No. of new signals	Structures (bridge/ interchange)	# of Culverts	Culverts $	Utility relocation	Property	EA Study	Subtotal	Engineering (10%)	Contingency (10%)	Total cost	BTE%	Benefit to Existing (non-growth related)	BTG%	Growth Related
1	Big Bay Point Road	20th Sideroad	25th Sideroad / 13th	Reconstruction	Short	Arterial Road	Rural	2	2	3.1	4.2	$ 1,162,892	$ 4,826,000								$4,826,000	$482,600	$482,600	$5,791,200	0%	$0	100%	$5,791,200
2	Big Bay Point Road	25th Sideroad / 13th Lin	Friday Drive	Reconstruction	Short	Major Collector	Rural	2	2	4.7	7.7	$ 1,162,892	$ 8,954,266								$8,954,266	$895,427	$895,427	$10,745,119	0%	$0	100%	$10,745,119
3	Big Bay Point Road	Friday Drive	Lake Simcoe	Reconstruction	Short	Major Collector	Rural	2	2	4.7	7.7	$ 1,162,892	$ 8,954,266								$8,954,266	$895,427	$895,427	$10,745,119	40%	$4,298,048	60%	$6,447,071
4	Big Bay Point Road	20th Sideroad	West St	Paved Shoulders	Short	Arterial / Major Collector	Rural	2	2	6.9	6.9	$ 192,720	$ 1,329,769								$1,329,769	$132,977	$132,977	$1,595,723	40%	$638,289	60%	$957,434
5	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Reconstruction	Short	Minor Collector	Rural	2	2	0.8	1.3	$ 1,162,892	$ 1,453,615								$1,453,615	$145,361	$145,361	$1,744,337	0%	$0	100%	$1,744,337
6	13th Line	Big Bay Point Road / 25th Sideroad	Friday Drive	Multi-use trail	Short	Minor Collector	Rural	2	2	0.7	0.7	$ 157,663	$ 110,364								$110,364	$11,036	$11,036	$132,437	80%	$105,949	20%	$26,487
7	13th Line	Friday Drive	Lake Simcoe	Paved Shoulders	Short	Local	Rural	2	2	1.6	1.6	$ 192,720	$ 308,352								$308,352	$30,835	$30,835	$370,023	80%	$296,018	20%	$74,005
8	Lockhart Road	20th Sideroad	Lake Simcoe	Reconstruction	Short	Major Collector	Rural	2	2															$9,199,450	28%	$2,594,835	72%	$6,604,615
10	10th Line	west extent of boundary of Sandy Cove settlement area	25th Sideroad	Urbanization	Short	Major Collector	Rural	2	2	1.2	1.4	$ 3,167,442	$ 4,276,046			1	$112,616	$456,096		$400,000	$5,700,854	$570,085	$570,085	$6,841,025	10%	$684,102	90%	$6,156,922
11	10th Line	25th Sideroad	Purvis St	Urbanization	Short	Local	Rural	2	2	0.8	1.6	$ 3,167,442	$ 4,909,535			1	$112,616	$523,666		$400,000	$6,469,482	$646,948	$646,948	$7,763,378	10%	$776,338	90%	$6,987,040
12	25th Sideroad	Big Bay Point Rd	Mapleview Dr	Reconstruction	Short	Major Collector	Rural	2	2	2.1	2.7	$ 1,162,892	$ 3,139,807			2	$225,232				$3,365,040	$336,504	$336,504	$4,038,048	40%	$1,615,219	60%	$2,422,829
13	25th Sideroad	Mapleview Dr	Innisfil Beach Road	Urbanization	Short	Major Collector	Rural	2	2	5.5	9.7	$ 3,167,442	$ 30,724,184			1	$112,616	$3,277,133		$400,000	$37,791,066	$3,779,107	$3,779,107	$45,349,279	10%	$4,534,928	90%	$40,814,351
14	25th Sideroad	Big Bay Point Rd	Innisfil Beach Road	Multi-use trail	Short	Major Collector	Rural	2	2	7.6	7.6	$ 157,663	$ 1,198,237								$1,198,237	$119,824	$119,824	$1,437,884	40%	$575,154	60%	$862,731
15	7th Line	Yonge Street	St Johns Road	Multi-use trail	Short	Arterial Road	Rural	2	2	6.1	6.1	$ 157,663	$ 961,743								$961,743	$96,174	$96,174	$1,154,091	45%	$519,341	55%	$634,750
16	Webster Blvd South Extension	Quarry Dr	6th Line	New Construction	Short	Major Collector	Urban	0	2	0.8	1.0	$ 3,002,994	$ 2,852,844							$500,000	$3,673,801	$367,380	$367,380	$4,408,561	0%	$0	100%	$4,408,561
