



5.0 ROADS

Three alternative road networks for the 2031 horizon are being assessed as part of the TMP Update:

- ▶ Base Case: includes only those transportation improvements already underway or with funding committed;
- ▶ Previous TMP: all transportation improvements listed in the 2008 TMP; and
- ▶ Updated TMP: modifications to the 2008 TMP based on new population and employment forecasts plus the results of the Multiple Account Evaluation of individual projects.

This section presents the analysis for these scenarios, as well as the intermediate steps that were required to determine the recommended network.

One of the County of Simcoe’s goals for this TMP is to establish a sustainable, integrated, multi-modal transportation system that reduces reliance upon any single mode and promotes walking, cycling and transit. In order to achieve this, the road network must be leveraged to the benefit of all modes, not only the private automobile. This section describes the road network operation in 2011, along with multiple 2031 scenarios, and the methodology for selecting road network improvements to benefit active transportation, transit and goods movement, while also considering financial and environmental implications for maximizing routing options.

5.1 Conditions in 2011

In order to understand the existing operation of the road network, a model of all key links within the Simcoe Area was developed using TransCAD software. It incorporates County roads, provincial highways and roads under the jurisdiction of local municipalities, including the cities of Barrie and Orillia. **Figure 5.1-1** shows the performance of the County Road network. This scenario uses the population and employment data from the 2011 Transportation Tomorrow Survey. For consistency, the model assumes the corresponding County Road network at that time.

Green links correspond to roads that are operating well within their capacity with minimal delay to traffic, yellow links are on the cusp of acceptable road performance and red links are approaching or at their capacity.

The following links fall into the latter category in the 2011 scenario:

- ▶ CR90 at Utopia and east of CR28;
- ▶ CR88 between CR53 (formerly BWG Sideroad 5) and the Bradford City Limit and at CR27 near Bond Head;
- ▶ CR10 between CR9 and CR90;
- ▶ CR8 between Highway 400 and CR41;
- ▶ CR21 between CR53 and CR39;
- ▶ CR89 between Highway 400 and CR4;
- ▶ CR43 between CR53 and Highway 26;
- ▶ CR4 between 10th Line Innisfil and CR21; and
- ▶ CR49 between Highway 11 and Orillia City Limit.

The County has already taken remedial measures to address, either directly or indirectly, the aforementioned capacity issues. These are identified in Table 5.1-1 below. Although improvements have also been made to County Road 44 between CR 169 and Longford Mills, they are not expected to affect the capacity of the roadway. The table identifies the sections of County Roads 53 and 54 (formerly 5 and 10 Sideroad respectively) that have been resurfaced; however, both roads are now designated as County Roads from the Barrie City Limit to CR 88 and 8th Line BWG respectively.

Table 5.1- 1: Recent Road Improvements

Road	Limits	Improvement†	
		2011	2014
Alliston By-Pass via Industrial Parkway, New Tecumseth	Church Street, Alliston to Highway 89	LOCAL	4
CR 88, Bradford West Gwillimbury	Highway 400 to Bradford Limit	2	4
CR 90, Essa/Springwater	CR 10 to Barrie City Limit	2	5
27/28 Sideroad (CR 96), Clearview	CR 7 to Highway 26	LOCAL	CR
Poplar Sideroad (CR 32), Collingwood	Highway 26 to 10th Line (CR 32), Collingwood	LOCAL	CR
10th Line (CR 32), Collingwood	Poplar Sideroad to Sixth Street (CR 32)	LOCAL	CR
5 Sideroad (CR 53), Innisfil	Highway 89 to CR 88	LOCAL	CR
10 Sideroad (CR 54), Innisfil	CR 21 to 7th Line & 3rd Line to CR 89	LOCAL	CR
CR 28 (George Johnston Road), Springwater	Highway 26 to CR 90	2	2+TCL
CR 50, Adjala-Tosorontio	Highway 9 to Highway 89	2	2+TCL

† '2'=2-lane road; '4'=4-lane road; 'LOCAL'=local municipal road; 'CR'=County Road, 'TCL'=Truck Climbing Lane

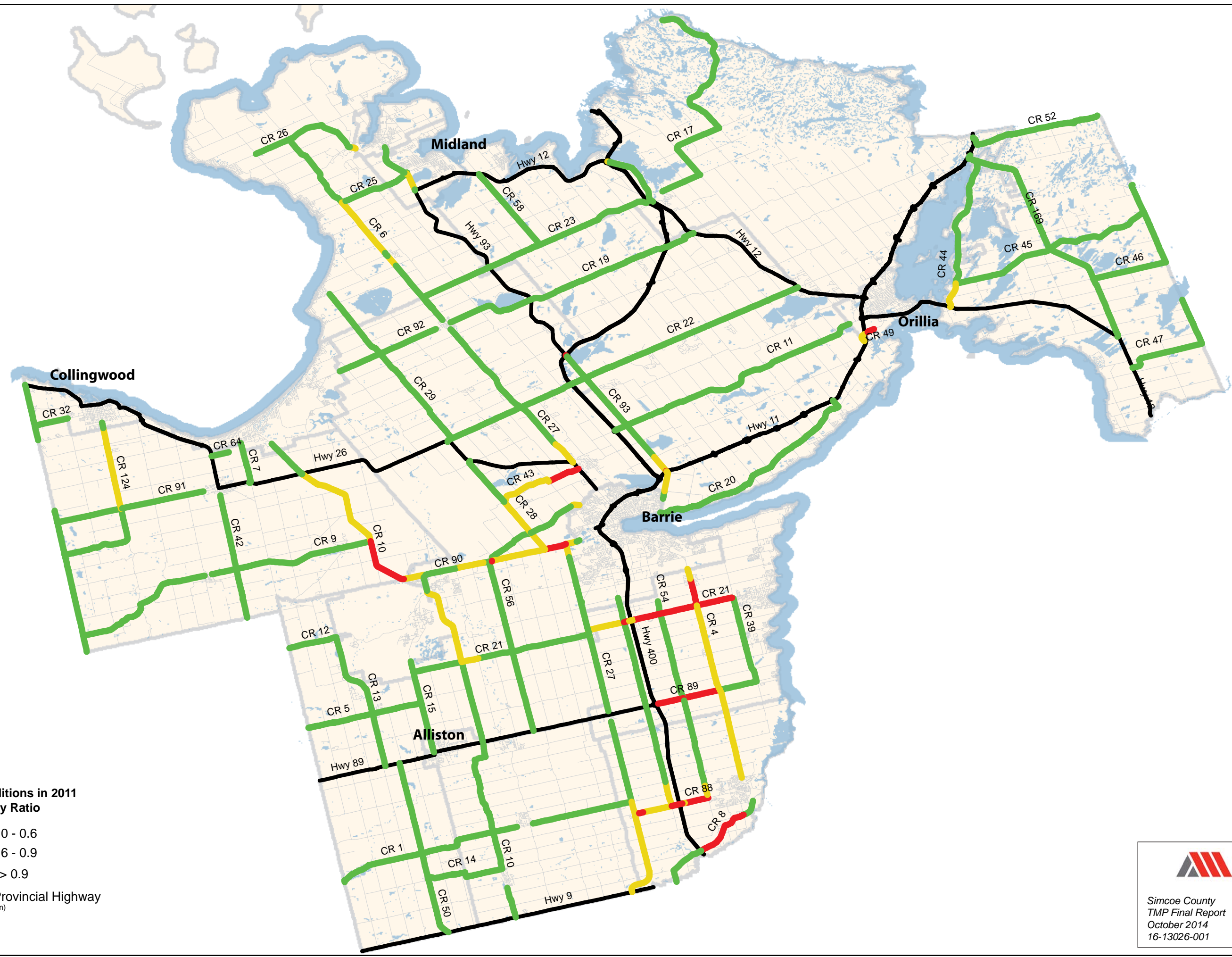
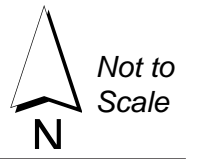


Figure 5.1-1: Conditions in 2011
Volume to Capacity Ratio

- █ 0.0 - 0.6
- █ 0.6 - 0.9
- █ > 0.9

█ Existing Provincial Highway
(MTO Jurisdiction)



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Simcoe County
TMP Final Report
October 2014
16-13026-001

5.2 Forecast Future Conditions

The Growth Plan for the Greater Golden Horseshoe (Schedule 7) allocates the distribution of population and employment for the County of Simcoe. These data were distributed across Traffic Analysis Zones covering the study area. **Figure 5.2 – 1** and **Figure 5.2 – 2** below show the predicted population and employment changes over the period from 2006 to 2031. In particular, the figures demonstrate that Bradford West Gwillimbury, the Alliston area, the Nottawasaga Bay area communities, southern Barrie and northern Innisfil are expecting significant growth in both population and employment. They may be at risk of increased congestion as a consequence.

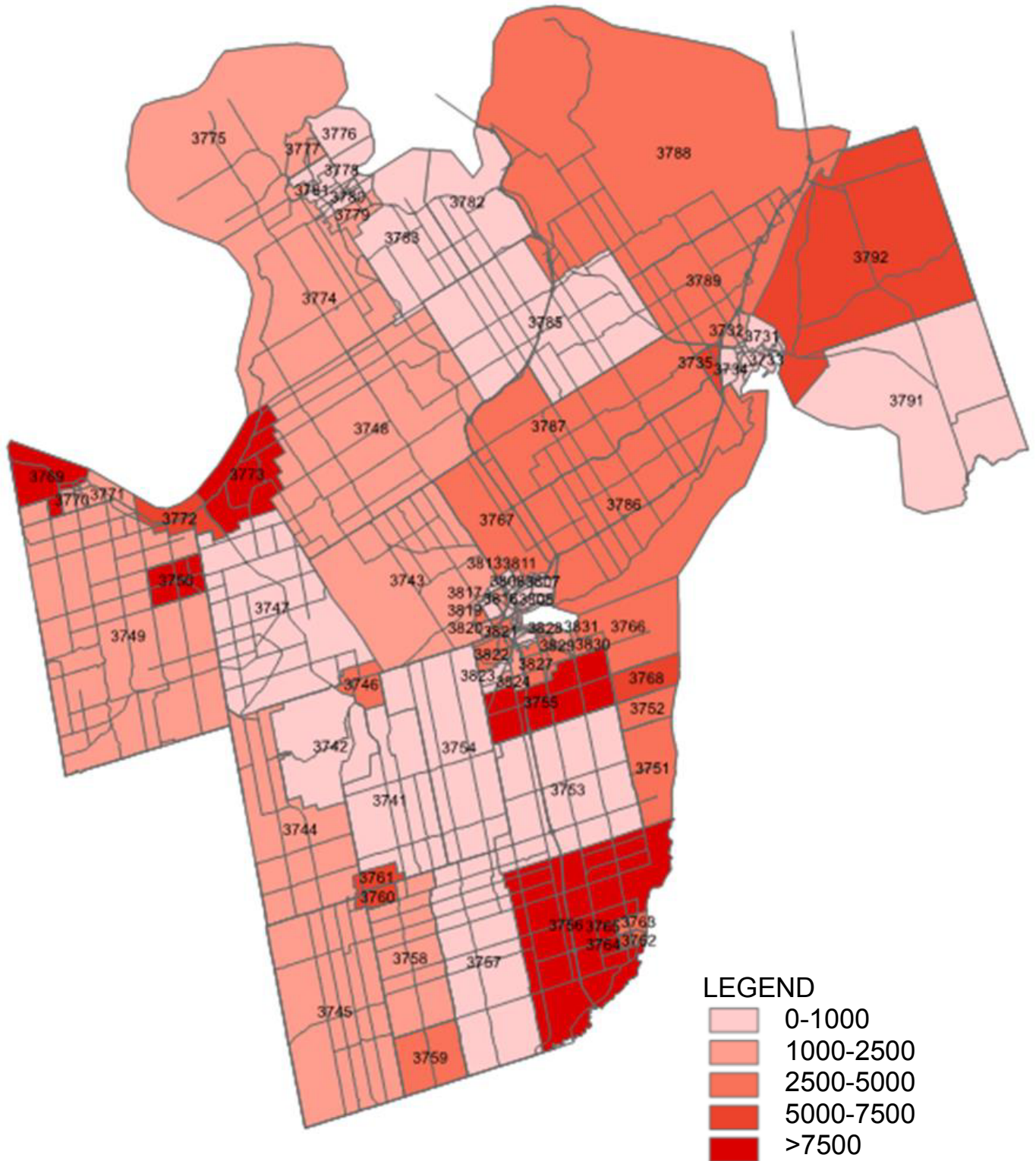
The TransCAD model was developed to consider the 2031 population and employment distribution. The road network was updated to include the recent road improvements in **Table 5.1-1**. Together, these comprise the ‘Do Nothing’ 2031 Base scenario.

Figure 5.2 – 3 shows the performance of the County Road network in the ‘Do Nothing’ scenario. Green, yellow and red links are defined in the same fashion as in **Section 5.1**. The following links fall into the “red” category:

- ▶ CR124 between CR32 and 27/28 Sideroad, Clearview;
- ▶ CR10 between CR9 and CR90, between Highway 89 and 8th Line (CR1) and between Cambrai Road (CFB Borden) and CR21;
- ▶ CR90 between Essa Line 5 and Barrie City Limit;
- ▶ CR88 between BWG Sideroad 5 and the Bradford City Limit and at CR27 near Bond Head;
- ▶ CR28 between CR43 and CR90;
- ▶ CR21 between CR10 and Essa Line 5, between CR53 (formerly BWG Sideroad 5) and CR39, and in the vicinity of Thornton;
- ▶ CR56 between CR21 and Essa Sideroad 20;
- ▶ CR89 between Highway 400 and CR4;
- ▶ CR3 between CR4 and CR39;
- ▶ CR4 between Barrie City Limit and BWG 9th Line;
- ▶ CR27 between 11th Line BWG and Highway 9, between Essa Road and Innisfil 7th Line and between CR90 and Ardagh Road;
- ▶ CR1 west of CR27;
- ▶ CR8 between Highway 400 and CR41;
- ▶ CR43 between CR53 (formerly Wilson Drive) and Highway 26;
- ▶ CR13 between Tosorontio Sideroad 17 and CR5;
- ▶ CR50 between CR1 and Highway 9;
- ▶ 27/28 Sideroad, Clearview (upgraded to County Road) between Highway 26 and CR7;
- ▶ Poplar Sideroad (CR32) between High Street and CR124;
- ▶ CR49 between Highway 11 and Orillia City Limit; and
- ▶ CR93 between CR25 and Highway 93, and between Ski Trails Road and Highway 11.



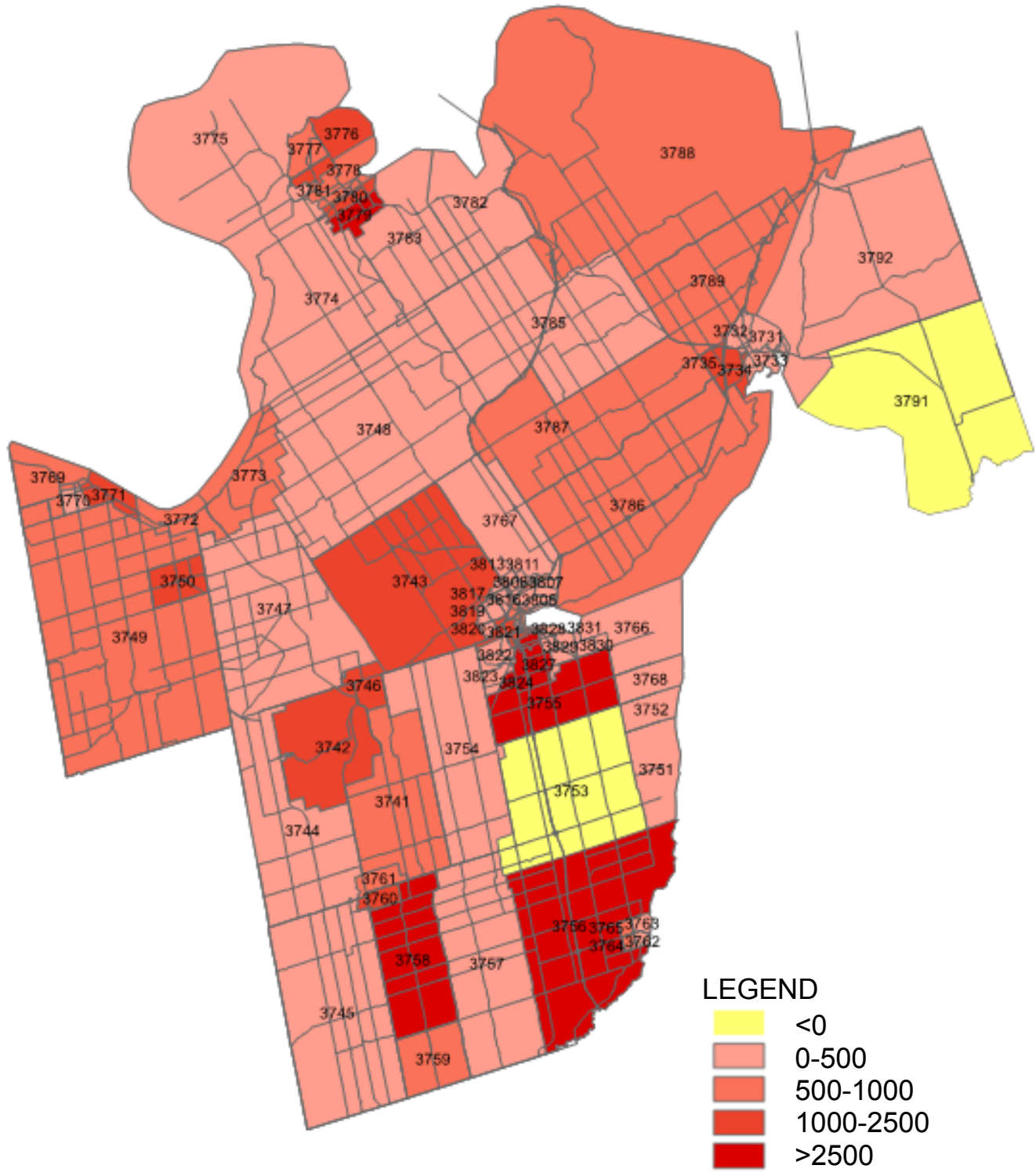
Figure 5.2-1: Forecast Change in Population (2006-2031)



LEGEND

Lightest Pink	0-1000
Light Pink	1000-2500
Medium Pink	2500-5000
Dark Pink	5000-7500
Red	>7500

Figure 5.2-2: Forecast Change in Employment (2006-2031)



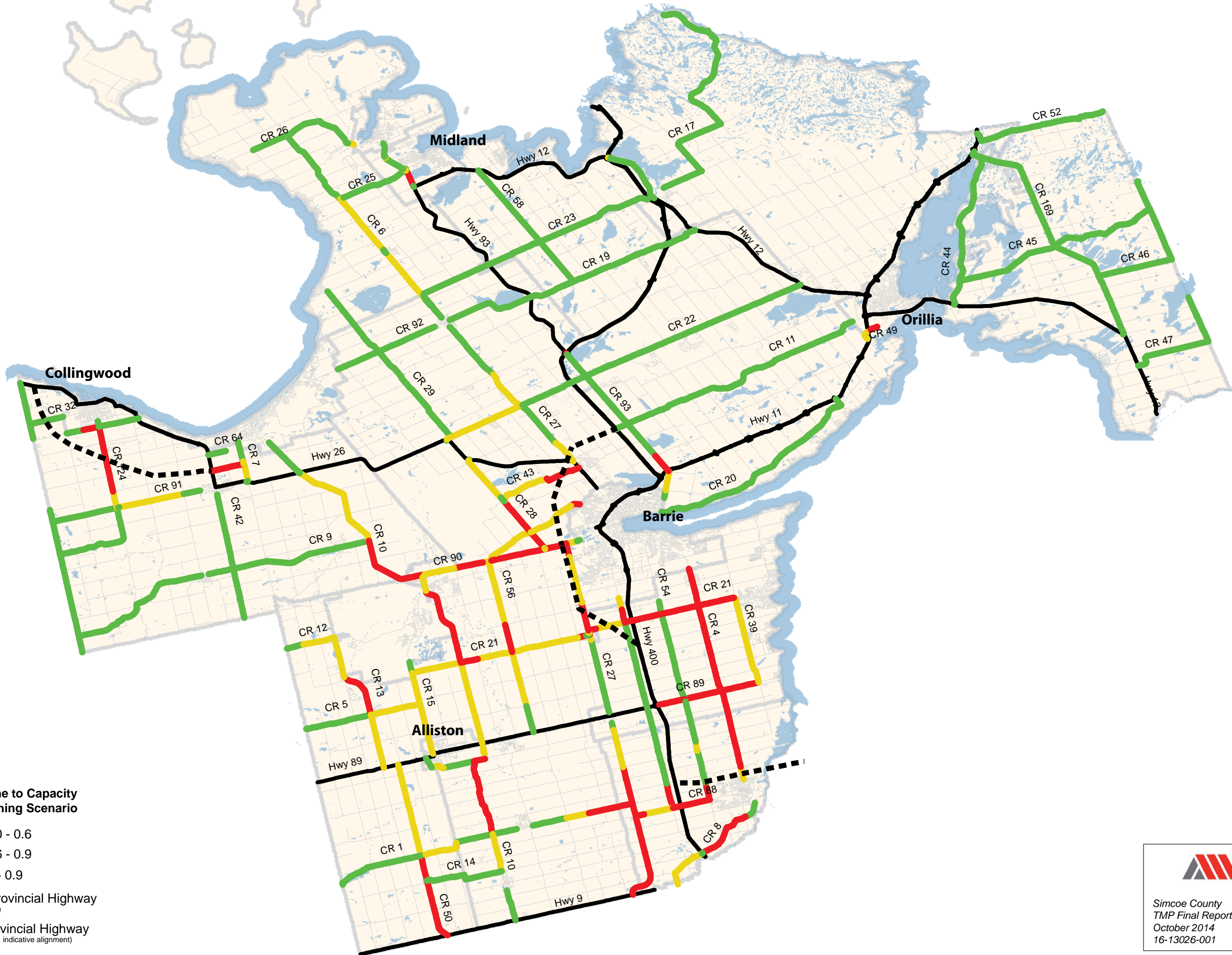
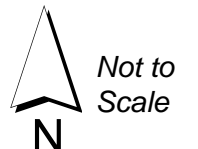


Figure 5.2-3: Volume to Capacity Ratio Plot - Do Nothing Scenario

- █ 0.0 - 0.6
- █ 0.6 - 0.9
- █ > 0.9
- Existing Provincial Highway (MTO Jurisdiction)
- Future Provincial Highway (MTO Jurisdiction, indicative alignment)



5.3 Alternative Future Scenarios

Traditionally, road network performance has been evaluated almost exclusively from the perspective of the private automobile. Recommendations primarily involve widening roads on which congestion is predicted. Such improvements attract greater numbers of vehicles, filling the extra capacity generated by the widening and increasing congestion on connecting roads. This approach encourages drivers to travel greater distances thus promoting urban sprawl, and discourages consideration of more sustainable travel modes such as transit and active transportation.

Among the County of Simcoe's goals for this TMP is to establish a sustainable, integrated multi-modal transportation system that reduces reliance upon any single mode, and promotes walking, cycling and transit. In line with this, potential road improvements have been filtered using a Multiple Account Evaluation (MAE) approach which is described in **Section 5.3.1** below. Benefits of this approach include:

- ▶ Identifying road network benefits for active transportation, transit and goods movement;
- ▶ Recognizing the addition of routing options for automobile drivers as a result of greater network connectivity;
- ▶ Consideration of the relative costs of improvements in both financial and environmental terms; and
- ▶ Informing the implementation program by prioritizing improvements with the greatest overall benefits.

5.3.1 Projects Recommended in the 2008 TMP

A modeling scenario was developed comprising the base case and all road improvements included in the 2008 Transportation Master Plan. **Figure 5.3.1-1** shows the performance of the County Road network in that scenario. Green, yellow and red links are again defined as in **Section 5.1**. As a result of the improvements, fewer links fall into the "red" category than in the "Do Nothing" scenario discussed in **Section 5.1**, however the following congested links remain:

- ▶ CR10 between CR9 and Highway 26 and between Highway 89 and Industrial Parkway;
- ▶ CR28 between CR40 and CR90;
- ▶ CR90 between CR28 and CR27;
- ▶ CR21 between CR53 and CR4;
- ▶ CR3 between CR4 and CR39;
- ▶ CR88 between Highway 400 and Bradford City Limit;
- ▶ CR43 between CR53 and Anne Street;
- ▶ CR53 between Barrie City Limit (south) and CR21;
- ▶ CR4 between Innisfil 10th Line and CR21, and between 9th Line BWG and the Bradford City Limit;
- ▶ CR49 between Highway 11 and Orillia City Limit;
- ▶ CR93 between CR25 and Highway 93, and between Ski Trails Road and Georgian Drive;
- ▶ 27/28 Sideroad, Clearview (upgraded to County Road) between Highway 26 and CR7; Concession 12 between CR7 and Klondike Park Road;
- ▶ Poplar Sideroad (CR32) between High Street and CR124; and
- ▶ CR89 between Highway 400 and BWG 10 Sideroad.

5.3.2 Multiple Account Evaluation Criteria

The following accounts were used to rate the individual projects recommended in the 2008 TMP, with the exception of those recently implemented (see **Table 5.1-1**) or subject a separate evaluation under the Environmental Assessment process (see Error! Reference source not found.). The abbreviations in brackets are as used in the tables that follow:

- ▶ **Goods Movement (GM)** – This account recognizes where improvements are proposed on roads that were identified as Goods Movement Corridors in the 2008 Transportation Master Plan, roads that link these corridors to major settlements such as Barrie and Orillia, or bypasses around smaller communities. An effective Goods Movement network is essential to enabling and managing resource-based development, which is a key theme of the planning strategy laid out in the County’s proposed Official Plan.
- ▶ **Connectivity (CON)** – This applies to projects that fill gaps in the County Road network and thus have the potential to shorten the distance travelled between origins and destinations. Recognition is given to bypasses, local roads upgraded to County Roads (where the closest parallel County Road is at least 2km away) and improvements to roads that are at least 7km away from adjacent County Roads.
- ▶ **Active Transportation (AT)** – Overlaps between road network improvements and active transportation proposals were identified. This recognizes potential synergies by giving preferential scoring to road projects that have the scope to incorporate active transportation facility upgrades. This assumes that sufficient right-of-way will be available to accommodate both the additional traffic lanes and the active transportation facility. The greatest benefit is where on-road bicycle facilities are proposed and can be implemented at the time of the road widening, although this may also be the case for off-road sections.
- ▶ **Support for Transit (TRA)** – The density and intensification targets highlighted in the County’s proposed Official Plan would make the provision of express transit service between major settlements more feasible. This account recognizes improvements on direct routes between primary settlement areas, strategic settlement employment areas and economic employment districts (as identified in Schedule 5.1.2 of the Official Plan) as well as the Cities of Barrie and Orillia.
- ▶ **Environmental Impact (ENV)** – This assessment identifies the land use designations adjacent to the proposed improvements which may be affected by them. This includes, in decreasing order of environmental impact: settlements, economic districts and economic employment districts, rural and agricultural designations. It also considers projects that may be proposed in areas that carry a ‘Greenlands designation’ (as defined in 3.8.10 and identified in Schedule 5.1 of the County’s proposed Official Plan) or areas that are protected under the Niagara Escarpment Plan, the Oak Ridges Moraine Conservation Plan or the Greenbelt Plan. In all cases, the need for an Environmental Assessment or Environmental Impact Statement (EIS) should be determined in accordance with the criteria outlined in the County’s proposed Official Plan and other relevant documentation.
- ▶ **Cost Effectiveness (\$)** – Based on the estimates from the 2008 Transportation Master Plan, the implementation costs per kilometre have been compared for each of the candidate road improvements.



Figures 5.3.2-1 to 5.3.2-6 inclusive show each Multiple Account Evaluation in map format, along with the scoring system for each account. They show the points awarded to each link forming part of a candidate improvement that was evaluated for the scenarios that follow.

The MAE also feeds into the Transportation Principles outlined in Section 3.2.2:

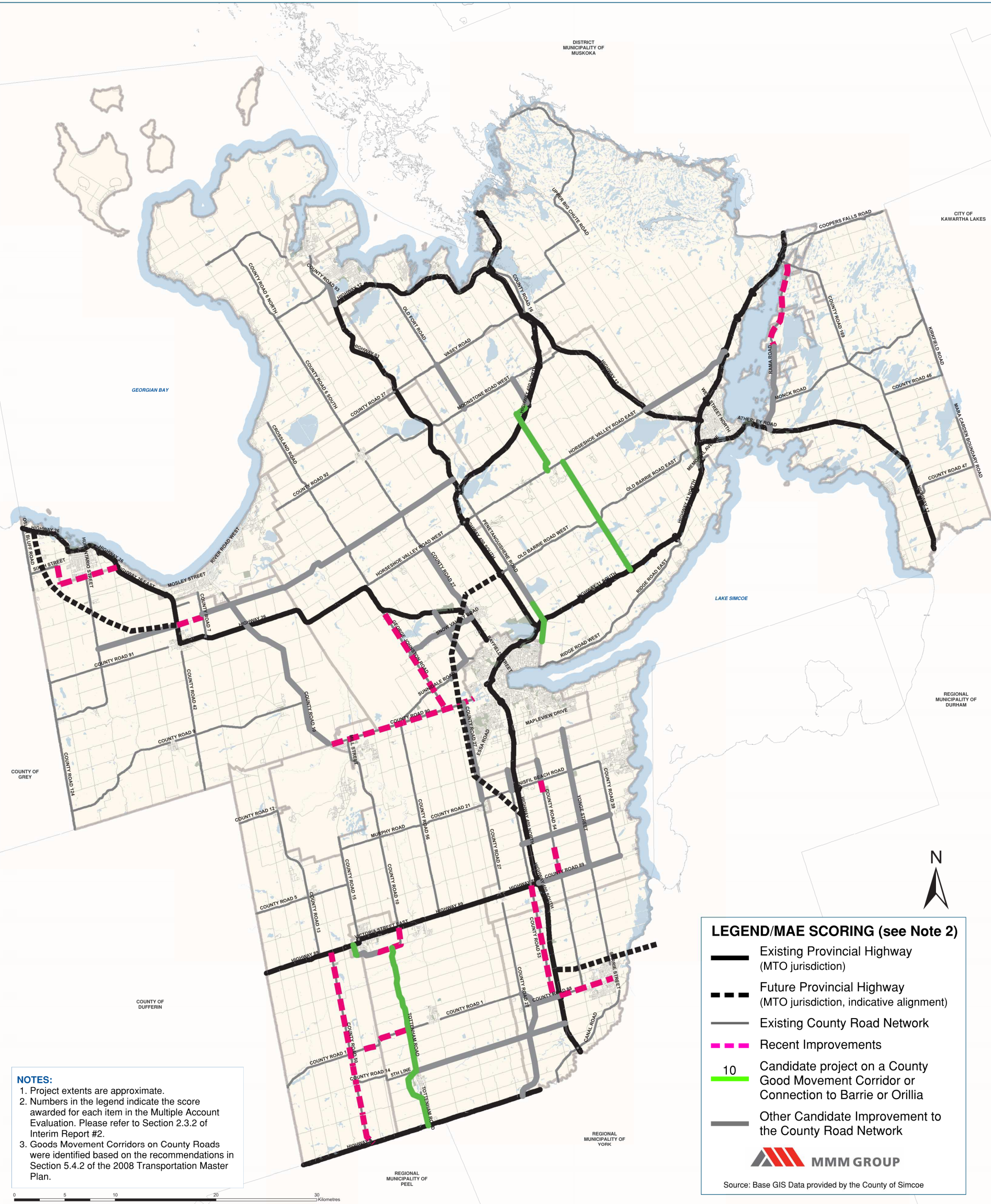
- ▶ **Transportation and Land Use Integration:** the transportation systems and surrounding land uses are planned and complementary so that the use of transportation infrastructure is optimized, and limits the impacts of transportation on the environment.
- ▶ **Access and Mobility:** the transportation system is interconnected to allow people and goods to move safely and efficiently throughout and beyond the County.
- ▶ **Multi-modal Integration:** a transportation network with options regarding transit services and nodes, active transportation connectivity and amenities, including a comprehensive network of motorized and non-motorized transportation modes, plus alternatives such as carpooling to decrease reliance on single-occupant vehicles.

Table 5.3-1: Correlation of Transportation Principles with Multiple Account Evaluation identifies which of the MAE accounts are relevant to each of these principles.

Table 5.3-1: Correlation of Transportation Principles with Multiple Account Evaluation







Transportation Principles	GM	CON	AT	TRA	ENV	\$
Transportation and Land Use Integration					✓	✓
Access and Mobility	✓					✓
Multi-modal Integration		✓	✓	✓		✓


**MULTIPLE ACCOUNT EVALUATION - GOODS MOVEMENT
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



NOTES:
 1. Project extents are approximate.
 2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.
 3. Goods Movement Corridors on County Roads were identified based on the recommendations in Section 5.4.2 of the 2008 Transportation Master Plan.

LEGEND/MAE SCORING (see Note 2)

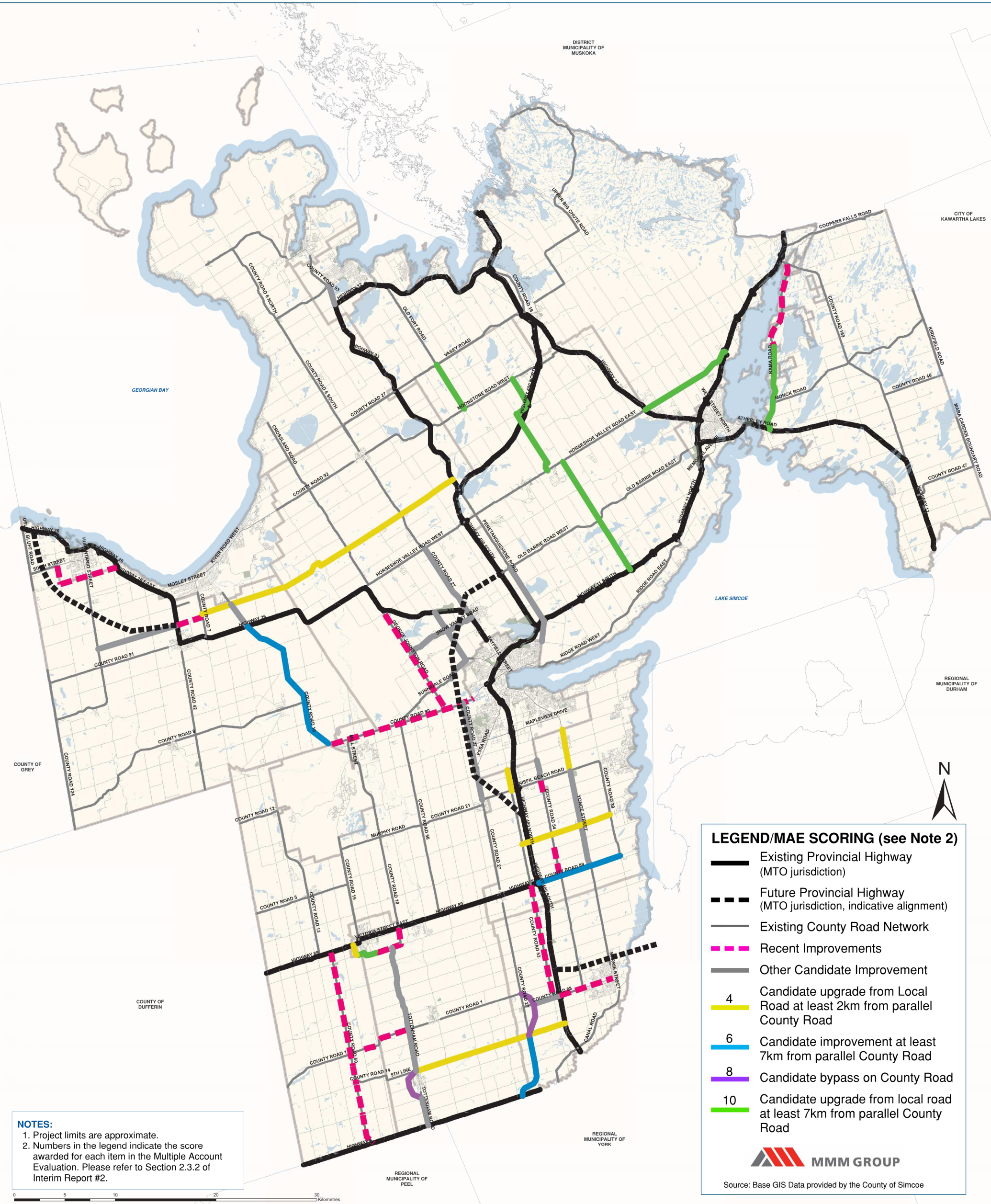
-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  10 Candidate project on a County Good Movement Corridor or Connection to Barrie or Orillia
-  Other Candidate Improvement to the County Road Network

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Source: Base GIS Data provided by the County of Simcoe













**MULTIPLE ACCOUNT EVALUATION - CONNECTIVITY
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



NOTES:
 1. Project limits are approximate.
 2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.

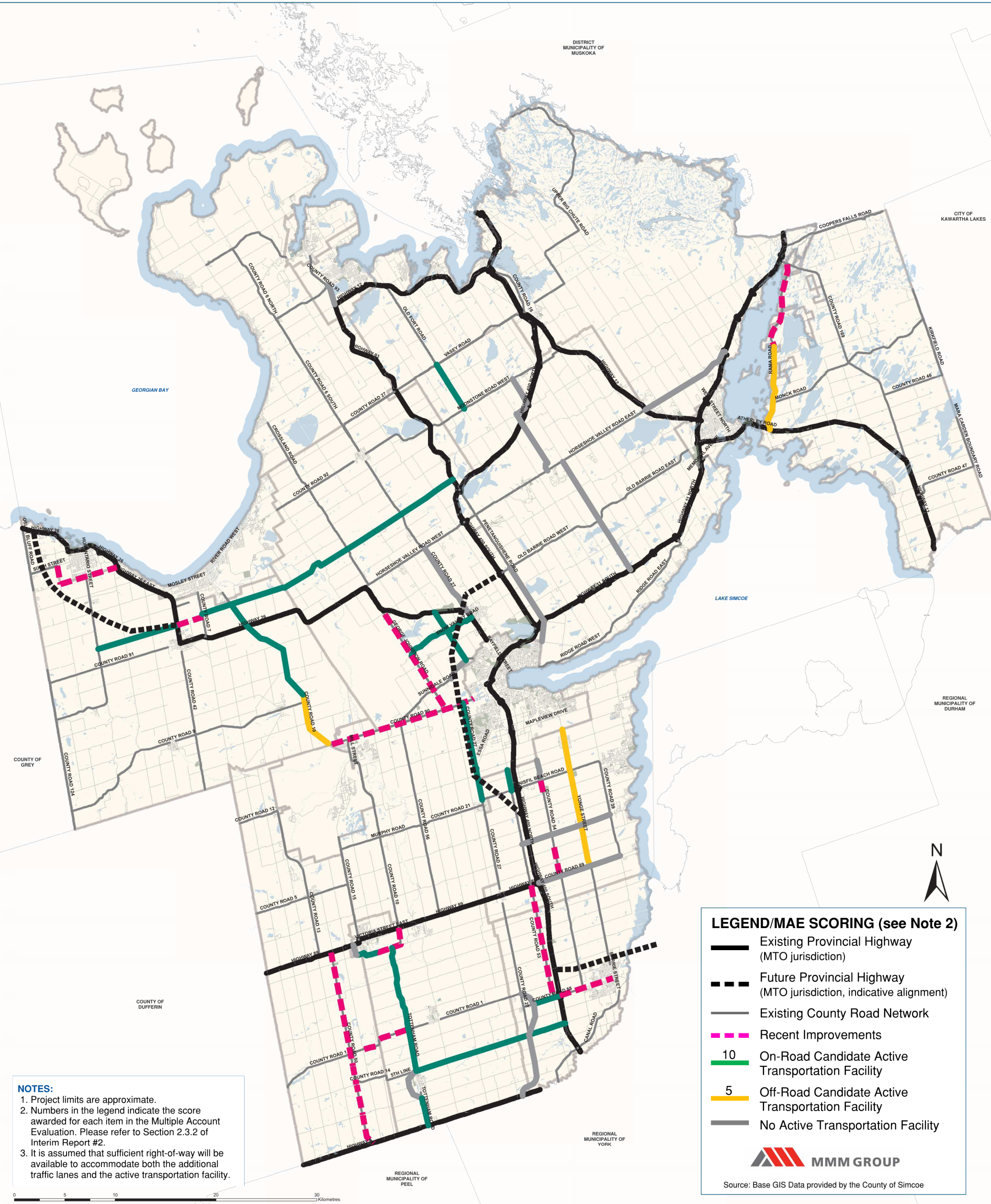
LEGEND/MAE SCORING (see Note 2)

-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  Other Candidate Improvement
-  4 Candidate upgrade from Local Road at least 2km from parallel County Road
-  6 Candidate improvement at least 7km from parallel County Road
-  8 Candidate bypass on County Road
-  10 Candidate upgrade from local road at least 7km from parallel County Road

 **MMM GROUP**








Source: Base GIS Data provided by the County of Simcoe


**MULTIPLE ACCOUNT EVALUATION - ACTIVE TRANSPORTATION
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



NOTES:
 1. Project limits are approximate.
 2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.
 3. It is assumed that sufficient right-of-way will be available to accommodate both the additional traffic lanes and the active transportation facility.

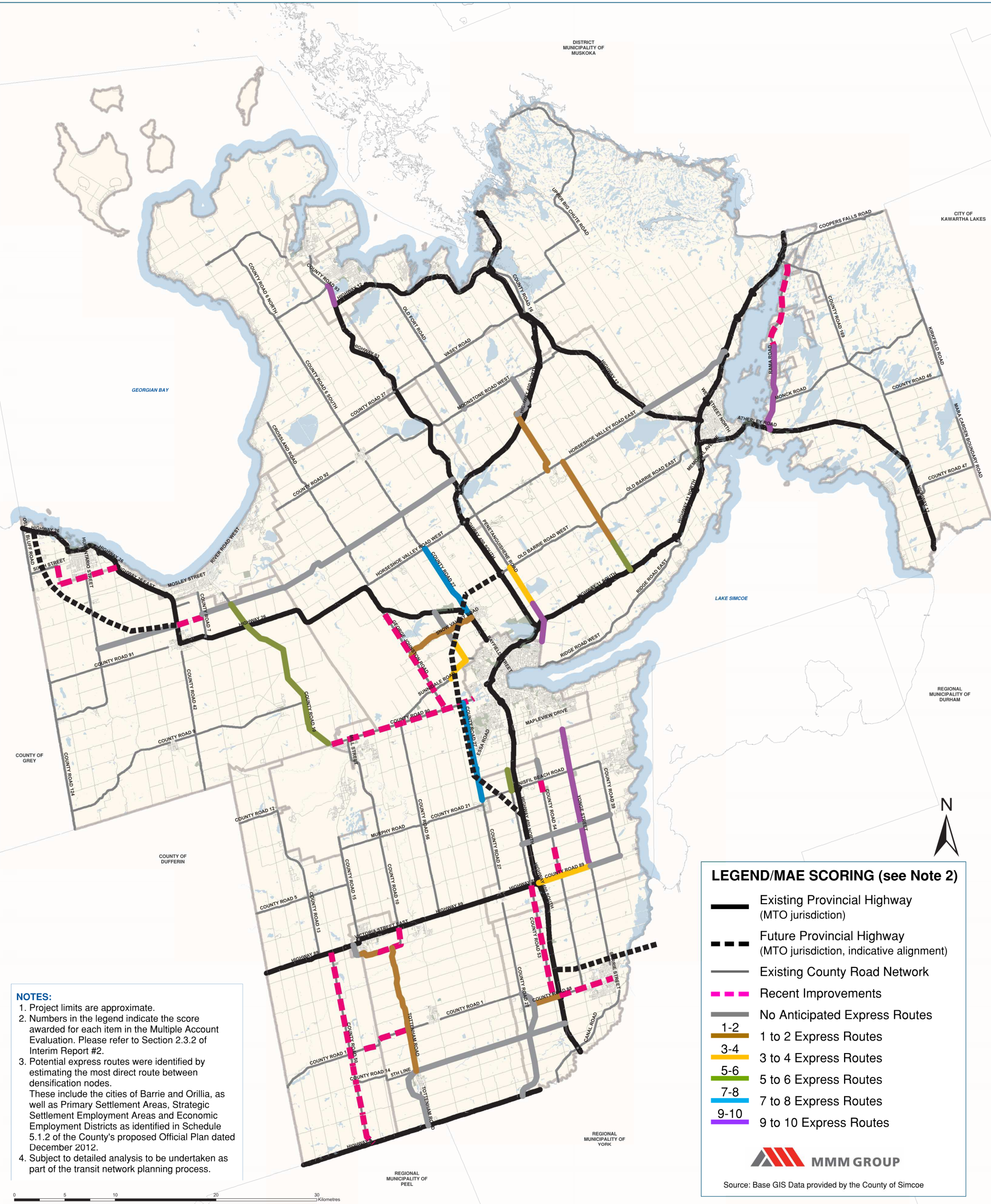
LEGEND/MAE SCORING (see Note 2)

-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  10 On-Road Candidate Active Transportation Facility
-  5 Off-Road Candidate Active Transportation Facility
-  No Active Transportation Facility

 **MMM GROUP**

Source: Base GIS Data provided by the County of Simcoe











**MULTIPLE ACCOUNT EVALUATION - SUPPORT FOR TRANSIT
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**




NOTES:

1. Project limits are approximate.
2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.
3. Potential express routes were identified by estimating the most direct route between densification nodes. These include the cities of Barrie and Orillia, as well as Primary Settlement Areas, Strategic Settlement Employment Areas and Economic Employment Districts as identified in Schedule 5.1.2 of the County's proposed Official Plan dated December 2012.
4. Subject to detailed analysis to be undertaken as part of the transit network planning process.

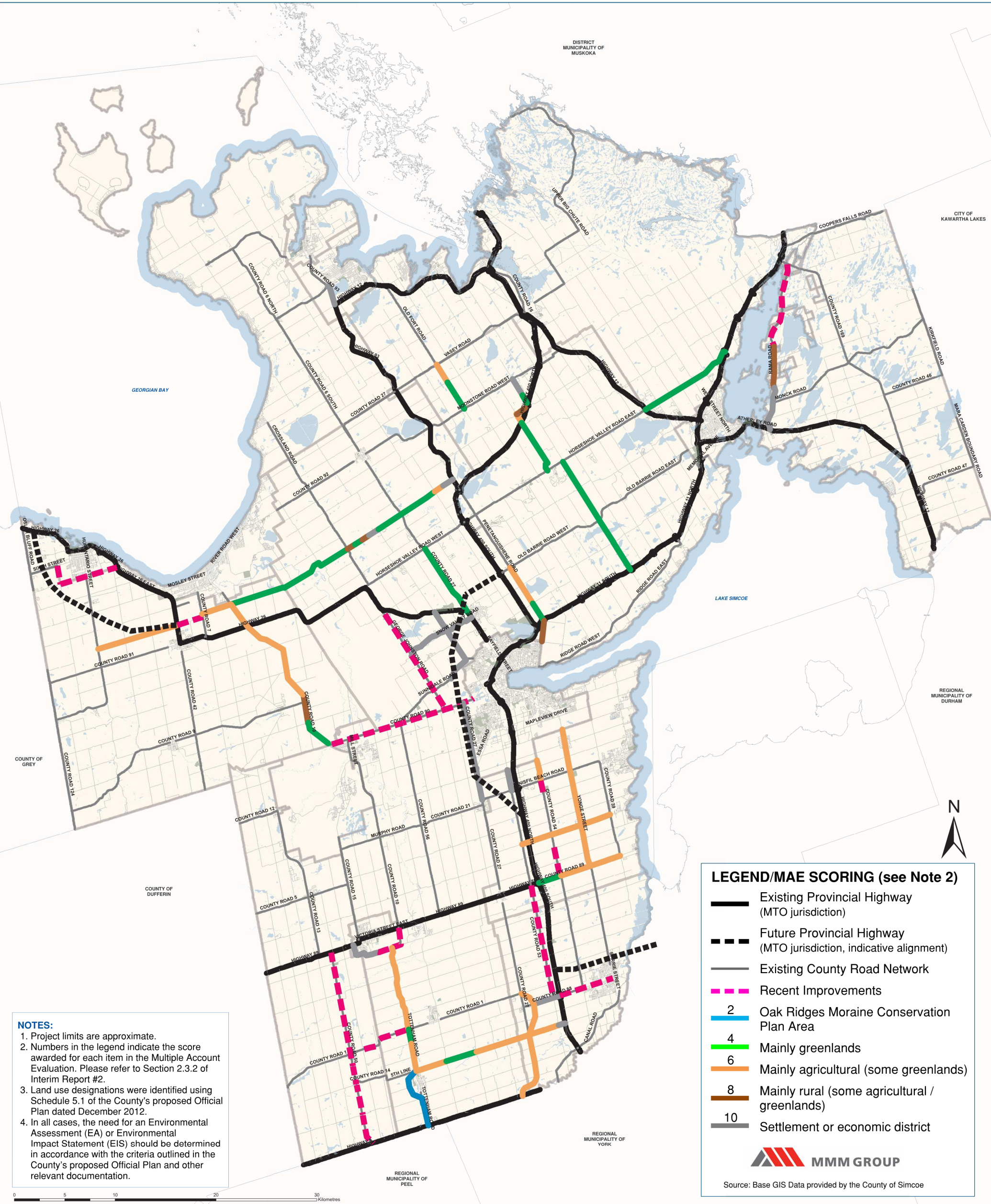
LEGEND/MAE SCORING (see Note 2)

-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  No Anticipated Express Routes
-  1-2 Express Routes
-  3-4 Express Routes
-  5-6 Express Routes
-  7-8 Express Routes
-  9-10 Express Routes

 **MMM GROUP**

Source: Base GIS Data provided by the County of Simcoe



**MULTIPLE ACCOUNT EVALUATION - ENVIRONMENTAL IMPACT
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**




NOTES:

1. Project limits are approximate.
2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.
3. Land use designations were identified using Schedule 5.1 of the County's proposed Official Plan dated December 2012.
4. In all cases, the need for an Environmental Assessment (EA) or Environmental Impact Statement (EIS) should be determined in accordance with the criteria outlined in the County's proposed Official Plan and other relevant documentation.

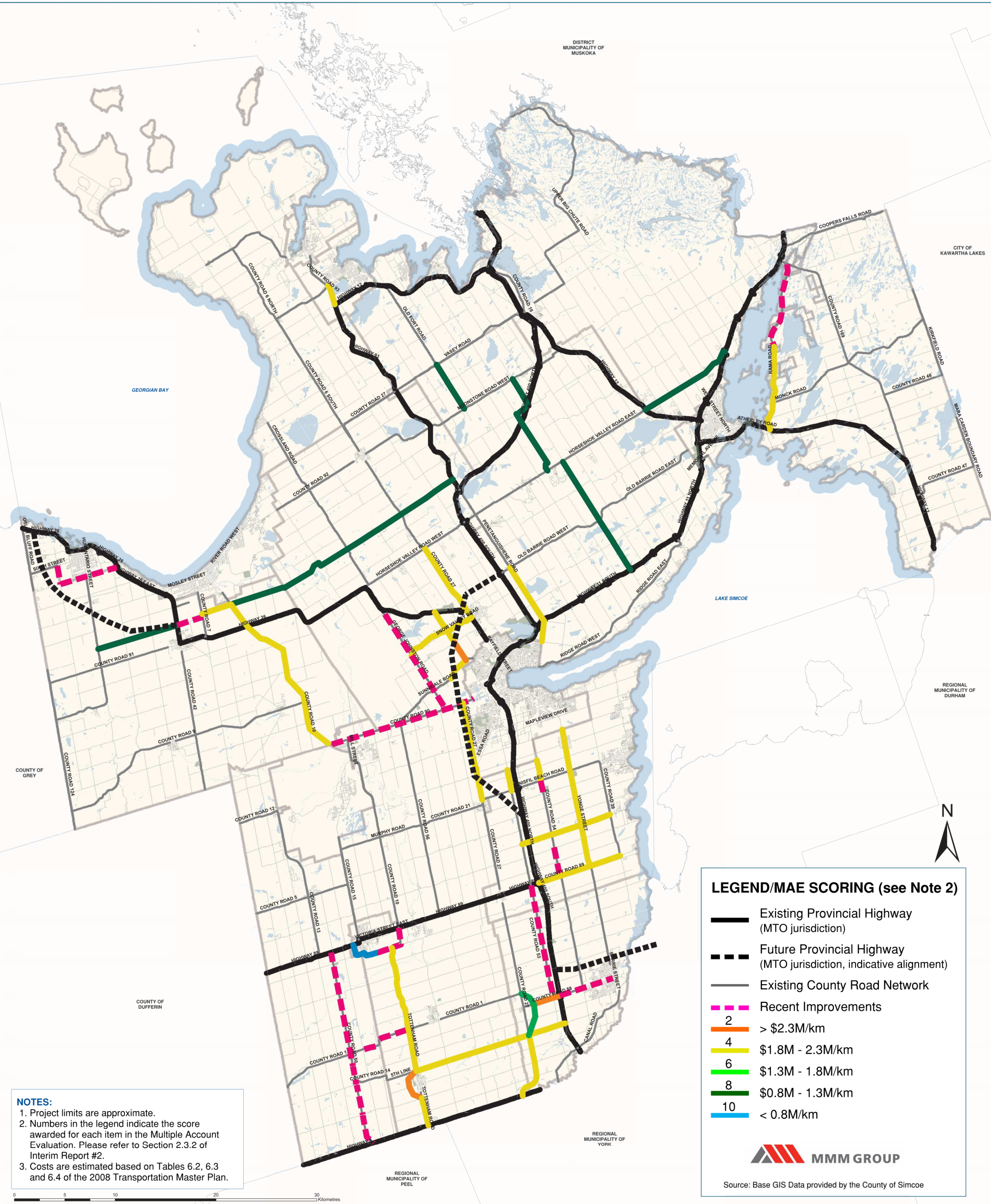
LEGEND/MAE SCORING (see Note 2)

-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  2 Oak Ridges Moraine Conservation Plan Area
-  4 Mainly greenlands
-  6 Mainly agricultural (some greenlands)
-  8 Mainly rural (some agricultural / greenlands)
-  10 Settlement or economic district

 **MMM GROUP**










Source: Base GIS Data provided by the County of Simcoe


**MULTIPLE ACCOUNT EVALUATION - COST EFFECTIVENESS
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



NOTES:
 1. Project limits are approximate.
 2. Numbers in the legend indicate the score awarded for each item in the Multiple Account Evaluation. Please refer to Section 2.3.2 of Interim Report #2.
 3. Costs are estimated based on Tables 6.2, 6.3 and 6.4 of the 2008 Transportation Master Plan.

LEGEND/MAE SCORING (see Note 2)

-  Existing Provincial Highway (MTO jurisdiction)
-  Future Provincial Highway (MTO jurisdiction, indicative alignment)
-  Existing County Road Network
-  Recent Improvements
-  2 > \$2.3M/km
-  4 \$1.8M - 2.3M/km
-  6 \$1.3M - 1.8M/km
-  8 \$0.8M - 1.3M/km
-  10 < 0.8M/km

 **MMM GROUP**

Source: Base GIS Data provided by the County of Simcoe

5.3.3 Evaluation of Projects Recommended in the 2008 TMP

The recommended improvements from the 2008 Transportation Master Plan were evaluated based on these accounts. These roads were scored in blocks between major intersections and values were averaged across the length of the proposed project. Following discussions with the County, the threshold for the Multiple Account Evaluation was set at 24 points. Those projects with a total score greater than 24 were identified for implementation by 2031. The points awarded for each account to each candidate improvement are summarized in **Table 5.3-2: Projects for Implementation by 2031** below. The darker the shade of green, the greater the benefit for that account.

Table 5.3-2: Projects for Implementation by 2031

Road	Limits	Improvement†		Multiple Account Evaluation (MAE)‡						
		2011	2031	GM	CON	AT	TRA	ENV	\$	TOTAL
CR 44, Ramara	Highway 12 to Casino Rama	2	4	0	10	5	10	9.3	4	38.3
Line 7, Oro-Medonte	Highway 11 to CR 22	LOCAL	CR	10	10	0	1.7	5	8	34.7
Line 6, Oro-Medonte	CR 22 to Mt. St. Louis Rd.	LOCAL	CR							
Mt. St. Louis Rd, Oro-Medonte	Line 6, Oro-Medonte to Highway 400	LOCAL	CR							
CR 10, New Tecumseth	CR 14 to Highway 89	2	4	10	0	10	2	5.3	4	31.3
CR 27, Innisfil	CR 21 to CR 90	2	4	0	0	10	7	10	4	31
Flos Road 4 Springwater	Highway 93 to Springwater/Clearview boundary	LOCAL	CR	0	4	10	0	6.2	8	28.2
CR 4, Innisfil	CR 89 to Barrie City Limit	2	4	0	1.6	5	9.4	6	4	26
CR 10, Clearview	CR 90 to CR 9	2	4	0	6	5	5	6	4	26
CR 10 Clearview	Highway 26 to 27/28 Sideroad/12 Conc.	2	4	0	0	10	5	6	4	25
CR53/Wilson Drive, Springwater	Ferndale Drive (Barrie City Limit) to Highway 26	2	4	0	0	10	1.5	10	3	24.5
12 Conc. Sunnidale Clearview	Springwater / Clearview boundary to CR 7	LOCAL	CR	0	4	10	0	5.7	4.7	24.3
5th Line, New Tecumseth/BWG	CR 10 to Highway 400	LOCAL	CR	0	4	10	0	6.3	4	24.3

† 2' = 2-lane road; '4' = 4-lane road; 'LOCAL' = local municipal road; 'CR' = County Road
 ‡ Please refer to **Section 5.3.2** for more information.

The recommended improvements from the 2008 Transportation Master Plan that achieved a total score of 24 or less in the Multiple Account Evaluation are ranked in **Table 5.3-3: For Consideration Post-2031** below. These improvements may be considered for implementation post-2031. Where projects are co-dependent and part of

one overall improvement, they have been grouped for evaluation purposes. The darker the shade of green, the greater the benefit for that particular account.

Table 5.3-3: For Consideration Post-2031

Road	Limits	Improvement†		Multiple Account Evaluation (MAE)‡						
		2011	2031	GM	CON	AT	TRA	ENV	\$	TOTAL
CR 10, New Tecumseth	Highway 9 to Tottenham boundary	2	4	10	4	5	0	2	3	24
CR 10 -Tottenham By-Pass, New Tecumseth	3rd Line to north of 5th Line	0	4							
27/28 Sideroad, Clearview	Highway 26 to CR 124	LOCAL	CR	0	0	10	0	6	8	24
CR 88, BWG	Highway 400 to Bond Head By-Pass	2	4	0	0	10	1	10	2	23
Mt. St. Louis Rd, Oro-Medonte	Line 5 to Line 6	LOCAL	CR	0	8	0	1	5.2	8	22.2
Line 5, Oro-Medonte	Mt. St. Louis to Highway 12	LOCAL	CR							
Division Road Severn	Highway 12 to Highway 11	LOCAL	CR	0	10	0	0	4	8	22
10 Sideroad, BWG/Innisfil	Line 5 BWG to CR 21 Innisfil	LOCAL	CR	0	4	2.9	0.6	6.3	8	21.7
CR 27- Bond Head By-Pass, BWG	6th Line to CR 1	0	4	0	8	0	0	6	6	20
CR 40, Springwater	Dobson Road to Barrie City Limit	2	4	0	0	0	3	10	4	17
CR 27, BWG	Highway 9 to 6th Line	2	4	0	6	0	0	6	4	16
CR 27, Springwater	Highway 26 to CR 22	2	4	0	0	0	7	4	4	15
CR 54, Innisfil	CR 21 to Barrie City Limit	2	4	0	0	0	0	6	4	10

† 2' = 2-lane road; '4' = 4-lane road; 'LOCAL' = local municipal road; 'CR' = County Road

‡ Please refer to **Section 5.3.2** for more information.

The County Road upgrades that were previously proposed in Oro-Medonte have been superseded by alternative improvements as described in **Section 5.3.4** and are hence shaded in grey. Environmental Assessments have been undertaken for the proposed widening of CR 4 (between 8th Line, BWG and CR 89) and CR 21 (between CR 27 and 20th Sideroad, Innisfil) from 2 to 4 lanes, hence the Multiple Account Evaluation was not applied in those cases.