17	Webster Blvd	Existing north limit of Webster Blvd	6th Line	Bike lanes	Short	Major Collector	Urban	2	2	3.9	3.9	$ 152,100	$ 1,186,380								$1,186,380	$118,638	$118,638	$1,423,656	45%	$640,645	55%	$783,011
18	Jans Blvd North Extension	North extent of Jans Blvd	9th Line	New Construction	Short	Major Collector	Urban	0	2	0.8	1.0	$ 3,002,994	$ 2,852,844							$500,000	$3,673,801	$367,380	$367,380	$4,408,561	0%	$0	100%	$4,408,561
19	Jans Blvd	North extent of Jans Blvd	Webster Blvd	Bike lanes	Short	Major Collector	Urban	2	2	0.8	0.8	$ 152,100	$ 243,360								$243,360	$24,336	$24,336	$292,032	45%	$131,414	55%	$160,618
20	6th Line	20th Sideroad	St Johns Road	Multi-use trail	Short	Arterial Road	Rural	2	4	3.1	3.1	$ 157,663	$ 488,754								$488,754	$48,875	$48,875	$586,505	45%	$263,927	55%	$322,578
21	6th Line	Bridge Expansion over Railway		New Structure	Short	Arterial Road	Rural	2	2		0.0													3,767,400	0%	$0	100%	$3,767,400
22	6th Line	20 Sideroad	Angus St	Widening	Short	Arterial Road	Rural	2	4	2	2.3	$ 3,045,095	$ 7,003,718											$11,588,774	0%	$0	100%	$11,588,774
23	6th Line	Angus St	St Johns Road	Urbanization	Short	Arterial Road	Rural	2	2	1.1	1.4	$ 3,008,964	$ 4,212,549											$6,373,826	40%	$2,549,530	60%	$3,824,295
24	Killarney Beach Road	Yonge Street	20th Sideroad	Reconstruction	Short	Major Collector	Rural	2	2	3.4	4.0	$ 1,162,892	$ 4,651,567			1	$112,616				$4,764,183	$476,418	$476,418	$5,717,019	0%	$0	100%	$5,717,019
25	Killarney Beach Road	Yonge Street	20th Sideroad	Paved Shoulders	Short	Major Collector	Rural	2	2	3.1	3.1	$ 192,720	$ 597,433								$597,433	$59,743	$59,743	$716,919	80%	$573,535	20%	$143,384
26	Various EA studies for local road upgrade to minor collectors (Anna Maria, Westmount, Willard, Adullam, 3rd Line, 2nd Line, Shore Acres east of 20th, Gilford Road, 20th between Gilford and Shore Acres, 13th Line 25th to Friday Drive)			Studies	Short																$4,000,000			$4,000,000	0%	$0	100%	$4,000,000
89	Education Programs for walking and cycling			Studies	Short																$200,000			$200,000	0%	$0	100%	$200,000
9	9th Line	25th Sideroad	Leonard Street	Paved Shoulders	Medium	Local	Rural	2	2	0.8	0.8	$ 192,720	$ 154,176								$154,176	$15,418	$15,418	$185,011	45%	$83,255	55%	$101,756
27	20th Sideroad	Big Bay Point Road	9th Line	Reconstruction	Medium	Arterial Road	Rural	2	2	5.5	6.7	$ 1,188,773	$ 7,964,779			4	$450,465				$8,415,244	$841,524	$841,524	$10,098,292	75%	$7,573,719	25%	$2,524,573
28	20th Sideroad	Big Bay Point Road	9th Line	Paved Shoulders	Medium	Arterial Road	Rural	2	2	5.5	5.5	$ 192,720	$ 1,059,961								$1,059,961	$105,996	$105,996	$1,271,953	80%	$1,017,563	20%	$254,391
29	20th Sideroad	9th Line	5th Line	Multi-use trail	Medium	Arterial Road	Rural	2	2	5.5	2.8	$ 157,663	$ 441,456								$441,456	$44,146	$44,146	$529,747	0%	$0	100%	$529,747
30	20th Sideroad	5th Line	3rd Line	Multi-use trail	Medium	Arterial Road	Rural	2	2	2.8	5.5	$ 157,663	$ 867,145								$867,145	$86,715	$86,715	$1,040,574	45%	$468,258	55%	$572,316
31	20th Sideroad	3rd Line	Innisfil / Bradford Boundary	Paved Shoulders	Medium	Local	Rural	2	2	5.2	5.2	$ 192,720	$ 1,002,145								$1,002,145	$100,214	$100,214	$1,202,574	80%	$962,059	20%	$240,515
32	Killarney Beach Road / 4th Line	John Street	Yonge Street	Urbanization	Medium	Major Collector	Rural	2	2	0.8	1.9	$ 3,167,442	$ 5,859,767			1	$112,616	$625,020		$400,000	$7,622,424	$762,242	$762,242	$9,146,908	10%	$914,691	90%	$8,232,218