5.3.4 Draft 2031 Road Network

A modeling scenario was constructed including recent improvements, the proposed widening of County Roads 4 and 21 mentioned above, as well as the projects listed in **Table 5.3-2**: Projects for Implementation by 2031 that were prioritized for implementation by 2031 through the Multiple Account Evaluation. **Figure 5.3.4-1** shows the performance of the County Road network in that scenario. Green, yellow and red links are again defined as in **Section 5.1**.

The following links fall into the “red” category:

- ▶ CR49 between Highway 11 and Orillia City Limit;
- ▶ CR4 between Innisfil 10th Line and CR21, and between 9th Line BWG and the Bradford City Limit;
- ▶ CR53 between Barrie City Limit and CR21;
- ▶ CR93 between CR25 and Highway 12,
- ▶ CR10 between CR9 and Highway 26 and between Highway 89 and Industrial Parkway;
- ▶ CR90 between CR28 and the Barrie City Limit;
- ▶ CR28 between CR40 and CR90;
- ▶ CR21 between CR53 and CR4;
- ▶ CR3 between CR4 and CR39;
- ▶ CR43 between CR53 and Highway 26;
- ▶ CR93 between Ski Trails Road and the Barrie City Limit.
- ▶ CR88 at CR27 near Bond Head and between Highway 400 and Bradford City Limit; 27/28 Sideroad, Clearview (upgraded to County Road) between Highway 26 and CR7;
- ▶ Poplar Sideroad (CR32) between High Street and CR124; and
- ▶ Concession 12 between CR7 and Klondike Park Road.

5.3.5 Identifying Additional Improvements

As previously described, the traditional approach to mitigating the red links identified in **Section 5.3.4** above would be to simply widen the affected roads. In order to promote the Transportation Principles outlined in **Section 5.3.2**, and for consistency, these links were subject to the Multiple Account Evaluation. Those that scored highly are recommended for widening. For those that scored poorly, alternative improvements were investigated on nearby or parallel roads. Those alternatives that scored highly are being recommended in order to divert traffic away from the congested links while also improving the road network for all users. **Table 5.3-4**: Additional Improvements for Inclusion in the Draft 2031 Road Network shows the results of the Multiple Account Evaluation. The darker the shade of green, the greater the benefit for that particular account. Improvements that scored poorly on the MAE are grouped with potential alternatives within the black-bordered boxes. The column on the right indicates whether the improvement passed the MAE. In the cases of CR 4 between Innisfil 10th Line and CR 21, and CR 90 between CR 28 to Barrie City Limit, these roads will already be at 4 or 5 lanes in 2031 and have, therefore, not been considered for further widening.



Figure 5.3.4-1: Volume to Capacity Ratio Plot - Preferred Scenario

- █ 0.0 - 0.6
- █ 0.6 - 0.9
- █ > 0.9

- Existing Provincial Highway (MTO Jurisdiction)
- Future Provincial Highway (MTO Jurisdiction, indicative alignment)

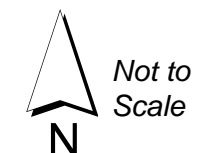


Table 5.3-4: Additional Improvements for Inclusion in the Draft 2031 Road Network

Road	Limits	Improvement†		Multiple Account Evaluation (MAE)‡							MAE Pass?
		2011	2031	GM	CON	AT	TRA	ENV	\$	TOTAL	
CR 4, Innisfil	Innisfil 10th Line to CR 21	2	4	CONGESTED DESPITE IMPROVEMENT							
CR 53, Innisfil	CR 21 to Barrie City Limit	2	4	0	4	10	5	10	4	33	✓
CR 10 Clearview	CR 9 to Highway 26	2	4	0	6	10	5	6	4	31	✓
CR 90, Springwater	CR 28 to the Barrie City Limit	2	5	CONGESTED DESPITE IMPROVEMENT							
CR 43, Springwater	CR 28 to Highway 26	2	4	0	0	10	1	10	4	25	✓
CR 93, Oro-Medonte	CR 11 to Barrie City Limit	2	4	6.7	0	0	7.7	6	4	24.3	✓
CR 21, Innisfil	CR 53 to CR 4	2	4	CONGESTED DESPITE IMPROVEMENT							
CR 89 / CR 3, Innisfil	CR 53 to CR 39	2	4	0	6	0	2	5.5	4	17.5	✗
4th Line, Innisfil	CR 53 to CR 39	LOCAL	CR	0	6	0	1	5	4	16	✗
CR 93, Midland	CR 25 to Highway 12	2	4	0	0	0	10	10	4	24	✓
Line 3 N, Oro Medonte	CR 23 to CR 19	LOCAL	CR	0	10	10	0	5	8	33	✓
Line 7 N, Oro Medonte	CR 19 to Highway 400	LOCAL	CR	0	10	0	0	7	8	25	✓

† 2' = 2-lane road; '4' = 4-lane road; '5' = 5-lane road; 'LOCAL' = local municipal road; 'CR' = County Road

‡ Please refer to **Section 5.3.2** for more information.

The following improvements in **Table 5.3-4: Additional Improvements for Inclusion in the Draft 2031 Road Network** passed the Multiple Account Evaluation and are provisionally recommended for widening from 2 to 4 lanes: CR 53 from CR 21 to the Barrie City Limit;

- ▶ CR 10 between CR 9 and Highway 26;
- ▶ CR 43 between CR 28 and Highway 26; and
- ▶ CR 93 between CR 11 and Barrie City Limit.

The local road upgrades in Oro-Medonte will provide residents of Midland, Penetanguishene and Tay with an alternative County Road connection to the provincial highways. They will also improve the accessibility of Lake Simcoe Regional Airport to the goods movement network and air passengers in Muskoka. The provision of a tightly-aligned north-south corridor is of secondary importance given that the airport is well connected to Midland, Penetanguishene and Tay by the existing provincial highway network and trips will be distributed throughout the day, including off-peak periods.

Since upgrading Line 3 from CR 23 to CR 19 and Line 7 from CR 19 to Highway 400 would take advantage of existing County Roads 58 and 19, the length of local road to be upgraded is less than the Oro-Medonte Line 5 link proposed in the 2008 Transportation Master Plan. Therefore, this alternative replaces that previous candidate improvement, which did not score so highly in the Multiple Account Evaluation. CR 93 in Midland returned a borderline score right on the evaluation threshold. Given the importance of this connection for Midland and Penetanguishene, this has been included in the draft 2031 network.

There are residual links where congestion is anticipated however widening options are not feasible. As shown in **Table 5.3-4: Additional Improvements for Inclusion in the Draft 2031 Road Network**, these include County Road 21 between County Road 53 and County Road 4. Despite the proposed widening to 4 lanes, the attraction of additional traffic means that County Road 21 is expected to remain congested. Although two alternatives were assessed through the Multiple Account Evaluation process, neither passed the MAE threshold. The same is true of County Road 88 between County Road 53 and the Bradford City Limit, which has already been widened to 4 lanes. To the north, 8th Line is broken by Highway 400. Although this links to the County Road 88 interchange with Highway 400 via McKinstry Road, this lack of connection to and across Highway 400 means that in its current configuration it would not provide relief to the entire congested section of County Road, which starts at Sideroad 5. Further north, 9th Line crosses Highway 400 but there is no interchange, hence the congestion relief provided by improving this link would be limited. It is recommended that the feasibility and impact of improving access to and across Highway 400 be considered with MTO as part of improvements to the provincial highway and associated connections to Bradford West Gwillimbury.

South of Collingwood, some roads are still expected to experience congestion despite being upgraded from local to County roads. Options for alternative County Road improvements are limited. As described in **Section 5.3.6** below, the traffic flow dynamic in that area is sensitive to the alignment of the Collingwood By-Pass and this should be reviewed with the Ministry of Transportation of Ontario (MTO).

CR 49 is being transferred to the City of Orillia. Based on the modeling analysis, it is suggested that the road be widened from the Highway 11 exit to the signalized intersection serving the Ontario Provincial Police building in Orillia.

5.3.6 Provincial Highway Assumptions

In the process of developing the draft future road network, it has been assumed that the following provincial highway improvements will be undertaken, as described in the 2008 TMP and as included in the Ministry of Transportation's Simcoe Area Multi-Modal Transportation Strategy Needs Assessment and Highway 26 Transportation Study - Georgian Triangle Area.:

- ▶ New Barrie By-Pass – 4 lane controlled access facility;
- ▶ Highway 400/404 Link (Bradford By-Pass);
- ▶ Highway 400 – 10 lanes through Barrie to Toronto;
- ▶ Highway 11 – 6 lanes (Highway 400 to Highway 12);
- ▶ Highway 400 – new interchange at Line 5 Bradford West Gwillimbury and closure of Canal Road interchange;
- ▶ Highway 26 – Collingwood By-Pass – 4 lanes;
- ▶ Highway 26 – 4 lanes from Barrie to the new Highway 26 realignment between the Town of Wasaga Beach and Collingwood;
- ▶ Highway 89 – 4 lanes, from Highway 400 to Alliston and from County Road 50 to Dufferin Boundary.

Should any of these improvements not be undertaken, there will likely be an impact on County Roads. The effect on network operation in 2031 is dependent on exactly which improvements are implemented. The alignment of new highways is also a factor. For the Collingwood By-Pass, the modelling analysis assumes one possible alignment from the Highway 26 Transportation Study that joins Highway 26 at 27/28 Sideroad. An alternative alignment that passes to the south of Stayner may mitigate the congestion predicted on the upgraded 27/28 Sideroad and Concession 12 Sunnidale Road, as highlighted in **Section 5.3.4** above.

It is recommended that the County liaise with the Ministry of Transportation of Ontario (MTO) between now and the production of the next TMP so that any gaps in the Provincial Highway improvement program are identified and mitigating measures established. The liaison with MTO should also cover expanding the Emergency Detour Route (EDR) network.

5.4 Summary

Section 6 of this TMP Update describes the process that was undertaken to address congested links while also promoting a sustainable, integrated multi-modal transportation system that reduces reliance upon any single mode and promotes walking, cycling and transit.

The operation of the Draft 2031 Road Network is comparable to that recommended in the 2008 TMP, despite the fact that fewer projects are recommended for implementation by 2031. By deferring those projects that scored lower in the Multiple Account Evaluation, resources can be focused on areas of residual congestion with the implementation of the additional projects identified in **Table 5.3-4: Additional Improvements for Inclusion in the Draft 2031 Road Network**.

The following general conclusions can be drawn from the preliminary analysis:

- ▶ South of Alliston, CR10 is expected to operate well regardless of whether the improvements extend as far south as Highway 89, or whether they also include the Tottenham Bypass and the widening to the south of Tottenham as recommended in the 2008 TMP. The impact on the operation of County Road 50, the adjacent north-south corridor, is also minimal. The volume of traffic expected on the local roads through Tottenham is very similar with or without the bypass, and in both cases those roads are expected to operate at capacity. Therefore the decision on whether to construct the Tottenham Bypass is independent of network capacity.
- ▶ County Road 10 between Highway 26 and County Road 90, particularly the section south of County Road 9, serves as a critical north-south connection through the centre of the County. It passes through the constrained corridor between CFB Borden and the Minesing Wetlands Conservation Area.
- ▶ The proposed widening of CR21 between CR 27 and County Road 39, recently approved following an Environmental Assessment, is justified from a road network operational perspective by the high level of utilization expected.

5.5 Preliminary Recommendations

Figure 5.5 – 1 summarizes the Draft Future Recommended Road Network for this 2014 TMP and shows:

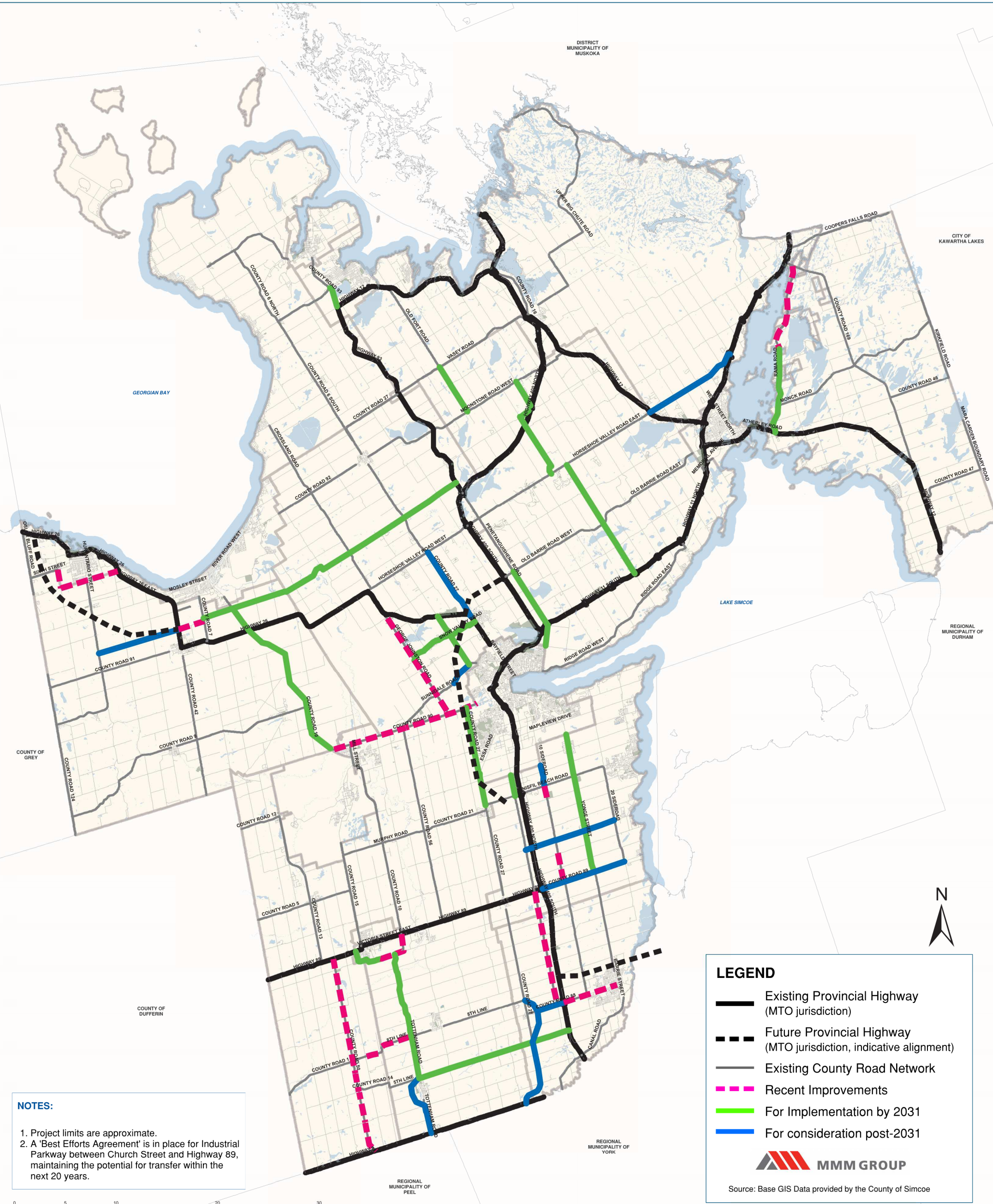
- ▶ Existing and future provincial highways (under MTO jurisdiction);
- ▶ The existing County Road network;
- ▶ Recent road improvements (see **Table 5.1-1**);
- ▶ Projects recommended for implementation by 2031 (see **Tables 5.3.3-1** and **5.3.5-1**); and
- ▶ Projects for consideration post-2031 (see **Table 5.3.3-2**).

Indications are that the following roads will remain congested despite their improvement:

- ▶ CR 21 between CR53 and CR4;
- ▶ CR 88 between CR 53 and the Bradford City Limit;
- ▶ 27/28 Sideroad, Clearview (upgraded to County Road) between Highway 26 and CR7;
- ▶ Poplar Sideroad (CR32) between High Street and CR124; and
- ▶ Concession 12 (upgraded to County Road) between CR7 and Klondike Park Road.

All of these roads feature previously proposed or candidate Active Transportation routes. Promoting the use of these facilities for cycling may encourage a reduction in auto use and, consequently, congestion. Similarly, transit and TDM-related alternatives should be made available, particularly in these areas but also more widely throughout Simcoe County.

**DRAFT FUTURE ROAD NETWORK
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



NOTES:

1. Project limits are approximate.
2. A 'Best Efforts Agreement' is in place for Industrial Parkway between Church Street and Highway 89, maintaining the potential for transfer within the next 20 years.

LEGEND

- Existing Provincial Highway (MTO jurisdiction)
- - - Future Provincial Highway (MTO jurisdiction, indicative alignment)
- Existing County Road Network
- Recent Improvements
- For Implementation by 2031
- For consideration post-2031

MMM GROUP

Source: Base GIS Data provided by the County of Simcoe



6.0 CONTEXT – SENSITIVE ROAD DESIGN

6.1 Regional Cross-Section Design – Complete Streets Approach

The county has historically used three classifications as a means to identify the capacity of roadways. The three classifications consist of Primary Arterial-Controlled Access, Primary Arterial and Secondary Arterial facilities. The three classifications were used in the 2008 Transportation Master Plan as a means to identify the capacity of roadways. It also provides an access management system to protect the function of the roadway, and assists in the prioritization of capital funding and maintenance. The classifications of the County Roads were determined based on a set of weighed rationalization criteria along with a scoring system to determine the roadways classification. The eight roadway rationalization criteria included:

- ▶ Connection between municipalities or population centres;
- ▶ Connection to an upper-tier road in a neighbouring jurisdiction;
- ▶ Connection between a population centre and a provincial highway greater than 5 km in distance;
- ▶ Connection between a major recreational centre and a provincial highway;
- ▶ Average annual daily traffic volumes;
- ▶ Commercial goods corridor function;
- ▶ Provides urban congestion relief (by-pass); and
- ▶ Designated as an emergency detour route.

A summary of the general descriptions identified for the three roadway classifications are outlined in detail in **Table 6.1-1**. In general, larger volume, long distance travel and higher access controlled facilities would be assigned as a Primary Arterial-Controlled Access, while roads with lower volumes and less access control would be assigned as a Secondary Arterial. As per the County's proposed Official Plan, required basic right-of-way widths vary and include widths of 20.0 m, 30.5 m, 36.0 m, 40.0 m and 45.0 m. There are instances where the Official Plan allows for a right-of-way to be reduced from 40.0 m to 36.0 m where constraints exist.

Table 6.1-1: Existing Simcoe County Road Classification

	Primary Arterial/Controlled Access	Primary Arterial	Secondary Arterial
Function	Traffic movement is a primary consideration: Connect major settlement areas and accommodate long distance person and goods movement.	Traffic movement is a primary consideration: Connect major settlement areas and accommodate long distance person and goods movement.	Traffic movement is a major consideration: Connect major settlement areas, two primary arterial roads, settlement or activity centre with primary arterial, plus access to local properties, municipal roads and local streets
Volumes	Large volumes of intra-municipal and inter-regional traffic	Large volumes of intra-municipal and inter-regional traffic	Moderate volumes of intra-municipal and inter-regional traffic
Right-of-Way	36 m to 45 m 40 m minimum with Active Transportation	30.5 m to 45 m (36m preferred minimum) 40 m minimum with Active Transportation	30.5 m to 36 m
Traffic Signal Spacing	300 m	300 m	250 m (with exception to mid-block minor local road intersections)
Land Use/Driveways	Strictly controlled access: Major commercial, industrial or growth area	Strictly controlled access: Major commercial and industrial areas	Controlled access: Residential, commercial and industrial
Centre Left Turn Lane Consideration	≥25 entrances per kilometre	≥25 entrances per kilometre	--

6.2 Objective

In order to better meet the needs of communities and all road users, context sensitive solutions and complete streets design need to be further integrated into the current classification system. The objectives of context sensitive solutions and complete streets are very closely interrelated and often used interchangeably. In the strictest sense, context-sensitive solutions focus on communities and how roadways can be more supportive of their surrounding environment. Complete streets design encourages supportive modes of travel including pedestrians, cyclists, transit, motor vehicles and freight.

A road classification system which provides an array of applicable guidelines considering the needs of the community, all road users and the required access and movement provisions for a roadway is crucial in providing the safe and efficient movement of goods and people throughout the County. This approach is a shift from previously accepted norms of designing roadways for motor vehicle traffic plus carrying goods and people from point A to B, to an approach that accommodates users of all applicable modes while also enhancing a community with character and instilling a sense of place.

Differing from the legal definition of a roadway corridor, a corridor may be seen as the distance between buildings including travelled lanes, sidewalks, boulevards and the setback distance to a building face. The challenge many jurisdictions are now facing is to update their planning documents to incorporate this new concept of multi-modal corridors within existing constrained rights-of-way. In addition to implementing complete streets and meeting sustainability requirements of balancing environmental, social and economic needs, the challenge for Simcoe County is taken a step further in meeting the requirements of its diverse rural and urban environments in serving goods and people movement, local communities and future development.

6.3 Best Practices Review

A review of recent planning documents of other regions and AT guidelines has provided insight with respect to the direction other jurisdictions are headed in considering complete streets and sustainability aspects in their communities through the development of guidelines and policies. The description of each of the regions, which have taken different approaches and are at different stages in the development, is discussed below. Ideas for application of complete streets in Simcoe County, presented later in this chapter, build upon some of these best practices.

6.3.1 York Region

York Region has identified an objective to develop policies and guidelines in the coming years to aid in the implementation of complete streets that will bring them closer to the direction identified in their *Regional Official Plan* and *Transportation Master Plan* of promoting transit as well as walking and cycling. Although a context-sensitive solutions guide is not in place and is under development, York Region has elements which are guiding them towards complete streets through sustainability and streetscaping initiatives.

In promoting sustainability, York Region developed their *Pedestrian and Cycling Master Plan* in 2008 to help develop cycling and pedestrian networks and identify an implementation strategy to provide an integrated

mobility system between active transportation and transit, and to promote those as preferred modes of mobility throughout the Region.

As one of the initiatives to building a more prominent public realm, York Region developed the *Regional Streetscape Policy* which supports streetscaping and urban design that helps intensify the Regional Centres of Vaughan Metropolitan Centre, Richmond Hill/Langstaff Urban Growth Centre, Markham Town Centre and Newmarket Regional Centre. Further to the *Regional Streetscape Policy*, York Region has developed the *Municipal Streetscape Partnership Program* where the Region financially supports streetscaping projects put forward by local municipalities.

Another York Region best practice initiative which supports the *Regional Streetscape Policy* is the *Towards Great Regional Streets – A Path to Improvement* which was a study to identify means of widening to six-lane roadways with many of the objectives in line with complete streets principles. A fundamental principle in the document was to ensure that the planned function of a corridor supports land use intensification and alternative transportation modes with an objective for future widening to be dedicated to high-occupancy vehicle (HOV) lanes accommodating transit or carpooling. As a result, the Region developed alternative cross-sections which include a median, exclusive on-street bikeways, HOV and general purpose lanes plus pedestrian boulevards. The recommended alternatives were also further applied to the land uses of residential, commercial, urban mixed-use, employment campus and industrial to identify elements which are more sensitive to their surrounding land use. **Figure 6.3.1-1** illustrates an example of such a cross-section.

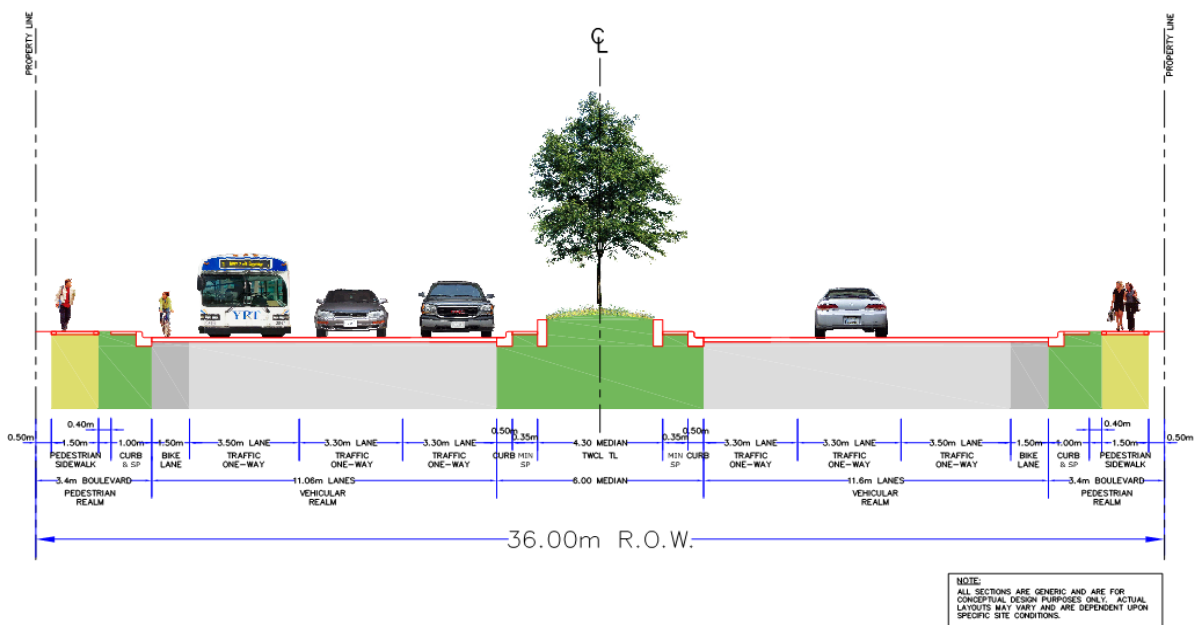


Figure 6.3.1-1: Example Cross Section from York Region’s *Towards Great Regional Streets – A Path to Improvement*

Currently, York Region is developing the *Designing Great Streets: A Context-Sensitive Solutions Approach* which will provide numerous street typologies involving context-sensitive solutions. The objective with this study is for regional roadways to better meet the needs of communities and consider all modes of travel. The draft form of the study identifies six roadway typologies:

1. Urban Centre;
2. Urban Avenue;
3. Main Street;
4. Connector;
5. Rural Road; and
6. Rural Hamlet.

Each of the six typologies is defined with operational criteria, urban design criteria and design elements for the road and boulevard. First, the operational criteria consider traditional design elements such as right-of-way, function, speed and intersection spacing. Second, the urban design criteria classify the expected land use along the roadways, boulevard treatments plus the adjacent building size and orientation. Last, the road and boulevard elements provide a list of minimum and preferred widths for various cross-section elements including optional items. The identified street typologies are meant to be a guideline, and provide designers with flexibility in the application and decision-making process.

6.3.2 Durham Region

Durham Region's 2005 *Transportation Master Plan* (TMP) had two developments which are in line with the consideration of consolidating street classification and complete streets. From the TMP, a hierarchy of regional arterial roadway systems was developed with three classifications similar to those developed in Simcoe County. The three arterial classifications ranged from Type A, to provide mobility over longer distances, to Type C, to serve as local collectors and distributors.

In addition to the development of arterial classifications, the TMP recommended the development of the *Arterial Road Corridor Design Guidelines*. The objective of these guidelines was to determine the approach to incorporate vehicle mobility, property access, community design, landscape and alternative modes that is more responsive to the community and adjacent land uses. The guidelines provide criteria for various design elements including cross-section design. In supporting the initiatives of the TMP and the *Arterial Road Corridor Design Guidelines*, the Region has also developed a primary cycling network and facility treatment types which identify which corridors in Durham will contain cycling facilities and the type of facility.

Through the *Arterial Road Corridor Design Guidelines*, Durham Region has developed a series of cross-sections for various types of development including the following:

- ▶ Rural;
- ▶ Residential;
- ▶ Single sided streets (such as a park or other high-profile development);
- ▶ Main Streets;
- ▶ Commercial Streets;

- ▶ Movement Focused Streets; and
- ▶ Transit Corridors.

A series of sample cross-sections from the *Arterial Road Corridor Design Guidelines* for rural, residential and main streets are illustrated below in **Figures 6.3.2-1 to 6.3.2-3**.

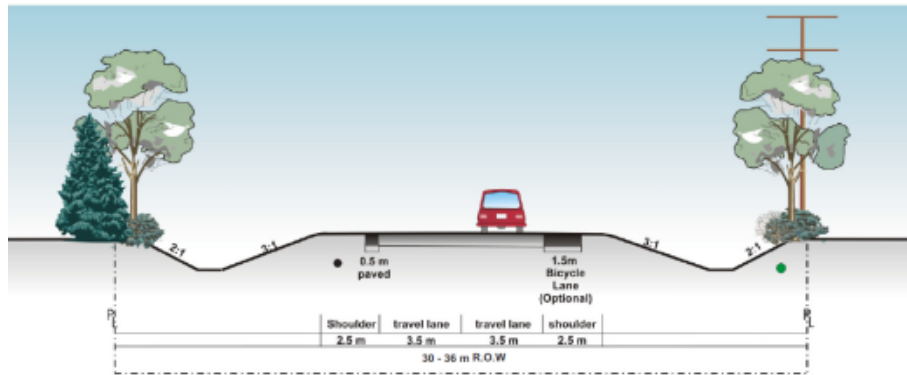


Figure 6.3.2-1: Example of Rural Cross-Section from Durham Region’s Arterial Road Corridor Design Guidelines

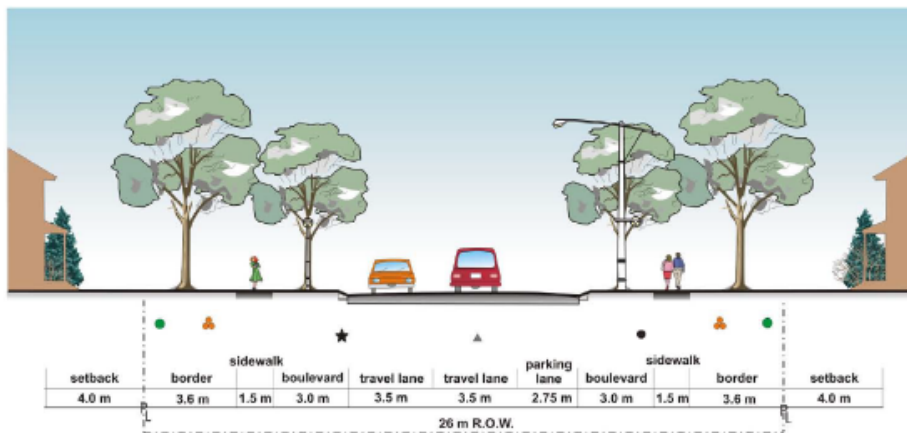


Figure 6.3.2-2: Example of Residential Cross-Section from Durham Region’s Arterial Road Corridor Design Guidelines

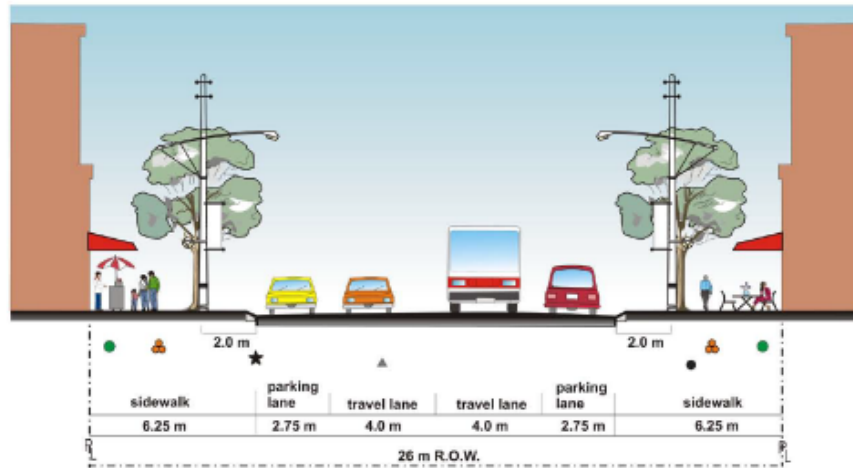


Figure 6.3.2-3: Example of Main Street Cross-Section from Durham Region's Arterial Road Corridor Design Guidelines

In addition to the sample cross-sections, a matrix of the above sections is superimposed on the following elements for a comparison of the different considerations, including:

- ▶ Typical arterial classification – Type A, B or C;
- ▶ Modes of travel (priorities, supportive and focus);
- ▶ Rural/urban;
- ▶ Future intensification and land use;
- ▶ Cross-section elements (right-of-way, number of travel lanes, parking, median); and
- ▶ Access.

The matrix and sample sections developed by Durham Region are very closely in line with the direction to implement complete streets which recognize the unique urban and rural centres throughout Simcoe County.

6.3.3 Region of Waterloo

The Region of Waterloo developed the *Context-Sensitive Regional Transportation Corridor Design Guidelines* (CSRTCDG) in 2010 to address the varying urban forms and modes of travel along their regional corridors. Unlike conventional systems of looking at road classification and urban design as mutually exclusive roles, the Region of Waterloo developed a road classification system which merges the consideration of urban design and arterial road classification, or what the Region refers to as the combined road and boulevard design guidelines. The roadway classification considers both rural and urban arterial roadways:

Rural Arterial Roadways

- ▶ Rural Connector;
- ▶ Rural Village – Main Street; and
- ▶ Neighbourhood Connector – Main Street.

Urban Arterial Roadways

- ▶ Expressway;
- ▶ Community Connector;
- ▶ Neighbourhood Connector – Avenue;
- ▶ Neighbourhood Connector – Main Street; and
- ▶ Residential Connector.

To help emphasize the nature of context-sensitive design, the ideal cross-sections developed in the *Context-Sensitive Regional Transportation Corridor Design Guidelines* only incorporate elements which were determined to be important or necessary for a classification. Flexibility is offered to designers with optional items which may be accommodated as deemed necessary for a community. Two example cross-sections are shown below in **Figures 6.3.3-1** and **6.3.3-2** for Rural Connector and Rural Village – Main Street. The two sections provide examples similar to those encountered on numerous Simcoe County roads which transition from higher-speed facilities that are focused on the movement of goods and people, to those that pass through villages or hamlets, where consideration of parking and Active Transportation are of greater importance. To address special character streets, there is a guideline to provide setbacks and corridor rights-of-way which respond to the nature of the area. Additionally, in building around the context of the local community, the cross-section identifies the need to accommodate buggies for the Mennonite population, as may be seen in the Rural Village – Main Street cross-section.

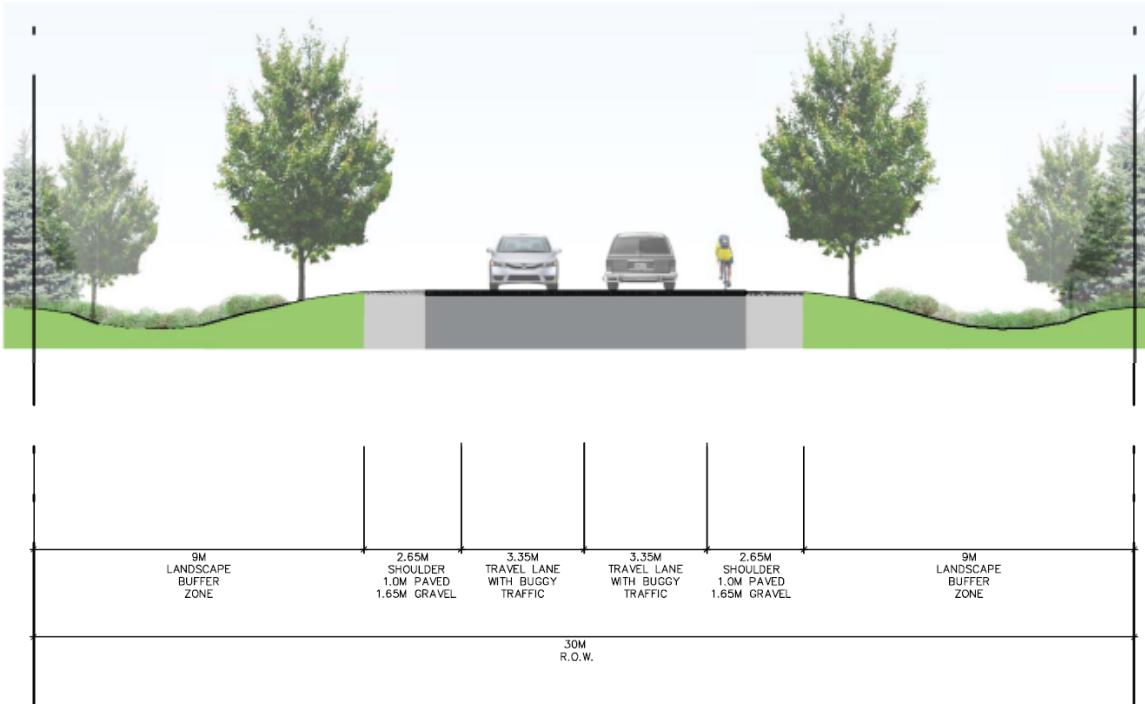


Figure 6.3.3-1: Example of Rural Connector Cross-Section from Waterloo Region's Context-Sensitive Regional Transportation Corridor Design Guidelines

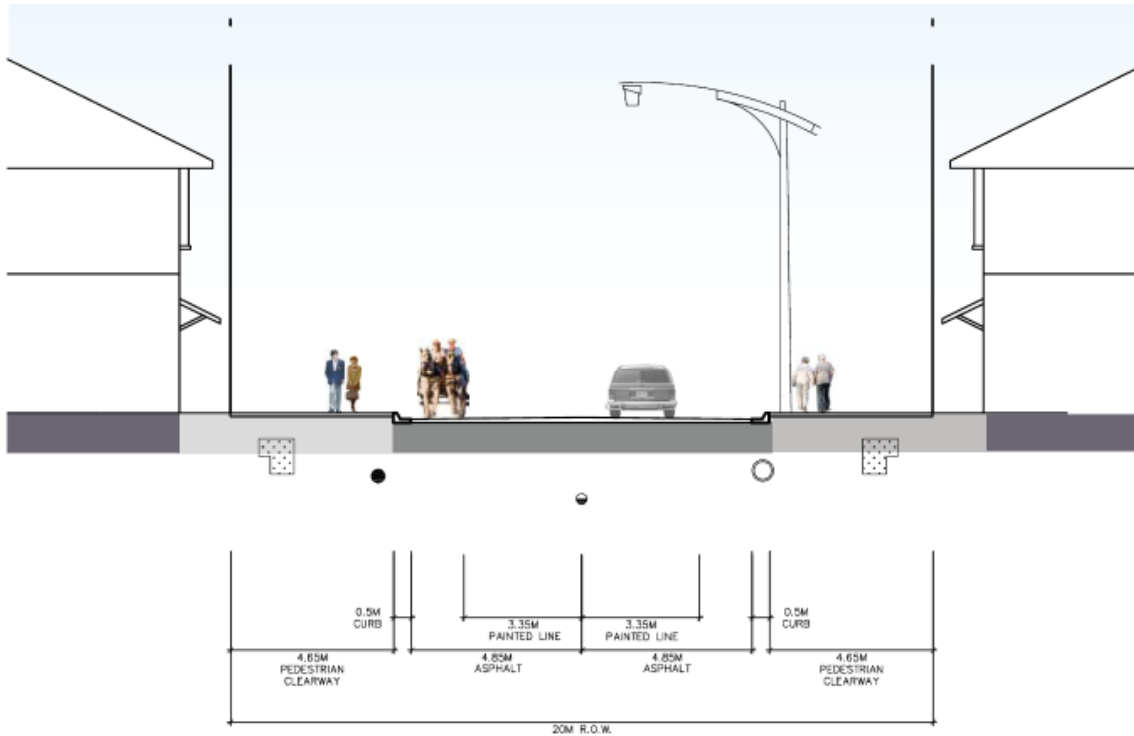


Figure 6.3.3-2: Example of Rural Village – Main Street Cross-Section from Waterloo Region’s Context-Sensitive Regional Transportation Corridor Design Guidelines

6.3.4 Ontario Traffic Manual Book 18 – Bicycle Facilities

The Ontario Traffic Manual (OTM) Book 18 has been developed by the Ontario Traffic Council in collaboration with MMM Group Limited, the MTO and a broad range of local and regional municipalities. The purpose of Book 18 is to provide guidance in the planning, design and operation of bicycle facilities in Ontario that are within road rights-of-way, and incorporates both local and international best practices. Book 18 provides a significant amount of information regarding bicycle facilities in five main sections, including: Bikeway Network Planning; Bicycle Facility Type Selection; Bicycle Facility Design; Additional Bicycle Facility Design Applications; and implementation Process. A heuristic analysis of the general considerations and application of bicycle facilities is discussed.

There are varying types of bicycle facilities which may be implemented including on-road and in-boulevard facilities, with urban and rural characteristics of the roadway to be carefully considered. A decision process is provided in Book 18 which helps a designer to identify a potential cycling facility for a corridor. In addition to the decision process, secondary criteria such as identifying the user group (age, skill and comfort level) and trip purpose (recreational, utilitarian) are aspects which may have an impact on the decision.

In determining a bicycle facility, the Manual provides an in-depth description of the bicycle facility design and, in particular, the geometric elements as shown in **Table 6.3.4**. The widths presented are for illustrative purposes

only, and reference should be made to Book 18 for additional considerations which may impact the widths noted such as buffers, parking, pavement markings, speed and volume. The facilities that are most likely to apply to County roads include shared roadways, paved shoulders or bicycle lanes.

Table 6.3.4: Bicycle Facility Cross-Section Widths

Bicycle Facility			Desired Width	Suggested Minimum Width
On-Road	Shared Roadway Cyclists and motorists share a travel lane with essentially all roads being this type where cyclists are not restricted. Some routes will be signed while others may also have shared use lane markings referred to as “Sharrows”.	Wide	4.5 m	4.0 m
		Narrow	4.0 m	3.0 m
	Paved Shoulder Typically a signed bike route on rural roadways where a paved shoulder accommodates cyclists with a buffer providing separation to motorists.	Rural Shoulders	2.0 m	1.2 m
		Urban Shoulders	2.0 m	1.2 m
	Bicycle Lane A portion of a roadway exclusive for cyclists designated with signs and pavement markings typically on high speed or high volume urban arterials.	Curb Side	1.8 m	1.2m to 1.5 m
		Between Travel Lanes	2.0 m	1.8 m
		Adjacent to 2.5 m parking	1.5 m lane + 1.0 m buffer	1.5 m lane + 0.5 m buffer
	Separated Bicycle Lanes A portion of a roadway exclusive for cyclists designated with signs and pavement markings with a physical or marked buffer.	Marked Buffer/On Street Parking	1.5 m lane + 1.0 m buffer	1.5 m lane + 0.5 m buffer
		Flexible Bollards	2.0 m lane + 0.5 m buffer	1.5 m lane + 0.5 m buffer
		Physical Division	2.0 m lane + 1.0 m buffer	1.5 m lane + 0.5 m buffer
	Cycle Track A facility designated exclusively for cyclists that is adjacent to but raised from vehicular traffic and separated from the sidewalk. These typically accommodate higher cyclist volumes on urban arterial or collector roads.	One-Way	2.0 m	1.5 m
		Two-Way	4.0 m	3.0 m
	Bicycle Priority Streets A low speed or low volume roadway which is designed for through cyclist movement while discouraging motorized traffic from using the	--	--	--

Bicycle Facility		Desired Width	Suggested Minimum Width
	route.		
In-Boulevard	Active Transportation Path A pathway that is separated by a boulevard which accommodates cyclists and pedestrians on one side of a road that may be complemented with a sidewalk on the opposite side of the street.	One-Way – Bicycle	2.0 m 1.8 m
		Two-Way – Bicycle	3.5 m 3.0 m
		Two-Way – Shared	4.0 m 3.0 m

6.4 Current Application in Simcoe County

The following section summarizes the existing corridors and corresponding cross-sections in Simcoe County that traverse both rural surroundings and urban environments. Some of the defining characteristics of the roadway, including classification, right-of-way, land use and dedicated modes, are illustrated in **Table E-1** provided in **Appendix E**. After describing the existing facilities in this section, the following sections summarize the general design guidelines and some sample applications along the various Simcoe corridors.

Although not defined to be within a roadway corridor, the minimum front yard distance, or setback, also plays an important role in a development context. For comparison purposes, the municipal and County setback requirements are summarized in **Table E-1**. As illustrated, municipal setbacks are generally much lower than County road setbacks to promote a more appropriate urban environment. Context sensitive design offers a solution that considers the function of the roadway while accommodating the other users and the land uses along the corridor.

The following existing corridors were identified as representative of the types of land uses prevalent in the county. These were selected for evaluation to help develop context-sensitive solutions that could be applied at appropriate locations across the county. The corridors evaluated included:

County Road 93

County Road 93 is a predominantly a primary arterial roadway from the City of Barrie to the Town of Penetanguishene. From the south end of County Road 93 near the City of Barrie, it parallels Highway 400 until the two roadways meet at an interchange. North of the interchange, County Road 93 becomes Highway 93 (MTO jurisdiction) and continues in a northwest direction until Highway 12. North of Highway 12, the road becomes County Road 93 again. From Highway 12, County Road 93 resumes northwards as a primary arterial-controlled access roadway through the developed area within Midland, finally terminating in the Town of Penetanguishene.

The corridor traverses various agricultural lands, services a few pockets of rural residential land uses and provides connections to Midland’s primary retail area and, therefore, should be considered context sensitive along this corridor.

Furthermore, although pedestrian facilities are provided in select sections along County Road 93, it is recognized that a continuous sidewalk should be implemented in the developed areas to provide an established, well-connected pedestrian system for the community. The commercial development in Midland has developed around an auto-supportive environment with retail development set back from the streets behind parking lots. Maintaining the existing right-of-way but bringing future development “closer to the street” instead of set back behind large parking lots will help promote pedestrian activity and create a more attractive environment for this urban stretch of County road.

County Road 27

County Road 27 is a primary arterial roadway that stretches from Highway 9 to Highway 93. County Road 27 traverses the western edge of the City of Barrie and continues south parallel to Highway 400, where it connects to York Region before ultimately terminating in the vicinity of Toronto Pearson International Airport. County Road 27 also travels from the junction with Highway 26 / Bayfield Street in Midhurst through Elmvalle and ending in Waverly. The portion of corridor located in Simcoe County is under the jurisdiction of the County, except for the area around Highway 89 at Cookstown. The corridor is a two-lane, two-way highway with rural ditches and some urbanized sections with curbs and gutters. The roadway has a posted speed ranging from 50 km/h in developed areas to 80 km/h in rural areas. AADT volumes along the corridor range between 4,700 and 6,300 vehicles per day, and reach 10,300 vehicles per day near the City of Barrie.

With the majority of the corridor serving agricultural and rural residential land uses, there are settlements including Thornton, Cookstown and Bond Head where pedestrian facilities are provided throughout these urban areas. Additional considerations may include ensuring consistent setback distances which are also reasonable within an urban context while maintaining its primary arterial function.

County Road 90

County Road 90 is a primary arterial-controlled access roadway that serves the Canadian Forces Base Borden to the City of Barrie. The corridor is under the jurisdiction of Simcoe County including the section through Angus. The corridor is a two-lane, two-way highway with ditches through rural sections, and it operates as a four-lane divided road through Angus. The roadway has a posted speed of 50 km/h through Angus and ranges from 70 km/h to 80 km/h in rural areas. AADT volumes along the corridor range between 14,100 and 20,700 vehicles per day.

The corridor is primarily agricultural and has residential and commercial development along its rural section. The developed areas of Angus and Essa provide for residential land uses with commercial and retail prominent on the main street in Angus. There are opportunities to enhance the public realm along the main street in Angus and to promote pedestrian activity in the area. The setbacks of the residential properties in Essa are approximately 15 m. There is an opportunity to apply context-sensitive design through Angus to enhance the public realm. A discontinuous Active Transportation facility may be expanded in the Essa area to provide a connected network in the community.

County Road 43

County Road 43 is a primary arterial roadway operating between Highway 26 and County Road 28. The entire corridor is under the jurisdiction of Simcoe County and is a two-lane, two-way highway with rural ditches throughout. The roadway has a posted speed ranging from 60 to 80 km/h with AADT volumes ranging between 1,400 to 2,700 vehicles per day.

The corridor is primarily agricultural and has residential development and environmentally-sensitive areas dispersed throughout, and, thus, it does not have a definitive urban/rural development area like those that exist on other corridors. However, the corridor does travel through the growing settlement area of Centre Vespra. Given the existing recreational nature of the area and the planned growth within the settlement area, there is an opportunity to provide AT facilities such as expanding some Active Transportation paths which currently exist on sections of the corridor. County Road 43 is proposed as an on-road cycling route, as depicted in the Draft Active Transportation Network Concept described in Chapter 6.

County Road 10

County Road 10 is a primary arterial-controlled access roadway from the south at Highway 9 to Highway 89 at the north where it continues as a primary arterial until meeting with County Road 90. The corridor connects the area of Angus/Canadian Forces Base Borden to Peel Region at Highway 9. The corridor is under the jurisdiction of Simcoe County except for the area around Tottenham. The corridor is a two-lane, two-way highway with rural ditches, and the industrialized area at New Tecumseth utilizes a four-lane undivided cross-section with curbs and gutters. The roadway has a posted speed of 50 to 80 km/h, with AADT volumes ranging from 5,200 to 7,200 vehicles per day.

The corridor is primarily agricultural and has residential land uses along its rural sections, with industrial and commercial uses within the settlement areas of Tottenham and Alliston. With the employment nature of the area in Alliston, there is an opportunity to provide Active Transportation facilities to increase the number of access options to the employment areas.

A review of the sample corridors reveals the following:

- ▶ **Classification:** Roadways are classified as Primary Arterial – Controlled Access, Primary Arterial or Secondary Arterial. Currently, the classifications do not differentiate between urban and rural environments or the surrounding land use. The provision of different classifications will ensure that specific sections of County roads traversing developed centres are more complementary of the surrounding neighbourhoods, and support alternative modes of travel in those communities.
- ▶ **Municipality Minimum Front Yard Setback:** The municipal minimum front yard setback is provided for information purposes; since the examples shown are along County roads, the County roadway setback requirements apply. Although the wording varies slightly between municipalities, the minimum front yard setback is defined as the distance between the front lot line and the nearest main wall of any building or structure on the lot. The setbacks indicated in the local municipal Zoning By-laws, which are referenced to the land use codes provided, generally complement the change from an urban or developed environment to

a rural one, with shorter setbacks for urban environments. There are instances where the same land use codes are encountered in both an urban and rural environment where the lands are currently undeveloped or the segment considered involves a transition from a rural to urban environment.

- ▶ **County Road Setback:** The basic setback distance for a County roadway, as stated in By-law No. 5604, applies to any property within 45 m of the property line of a highway under the jurisdiction of the County. A basic setback of 15 m applies for any building or structure measured from the limit of the highway. With the primary objective of the By-law being to avoid the removal of a building if the highway right-of-way is widened, there is no differentiation between urban and rural environments except for buildings in Settlement Areas. In these areas, the setback may be determined as the average of the neighbouring properties, or for new buildings in a subdivision which have a 10 m setback. Otherwise, a review may be required to confirm the right-of-way and to ensure that setbacks are not greater than what will be required in consideration of future highway right-of-way widening that will encourage sustainable development in urban corridors. An application or consideration of local Zoning By-laws should be made in urban areas instead of the application of the Simcoe County By-law No. 5604, in order to reflect the development context of urban areas.
- ▶ **Dedicated Modes:** The rural roadways have been primarily designed for motor vehicle traffic since its primary function is defined to move goods and people throughout the County. Conversely, some urban roadways have been designed for both vehicular and pedestrian traffic. The County-wide Cycling Master Plan presented in this TMP assists in identifying if and what type of cycling facilities are required along specific County roads. In order to provide for and encourage pedestrian activity, sidewalks are required on some urban sections such as County Road 10 where there may be future industrial or employment development, as well as County Road 93 where there is considerable commercial development.
- ▶ **Cross-Section:** Generally, the provision of curbs and sidewalks versus paved or gravel shoulders and ditches differentiate the cross-sections between urban and rural environments. The application of boulevard treatments is recommended to help to define and transition between the two environments.

6.5 Applying Complete Streets in Simcoe County

As may be seen with the review of best practices of other jurisdictions, there are several different steps that other regions have taken in considering complete streets concepts along their arterial corridors. The direction in which Simcoe County may take in applying context-sensitive solutions to the arterial corridors, whether it be applying complete street concepts in future corridor plans or the development of a corridor design guideline emphasizing complete streets, depends on the unique urban and rural nature of the communities that the County roads serve. With either approach, the following section provides a baseline for Simcoe County in implementing complete streets concepts. The County has already started a focus towards Active Transportation by adopting a standard practice of including AT infrastructure into County Road construction projects whether through multi-use pathways or paved shoulders.

The following sections identify how complete streets and context-sensitive design may be applied in Simcoe County.

6.5.1 Considerations for a Complete Streets Approach

For current roadway designs, Simcoe County has minimum dimensions for different cross-section elements as presented in the Draft *Policies and Procedures Manual 2011*. In order to accommodate other modes of travel within the existing right-of-way, the existing cross-section elements may need to be modified to accommodate

urban design or alternative modes of travel. The primary elements to be considered as part of rural and urban cross-sections for complete streets include the following:

Rural Cross-Section elements:

- ▶ Travel Lanes;
- ▶ Cycling/Active Transportation Facilities;
- ▶ Medians;
- ▶ Utilities;
- ▶ Paved/Granular Shoulders; and
- ▶ Landscape buffers and ditches.

Urban Cross-Section elements:

- ▶ Travel Lanes;
- ▶ Cycling/Active Transportation Facilities;
- ▶ Medians;
- ▶ Pedestrian Facilities/Boulevards;
- ▶ On-Street Parking;
- ▶ Curbs and Gutters; and
- ▶ Setback Distance.

The following toolbox of design elements may be considered by designers in the interim for complete streets or for the future development of a Simcoe County complete streets guideline. Designers should ensure accommodation of the needs of utilities within the corridor. The design elements below are related to the rural and urban cross-section elements noted above.

- ▶ **Travel Lanes:** In order to accommodate alternative modes of travel and to increase the amount of space to the public realm in urban environments, an area from the corridor to reserve right-of-way may be the travel lanes which have historically been placed as the primary consideration in design. Applications may include road diets involving travel lane reductions or reductions in the width of travel lanes. Current Simcoe County standards indicate a minimum through lane width of 3.75 m. The best practices review has indicated that safety is optimized with a lane width between 3.3 m and 3.5 m. Wider lanes are noted to have undesirable impacts to a roadway environment including increased travel speeds, longer pedestrian crossings or undesired parking on the street. Lane widths of 3.3 m may be considered for median lanes while slightly wider lanes may be utilized for curb lanes to increase the distance between vehicles and pedestrians, or to accommodate heavier truck or bus traffic.
- ▶ **Cycling/Active Transportation Facilities:** The type of cycling facility provided should consider the skill, age and purpose of the expected trips. For instance, experienced older riders performing utilitarian trips may be comfortably accommodated within a shared roadway or wide curb lane, while younger, unskilled recreational users may desire more dedicated facilities. The range of right-of-way widths for different facilities has been summarized from OTM Book 18 in Table 2. Simcoe County has previously identified, in their 2008 Transportation Master Plan, typical on-road and off-road facilities for 1.5 m and 2.2 m wide facilities, respectively. Instead of applying standard facilities throughout the County, identification of the type and width of the facility will be required based on community needs and the available right-of-way.
- ▶ **Medians:** The presence of medians will reduce access to adjacent lands. However, medians provide the benefit of limiting conflict points and offering an area for pedestrian refuge. Additionally, they also provide

an opportunity to include urban design or streetscaping elements such as soft landscaping of trees and shrubs, to hard landscaping of decorative concrete or art installations to emphasize a more urbanized environment. The best practices review has shown that median widths of 4.5 m to 6.0 m may sustain vegetation in the median protected by splash strips, and provide room for any required left-turn bays. Depending on the median width, the removal or narrowing of medians have been a part of complete streets designs in order to provide room for other modes of travel.

- ▶ **Pedestrian Facilities/Boulevards:** Creating an inviting pedestrian environment is crucial for encouraging street activity in urbanized areas. Sidewalk widths are recommended to be a minimum of 1.5 m with an increase in width from 1.8 to 2.4 m for higher pedestrian activity. Boulevards with landscaping may be perceived as an extension of the pedestrian realm. Boulevards may be enhanced with historical plaques, street furniture, public art installations and vegetation. A catalogue of boulevard treatments may be created, yet flexibility should be offered to allow elements to be catered to specific communities. Agreements may be made with adjacent property owners for tree planting beyond the rights-of-way to enhance the streetscape with double rows of trees.
- ▶ **On-Street Parking:** On-street parking is seen as crucial for the economic viability of businesses. Additionally, where boulevards do not exist, on-street parking offers an additional area of buffer between travelling vehicles and pedestrians. Pedestrians may be further protected from parked vehicles with bulb-outs at intersections which may be perceived as an extension of the public realm and urban streetscape. Through the best practices review, on-street parking lane widths may vary from 2.0 m to 2.75 m.
- ▶ **Drainage:** The utilization of curbs and gutters or rural ditches will be dependent on the overall context of the surrounding development and the available right-of-way. The provision of ditches in rural areas provides a more natural method of stormwater management, utilizing the processes of evaporation and infiltration, thereby limiting runoff into streams and rivers. The provision of curbs and gutters in developed areas may be supported with low impact development practices using elements such as bioretention facilities or the use of permeable pavement.
- ▶ **Setback Distance:** One of the factors defining the character of a street is the distance between the buildings along a corridor. Current setback requirements from County roads may detract from the urban form by increasing the separation between the activity on the street and the adjacent development. It is recognized that the current setback requirements are to protect for any future changes in the highway right-of-way. A review may be required to incorporate explicit setback distances for urban development along County roads considering where right-of-way widenings will be required. An option may be to consider the use of local municipal zoning setback distances as a guideline.

6.5.2 Recommended Roadway Typologies

Integrating the diverse urban and rural developments in Simcoe County and considering the roadway typologies proposed in other jurisdictions, Simcoe County may integrate a system which provides another dimension to its existing three-tier roadway classification system. The system may be expanded so that the roadways better accommodate the needs of the community and provide for the desired modes of travel. The expansion of the classification system includes consideration of the adjacent development including the following typologies:

- ▶ **Rural:** High speed roadways connecting communities throughout the County;
- ▶ **Rural Settlement:** Characteristics are similar to a rural environment with localized low-density development in sections along the corridor;
- ▶ **Urban – Commercial:** Supported primarily by commercial and large format retail development;
- ▶ **Urban – Village Core:** A roadway around which a community is developed involving commercial, retail and residential;

- ▶ Urban – Main Street: Supported by mixed-use development with a focus on retail in urban communities; and
- ▶ Urban – Industrial: Primarily services industrial employments centres.

6.5.3 Policies

In supporting context-sensitive solutions, and to allow for sustainable transportation aspects to be incorporated in the complete streets design process, there are some policy considerations which may aid in strengthening the approach and application. In addition to a relaxation of current engineering design standards to allow for dedication to the public realm and alternative modes of travel, such as reducing minimum through lane widths, some policy measures to encourage alternative modes and enhancing the public realm include:

Encouraging Alternative Modes:

- ▶ Adopt a mobility plan that incorporates the following elements: 1) Connections between communities with a priority on Active Transportation and transit; 2) Integration of the alternative transportation networks; 3) Collaborating with local municipalities for internal systems of pedestrian and cycling facilities that connect to a transit system within a community including schools and community centres; and 4) Supporting local municipalities in developing AT system maps that identify existing and planned facilities (as noted in the proposed County Official Plan);
- ▶ Providing clearly signed or marked cycling facilities where cyclists may be accommodated within existing cross-sections to enhance a presence and sense of permanence;
- ▶ Liaise with local municipalities regarding future transit corridors to be integrated with the County Official Plan; and
- ▶ Collaborate with local municipalities to ensure the provision of sidewalk facilities in urban corridors.

Urban Design and Community Requirements:

- ▶ Develop street tree planting design guidelines and specifications to help ensure the longevity of plants, and provide the right vegetation in the harsher roadside climates involving limited soil volumes and salt exposure;
- ▶ Develop an engagement policy to ensure plans are developed with the community to cater to the local context;
- ▶ Enact plans to discourage new reverse frontage developments which have the back of properties adjacent to a street. Reverse frontage has been seen to produce an unattractive corridor of fences on both sides with a perceived loss in the sense of security on a street;
- ▶ Encourage mixed land use and urban design to encourage pedestrian activity throughout the day and to reduce the reliance on private automobiles;
- ▶ Recognize that a context-sensitive design approach may cost more with an additional emphasis on landscaping and urban design requiring a reassessment of the future roadway capital project plans;
- ▶ Review current County By-laws stipulating setback requirements from County roads to allow greater flexibility for urban development beyond exception requests. Options may include identifying designated rural main street setback distances or promoting the application of local front yard distances, where appropriate; and
- ▶ Identify urban boulevard treatment objectives to help aid in the development of a prominent public realm in urban corridors.