33	Killarney Beach Road	20th Sideroad	Ewart Street	Urbanization	Long	Major Collector	Rural	2	2	1.2	2.1	$ 3,167,442	$ 6,651,628					$709,482		$400,000	$8,470,592	$847,059	$847,059	$10,164,711	10%	$1,016,471	90%	$9,148,240
34	Killarney Beach Road	Ewart St	Lake Simcoe	Paved Shoulders	Medium	Major Collector	Rural	2	2	0.5	0.5	$ 192,720	$ 96,360								$96,360	$9,636	$9,636	$115,632	80%	$92,506	20%	$23,126
35	Willard Ave	Leslie Drive	Innisfil Beach Road	Urbanization	Medium	Minor Collector	Rural	2	2	0.7	1.5	$ 2,837,447	$ 4,114,299					$489,881		$400,000	$5,494,060	$549,406	$549,406	$6,592,872	10%	$659,287	90%	$5,933,585
36	Adullam Ave	Lebanon Drive	Innisfil Beach Road	Urbanization	Medium	Minor Collector	Rural	2	2	0.3	1.2	$ 2,837,447	$ 3,404,937					$405,418		$400,000	$4,615,774	$461,577	$461,577	$5,538,929	10%	$553,893	90%	$4,985,036
37	6th Line	County Road 27	County Road 53 / 5th Sideroad	Reconstruction	Medium	Arterial Road	Rural	2	2	3.1	3.4	$ 1,188,773	$ 4,041,828											$11,360,000	40%	$4,544,000	60%	$6,816,000
38	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Reconstruction	Medium	Arterial Road	Rural	2	2	9.1	10.2	$ 1,188,773	$ 12,066,045											$33,347,097	40%	$13,338,839	60%	$20,008,258
39	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Paved Shoulders	Medium	Arterial Road	Rural	2	2	9.1	9.1	$ 192,720	$ 1,753,754								$1,753,754	$175,375	$175,375	$2,104,504	80%	$1,683,604	20%	$420,901
40	7th Line	10 Sideroad	Yonge Street	Reconstruction	Medium	Local	Rural	2	2	3.0	3.6	$ 1,162,892	$ 4,186,410			2	$225,232				$4,411,642	$441,164	$441,164	$5,293,971	75%	$3,970,478	25%	$1,323,493
41	7th Line	Yonge Street	20 Sideroad	Reconstruction	Medium	Arterial Road	Rural	2	2	3.1	3.7	$ 1,188,773	$ 4,350,909								$4,350,909	$435,091	$435,091	$5,221,091	75%	$3,915,818	25%	$1,305,273
42	7th Line	20th Sideroad	Webster Blvd	Urbanization	Medium	Arterial Road	Rural	2	2	1.2	2.6	$ 3,008,964	$ 7,672,858			1	$112,616	$861,514			$9,508,503	$950,850	$950,850	$11,410,203	10%	$1,141,020	90%	$10,269,183
66	7th Line	Webster Blvd	St Johns Road	Urbanization	Medium	Arterial Road	Rural	2	2	1.5	2.9	$ 3,008,964	$ 8,575,547			1	$112,616	$962,869			$10,613,901	$1,061,390	$1,061,390	$12,736,681	10%	$1,273,668	90%	$11,463,013
43	Webster Blvd North Extenion	Existing north limit of Webster Blvd	20th Sideroad	New Construction	Medium	Major Collector	Urban	0	2	0.4	0.6	$ 3,002,994	$ 1,651,647			1	$112,616			$500,000	$2,450,080	$245,008	$245,008	$2,940,096	0%	$0	100%	$2,940,096
45	Innisfil Beach Road Grade Separation			New Construction	Medium	Arterial Road	Urban	0	2						$25,000,000						$25,000,000				0%	$0	100%	$0
46	20th Sideroad (bypass) with Grade Separation			Studies	Medium																$600,000			$600,000	0%	$0	100%	$600,000
47	20th Sideroad (bypass) with Grade Separation	Leslie Drive	South of Innisfil Beach Rd	New Construction	Medium	Arterial Road	Rural	0	2	2	2.5	$ 3,045,318	$ 7,461,028		$25,000,000	1	$112,616				$33,401,374	$3,340,137	$3,340,137	$40,081,648	0%	$0	100%	$40,081,648
48	Webster Blvd South Extension	6th Line	5th Line	New Construction	Medium	Major Collector	Urban	0	2	1.3	1.8	$ 3,002,994	$ 5,255,240			1	$112,616			$500,000	$6,459,091	$645,909	$645,909	$7,750,909	0%	$0	100%	$7,750,909