6.5.4 Complete Streets Design Process

To apply complete streets in Simcoe County, the complete street design elements and the policies of Simcoe County described in the previous subsections will need to be integrated in an overall implementation and decision-making process. The process, shown in the inset flowchart in **Figure 6.5.4-1**, defines the considerations for each of the five steps in the design process. **Table E-2** in **Appendix E** complements the flowchart to aid planners and designers in implementing complete streets along Simcoe County roadways with a list of considerations and design element dimensions to be considered for each roadway typology.

1. The first step involves determining the roadway context. This involves not only determining the arterial classification of the roadway as set out in the Official Plan, but also the requirement to determine the adjacent land use. This will aid in defining the characteristics of a corridor to be more sensitive to its surrounding context;
2. The second step involves identifying the needs and objectives of a community. In order to move away from traditional directions of designing primarily for vehicular movements, the community should be integrated in the overall planning and design process. This may range from involving County staff, local municipalities or community stakeholders who will be using the facility and identifying their use of the corridor. It will be paramount to determine the desired modes of travel along the corridor from a County policy direction as well as local demands;
3. Step three involves determining the road typology based on the parameters identified in the first two steps. The roadway typologies include rural, rural settlement, urban-commercial, urban-village core, urban-main street and urban-industrial;
4. The fourth step determines the applicable road and boulevard design elements and the ranges in their dimensions. The ranges and general parameters shown are not definitive but provide a general guideline to the overall application of elements. Depending on the context, existing development and available right-of-way, some elements may have to be narrowed or removed depending on their priority in the overall objective of the corridor. The fourth step is an iterative process to determine an ideal combination of design elements within the corridor; and
5. The fifth and final step involves developing the final recommended corridor after determining the elements and their dimensions in the corridor design.

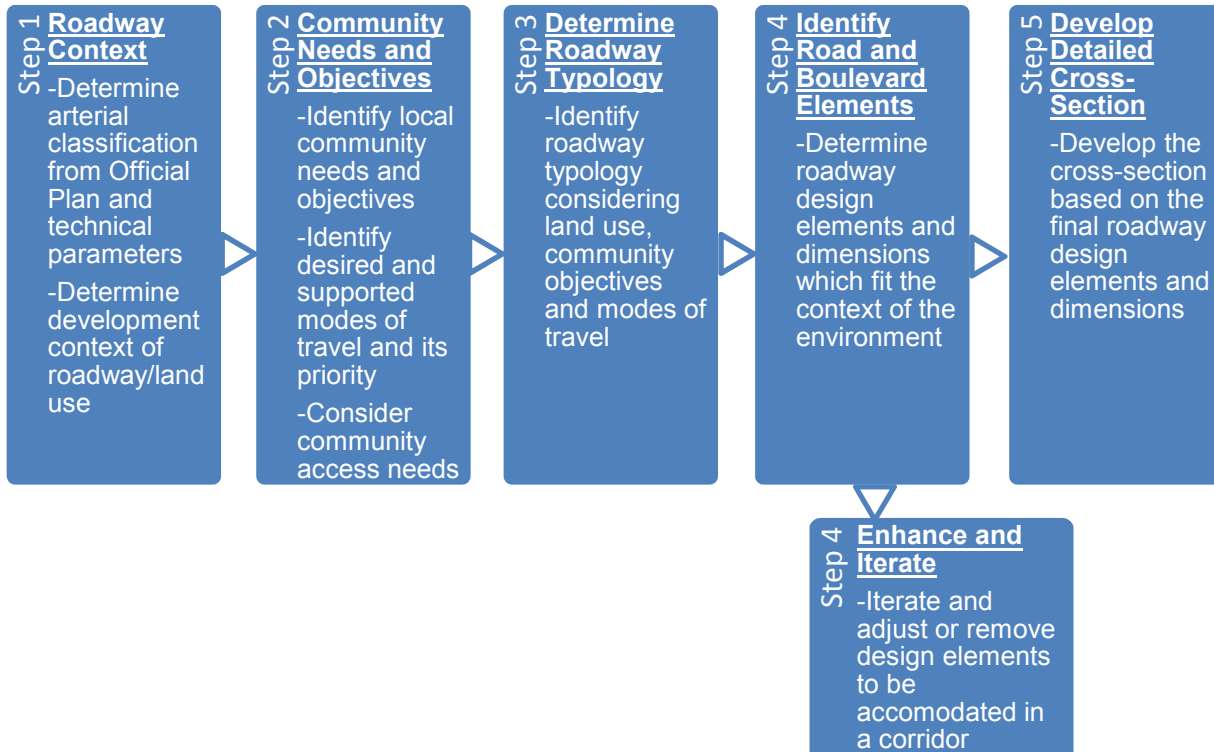


Figure 6.5.4-1: Five Steps of Complete Streets Design Process

6.5.5 Sample Application of Complete Streets Cross-Sections in Simcoe County

The following is a sample of the complete street application process for urban and rural corridor sections in Simcoe County illustrating how the roadway typologies may be identified and complete streets elements implemented into the cross-sections. Further planning or design along these corridors will require a more rigorous design process including continued communication among internal County Departments, liaising with stakeholders and confirmation of right-of-way and setbacks along the entire corridor. The current cross-sections are based on right-of-way widths identified in the Official Plan. The sample complete streets application process emphasizes the concept of sustainability not only in the environmental and social aspect of providing cycling and pedestrian facilities but also ensuring economic sustainability by minimizing the amount of widening or reconstruction. **Tables 6.5.5-1 to 6.5.5-5** exemplifies the complete streets application process for the five corridors previously identified. In building upon the idea to distinguish urban and rural sections, the application process is identified for both environments with the resulting sample cross-sections shown in **Figures 6.5.5-1 to 6.5.5-5**.

Table 6.5.5-1: County Road 93 Application

Step	Element	Road Segment	
		Rural	Urban
① Roadway Context	Arterial Classification	Primary Arterial – Controlled Access	Primary Arterial – Controlled Access
	Posted Speed (km/h)	80	60
	Typical Volume (vehicles/day)	14,500-17,900	14,500-17,900
	Number of Lanes	4	4
	Development and Land Uses	Limited development: Rural, Recreation	Developed: Commercial
② Community Needs and Objectives	Transit Potential	Limited: Requires confirmation of transit potential and requirements with local municipality	Requires confirmation of transit potential and requirements with local municipality
	Pedestrian Accommodation	None	High importance to promote an active streetscape
	Cycling Accommodation	Paved shoulder	Bicycle lane
	Access Management	Remove median for provision of Active Transportation	Reduce median for provision of Active Transportation
③ Roadway Typology		Rural	Urban-Commercial
④ Identify Road and Boulevard Elements	Curb Lane	3.5 m	3.5 m
	Median Lane	3.5 m	3.3 m
	Shared Cycle Lane	None	None
	Median	Remove median for provision of Active Transportation	4.0 m reduced median for provision of Active Transportation
	On-Street Parking	None	None
	Boulevard (width varies)	None	8.0 m boulevard provided with landscaping, sidewalk, street furniture and public art
	Shoulder	•2.0 m paved shoulder cycle •2.5 m gravel	No shoulder
	Bicycle Lane	None	1.2 m-1.8 m
	Separated Bicycle Lane	None	None
	Active Transportation Path	None	None
	Stormwater Management	Rural ditches	Curb and gutter with consideration of low impact development
	Utilities	Overhead and underground facilities as required	Underground facilities desired

The following is a further description of the changes applied to the County Road 93 corridor:

- ▶ Rural: Maintaining the existing pavement width, a paved shoulder cycling facility may be provided between Midland and Penetanguishene through the reduction of lane widths and the median; and
- ▶ Urban: Maintaining the current curb-to-curb width, bike lanes may be provided along the commercialized section in Midland through the reduction of lane and median widths. Boulevard treatments may include provision of sidewalks along the entire corridor and streetscaping with vegetation.

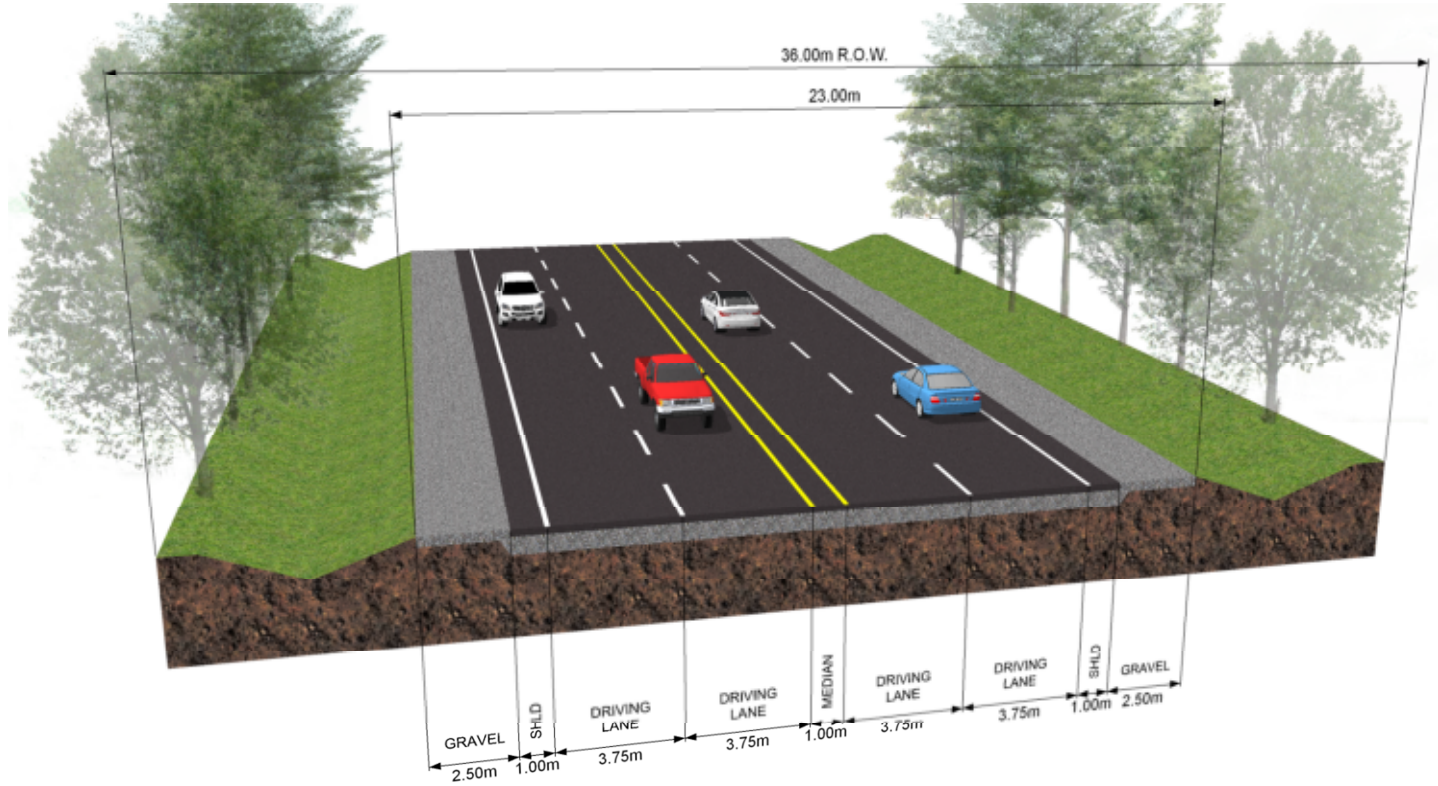


Figure 6.5.5-1: Existing Rural Cross Section

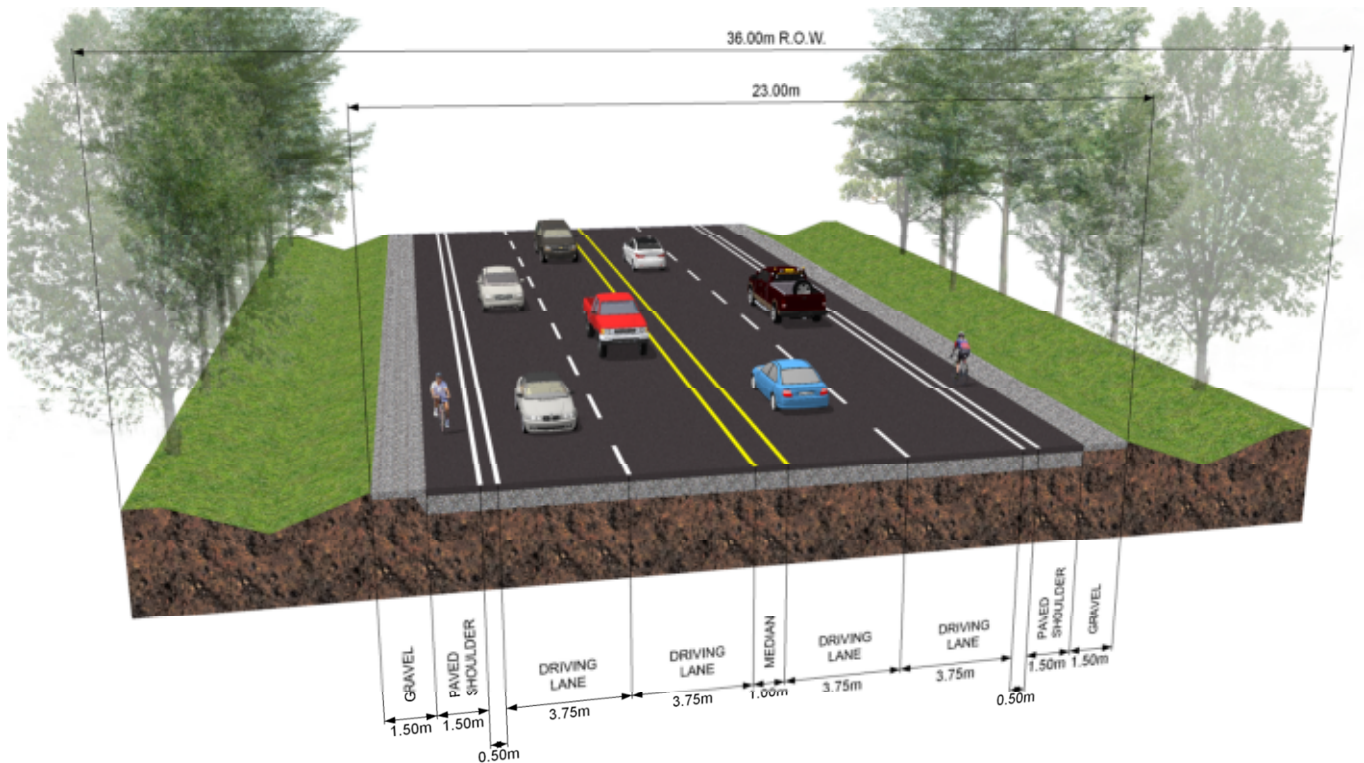


Figure 6.5.5-2: Potential Future Rural Cross Section

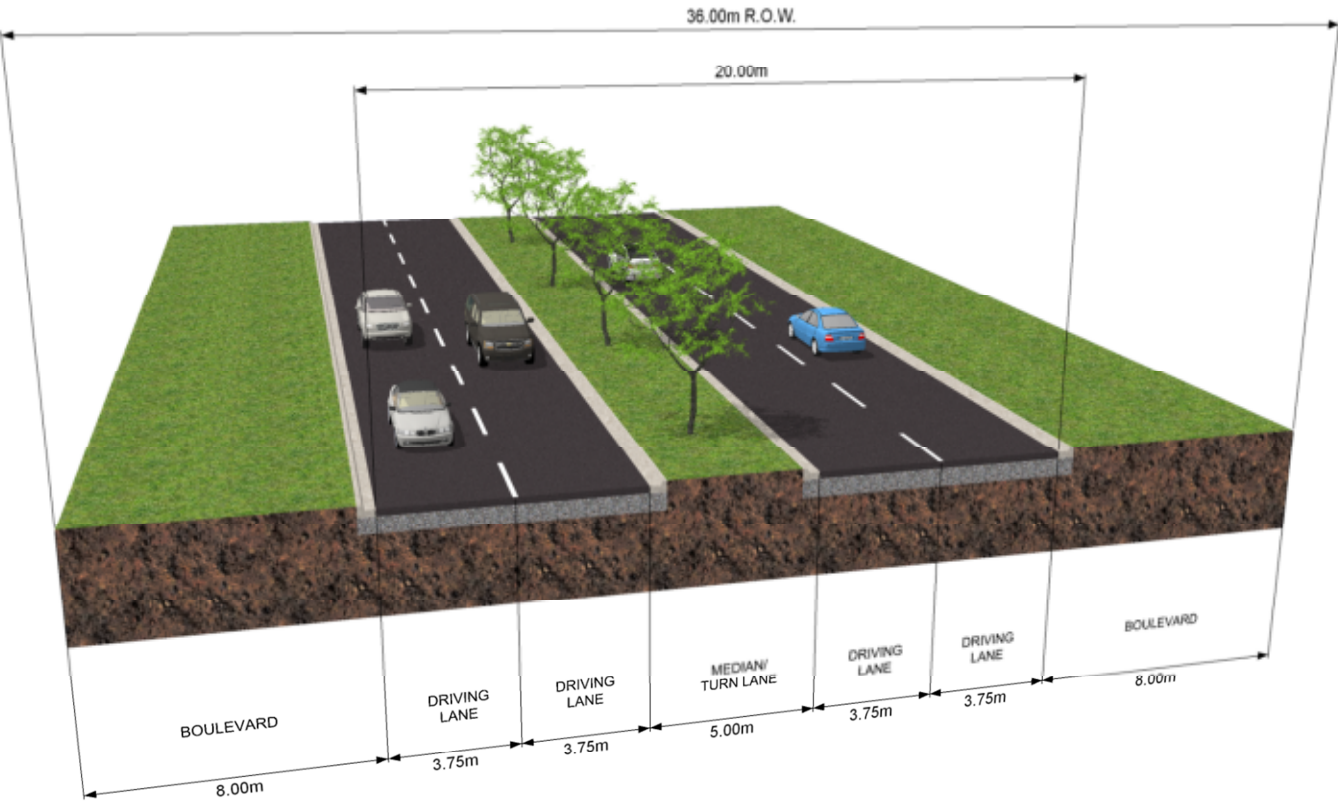


Figure 6.5.5-3: Existing Urban Cross Section

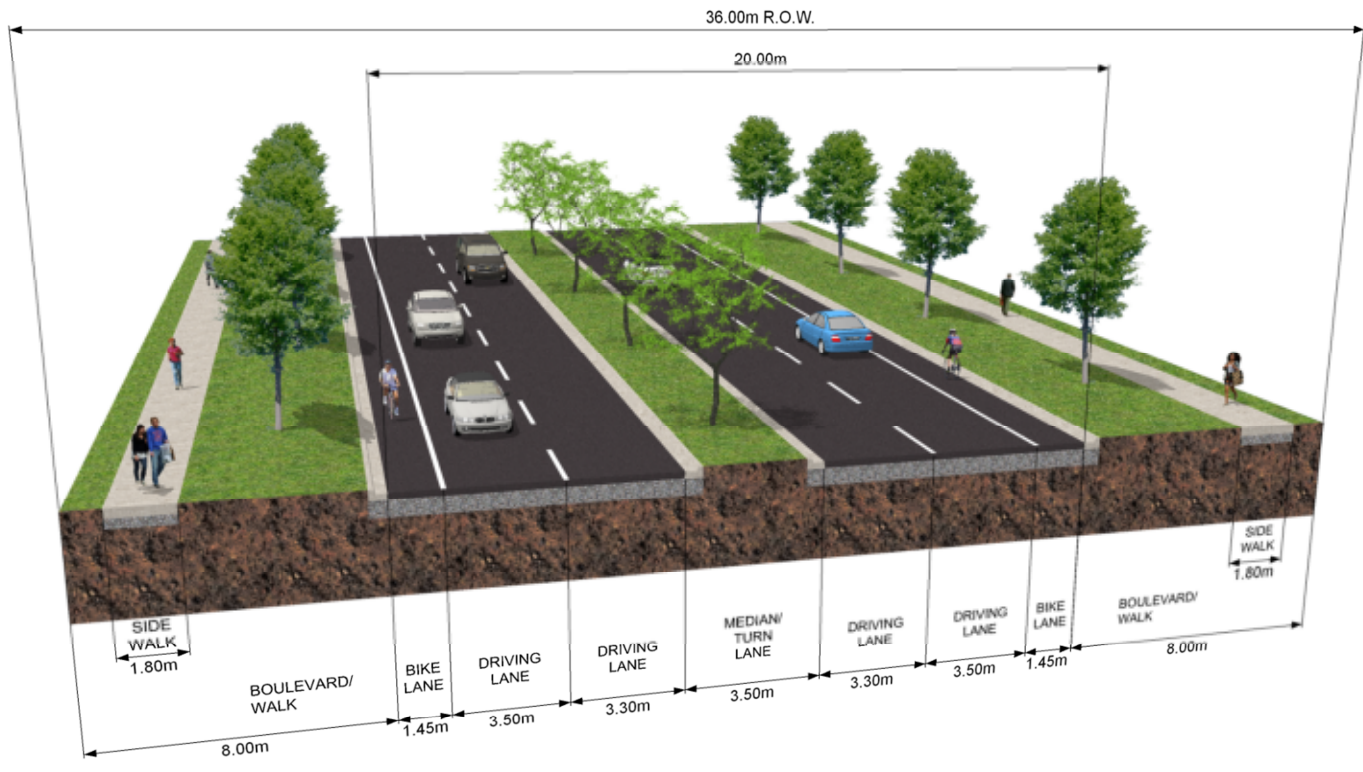


Figure 6.5.5-4: Potential Urban Cross Section Retrofit

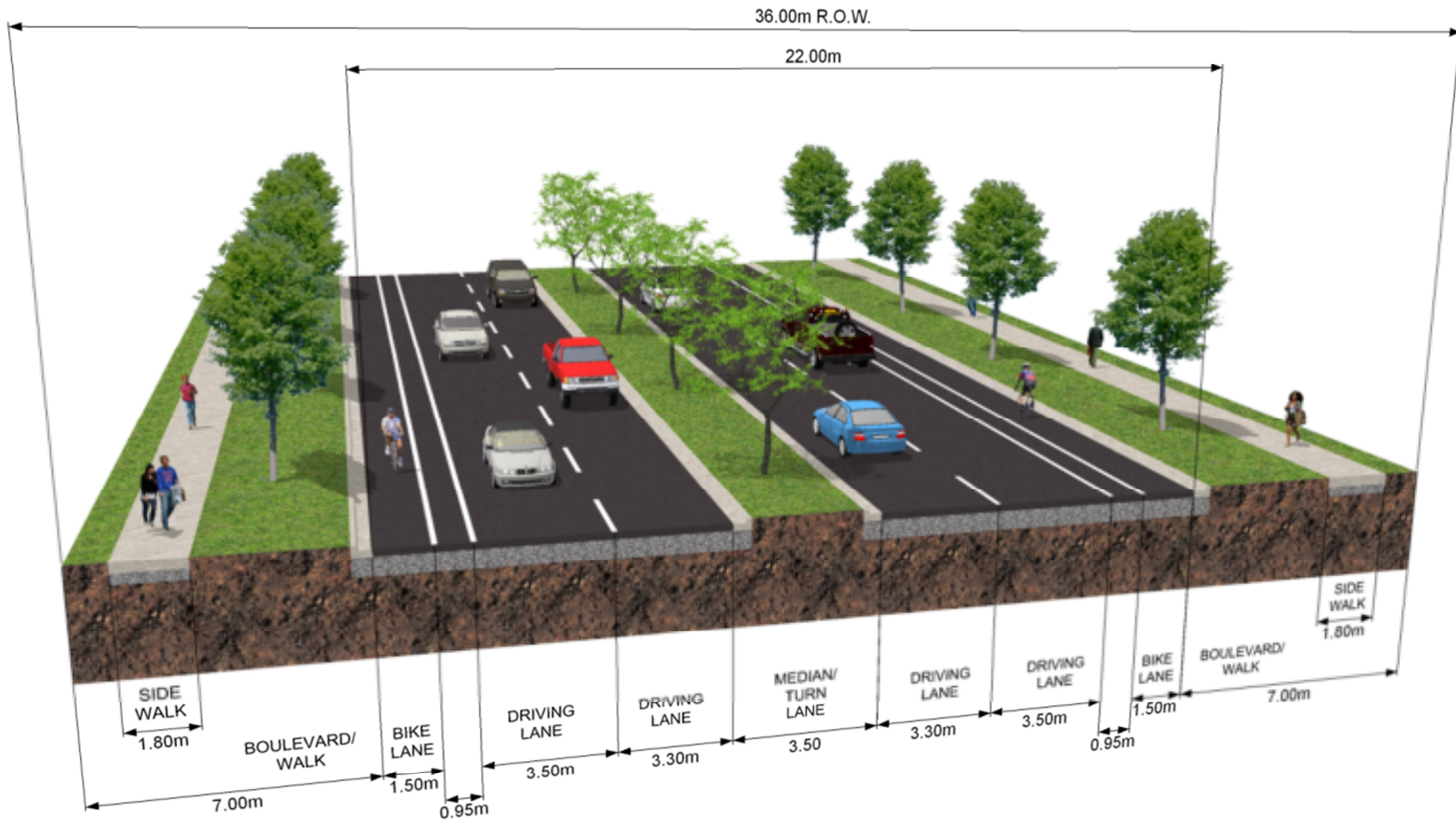


Figure 6.5.5-5: Potential Future Urban Cross Section – New Roads

Table 6.5.5-2: County Road 27 Application

Step	Element	Road Segment	
		Rural	Urban
① Roadway Context	Arterial Classification	Primary Arterial	Primary Arterial
	Posted Speed (km/h)	80	50
	Typical Volume (vehicles/day)	6,100	6,100
	Number of Lanes	2	2
	Development and Land Uses	Limited development: Agricultural	Developed: Commercial, Residential
② Community Needs and Objectives	Transit Potential	Limited: Requires confirmation of transit potential and requirements with local municipality	Requires confirmation of transit potential and requirements with local municipality
	Pedestrian Accommodation	None	High importance to promote an active community
	Cycling Accommodation	Paved shoulder	Separated bicycle lane
	Access Management	No median; Driveway access determined by entrance by-law	No median; Driveway access determined by entrance by-law
③ Roadway Typology		Rural	Urban – Village Core
④ Identify Road and Boulevard Elements	Curb Lane	3.5 m	3.75 m (existing)
	Median Lane	None	None
	Shared Cycle Lane	None	None
	Median	None	None
	On-Street Parking	No parking	2.0 m-2.75 m (where required)
	Boulevard (width varies)	None	14.3 m boulevard provided with landscaping and sidewalk
	Shoulder	•1.25 m paved shoulder cycle •2.5 m gravel	No shoulder
	Bicycle Lane	None	None
	Separated Bicycle Lane	None	2.0 m utilizing existing asphalt
	Active Transportation Path	None	None
	Stormwater Management	Rural ditches	Curb and gutter with consideration of low impact development
	Utilities	Overhead and underground facilities as required	Underground facilities desired

⑤ Develop Detailed Cross-Section

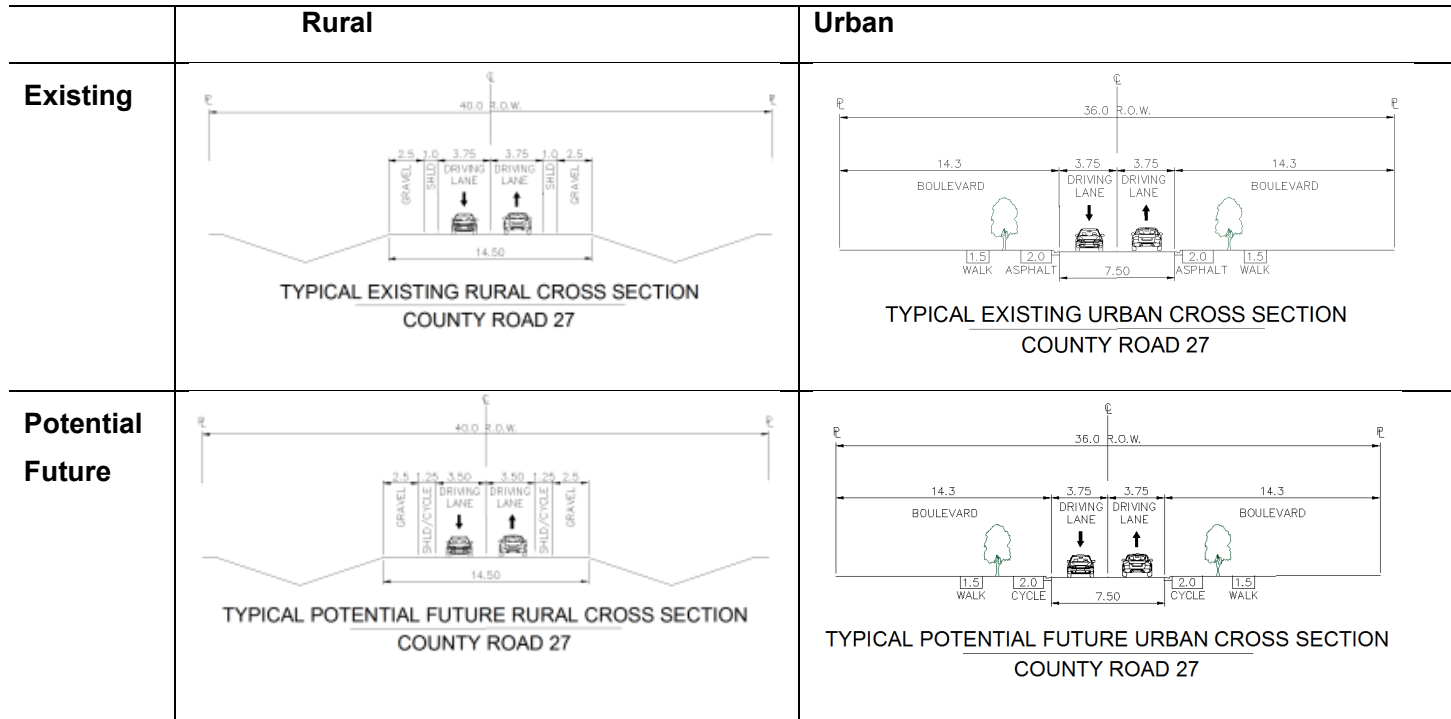


Figure 6.5.5-6: County Road 27 Cross-Sections

The following is a further description of the changes applied to the County Road 27 corridor:

- ▶ Rural: Maintaining the existing pavement width, a near minimum width shoulder cycling facility may be provided between Barrie and York Region.
- ▶ Urban: The urban section did not have any changes within the highway limits. A cycling facility may be provided on the existing asphalt strip adjacent to the roadway. As noted in OTM Book 18, the facility should be accompanied with the appropriate signs and pavement markings.