49	Highway 89 East-west Link Improvement	West of Cookstown	East to Cookstown	New Construction	Medium	Arterial Road / County Road	Urban	0	2	4	4.6	$ 3,045,318	$ 4,669,487			1	$112,616			$500,000	$6,836,207	$683,621	$683,621	$8,203,449	0%	$0	100%	$8,203,449
50	10th Line	20th Sideroad	west extent of boundary of Sandy Cove settlement area	Reconstruction	Medium	Major Collector	Rural	2	2	1.8	2.1	$ 1,162,892	$ 2,442,072			1	$112,616	709482.3241			$3,973,653	$397,365	$397,365	$4,768,384	0%	$0	100%	$4,768,384

ID	Road	From	To	Improvement Type	TIMING	Road Class	Exist. Cross-section	Exist # of Lanes	Ultimate # of Lanes	Section length (km)	Length with inter-sections (km)	Benchmark cost ($ per km)	Roadwork subtotal ($)	No. of new signals	Structures (bridge/ interchange)	# of Culverts	Culverts $	Utility relocation	Property	EA Study	Subtotal	Engineering (10%)	Contingency (10%)	Total cost	BTE%	Benefit to Existing (non-growth related)	BTG%	Growth Related
52	Transportation Planning Studies (TMP)			Studies	Medium																$300,000			$300,000	0%	$0	100%	$300,000
90	Yonge Street & 9th Line			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
91	Yonge Street & 7th Line			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
92	Yonge Street & 6th Line (Refer to 6th Line EA)			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
93	Yonge Street & 5th Line			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
94	Yonge Street & 4th Line / Killarney Beach Road			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
95	20th Sideroad & Lockhart Road			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	10%	$67,958	90%	$611,625
96	20th Sideroad & 9th Line			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	10%	$67,958	90%	$611,625
97	20th Sideroad and 6th Line (Refer to 6th Line EA)			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	0%	$0	100%	$679,583
98	Innisfil Beach Road & 20th Sideroad Bypass			Signalized Intersection	Medium							$ 287,171	$ 287,171								$287,171	$28,717	$28,717	$344,606	10%	$34,461	90%	$310,145
99	20th Sideroad & 5th Line			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	0%	$0	100%	$679,583
100	25th Sideroad & Big Bay Point Road / 13th Line			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	10%	$67,958	90%	$611,625
101	25th Sideroad & 9th Line			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	10%	$67,958	90%	$611,625
102	St. John's Road & 7th Line (currently under study by 7th Line EA)			Roundabout	Medium							$ 466,320	$ 466,320							$100,000	$566,320	$56,632	$56,632	$679,583	10%	$67,958	90%	$611,625
51	Innisfil Beach Road	20th Sideroad	25th Sideroad	Reconstruction	Long	Arterial Road	Rural	2	2		0.2	$ 1,188,773	$ 178,316			1	$112,616	$50,677			$392,287	$39,229	$39,229	$470,744	0%	$0	100%	$470,744
54	6th Line	County Road 53 / 5th Sideroad	20 Sideroad	Widening	Long	Arterial Road	Rural	2	2	9.1	10.2	$ 3,045,095	$ 30,907,713											$34,010,000	40%	$13,604,000	60%	$20,406,000
55	6th Line	County Road 53 / 5th Sideroad	20th Sideroad	Multi-use trail	Long	Arterial Road	Rural	2	2	9.1	9.1	$ 157,663	$ 1,434,731								$1,434,731	$143,473	$143,473	$1,721,677	80%	$1,377,342	20%	$344,335
44	Belle Aire Beach Road	20th Sideroad	Railway tracks	Urbanization	Long	Major Collector	Rural	2	2	0.94	1.5	$ 3,167,442	$ 4,877,860			1	$112,616	$520,287		$400,000	$6,431,051	$643,105	$643,105	$7,717,261	10%	$771,726	90%	$6,945,535
56	Belle Aire Beach Road	Willow Street	Maple Road	Urbanization	Long	Major Collector	Rural	2	2	0.56	1.2	$ 3,167,442	$ 3,674,232			1	$112,616	$391,905		$400,000	$4,970,658	$497,066	$497,066	$5,964,789	10%	$596,479	90%	$5,368,310
57	Ewart Street	Killarney Beach Road	300 metres north of Killarney Beach Road	Urbanization	Long	Major Collector	Rural	2	2	0.4	0.7	$ 3,167,442	$ 2,217,209					$236,494		$400,000	$3,090,197	$309,020	$309,020	$3,708,237	10%	$370,824	90%	$3,337,413
58	Ewart Street	300 metres north of Killarney Beach Road	Lake Simcoe	Paved Shoulders	Long	Major Collector	Rural	2	2	1.5	1.5	$ 192,720	$ 289,080								$289,080	$28,908	$28,908	$346,896	40%	$138,759	60%	$208,138
59	9th Line	Yonge Street	20 Sideroad	Reconstruction	Long	Major Collector	Rural	2	2	3.1	3.7	$ 1,162,892	$ 4,256,183			2	$225,232				$4,481,416	$448,142	$448,142	$5,377,699	40%	$2,151,080	60%	$3,226,619
60	9th Line	20 Sideroad	25th Sideroad	Urbanization	Long	Major Collector	Rural	2	2	3	3.9	$ 3,167,442	$ 12,353,023			2	$225,232	$1,317,610		$400,000	$15,613,475	$1,561,348	$1,561,348	$18,736,170	10%	$1,873,617	90%	$16,862,553
61	Mapleview Drive	25th Sideroad	20th Sideroad	Reconstruction	Long	Minor Collector	Rural	2	2	3.3	3.9	$ 1,162,892	$ 4,535,277			1	$112,616				$4,647,894	$464,789	$464,789	$5,577,472	75%	$4,183,104	25%	$1,394,368
62	St. John's Road	Innisfil Beach Road	Nantyr Drive	Urbanization	Long	Major Collector	Rural	2	2	2.3	5.2	$ 3,167,442	$ 16,312,325			3	$337,849	$1,739,921		$400,000	$20,530,015	$2,053,002	$2,053,002	$24,636,018	10%	$2,463,602	90%	$22,172,417
88	Highway 89 / Shore Acres	Yonge Street	20 Sideroad	Paved Shoulders	Long	Arterial Road	Rural	2	4	3.1	3.1	$ 192,720	$ 597,433								$597,433	$59,743	$59,743	$716,919	80%	$573,535	20%	$143,384
63	Transit feasibility study			Studies	Medium																$400,000			$400,000	0%	$0	100%	$400,000
64	EcoMobility Hub			Other Improvements	Medium																$2,400,000			$2,400,000	40%	$960,000	60%	$1,440,000
65	Bike-share program			Other Improvements	Medium																$105,000			$105,000	0%	$0	100%	$105,000
66	Zoning by-law study to consider reduced minimum parking standards and the addition of Electric Vehicle parking space and carpool parking space requirements			Studies	Medium																$400,000			$400,000	0%	$0	100%	$400,000
	SUB-TOTAL ROADS:																				$319,219,716	$28,621,472	$28,621,472	$461,109,206		$93,617,025		$367,492,181
67	Other paved shoulders (Roberts Road, Crystal Beach Road / Goodfellow Avenue, location can be found in Trail Master Plan map)			Paved Shoulders	Medium					1.6		$ 192,720	$ 312,207								$312,207	$31,221	$31,221	$374,648	45%	$168,592	55%	$206,056
68	Other MUT (IRC Loop, Innisfil Beach Park Trail, Sleeping Lion Loop), location can be found in Trail Master Plan map			Multi-use trail	Short					4.2		$ 157,663	$ 662,184								$662,184	$66,218	$66,218	$794,620	80%	$635,696	20%	$158,924
69	Other MUT (20th Sideroad proposed realignment), location can be found in Trail Master Plan map			Multi-use trail	Medium					1.7		$ 157,663	$ 268,027								$268,027	$26,803	$26,803	$321,632	80%	$257,306	20%	$64,326
70	Secondary Trail, location can be found in Trail Master Plan map			Secondary Trail	Short					12.1		$ 157,663	$ 1,907,719								$1,907,719	$190,772	$190,772	$2,289,263	80%	$1,831,410	20%	$457,853