Table 6.5.5-3: County Road 90 Application

Step	Element	Road Segment	
		Rural	
① Roadway Context	Arterial Classification	Primary Arterial	Primary Arterial
	Posted Speed (km/h)	60-80	60-80
	Typical Volume (vehicles/day)	15,000-20,000	15,000-20,000
	Number of Lanes	2	2
	Development and Land Uses	Limited development: Agricultural, Environmental/Recreation	Dispersed Development: Residential, Industrial
② Community Needs and Objectives	Transit Potential	Limited: Requires confirmation of transit potential and requirements with local municipality	Requires confirmation of transit potential and requirements with local municipality
	Pedestrian Accommodation	Pedestrian facilities may be provided	Pedestrian facilities may be provided
	Cycling Accommodation	Active transportation path	Active transportation path
	Access Management	No median; Driveway access determined by entrance by-law	No median; Driveway access determined by entrance by-law
③ Roadway Typology		Rural	Rural Settlement
④ Identify Road and Boulevard Elements	Curb Lane	3.75 m	3.75 m
	Median Lane	None	None
	Shared Cycle Lane	None	None
	Median	None	None
	On-Street Parking	None	None
	Boulevard (width varies)	Provided for active transportation path as buffer to vehicles	Provided for active transportation path as buffer to vehicles
	Shoulder	2.5 m gravel	2.5 m gravel
	Bicycle Lane	None	None
	Separated Bicycle Lane	None	None
	Active Transportation Path	3.0 m	3.0 m
	Stormwater Management	Rural ditches	Rural ditches
	Utilities	Overhead and underground facilities as required	Overhead and underground facilities as required

The following is a further description of the changes applied to the County Road 90 corridor:

- ▶ Rural: Maintaining the existing width between the edge of gravel, a wider shoulder cycling facility may be provided between Angus and Barrie with some pavement widening. A wider shoulder cycling facility is shown, given the relatively higher volumes on County Road 90 compared to other County roads; and
- ▶ Urban: Maintaining the current curb-to-curb width, bike lanes may be provided along the commercialized section in Angus through the reduction of lane and median widths. Boulevard treatments may include streetscaping with vegetation.

Table 6.5.5-4: County Road 43 Application

Step	Element	Road Segment	
		Rural	Development
① Roadway Context	Arterial Classification	Primary Arterial	Primary Arterial
	Posted Speed (km/h)	60-80	60-80
	Typical Volume (vehicles/day)	1,400-2,700	1,400-2,700
	Number of Lanes	2	2
	Development and Land Uses	Limited development: Agricultural, Environmental/Recreation	Dispersed Development: Residential, Industrial
② Community Needs and Objectives	Transit Potential	Limited: Requires confirmation of transit potential and requirements with local municipality	Requires confirmation of transit potential and requirements with local municipality
	Pedestrian Accommodation	Pedestrian facilities may be provided	Pedestrian facilities may be provided
	Cycling Accommodation	Active Transportation path	Active Transportation path
	Access Management	No median; Driveway access determined by entrance by-law	No median; Driveway access determined by entrance by-law
③ Roadway Typology		Rural	Rural Settlement
④ Identify Road and Boulevard Elements	Curb Lane	3.75 m	3.75 m
	Median Lane	None	None
	Shared Cycle Lane	None	None
	Median	None	None
	On-Street Parking	None	None
	Boulevard (width varies)	Provided for active transportation path as buffer to vehicles	Provided for active transportation path as buffer to vehicles
	Shoulder	2.5 m gravel	2.5 m gravel
	Bicycle Lane	None	None
	Separated Bicycle Lane	None	None
	Active	3.0 m	3.0 m

Step	Element	Road Segment	
		Rural	Development
	Transportation Path		
	Stormwater Management	Rural ditches	Rural ditches
	Utilities	Overhead and underground facilities as required	Overhead and underground facilities as required

⑤ Develop Detailed Cross-Section

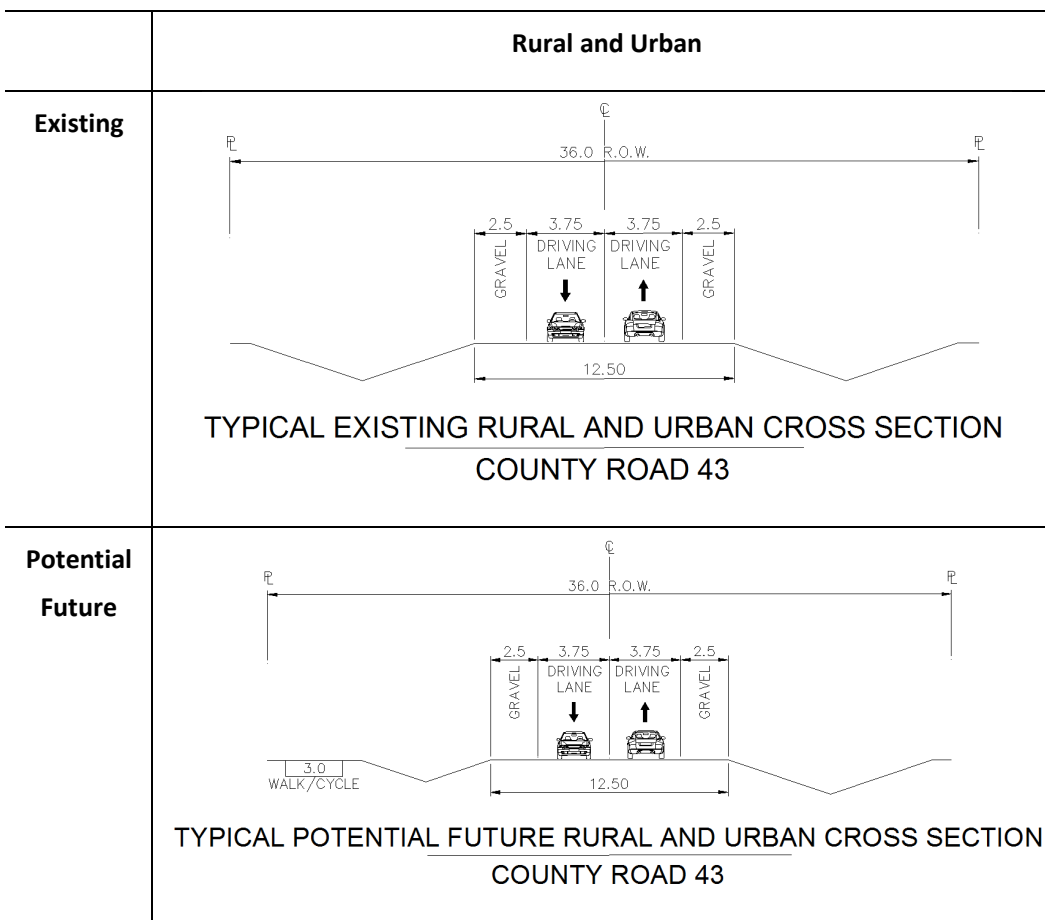


Figure 6.5.5-7: County Road 43 Cross-Sections

The following is a further description of the changes applied to the County Road 43 corridor:

- ▶ Rural and Urban: The urban and rural sections are essentially the same with development distributed along the corridor. An economical alternative to provide for both pedestrians and cyclists along this corridor may be through an Active Transportation path on one side of the roadway. This compliments the existing recreational areas along the corridor which already have a pathway on one side.

Table 6.5.5-5: County Road 10 Application

Step	Element	Road Segment	
		Rural	Urban - Industrial
① Roadway Context	Arterial Classification	Primary Arterial – Controlled Access	Primary Arterial – Controlled Access
	Posted Speed (km/h)	80	80
	Typical Volume (vehicles/day)	3,000-9,000	3,000-9,000
	Number of Lanes	4	4
	Development and Land Uses	Limited development: Agricultural	Developed: Industrial, Commercial
② Community Needs and Objectives	Transit Potential	Limited: Requires confirmation of transit potential and requirements with local municipality	Requires confirmation of transit potential and requirements with local municipality
	Pedestrian Accommodation	None	Pedestrian facilities provided as an alternative mode choice
	Cycling Accommodation	Paved shoulder	Active Transportation path
	Access Management	No median; Driveway access determined by entrance by-law	No median; Driveway access determined by entrance by-law
③ Roadway Typology		Rural	Urban - Industrial
④ Identify Road and Boulevard Elements	Curb Lane	3.55 m	3.75 m (existing)
	Median Lane	None	3.75 m (existing)
	Shared Cycle Lane	None	None
	Median	None	None
	On-Street Parking	None	None
	Boulevard (width varies)	None	9.5 m boulevard provided with consideration of active transportation and landscaping
	Shoulder	•1.2 m paved shoulder cycle •2.5 m gravel	None
	Bicycle Lane	None	None
	Separated Bicycle Lane	None	None
	Active Transportation Path	None	3.0 m
	Stormwater Management	Rural ditches	Curb and gutter with consideration of low impact development
	Utilities	Overhead and underground facilities as required	Underground facilities should be considered

⑤ Develop Detailed Cross-Section

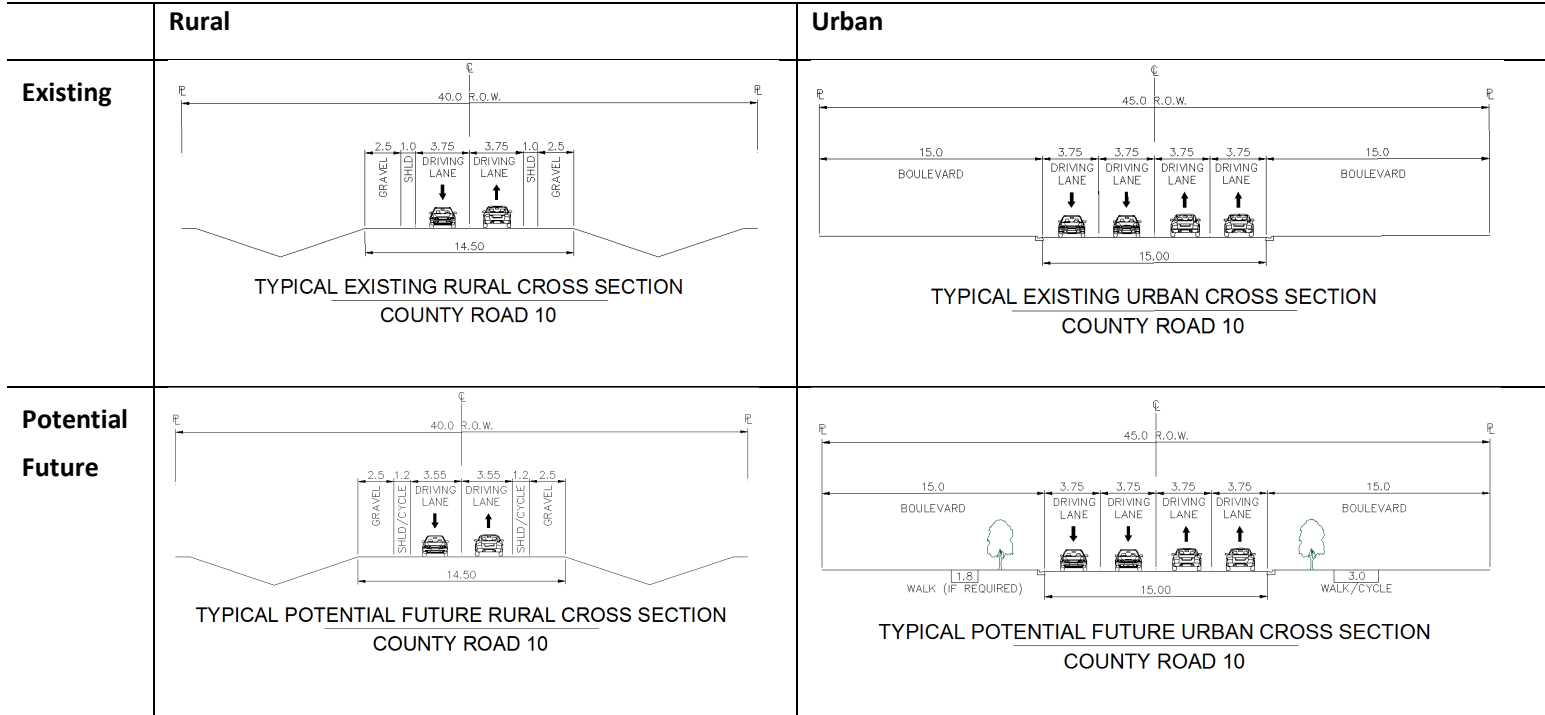


Figure 6.5.5-9: County Road 10 Cross-Sections

The following is a further description of the changes applied to the County Road 10 corridor:

- ▶ Rural: Maintaining the existing pavement width, a minimum width shoulder cycling facility may be provided along County Road 10. The driving lane widths were reduced instead of widening into the gravel as a means to promote lower vehicle speeds in light of the adjacent cycling facility. The cycling facility on this section will likely attract cyclists who are more experienced and willing to cycle in mixed traffic considering the nearby employment centres, so a wide shared-lane facility may be considered; and
- ▶ Urban: To avoid widening the existing pavement to provide dedicated cycling facilities, an AT path may be provided on one side of the roadway to accommodate both pedestrians and cyclists. Alternatively, a sidewalk may be provided with a shared-lane cycling facility as in the rural section.

6.6 Recommendations

With Simcoe County's population and activity centres spread over a vast geographical area, providing dedicated transit and AT facilities throughout the County may not be feasible or warranted, plus the current cross-sections may already meet the needs of the community. In order to provide for those who utilize alternative modes of transport, it will be prudent to ensure that County-wide pedestrian, cycling and transit networks provide a fully integrated, safe and efficient system for all road users. Such plans will help to ensure that intra-regional travel between communities may be supported by transit and Active Transportation at the trip ends. The identified networks will also aid planners in identifying the modes of travel which will be supported now and in the future.

For the future County transportation system, the classification of the roadways may identify adjacent land use, and the resulting supported modes of travel in order to better meet the needs of the communities in which it supports. A context-sensitive design approach will consider the unique nature and differences between urban and rural environments including supported modes of travel, streetscape design and the function of the roadway. County setback requirements may require amendments in order to maintain an activity-oriented street environment in urban sections. Adopting the complete streets application process presented in this document onto the existing classification system will aid in better meeting the needs of communities and all modes of travel.

To adopt complete street designs into the community, Simcoe County may identify corridors which should benefit from a detailed complete streets application. A wider area plan would involve further developing the principles and processes presented here with a complete streets manual for Simcoe County.

6.6.1 Summary Recommendations

Expand the County road classifications to the following six categories:

- ▶ Rural: High speed roadways connecting communities throughout the County;
- ▶ Rural Settlement: Characteristics are similar to a rural environment with localized low-density development in sections along the corridor;
- ▶ Urban – Commercial: Supported primarily by commercial and large format retail development;
- ▶ Urban – Village Core: A roadway around which a community is developed involving commercial, retail and residential;
- ▶ Urban – Main Street: Supported by mixed-use development with a focus on retail in urban communities; and
- ▶ Urban – Industrial: Primarily services industrial employments centres.

Encourage alternative modes of travel by:

- ▶ Adopting a mobility plan that incorporates the following elements: 1) Connections between communities with a priority on Active Transportation and transit; 2) Integration of the alternative transportation networks; 3) Collaborating with local municipalities for internal systems of pedestrian and cycling facilities that connect to a transit system within a community including schools and community centres; and 4) Supporting local municipalities in developing AT system maps that identify existing and planned facilities (as noted in the proposed County Official Plan);

- ▶ Providing clearly signed or marked cycling facilities where cyclists may be accommodated within existing cross-sections to enhance a presence and sense of permanence;
- ▶ Liaising with local municipalities regarding future transit corridors to be integrated with the County Official Plan; and
- ▶ Collaborating with local municipalities to ensure the provision of sidewalk facilities in urban corridors.

Address urban design and community requirements by:

- ▶ Developing street tree planting design guidelines and specifications to help ensure the longevity of plants, and provide the right vegetation in the harsher roadside climates involving limited soil volumes and salt exposure;
- ▶ Preparing an engagement policy to ensure plans are developed with the community to cater to the local context;
- ▶ Enacting plans to discourage new reverse frontage developments which have the back of properties adjacent to a street. Reverse frontage has been seen to produce an unattractive corridor of fences on both sides with a perceived loss in the sense of security on a street;
- ▶ Encouraging mixed land use and urban design to encourage pedestrian activity throughout the day and to reduce the reliance on private automobiles;
- ▶ Recognizing that a context-sensitive design approach may cost more with an additional emphasis on landscaping and urban design requiring a reassessment of the future roadway capital project plans;
- ▶ Reviewing current County By-laws stipulating setback requirements from County roads to allow greater flexibility for urban development beyond exception requests. Options may include identifying designated rural main street setback distances or promoting the application of local front yard distances, where appropriate; and
- ▶ Identifying urban boulevard treatment objectives to help aid in the development of a prominent public realm in urban corridors.

Incorporate context-sensitive design into County roads by:

- ▶ Implementing new cross sections as described in this chapter when renovations or upgrades are made to County roads.



7.0 ROUNDABOUT FEASIBILITY GUIDELINES

The provision of roundabouts has been widely accepted in many jurisdictions in North America. When appropriate, a roundabout is a safer and more efficient means of traffic control compared to a signalized or stop-controlled intersection. To make an assessment on whether a roundabout is feasible, a planning level feasibility guideline was developed that can be used by Simcoe County to ultimately decide which traffic control measure is most appropriate.

7.1 What is a Roundabout?

“Roundabouts are a type of intersection at which all traffic circulates in a counterclockwise direction, to the right of a central island. All entering vehicles must yield to traffic already in the roundabout.”

Ministry of Transportation, Ontario

Roundabouts are circular intersections that emerged from the earlier versions of traffic circles that came into existence in the early 1990s in the United States. They have been widely accepted in North America and have been implemented successfully in many jurisdictions in Canada. Several industry guidelines have been published by agencies such as the Transportation Research Board (TRB), USDOTs Federal Highway Administration as well as various Canadian provinces and local jurisdictions to properly plan for and design a roundabout. The discussion in the sections below is drawn from extensive research within such published resources.

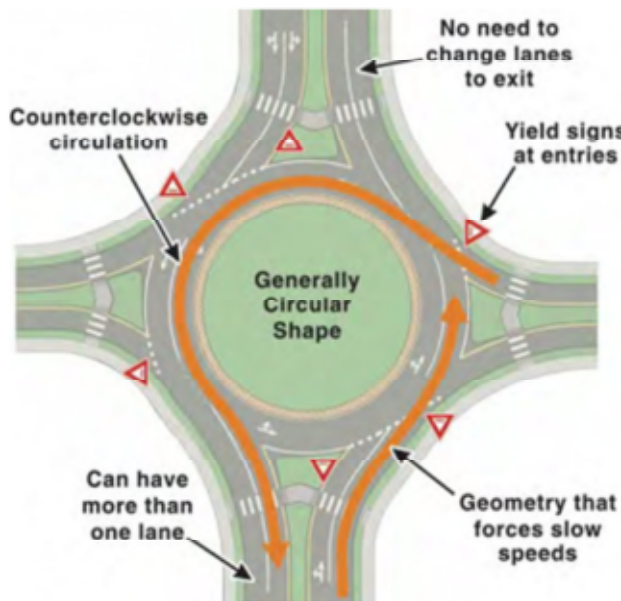
There are three distinct types of circular intersections as described below, and one that is most common is a Roundabout.

- ▶ **Rotaries:** These are characterized by large diameters which are typically greater than 100 m. As a result of the larger diameter of the circle, traffic circulating within the circle operates at speeds that are higher than that of a typical roundabout. Rotaries are not common in North America but can be found in some locations in Europe.

- ▶ Neighbourhood traffic circles: These are small circular islands that are typically built to function as a traffic calming element at the intersection of local neighborhood streets. At some locations, traffic circles are solely intended to serve as an aesthetic treatment rather than as a traffic control element.
- ▶ Roundabouts: These are circular intersections with distinct characteristics that are defined by its design and operation. Roundabouts have been widely accepted as a safer, more operationally efficient and greener method of traffic control when supported by robust engineering analysis.

Figure 7.1-1 summarizes the key characteristics of a roundabout. It has a circular shape with yield control signs that control the speed of traffic at the entry points and within the circle of the roundabout. Roundabouts can have more than one entry and exit lane at each approach. Depending on the operational volumes, there can be more than one circulatory lane in the circular roadway. As noted earlier, traffic moves in a counter-clockwise direction in a roundabout.

There are various elements of a roundabout that serve a specific purpose. **Figure 7.1-2** provides a summary of these elements. When planning for a roundabout, it is important to understand the function of each element. For example, the splitter island functions not only to facilitate the entry and exit of a vehicle, but also to provide pedestrian refuge and to slow traffic. Similarly, since the provision of an apron is optional, it may not be an obvious choice unless a planning level assessment has identified a need for it.

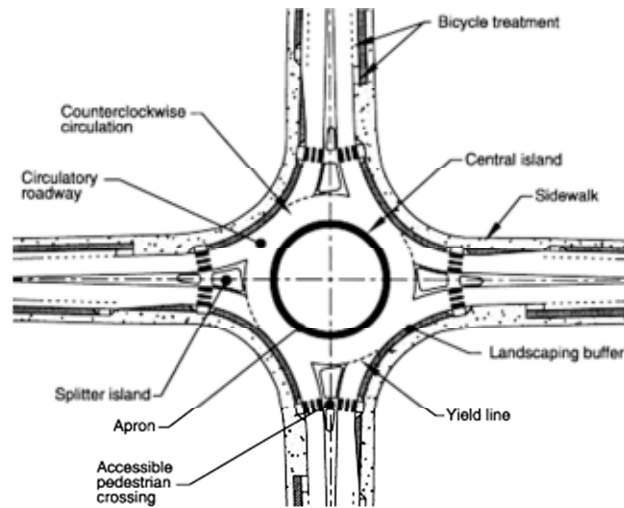


A yield sign helps slow the approaching traffic at each entry leg of a roundabout. The traffic entering the roundabout waits for a suitable gap to enter. A yield sign is one key characteristic of a roundabout. Further details can be found in NCHRP Report 672, *Roundabouts: An Informational Guide*.

Source: Adapted from NCHRP report 672, Roundabouts an Informational Guide

Figure 7.1-1: Characteristics of a Roundabout

While all the features shown in the figure serve their own purpose, the splitter island has more than one purpose that influences the design of a roundabout. For more details refer to NCHRP 672, Roundabouts an Informational Guide.



Central Island	The central island is the raised area in the center of a roundabout around which traffic circulates.
Splitter Island	A splitter island is a raised or painted area on an approach used to separate entering from exiting traffic, deflect and slow entering traffic, and provide storage space for pedestrians crossing the road in two stages.
Circulatory Roadway	The circulatory roadway is the curved path used by vehicles to travel in a counter-clockwise fashion around the central island.
Apron	If required on smaller roundabouts to accommodate the wheel tracking of large vehicles, an apron is the mountable portion of the central island adjacent to the circulatory roadway.
Yield Line	A yield line is a pavement marking used to mark the point of entry from an approach into the circulatory roadway and is generally marked along the inscribed circle. Entering vehicles must yield to any circulating traffic coming from the left before crossing this line into the circulatory roadway.
Accessible pedestrian crossings	Accessible pedestrian crossings should be provided at all roundabouts. The crossing location is set back from the yield line, and the splitter island is cut to allow pedestrians, wheelchairs, strollers, and bicycles to pass through.
Bicycle treatments	Bicycle treatments at roundabouts provide bicyclists the option of traveling through the roundabout either as a vehicle or as a pedestrian, depending on the bicyclist's level of comfort.
Landscaping buffer	Landscaping buffers are provided at most roundabouts to separate vehicular and pedestrian traffic and to encourage pedestrians to cross only at the designated crossing locations. Landscaping buffers can also significantly improve the aesthetics of the intersection.

Source: Adapted from NCHRP report 672, Roundabouts an Informational Guide

Figure 7.1-2: Various Elements of a Roundabout

7.2 Roundabout Categories

Roundabouts can be identified into six basic categories according to their size and environment, as shown in **Figure 7.2-1**. A brief synopsis of each category is provided below.

Mini-roundabouts: These are primarily used in low speed urban environments. These offer similar operational benefits to that of a single-lane roundabout described below, but are not very common in North America. These tend to be viewed as similar to a traffic calming device in that it can prove beneficial in reducing traffic speeds in residential neighbourhoods.

Salient features:

- ▶ Has a travelable central island.
- ▶ Operational standards are not calibrated to North American standards.
- ▶ Commonly found at residential neighbourhood locations where there is a right-of-way constraint to accommodating a traditional single-lane roundabout.

Urban compact roundabouts: These are primarily intended to be pedestrian friendly. The approach legs are designed to be perpendicular which significantly reduces travel speeds and creates a safer pedestrian environment since motorists must make a 90 degree right turn.

Salient features:

- ▶ Non-mountable central-island with raised splitter.
- ▶ Principal objective is to make effective use of the intersection and increase pedestrian safety.
- ▶ Compact design yields to a spacious circular island to accommodate large vehicles.
- ▶ Are typically single-lane and suitable for confined locations.

Urban single-lane roundabouts: These have slightly higher speeds and capacity than an urban compact roundabout, and are distinguished by a smaller inscribed circle. Geometric design includes a raised splitter island, non-mountable central island and preferably no apron.

Salient features:

- ▶ Design focuses on consistent entry and exit speeds.
- ▶ Has a landscaped buffer between the pedestrian pathways and the roundabout circle.
- ▶ Can accommodate bike treatments on the approach legs of the roundabout.

Urban double-lane roundabouts: A roundabout for an urban area that has at least one approach with two lanes. The inscribed circle and the circulatory roadway are larger to accommodate vehicles that may travel side by side.

Salient features:

- ▶ Design will not include a truck apron.
- ▶ Alternate routes may be provided for cyclists who want to by-pass the roundabout.
- ▶ Speed on the entry, exit and circulatory roadway is consistent.
- ▶ Special design consideration is given to pedestrians and cyclists.

Rural single-lane roundabouts: These roundabouts have higher than average speeds approaching the circular roadway. Because the location is rural, the provision of pedestrian facilities is not necessarily required if there is no current or anticipated future pedestrian activity.

Salient features:

- ▶ Vehicle speeds on rural roadways are higher and, therefore, require traffic control treatments at the approaches to slow approaching vehicles.
- ▶ Rural single-lane roundabouts at locations that might become urbanized in the future may need to be designed for urban roundabout standards.
- ▶ May not need a truck apron since higher than average speeds on the circular roadway results in the need for a wider circular roadway.

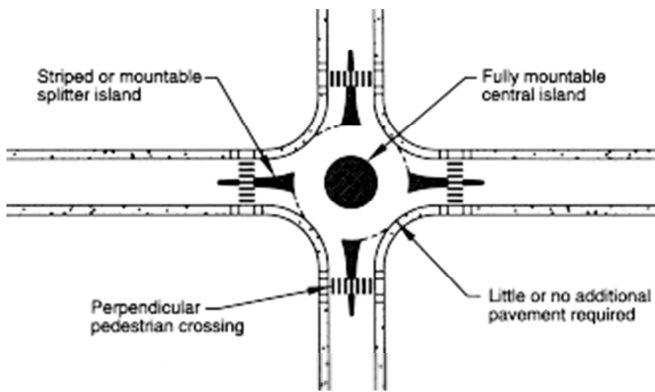
Rural double-lane roundabouts: These have similar speeds compared to the rural single-lane roundabout, but have larger diameters and higher speeds compared to their urban double-lane counterparts.

Salient features:

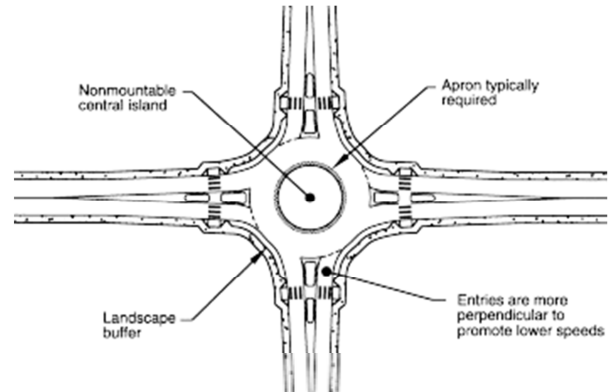
- ▶ Many characteristics mirror urban double-lane roundabouts with the only differences in design being the higher entry speeds, larger diameters and supplementary approach treatment.
- ▶ Such roundabouts may be part of an urban environment in the future so it may need to be designed as an urban double-lane roundabout.

7.3 Advantages and Disadvantages of Roundabouts

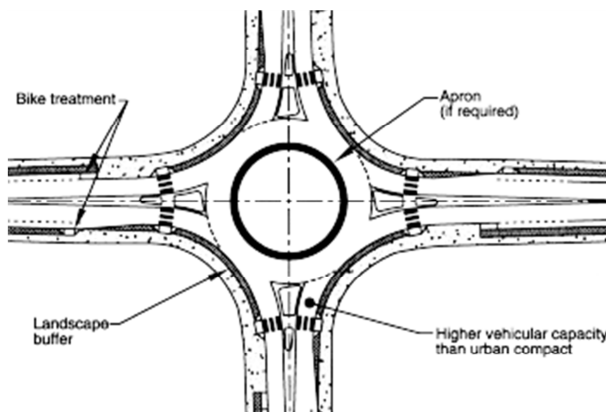
It has been widely established that there are several benefits of a roundabout over other forms of intersection control. However, a feasibility assessment needs to be conducted to establish the need for constructing a roundabout to either replace or choose among other forms of intersection control. **Table 7.3-1** below provides a summary of the advantages and disadvantages of a roundabout. It should be noted, however, that this list cannot be used as a prescriptive guideline to make a decision based on just one or more aspects that are listed in the table. A well-designed roundabout is context sensitive and is one that offers a safer form of intersection control while maintaining the sanctity of operational efficiency.