71	Secondary Trail, location can be found in Trail Master Plan map			Secondary Trail	Medium					12.6		$ 157,663	$ 1,986,551								$1,986,551	$198,655	$198,655	$2,383,861	80%	$1,907,088	20%	$476,772
72	Secondary Trail, location can be found in Trail Master Plan map			Secondary Trail	Long					8.8		$ 157,663	$ 1,387,432								$1,387,432	$138,743	$138,743	$1,664,919	80%	$1,331,935	20%	$332,984
73	Sidewalk (within established areas), location can be found in Trail Master Plan map			Sidewalk	Short					1.9		$ 157,663	$ 299,559								$299,559	$29,956	$29,956	$359,471	80%	$287,577	20%	$71,894
74	Sidewalk (within established areas), location can be found in Trail Master Plan map			Sidewalk	Medium					5.7		$ 157,663	$ 898,678								$898,678	$89,868	$89,868	$1,078,413	80%	$862,731	20%	$215,683
75	Sharrows, location can be found in Trail Master Plan map			Sharrows	Short					24.0		$ 3,641	$ 87,394								$87,394	$8,739	$8,739	$104,872	80%	$83,898	20%	$20,974
76	Sharrows, location can be found in Trail Master Plan map			Sharrows	Long					5.3		$ 3,641	$ 19,299								$19,299	$1,930	$1,930	$23,159	80%	$18,527	20%	$4,632
77	Cycling Lane, location can be found in Trail Master Plan map			Bike Lanes	Short					2.2		$ 3,641	$ 8,011								$8,011	$801	$801	$9,613	80%	$7,691	20%	$1,923
78	Cycling Lane, location can be found in Trail Master Plan map			Bike Lanes	Medium					1.7		$ 3,641	$ 6,190								$6,190	$619	$619	$7,428	80%	$5,943	20%	$1,486
	SUB-TOTAL OTHER TRAILS:																				$7,843,250	$784,325	$784,325	$9,411,900		$7,398,393		$2,013,507
80	10th Sideroad	Innisfil Beach Road	Centennial Park	Multi-use trail	Short	County Road	Rural	2	2	0.7	0.7	$ 157,663	$ 110,364								$110,364	$11,036	$11,036	$132,437	80%	$105,949	20%	$26,487
81	Innisfil Beach Road / County Road 21	5th Sideroad	10th Sideroad	Multi-use trail	Short	County Road	Rural	2/4	4	2.5	2.5	$ 157,663	$ 394,157								$394,157	$39,416	$39,416	$472,988	80%	$378,391	20%	$94,598
82	Innisfil Beach Road / County Road 21	10th Sideroad	20th Sideroad	Multi-use trail	Short	County Road	Rural	2/4	4	6.1	6.1	$ 157,663	$ 961,743								$961,743	$96,174	$96,174	$1,154,091	80%	$923,273	20%	$230,818
83	Innisfil Beach Road / County Road 21	Essa Road / County Road 27	5th Sideroad	Paved Shoulders	Medium	County Road	Rural	2/4	4	3.7	3.7	$ 192,720	$ 713,065								$713,065	$71,306	$71,306	$855,678	80%	$684,542	20%	$171,136
84	5th Sideroad / County Road 53	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Paved Shoulders	Long	County Road	Rural	2/4	4	14.1	14.1	$ 192,720	$ 2,717,355								$2,717,355	$271,735	$271,735	$3,260,826	80%	$2,608,660	20%	$652,165
85	Yonge Street / County Road 4	Innisfil / Barrie Boundary	Innisfil / Bradford Boundary	Multi-use trail	Long	County Road	Rural	2	4	16.2	16.2	$ 157,663	$ 2,554,136								$2,554,136	$255,414	$255,414	$3,064,964	80%	$2,451,971	20%	$612,993
86	Highway 89	Cookstown Boundary	Highway 400	Paved Shoulders	Long	Provincial Highway	Rural	2	4	2.5	2.5	$ 192,720	$ 481,800								$481,800	$48,180	$48,180	$578,161	40%	$231,264	60%	$346,896
87	Highway 89	Highway 400	Yonge Street	Paved Shoulders	Long	County Road	Rural	2	4	6.2	6.2	$ 192,720	$ 1,194,865								$1,194,865	$119,487	$119,487	$1,433,838	80%	$1,147,071	20%	$286,768