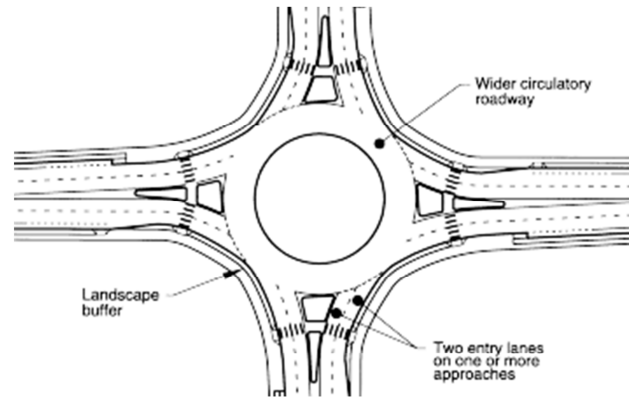
Mini-roundabout



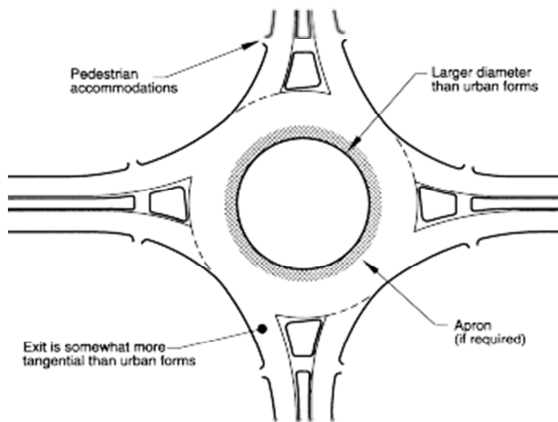
Urban compact roundabout



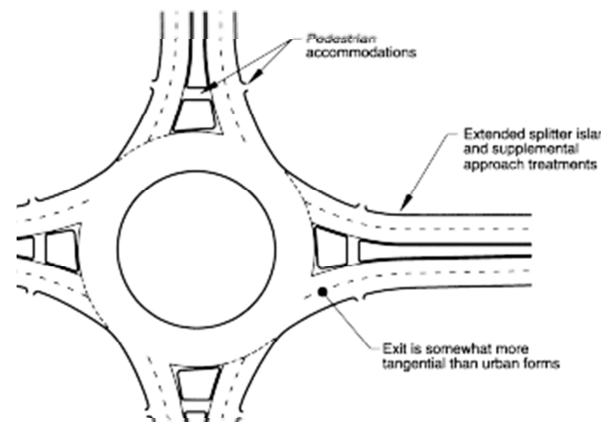
Urban single-lane roundabout



Urban double-lane roundabout



Rural single-lane roundabout



Rural double-lane roundabout

Source: NCHRP report 672, Roundabouts an Informational Guide

Table 7.3-1: Advantages and Disadvantages of a Roundabout

Advantages	Disadvantages
Non-Motorized Users	
<ul style="list-style-type: none"> ▶ Pedestrians consider only one direction of conflicting traffic at a time. ▶ Cyclists have options for negotiating roundabouts, depending on their skill and comfort level. 	<ul style="list-style-type: none"> ▶ Pedestrians with vision impairments may have trouble finding crosswalks and determining if and when vehicles have yielded at crosswalks. ▶ Bicycle ramps at roundabouts have the potential to be confused with pedestrian ramps.
Safety	
<ul style="list-style-type: none"> ▶ Reduced crash severity for all users, allows for safer merges and provides more time for all users to detect and correct for their mistakes or the mistakes of others due to lower speeds. ▶ Few conflict points and no left-turn conflict. 	<ul style="list-style-type: none"> ▶ Increase in single-vehicle and fixed-object crashes compared to other intersection treatments. ▶ Multi-lane roundabouts present more difficulties for individuals with visual impairment.
Operations	
<ul style="list-style-type: none"> ▶ May have lower delays and queues than other forms of intersection control. ▶ Can reduce lane requirements between intersections, including bridges between interchange ramp terminals. ▶ Creates the possibility for adjacent signals to operate with more efficient cycle lengths where the roundabout replaces a signal that is setting the controlling cycle length. 	<ul style="list-style-type: none"> ▶ Equal priority for all approaches can reduce the progression for high volume approaches. ▶ Cannot provide explicit priority to specific users such as trains, emergency vehicles, transit or pedestrians unless supplemental traffic control devices are provided.
Access Management	
<ul style="list-style-type: none"> ▶ Facilitates U-turns that can substitute for more difficult mid-block left turns. 	<ul style="list-style-type: none"> ▶ May reduce the number of available gaps for mid-block unsignalized intersections and driveways.
Environmental Factors	
<ul style="list-style-type: none"> ▶ Noise, air quality impacts, and fuel consumption may be reduced. ▶ Little stopping during off-peak periods. 	<ul style="list-style-type: none"> ▶ Possible impacts to natural and cultural resources due to greater spatial requirements at intersections.
Traffic Calming	
<ul style="list-style-type: none"> ▶ Reduced vehicular speeds. ▶ Beneficial in transition areas by reinforcing the notion of a significant change in driving environment. 	<ul style="list-style-type: none"> ▶ More expensive than other traffic calming treatments.

Space	
<ul style="list-style-type: none"> ▶ Often requires less queue storage space on intersection approaches—can allow for closer intersection and access spacing. ▶ Reduces the need for additional right-of-way between links of intersections. ▶ More feasibility to accommodate parking, wider sidewalks, planter strips, wider outside lanes, or bicycle lanes on approaches. 	<ul style="list-style-type: none"> ▶ Often requires more space at the intersection itself than other intersection treatments.
Operations and Maintenance	
<ul style="list-style-type: none"> ▶ No signal hardware or equipment maintenance. 	<ul style="list-style-type: none"> ▶ May require landscape maintenance.

Source: NCHRP report 672, Roundabouts an Informational Guide

7.4 Initial Feasibility Screening of Roundabouts

Before efforts are put into the full-scale design of a roundabout, a planning level feasibility assessment will help to determine if a roundabout is a viable alternative to consider. The discussion below provides a guideline for testing the feasibility of a roundabout, and also includes a methodology for making a planning level benefit-cost assessment.

7.4.1 Guidelines for Preliminary Decision Making

Below is a list of considerations that will guide preliminary decision making when planning for a roundabout in Simcoe County. Within each guideline, there are several elements that should be used as a checklist to determine whether a roundabout is a feasible alternative.

- ▶ **Consider the context:** NCHRP 672 identifies three types of contextual decision environments for a roundabout: first, when a roundabout is being considered for a new roadway; second, when a roundabout is the first in the area; and lastly when a roundabout will retrofit an existing stop-controlled or signalized intersection. For Simcoe County, the second context no longer applies since Highway 26 and Poplar Road both have roundabouts. Therefore, only new or retrofit roundabouts will apply as shown in **Table 7.4.1-1**.

Table 7.4.1-1: Advantages and Disadvantages of a Roundabout

Context	Elements to consider	Recommendation
For a new roadway ^a	Right-of-way easier to acquire	Feasible alternative
	No site specific problem to address	Feasible alternative
	Single-lane vs. multi-lane	Investigate further
Retrofit an existing intersection ^b	Right-of-way and utility conflicts	Investigate further
	Successful implementation history	Feasible alternative
	Existing vs. future conditions	Investigate further

Context	Elements to consider	Recommendation
	Site context such as grade or topography	Investigate further
<p>^a Fewer constraints are imposed when the roadway is not a part of the existing system, hence planning for a roundabout offers more flexibility. NCHRP 672.</p> <p>^b This is context where a site specific solution is being sought, lessons from previous implementation history will help plan for new implementations. NCHRP 672.</p>		

- ▶ **Safety Considerations:** Roundabouts are generally safer than signalized or stop-controlled intersections due to slower speeds and fewer vehicular conflict points. That being said, safety needs to be evaluated when planning for a roundabout in order to accommodate for non-motorized modes of transportation such as walking and cycling. Safety should also be evaluated for a visually impaired pedestrian, because unlike at a traffic signal, roundabouts do not have hardware devices such as pushbuttons or audible walk signals to facilitate street crossings for such individuals. **Table 7.4.1-2** outlines some of the safety elements and recommendations to consider.

Table 7.4.1-2: Safety Considerations of a Roundabout

Safety	Elements to consider	Recommendation
Poor crash history (with injury crashes) at a two-way stop controlled or signalized intersection with a high proportion of crashes ^a	Right-angle crashes	Feasible alternative
	Left-turn crashes	Feasible alternative
	Red light or stop sign running	Feasible alternative
Non-motorized users	High volume of pedestrians and vehicles	Investigate further
	Sight-impaired pedestrians	Investigate further
	Accommodate bicycles	Investigate further
<p>^a Four-way stop intersections and roundabouts have similar crash histories, whereas two-way stop controlled and signalized intersections have much higher crash rates than roundabouts. NCHRP 672.</p>		

- ▶ **Traffic operations:** The operation of vehicular traffic at a roundabout is primarily guided by gap acceptance. Since the traffic circulating in a roundabout does not come to a complete stop, unlike in the case of a signalized or stop-controlled intersection, roundabouts offer operational efficiencies. Consideration should also be given to unique circumstances such as the proximity to a railroad crossing, for example, when planning for a roundabout. In such cases, the operational assessment will need to take the rail crossing into consideration for analysis. **Table 7.4.1-3** outlines some of the traffic operation elements and recommendations to consider.

Table 7.4.1-3: Traffic Operation Considerations of a Roundabout

Operations	Elements to consider	Recommendation
Proximity to existing traffic signals ^a	Where queue may extend	Investigate further
	Within a coordinated signal system	Investigate further
	Where continuous movement of traffic facilitates progression	Feasible alternative
	Where modification to existing signal timings is needed for adjoining intersection	Investigate further
Vehicular turning movements ^b	High volume of U-turns	Feasible alternative
	High volume of left turning vehicles	Feasible alternative
	Intersections with higher traffic and delay but with relatively balanced traffic volumes on all approaches	Feasible alternative
^a Introduction of a roundabout in a coordinated traffic system may benefit the system, since roundabouts disperse and rearrange platoons of traffic. NCHRP 672. ^b Since all intersection movements in a roundabout have equal priority roundabouts can be beneficial since it facilitates movement of traffic in a continuous fashion. NCHRP 672.		



- ▶ **Geometric considerations:** Designing a roundabout involves a balancing act between various factors. However, a planning level design assessment should be made by considering the various geometric parameters highlighted below. Situations such as a skewed approach at a crossing will factor in as one key geometric consideration. In some instances, re-aligning the roadway can be a cost-prohibitive factor and, thus, a roundabout may not be the feasible alternative. **Table 7.4.1-4** outlines some of the geometric elements and recommendations to consider.

Table 7.4.1-4: Geometrics Considerations of a Roundabout

Geometric	Elements to consider	Recommendation
Intersection geometry	More than four legs	Feasible alternative
	Skewed intersection	Investigate further
	Within 100 feet of a driveway	Feasible alternative
	Limited sight distance	Not feasible

- ▶ **Roadway and environmental factors:** Roadway conditions such as speed differentials and environmental factors such as an upcoming development are examples of external factors that must be considered in roundabout planning. As listed in the checklist below, if a roundabout is being considered in a future development, then its viability with the projected growth in traffic needs to be considered as well. **Table 7.4.1-5** outlines some of the roadway and environmental elements and recommendations to consider.

Table 7.4.1-5: Roadway and Environmental Factors of a Roundabout

Roadway and Environmental Factors	Elements to consider	Recommendation
Speed and speed changes	Rural to urban	Feasible alternative
	High speed approaches	Feasible alternative
	Land use change such as rural to semi-urban	Feasible alternative
School zones	Near school zones	Feasible alternative
In specific settings	Interchange ramp terminals	Feasible alternative
	Suburban municipalities and small towns	Investigate further
	Rural settings and small communities	Feasible alternative
Developing areas	Traffic volume and pattern is expected to change	Investigate further
Railroad crossings	With pre-emption	Investigate further
	Crossing the intersection	Investigate further
	Near an approach leg	Investigate further

Benefit-cost Assessment

A benefit-cost (B-C) assessment at the planning level will help assess the economic viability of a roundabout over other intersection controls. Benefits associated with roundabouts are:

- ▶ Reduction in crashes and their severity; and
- ▶ Reduced delay, stops, fuel consumption and emissions.
- ▶
- ▶ The costs associated with roundabouts may include:
 - ▶ Cost of land acquisition; and
 - ▶ Construction and design fees plus operation and maintenance costs.

The benefit-cost assessment can be made by using the equation noted below. Each alternative should be compared to a no-build scenario first. Alternatives for which the B-C ratio is greater than 1.0 should then undergo a paired comparison to choose the most feasible option. Ranking the alternatives this way will help assess the incremental benefit-cost between various options.

$$\frac{\textit{Benefit}}{\textit{Cost}} B \rightarrow A = \frac{\textit{Benefits (B)} - \textit{Benefits (A)}}{\textit{Costs (B)} - \textit{Costs (A)}}$$

For example, let us assume that we are considering two roundabout options for a particular location. Each option will be an Alternative B at first, and individually compared to the no-build option Alternative A. If both roundabout options qualify as a better alternative to a no-build scenario, they will now be evaluated in pairs to choose between the two.

7.4.2 Estimating Benefits

Safety benefits can be determined by calculating the expected benefits from a reduction in crash rate and the level of severity. Generally, lower speeds in roundabouts translate into a lower number and decreased severity of crashes. The direct and indirect economic cost of a crash needs to be ascertained. This data can be gathered from the previous crash history in a jurisdiction. Once this step is complete and a dollar amount has been determined, the expected benefits from a reduced number of crashes in the future as a result of the roundabout need to be determined. This difference ($\Delta = \$$ value of before crashes - $\$$ value of after crashes) is then adjusted by annualizing the cost over the lifecycle of the roundabout.

Operational benefits can be calculated by estimating the total number of vehicle hours that are saved that are otherwise lost in the delay time that a vehicle experiences at a traffic signal or a stop-controlled intersection. The savings from fuel consumption and emission can be similarly computed by multiplying the savings in vehicle hours with the fuel cost. These dollar amounts are again annualized and discounted for inflation over the lifecycle of the facility.

7.4.3 Estimating Costs

Construction costs are estimated by considering standard constructing cost estimation measures such as the cost of paving, signing, markings, earthwork, materials, etc. This dollar amount needs to be converted to a *capital recovery factor* (CRF) by annualizing it over the project service life by using a discount rate.

Operation and maintenance costs associated with a roundabout are somewhat different than that of a traditional traffic signal or stop-controlled intersection. For example, a roundabout does not have any signal hardware to maintain. However, a roundabout may have higher maintenance costs associated with signing and markings. The cost of illuminating a roundabout will depend on the design, and needs to be considered when developing cost estimates. For maintenance costs that are associated with a typical roundabout design, we recommend that Simcoe County compare the costs to those of other roundabouts in the County or nearby jurisdictions. **Figure 7.4.3-1** provides a sketch level depiction of the methodology for a benefit-cost assessment.

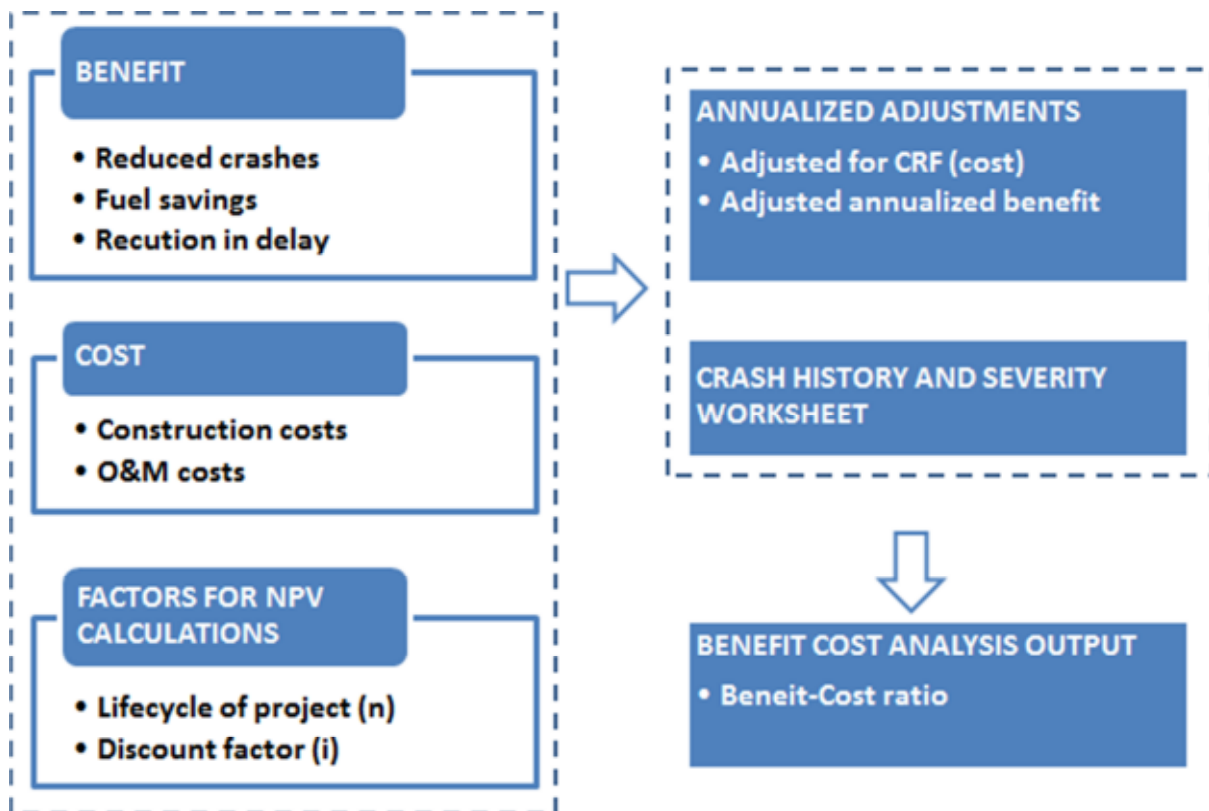


Figure 7.4.3-1: Inputs and Various Steps for a Benefit-Cost Analysis

7.5 Next Steps – From Planning to Implementation

After an initial screening analysis and a sketch level benefit-cost assessment, if it is determined that a roundabout is feasible then the following steps should be taken to move from the planning to the implementation stage.

7.5.1 Operational Analysis

A detailed operational analysis is the first step prior to the engineering design. Highlights of some elements to be considered are:

- ▶ After gathering the data, convert turning movement counts into entry flow and circulating flow for each approach to conduct a capacity analysis of the roundabout;
- ▶ Based on the capacity analysis, identify whether to design for a single-lane or a double-lane roundabout;
- ▶ Conduct a performance analysis to measure the degree of saturation, delay and queue length on each approach. Software such as SIDRA, RODEL or ARCADY are widely accepted programs that are used in North America; and
- ▶ Identify geometric design parameters such as approach roadway width, roadway curvature, width of central-island etc.

7.5.2 Detailed Engineering Design

Roundabout design is an iterative process. While the basic form of a roundabout is similar for all situations, the key design features that were noted earlier in this section need careful consideration in the detailed design process. Some key elements are:

- ▶ Determine the appropriate alignment and arrangement of each approach;
- ▶ Identify the design vehicle, path of the vehicle and the speed that needs to be achieved;
- ▶ Plan for designing various elements for non-motorized users such as pedestrians and cyclists;
- ▶ Define various geometric elements such as inscribed circle diameter, entry width, length of flare, circulatory roadway width, entry curves, exit curves, splitter islands etc., for the detailed design;
- ▶ Check for appropriate sight distances when designing the approach legs of the roundabout; and
- ▶ Typical engineering design of a roundabout will incorporate signing, marking, illumination, traffic control and landscaping plans.

7.5.3 Construction and Maintenance

Upon commissioning the construction of a roundabout, it is very important for a qualified engineer to be on site to supervise the construction in close co-ordination with the design engineer. Minor deviations in implementing various features of a roundabout can derail the optimal performance of the roundabout. For example, if the lane width or entry/exit radius is not implemented correctly it can negatively impact the performance of the facility. Maintenance of a roundabout is different than that of a signalized or stop-controlled intersection. Snow removal re-marking and maintaining the landscaping are all elements that need regular monitoring and attention.

7.5.4 Generating Public Awareness

Public awareness and education are the biggest hurdles for a jurisdiction to overcome when implementing a roundabout. A lack of awareness on how to properly maneuver through a roundabout is the biggest barrier to success. On the contrary, if a jurisdiction has already implemented one successfully then it is well positioned for the consideration of more roundabouts. MTO has recently installed three roundabouts on Highway 26 and this puts the County at an advantage since many members of the public are already familiar with their proper use. However, there is a level of public outreach that is required with every new roundabout that is proposed. Therefore, it is recommended that the County plan for public meetings, promotional materials and media announcements once a design has been commissioned.

7.6 Examples of Roundabouts in Canada and Resources

With increasing awareness about roundabouts in many Canadian jurisdictions, it is now easier to educate the public. The Region of Waterloo and the City of Hamilton are two leading examples in Ontario that have made significant headway with successfully implementing roundabouts. Simcoe County can draw upon the successes and failure of these jurisdictions. **Appendix F** presents examples from various locations in Canada where roundabouts have been implemented. As seen from the case studies, both single and double-lane roundabouts have been implemented in both rural and urban settings. Salient features are highlighted for each case study.

Potential locations in Simcoe County where roundabouts may be considered are listed below. We recommend that each location be evaluated on a case-by-case basis to determine its feasibility.

- ▶ CR27/CR88 (Bond Head)
- ▶ CR90/CR27 (Springwater)

Appendix F provides a list of resources on roundabouts. The publications that are listed in the table are key sources that are used as guidelines for the planning and design of roundabouts in North America, and these are widely accepted in Canada by various provinces as well. We have also included information from the Ministries of Transportation in Ontario, Alberta and British Columbia, as well as jurisdictions such as the cities of Hamilton and Calgary plus the Regions of Waterloo and Durham. Pointers are given to resources posted on their web portal specific to roundabouts.

7.7 Recommendation

Use the roundabout toolkit provided in this chapter, beginning with the initial feasibility screening and progressing to planning and implementation, to determine appropriate locations for roundabouts when the County is considering new or enhanced traffic control measures at intersections on County roads.



8.0 THE FUTURE OF TRANSIT

8.1 Introduction

With a land area larger than the state of Delaware and slightly smaller than that of Prince Edward Island, the County of Simcoe has large expanses of relatively undeveloped areas with very low population densities. However, the County’s blend of geographic, economic and recreational opportunity located in close proximity to the Greater Toronto & Hamilton Area (GTHA), has also created a collection of dispersed cities, towns and villages, many with a growing population and employment base. As these urban areas have evolved, some municipalities have made decisions to provide transit services to their communities.

Transit in Simcoe County has traditionally been localized and limited to municipal transit services in larger urban areas (i.e. Barrie, Orillia, etc.), with inter-community links provided by private coach carriers such as Greyhound, Getaway Coach Lines, Hammond, etc.. In the past decade, increasing growth, higher development densities and a renewed focus on sustainable transportation has propelled a few of Simcoe County’s medium-sized communities towards starting their own transit systems. These factors have also caused the provincial government to re-invest in GO rail and bus service between the Simcoe Area (Simcoe County, Barrie, and Orillia) and the Greater Golden Horseshoe Area. These existing transit services are summarized below:

Municipal Transit

- ▶ City of Barrie;
- ▶ City of Orillia;
- ▶ Town of Bradford West Gwillimbury;
- ▶ Town of Collingwood;
- ▶ Town of Midland; and
- ▶ Town of Wasaga Beach.

Municipal Inter-Community Links

- ▶ Barrie ↔ Angus/CFB Borden;
- ▶ Collingwood ↔ Wasaga Beach; and
- ▶ Collingwood ↔ Town of Blue Mountains.

Other Inter-Community Links

- ▶ Barrie ↔ Elmvale – Midland – Penetanguishene (operated by Hammond Transportation) ;
- ▶ Barrie ↔ Orillia ↔ Casino Rama (operated by Hammond Transportation);
- ▶ Barrie ↔ Toronto (operated by Greyhound Bus Lines);
- ▶ Barrie ↔ Orillia ↔ Washago (operated by Ontario Northland bus);
- ▶ Barrie ↔ Fergusonvale ↔ Elmvale ↔ Wasaga Beach – Stayner – Collingwood (operated by Greyhound Bus Lines); and
- ▶ Huntsville ↔ Bracebridge ↔ Gravenhurst ↔ Washago ↔ Orillia ↔ Barrie (“Corridor 11 Bus” Operated by Hammond Transportation).

Inter-Regional Routes

- ▶ Barrie Allandale ↔ Barrie South ↔ Bradford ↔ Newmarket/Toronto (GO Rail Service);
- ▶ Barrie ↔ Innisfil ↔ Bradford – Newmarket/Toronto (GO Bus Service);
- ▶ Toronto ↔ Washago ↔ Parry Sound ↔ Jasper ↔ Vancouver (VIA Rail); and
- ▶ Private Charter Coach route extensions between GTA and Simcoe County.

In addition to the above, demand-responsive door-to-door services also exist to accommodate people with disabilities. Through these services, Simcoe Area residents are able to travel within the County through services provided by not-for-profit, volunteers, medical-related, and social service government agencies. However, those that are unable to drive (seniors) and those that cannot afford to drive (under-employed) are less fortunate, falling into a gap area.

In Simcoe County, the Northern Simcoe Muskoka Local Health Integrated Network plays a role in providing transportation for medical purposes to the majority of the County. The County’s southern communities are a part of the Central Health Integration Network. In recent years, these Local Health Integration Network, have commenced their own initiatives, primarily focused on the coordinating services and dispatching, as well as exploring new ways to achieve better efficiencies with existing or shared resources. The Simcoe County Social Services Division also subsidizes bus passes for residents that use transit services in Collingwood and Wasaga Beach. Seniors residences, such as the County’s Long-term Care facilities, may also have vans or small buses that provide residents/ clients with affordable transportation. These are just three examples of services available to residents; however, not all residents in need have accessible and affordable transportation.

Those unable to drive are at risk of being forced to move to where affordable public transportation is available or where access to goods and services can be accommodated by walking or short taxi trips. The exodus could be to other small communities in the County that have public transit available or they may simply move out of the

County. This phenomenon is not unique and plays out across the country. Transit can be relatively expensive and as such, there is reluctance for smaller and low density rural townships to invest in public transportation due to limited financial resources. The cost of providing a transit service is significant and can be difficult for municipalities to absorb. However, with the cost of owning an automobile continuing to rise, transit will be an essential lifeline to many residents, particularly those that are aging, under-employed, young, or simply cannot drive. Therefore, with an aging, and growing population, it is imperative that the County work together with its municipalities to share the responsibility in establishing better transit connections in the future.

8.2 A New Transit Approach

Transit service within Simcoe County can be categorized into three context-based groups, each requiring a tailored approach and recommendations to enable action and change (excludes para-transit for the people requiring enhanced access to services):

- ▶ **Community Level:** Street-to-street bus routes with frequent stops within a community or municipality;
- ▶ **Inter-Community Level:** Routes connecting communities across greater distances within Simcoe County; and
- ▶ **Inter-Regional Level:** Major commuter routes that cross regional boundaries.

Based on the comments received from stakeholders and the public, a consistent theme emerged centering on a desire for new or increased transit service(s) in Simcoe County. There is a need for the County to enhance and expand its role in providing transit services to the residents of Simcoe County. The TMP Update recommends that the County's role in Transit be applied at the Community Level as a Facilitator; at the Inter-Community Level as a Driver; and, at the Inter-Regional Level as a Collaborator.

Ultimately, Community Transit Node Areas will be formed around areas of higher population & employment growth and densities. Each Node Area is served by a local municipal transit operator, co-funded by the benefiting municipalities and the County of Simcoe, and managed by Community Transit Node Committees.

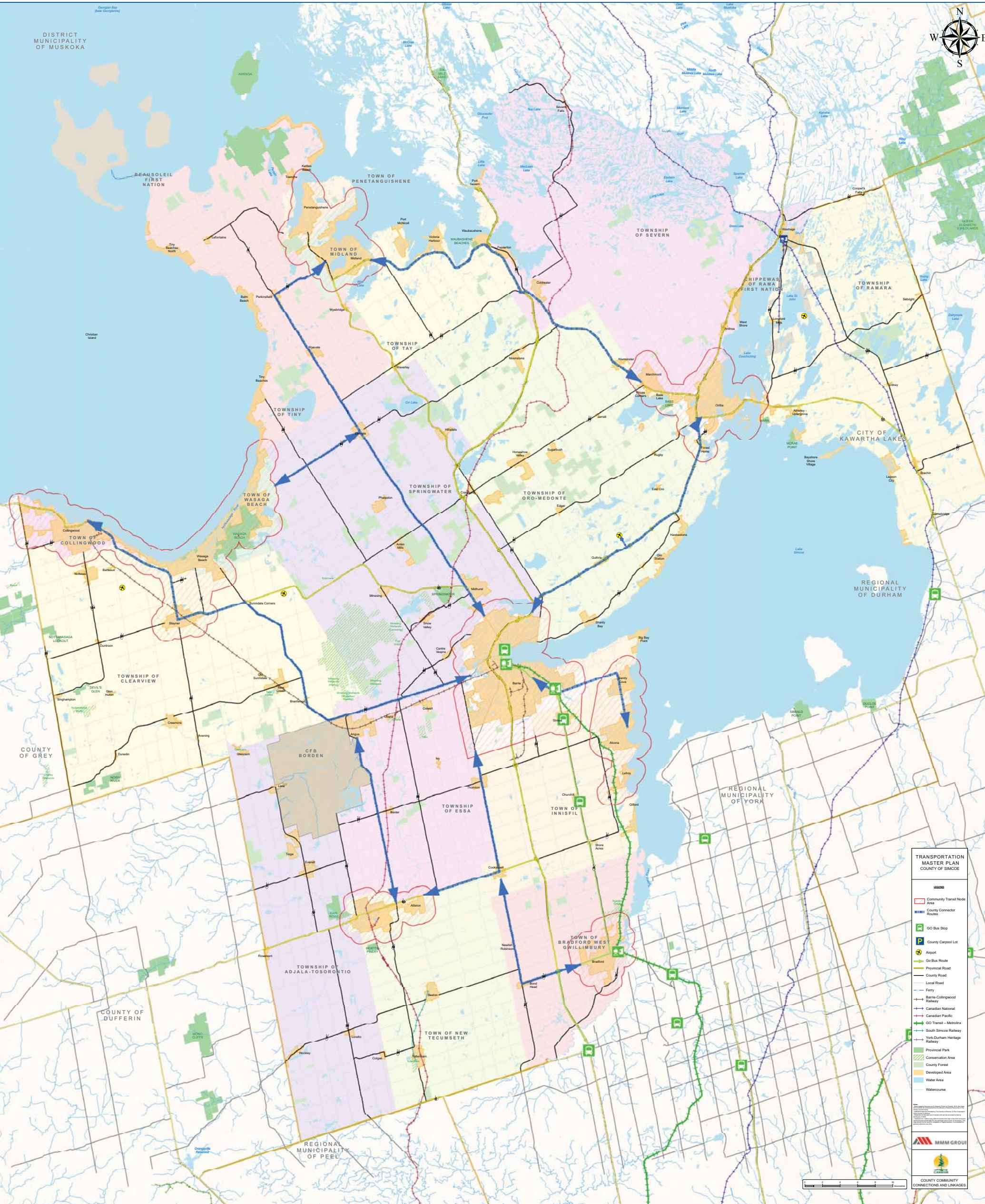
At the Inter-Community Level, it is recommended the County connect each Community Transit Node Area with County Connector transit routes. Operationally funded by the County and other partners, such routes would provide longer-distance “express” routes to the jobs, services, and opportunities at the larger centres and destinations around the County.