	SUB-TOTAL COUNTY/PROVINCIAL ROADS (Not Town jurisdiction but Town funding / contribution will be required):												$ 9,127,485				$0		$ -	$0	$9,127,485	$912,748	$912,748	$10,952,982		$8,531,121		$2,421,861
	TOTAL TRANSPORTATION																				$336,190,451	$30,318,545	$30,318,545	$481,474,088		$109,546,540		$371,927,548

Note: the implementation of recommended projects are subject to Town's funding.

10.5 Transit and Active Transportation Financing Options

Financing implementation of the transit services and active transportation could be supported by a variety of provincial and federal transit financing programs. One of the most widely used programs is the Gas Tax Fund (New Deal for Cities and Communities) initiative which consists of an ongoing transfer of funds from the federal government to municipalities. The funds are generally allocated to municipalities on a per capita basis and are to be used for "environmentally sustainable municipal infrastructure." Eligible expenditures include public transit, water, wastewater, solid waste, community energy systems, as well as local roads, bridges and tunnels, and active transportation infrastructure (e.g. bike lanes) that enhance sustainability outcomes. Funds must result in net incremental capital spending on public transit infrastructure. There cannot be any reduction in capital funding provided by the municipality and the funds must be used within three years of receipt.

A similar program to the Federal Gas Tax Fund is offered by the province of Ontario. The Ontario Gasoline Tax is an ongoing transfer of funds to municipalities exclusively for public transit. The Provincial Gas Tax has reached 14.7 cents per litre in 2017. The existing allocation is based upon each municipality's proportionate share of the province's population. The funds can be used for either operating or capital costs.

10.5.1 Funding Options for Active Transportation Improvements

To assist in reducing taxpayer costs on active transportation improvements, the Town should pursue outside funding opportunities such as:

- Infrastructure Canada Smart Cities Challenge;
- Federal / Provincial Gas Tax (as identified above);
- Federation of Canadian Municipalities Green Municipal Fund;
- Federal / Provincial infrastructure stimulus funding;
- Ontario Climate Change Action Plan Funding for Greenhouse Gas Reduction;
- Ontario Municipal Cycling Infrastructure Program;
- Ontario Ministry of Tourism, Culture and Sport Cycling Tourism Development Fund;
- Ontario Ministry of Health and Long Term Care grant programs;
- Ontario Municipal Commuter Cycling Program;
- Municipal GHG (Greenhouse Gas) Challenge Fund;
- Partnership funding with Simcoe County for infrastructure and health promotion related initiatives; and
- Ontario Trillium Foundation.

Governments around the world, including the Province of Ontario and Simcoe County, are facing challenges with respect to funding infrastructure and other transportation programs. New sources of funding and innovative ways of delivering services will need to be explored to ensure the continued affordability and sustainability of the system for all users.

The Town of Innisfil will continue to work in partnership with other levels of government, institutions, the private sector and the public to find funding solutions and infrastructure delivery methods that provide the most efficient and effective results.