At the Inter-Regional Level, it is recommended the County continue to advocate for better transit connections to the Greater Toronto Area. Most notably, the County should actively pursue expansion of GO Transit service into the Simcoe Area the next update of the Big Move, Metrolinx's transportation plan.

8.3 Community Transit Role - Facilitator

As the County's communities evolve and develop in the future, this new growth may highlight an increased need to better connect residents to their daily or weekly destinations – places within the community where they live, work, shop, play or socialize. For many communities, better connections will occur through the creation of more walkable neighbourhoods, livable streets and mixed use development. Some communities may have other factors that propel them to consider transit at an earlier point. These communities have reached a threshold of population & employment growth and density, as well as traffic congestion or demographic needs.

However, with stressed financial resources at the municipal level, it can be difficult for municipal representatives to bear the burden of even exploring the viability of transit. The County has been, and should continue to be, a partner with those municipalities that would like to either investigate the establishment of a new community-level transit service (i.e. Transit Feasibility and Implementation Study) or test the community's appetite for an expansion to an existing service (i.e. defined term pilot project). County funding needs to be made available for such initiatives through a formal process and/or program administered by County staff. While the amount of funding provided is subject to County Council budget priorities, sufficient funds should be set aside over the next 5 years to ensure municipal transit service for each of the Community Transit Node Areas is either investigated and/or expanded to the extent noted on **Figure 8.3-1**.



**TRANSPORTATION MASTER PLAN
COUNTY OF SIMCOE**

LEGEND

- Community Transit Node Area
- County Connector Routes
- GO Bus Stop
- County Carpool Lot
- Airport
- GO Bus Route
- Provincial Road
- County Road
- Local Road
- Ferry
- Barrie-Collingwood Railway
- Canadian National
- Canadian Pacific
- GO Transit - Metrolinx
- South Simcoe Railway
- York-Durham Heritage Railway
- Provincial Park
- Conservation Area
- County Forest
- Developed Area
- Water Area
- Watercourse

MMM GROUP

COUNTY COMMUNITY CONNECTIONS AND LINKAGES

8.3.1 Community Transit Node Areas

In the near future, community transit should be explored and/or established in areas that are most likely to need and support municipal transit. Based on existing settlement patterns, population projections, and anticipated travel characteristics (i.e. where people will need to go), these areas are conceptually described as the following:

- ▶ Barrie & Midhurst Community Transit Node Area
- ▶ Bradford Community Transit Node Area
- ▶ Orillia & Area Community Transit Node Area
- ▶ South Georgian Bay Community Transit Node Area
- ▶ Midland-Penetanguishene Community Transit Node Area
- ▶ Alliston Community Transit Node Area
- ▶ Innisfil Community Transit Node Area

Many of the existing services providing the foundation for the Community Transit Node Areas will need to be expanded, reaching across municipal boundaries. As a result, most of the Node Areas will require further study to some degree to more accurately identify traveler demand, destinations and detailed routes into the expansion areas. Investigation into the specific aspects of providing service within each of the Community Transit Nodes should be led by the County as part of a two stage County of Simcoe Transit Study, described further later in this chapter. However, the South Georgian Bay Community Transit Node Area effectively already exists as a result of the commitment and partnership between Collingwood Transit (CollTrans) and Wasaga Beach Transit. An expansion into Clearview Township (Stayner) is required to achieve the geographic area envisioned as the South Georgian Bay Community Transit Node Area. As such, it is recommended that the County work with the Town of Collingwood, Town of Wasaga Beach and Township of Clearview to explore and initiated coordinated transit in advance of the County of Simcoe Transit Study. The lessons learned through this pilot will provide valuable information for implementation of coordinated transit in the other Community Transit Node Areas.

Management of these Node Areas is best achieved by having representatives from each municipality within the Community Transit Node Area sit on a transit management committee. Other committee members should include a representative from the County of Simcoe and the Simcoe County Student Transportation Consortium; sit on a Community Transit Node Committee for each Node Area identified above. Issues related to route optimization, capital needs, and overall coordination can be dealt with much more effectively in a committee structure where all funding and benefiting parties are represented. Also, fare integration is something to be seriously investigated to both improve convenience for riders as well as streamline the financial aspects of transit service.

RECOMMENDATION: Formalize transit funding program using established County transit budget funds to undertake transit investigations/studies for Community Transit Node Areas as a funding partner with municipalities

ACTIONS:

- ▶ **2014** – Ensure sufficient funds are planned for 2015 County budget; unused funds directed to a Transit Reserve Fund on annual basis for future initiatives
- ▶ **2015** – Establish formal program with consistent eligibility criteria and reporting structure
- ▶ **2015** – Pursue completion of transit planning studies for emerging Community Transit Node Areas
- ▶ **2015** – South Georgian Bay Community Transit Node Area
- ▶ **2015** – Midland-Penetanguishene Community Transit Node Area
- ▶ **2016** – Monitor success of program and revise criteria and/or objectives to ensure program success is optimized
- ▶ **2016-2020** – Pursue completion of transit planning studies for other Community Transit Node Areas

RECOMMENDATION: Identify and equip County staff resource(s) to coordinate and manage the transit recommendations of the Transportation Master Plan Update Study.

ACTIONS:

- ▶ **2014/2015** – Determine budget required to dedicate County staff resource(s)
- ▶ **2015** – Obtain budget approval from County Council

RECOMMENDATION: Cultivate transit-supportive policies and design guidelines for use in planning documents.

ACTION(S):

- ▶ **2015** – Develop model transit-supportive policies for inclusion in local municipal official plans
- ▶ **2016** – Create model design guidelines and criteria to accommodate transit

RECOMMENDATION: County of Simcoe should partner with educational institutions and existing municipal transit providers to implement transit pass subsidy for students, seniors, Social Services clients.

ACTION(S):

- ▶ **2014** – County staff review existing statistics to target expansion of program; Contact local municipal transit service provider.
- ▶ **2015** – Review & Monitor success of program; Address issues if required; Consider expanding program to additional client groups.

8.4 Inter-community Transit Role - Driver

The growth of many of the County's settlement areas and the establishment of Community Transit Node Areas will address some of the residents' transportation needs. However, many people will still need to travel across the County to other centres and destinations for work, school, health care, or a variety of other reasons. This path leaned heavily on establishing partnerships with private coach operators (i.e. Greyhound, PMCL, Ontario Northland, etc.). To ensure effective coordination, as well as funding commitment and stability, it is recommended that the County of Simcoe be the driving force in exploring, funding, and implementing inter-community municipal transit service. This service is conceptually outlined as indicated by the County Connector Routes on **Figure 8.1**. However, the precise path of these County Connector Routes, route details, and governance structure needs to be refined in a County of Simcoe Transit Study.

8.4.1 County of Simcoe Transit Study

The need for transit across the County, connecting the served by Community Transit Node Areas, has been clearly expressed by numerous stakeholders. Therefore, it is recommended that the County of Simcoe undertake a Transit Study to further explore and refine the details of how transit can be optimally provided to meet the needs of the Simcoe Area's residents. The Study should occur in 2 stages:

Stage 1 – Community Transit Node Areas

- ▶ Investigate feasibility of providing new transit service in the Alliston area and the Innisfil area
- ▶ Outline transit coordination between Midland and Penetanguishene
- ▶ Determine feasibility and implementation of expanded transit service in other Community Transit Node Areas
- ▶ Recommend optimal governance and operation structure (i.e. partnership, municipal services board, contracted services, etc.)

Stage 2 – County Connections

- ▶ Confirm any other funding sources to supplement County funding

A Transit Working Group could be established to provide a) input in outlining the Terms of Reference for the Transit Study; and, b) a venue for collaboration and a mechanism for collective input. Over the long-term, the composition of a Transit Working Group could evolve to include representatives from the County of Simcoe and each Community Transit Node Area committee.

The Barrie-Collingwood Railway (BCRY) is a primary asset that can contribute to providing efficient transit service at the inter-community level. Use and ownership of the BCRY can be divided into two separate segments.

- ▶ Barrie ↔ Utopia
- ▶ Use: Active Rail Traffic (operated by Cando Rail Services Ltd.) servicing industrial locations within the Simcoe Area
- ▶ Ownership: City of Barrie (Allandale Community Development Corporation)

- ▶ Collingwood ↔ Utopia
- ▶ Use: Inactive
- ▶ Ownership: Town of Collingwood

The Town of Collingwood ceased active railway operations of its segment of the BCRY in 2011 due to financial reasons. Considering the age and state of the track, particularly in the Collingwood – Utopia segment, future rail transit service along the BCRY would require very significant reinvestment. However, the corridor still represents a unique opportunity to connect the County’s western municipalities. Therefore, it is recommended that the County purchase the Collingwood – Utopia segment of the BCRY. The County of Simcoe and the City of Barrie should also jointly develop a Long-term Viability & Management Plan for the BCRY, with a focus on investigating the long-term viability of rail operations along the corridor and the feasibility of integrating active transportation uses along the corridor in the short term. The Plan, in tandem with the County of Simcoe Transit Study, should also assess the viability to repurposing the inactive section(s) of the BCRY as a paved transit busway in future years.

RECOMMENDATION: Pursue long-term evolution as a system of sub-regional Transit Cooperative(s) with funding partners.

ACTIONS:

- ▶ **Ongoing** -- Monitor and act on emerging Inter-Community links as they evolve (Midland-Penetanguishene, Barrie-Midhurst, Orillia & area, etc.)
- ▶ **2016** – Review success of County involvement in transit service & cross-jurisdictional issues; recalibrate approach based on lessons learned
- ▶ **2017** – Consider the creation of additional Transit Cooperative(s), centered on Primary Settlement Areas

RECOMMENDATION: Establish a long-term Management Plan for the Barrie-Collingwood Railway (BCRY), including different uses in the short-term, medium term, and long-term.

ACTIONS:

- ▶ **2014** – County finalize purchase of BCRY; Finalize Terms of Reference for BCRY Viability & Management Plan; Initiate Study
- ▶ **2015**– Finalize BCRY Viability & Management Plan
- ▶ **2015** – Ensure corridor uses are considered in relevant planning documents (local Official Plans & County Official Plan)

RECOMMENDATION: Create and facilitate Simcoe Transit Working Group (municipal operators, private operators, Simcoe County Student Transportation Consortium) to engage stakeholders in transit-related initiatives.

ACTIONS:

- ▶ **2014** – Create list of stakeholders; assign County staff resource as primary contact/facilitator
- ▶ **2014** – Draft Terms of Reference for 2 stage County of Simcoe Transit Study with input from Transit Working Group
- ▶ **2014** – Schedule regular meetings as necessary
- ▶ **2015/2016** – Engage group in Transit Study as a resource

RECOMMENDATION: Investigate opportunities to subsidize transit trips (public operator) and inter-community transit trips (private operator) for higher needs sectors of the population (Ontario Works, ODSP recipients, seniors, students).

ACTIONS:

- ▶ **2015** – refine database and map of existing routes & carriers
- ▶ **2015** – identify potential routes that connect Primary Settlement Areas and other communities not serviced by transit
- ▶ **2015** – initiate discussions with private coach operators; obtain cost estimates to partially subsidize specific primary routes; existing routes could be retooled to maximize benefit to residents along the route;
- ▶ **2015** – investigate investment required to establish new routes through public/private partnership
- ▶ **2015** – incorporate cost estimates into County of Simcoe 2016 budget considerations
- ▶ **2016** – implementation of basic inter-community transit service operated by private coach

RECOMMENDATION: Work with local municipalities to preserve and plan transit stops/hubs in Community Transit Service Nodes and settlement areas along County Connector Routes and local municipal growth nodes.

ACTIONS:

- ▶ **2014/2015** – Incorporate transit supportive policies and designate Inter-Community Transit hubs into local municipal Official Plans.
- ▶ **Ongoing** - Ensure County and Provincial commuter/carpool lots have considered transit operations and facilities in their design

8.5 Inter-regional Transit Role – Change Agent

RECOMMENDATION: Advocate more actively for increased Metrolinx investment in Simcoe County.

ACTIONS:

- ▶ **2014** – Request semi-annual meetings with Metrolinx & GO Transit staff to ensure planning and operational needs are integrated
- ▶ **2015** – Engage Metrolinx in development of BCRY Viability & Management Plan
- ▶ **2015** – Coordinate with City of Barrie for additional GO Rail service/station along BCRY in central/west area of Barrie
- ▶ **2015** – Prepare staff report in support of request to Metrolinx to include County of Simcoe in any future investments outlined in updates of the “Big Move”
- ▶ **Ongoing** – Advocate for additional GO services (bus or train) to Orillia and the Primary Settlement Areas as population & employment continues. Advocate for two-way service to Bradford and points north.

RECOMMENDATION: Forge better working dialogue with City of Barrie and City of Orillia regarding Transit operations and potential enhancements that could be established that would benefit Simcoe Area residents.

ACTIONS:

- ▶ **Ongoing** – Coordinate discussion and opportunities with the Simcoe Transit Working Group to identify appropriate partners and funding required

8.6 Long-term Direction

Looking ahead to the long-term horizon, Simcoe County will be a well-connected region. The County's Primary Settlement Areas and municipal growth nodes will be the focus of higher-density growth with diverse economies and a variety of services and amenities. Areas of urban growth should move towards community transit services funded by local municipalities or Transit Service Boards. Residents should be able to travel from community to community for work, school, health, or recreational purposes without being wholly dependent on the automobile. The vastness of the County of Simcoe's geographic area is such that its rural areas will likely remain without transit service.

Long term transit ideas could include extending GO Rail service to the City of Orillia and utilizing existing freight rail lines for GO Rail service to other parts of the county. Depending on how the BCRY is used in the future, it could be considered as a Bus Rapid Transit Corridor with an active transportation facility sharing the corridor. These ideas are presented in **Figure 8.6-1**.

While establishing long-term recommendations is not practical, it is imperative to ensure the decisions made during the actionable life of this plan (approximately 5 years) do not compromise the County of Simcoe's ability to reach the future vision for transit that remains on the horizon. As such, the highlights of the Long Term transit vision include the following:

- ▶ Long-term Plan based on a network of well-connected sub-regional nodes;
- ▶ Express bus services between major communities and destinations;
- ▶ Community level transit would remain, but County, local municipalities, and separated cities need to revise appropriate bylaws, etc. to ensure appropriate authority to operate transit is obtained;
- ▶ Further recommendations dependent on long-term transportation modeling and transit-specific studies; and
- ▶ Further recommendations dependent on long-term transportation modeling and transit-specific studies.



TRANSPORTATION MASTER PLAN COUNTY OF SIMCOE

LEGEND

- GO Transit Station
- VIA Rail Station
- Airport
- Proposed Station
- Proposed Go Transit Station
- Proposed Rail Line
- Proposed Multimodal Transit Hub
- Proposed Bus Route
- Proposed Provincial Road
- Proposed County Road
- Proposed Local Road
- Barrie-Collingwood Railway
- Canadian National Railway
- Canadian Pacific Railway
- GO Transit - Metrolinx
- Orangeville-Brampton Railway
- South Simcoe Railway
- York-Durham Heritage Railway
- Provincial Park
- Conservation Area
- County Forest
- Developed Area
- Water Area

MMM GROUP

HORIZON TRANSIT CONNECTIONS



9.0 ACTIVE TRANSPORTATION

9.1 Active Transportation in Simcoe County: What is the Goal?

As noted in prior sections of the Transportation Master Plan Report, Active Transportation was considered a primary focus for the County and its partners. Input from the online questionnaire, public and stakeholder sessions as well as discussions with County and local staff provided clear direction to move forward with the development of a County-wide network of potential on and off-road Active Transportation routes.

For the purposes of the Transportation Master Plan Update for the County, Active Transportation is defined as:

“All human-powered forms of transportation, in particular walking and cycling. It includes the use of mobility aids such as wheel chairs, and can also encompass other active transport variations such as in-line skating, skateboarding, cross-country skiing, etc.” (Transport Canada)

Active Transportation modes can be accommodated on local and County roads using a number of different facility types. These can range from those that share the space with motorized vehicles such as on-road signed routes, to fully separated facilities such as multi-use trails within the road right-of-way or outside the road right-of-way.

With this in mind, the County and its team of consultants undertook an exercise to establish a proposed AT network concept. The concept is intended to be used as the basis from which a continuous and connected system of on and off-road AT routes and facilities could be formed. The goal of this “initiative” was to build upon:

- ▶ Routes and linkages already developed by the County and its local partners;
- ▶ Policies and plans already in place; and
- ▶ Promotion, tourism and outreach initiatives being undertaken.

The exercise was also used to highlight potential opportunities for future consideration, develop solutions to mitigate challenges and to ultimately identify a high-level network concept made of routes that could be refined to form a formal County-wide Active Transportation network.

9.2 Developing an Active Transportation Network Concept for Simcoe County

A number of key steps were undertaken by the study team to develop the route network concept. These steps make up an iterative network development process which has been used for AT related master plans of various scopes and scales. The process is made up of nine steps of which the first four were completed as part of the Simcoe County Transportation Master Plan Update. **Figure 9.2-1** illustrates the nine-step process and highlights those that were completed to inform the study’s findings.



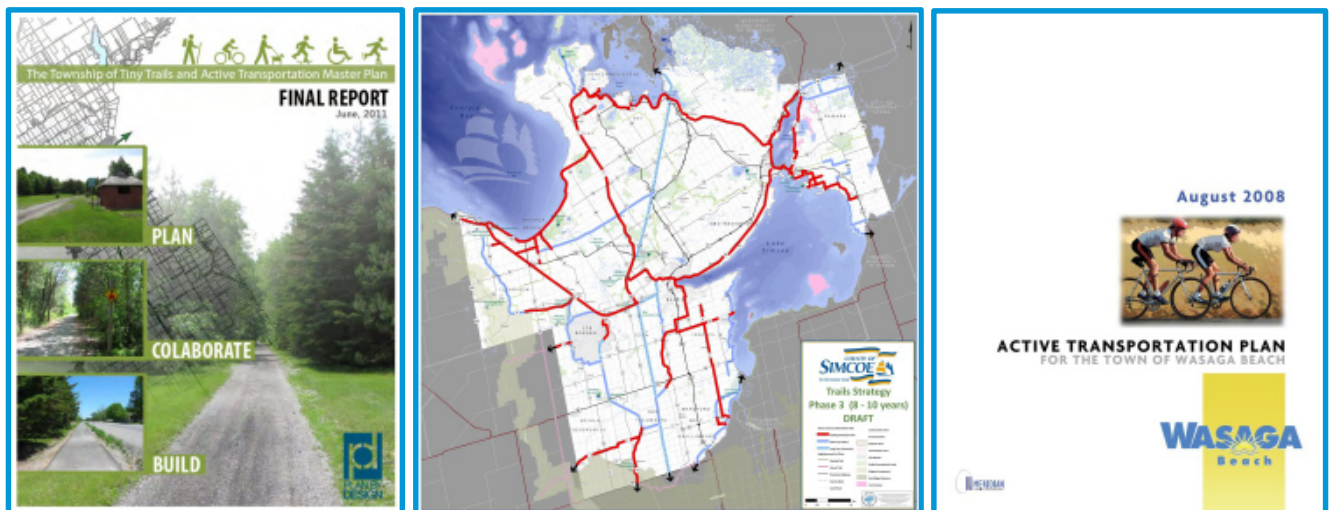
Figure 9.2-1 – Nine-Step Active Transportation Network Development Process

Once the Transportation Master Plan Update has been adopted, the County is encouraged to use the findings and tools related to the design and development of AT facilities included in the plan to develop a formal AT Master Plan. For the steps that were completed, findings have been documented in the following sections.

9.2.1 Step 1 (Part A): Collect & Assemble Background Information

The first step in developing an AT network is the consolidation and review of relevant policies and plans. Once the key information has been consolidated, a database of existing on and off-road AT routes and facilities is developed. As part of the study, a detailed review of relevant policies and plans from all levels of government was completed. Results indicated significant support for the development of alternative modes of transportation including active transportation.

Locally, there are numerous supportive policies and plans including the County’s Draft Trails Strategy, Adjala-Tosoronto Recreation Master Plan, the Bradford West Gwillimbury Trails System Master Plan, the Clearview Culture and Recreation Master Plan, the Collingwood Active Transportation Plan, the Springwater Trails Master Plan, the Tiny Trails and Active Transportation Master Plan, the Midland Green Map, the Township of Ramara Trails Map and the Wasaga Beach AT Master Plan. Their efforts have led to strong local and County-wide support for the design, development and implementation of AT routes for a range of purposes and pursuits – tourism, utilitarian and recreational.



9.2.2 Step 1 (Part B): Document Existing Condition

Following the policy review, the study team worked with County and local municipal staff to develop a consolidated database of existing AT conditions. **Figure 9.2.2-1** illustrates some of the existing on and off-road facilities currently found throughout the County. The facilities were confirmed through extensive consultation with the public, local stakeholders, politicians and staff. This was further refined through a desk-top exercise using Google Earth and Google Maps as well as the County’s Interactive Online Mapping tool. From this, it can be concluded that in recent years, AT directives and initiatives have primarily come from the local level. There are a number of existing on and off-road features found within each of the municipalities which highlight areas of cultural and natural significance.

Findings suggest a total of 529 km of on and off-road AT facilities exist within Simcoe County.

Existing Off-Road Active Transportation Facilities

One of the primary attractions within the County is its extensive trail system. The system is currently defined by three types of trail linkages:



Loop Trails

Trail systems that have the same start and end point typically found in conservation areas, forests, municipal parks or urban areas. Loop trails are typically shorter and can be used to encourage physical activity.

Total Loop Trails: 21



Linear Trails

Continuous long distance trails used typically for hiking, snowmobiling and cycling. They typically use abandoned rail lines and may provide connections to communities using natural areas.

Total Linear Trails: 16



Other

Trail systems found in natural areas within the County including County forests, Conservation Areas, Provincial Wildlife Areas, Provincial Parks, systems owned and maintained by external agencies such as the Trans Canada Trail.

Total Other Trails: 19



Many of the off-road trails are used primarily for recreation and tourism purposes. With a number of long distance off-road routes including the Ramara Rail Trail, Oro-Medonte Rail Trail, North Simcoe Rail Trail, the Thornton-Cookstown Trans Canada Trail, the Bruce Trail and the Ganaraska Trail, the County is committed to developing an inter-connected system of off-road routes. These routes feed into a greater system of provincial routes which can be used to help promote active tourism and economic growth.

The safe use of these routes is heavily promoted by the County and its partner organizations, including Simcoe County Trails (formerly Huronia Trails & Greenways). The Trails Strategy being drafted by the County of Simcoe is intended to provide an overview of existing and potential off-road routes for consideration by the County and its partners. Additional coordination and facilitation regarding the future design connectivity and development of trail facilities should be explored building on the work generated for this report.

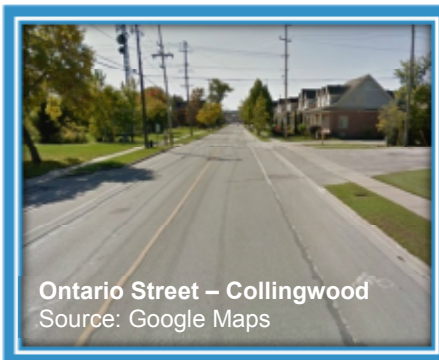
Existing On-Road Active Transportation Facilities

The off-road routes found in Simcoe County are complemented by a system of on-road linkages. To date, approximately 98 km of on-road connections can be found within the County including:



Paved Shoulders

Several roadways with rural cross-sections in Simcoe County currently have a 1.2 to 1.5 metre paved shoulder. Some paved shoulders have an additional rumble strip buffer to separate vehicular traffic from cyclists.



Bike Lanes

Bike Lanes have been implemented along municipal roadways in urban areas that have high traffic volumes and high speeds. A number of bike lanes connect to existing facilities, such as off-road multi-use trails in local municipalities.



Share the Road Signage

Some roadways in Simcoe County currently have “Share the Road” signage installed along them (e.g. Sideroad 33 & 34 Nottawasaga). The signs are used to inform motorists to share the roadscape with cyclists.

In the past, the County has primarily focused on recreational trail facility development. The County and its partners are now encouraged to take a lead role in the development of inter-municipal linkages that would provide a system of continuous and connected on-road routes County-wide.



The County is encouraged to use the mapping of existing conditions to update their database of on and off-road route information. This information could also be used to develop a more comprehensive Active Transportation Master Plan, and could inform the development of future updates to existing trail tourism and outreach mapping.

9.2.3 Step 2 (Part A): Identify Potential AT Opportunities & Challenges

Understanding the opportunities and challenges associated with developing AT facilities in Simcoe County was a key component of the development of the network concept. Input was gathered from those responsible for the design, implementation and promotion of AT facilities, public representatives and local stakeholders.

The input gathered not only helps to inform the development of specific on and off-road linkages but also highlights the need for potential outreach, education and promotion initiatives to complement the infrastructure being developed. Opportunities and challenges associated with AT facility development within the County have been divided into two categories - physical and social – and are summarized in **Table 9.2.3-1**.

Table 9.2.3-1: Summary of Active Transportation Opportunities & Challenges in Simcoe County

	Opportunities	Challenges
Social	<ul style="list-style-type: none"> ▶ Support from Local Clubs and Interest Groups ▶ Ongoing Discussion Between the County and its partners ▶ Support from the Simcoe Muskoka District Health Unit ▶ Support from the Regional Tourism Office ▶ Support from the Public ▶ Support from School Boards 	<ul style="list-style-type: none"> ▶ Urban and Rural differences ▶ Aging Population ▶ Internal structures and organizations ▶ Political structures and variation ▶ Cultural acceptance
Physical	<ul style="list-style-type: none"> ▶ Natural Lands / County Forests / Conservation Areas ▶ Waterfront Linkages ▶ Hydro Corridors ▶ Abandoned Rail Lines ▶ Points of Interest ▶ Existing on-road facility design ▶ Varying topography and geography 	<ul style="list-style-type: none"> ▶ Context Sensitive Design Solutions ▶ Varying topography and geography ▶ Truck traffic ▶ Provincial Highways ▶ Weather ▶ Maintenance ▶ Connectivity and continuity ▶ Community design and walkability

It is important to note that in some cases the opportunities and challenges can be the same. These are not conflicting statements but reflect the need for strategic growth and context sensitive solutions in more complex locations which provide direct inter-municipal connections throughout the County.

9.2.4 Step 2 (Part B): Prepare Candidate Active Transportation Routes

Following the documentation of existing on and off-road AT routes and the review of potential route opportunities and challenges, the study team undertook an exercise to identify potential routes which could form part of an AT network for the County. A set of candidate routes were developed by the study team in consultation with staff and stakeholders.

The routes were identified based on a number of key assumptions:

- ▶ Missing links in the existing off-road and on-road system;
- ▶ Direct north-south and east-west connections through the County to bordering municipalities;
- ▶ Direct connections throughout the County to connect local municipalities and key community destinations including prominent tourism draws;
- ▶ Routes which are endorsed by local partners or interest groups based on adopted policies or plans, plus input generated from public and stakeholder consultation;
- ▶ Connections through and over existing barriers such as major waterways or controlled access highways;
- ▶ Off-road opportunities through parks and open spaces as well as abandoned rail corridors and hydro corridors; and
- ▶ On-road connections proposed for routes which have the existing ROW width to accommodate on-road facilities.

The routes were mapped and assessed using the confirmed route selection criteria, professional judgments, input from County and local staff plus the public, as well as a high-level review of roadway characteristics and data.

9.2.5 Step 3: Review & Confirm Route Selection and Prioritization Criteria

The Route Selection Criteria are a set of qualitative principles which are intended to guide the selection, and in some cases the prioritization of routes. The principles were developed to reflect current County TMP Update objectives as well as best practices from projects completed of a similar scope and scale. The criteria developed for the TMPU were confirmed with County staff and presented to members of the public for their consideration.

Table 9.2.5-1 is a summary of the criteria.

Table 9.2.5-1: Active Transportation Route Selection Criteria & Principles

Visible	Active Transportation routes should be a visible component of the transportation system. Active Transportation linkages should be integrated with the planning, design and construction of the County and local municipal transportation systems.
Connected / Linked	The active transportation network should provide residents and visitors with connections to the urban and rural areas of the County, commercial and employment areas, open spaces, significant natural, historic and recreational features, community facilities and tourist destinations.
Easy to Access	Routes should be easily accessible from all local municipalities found within the County. Routes should also be designed as loop connections where possible, plus direct east-west and north-south linkages.
Diverse	The network should appeal to a range of user abilities and interests. This will be achieved by providing a diverse and balanced set of on-road and off-road active transportation linkages.
Integrated	The network should be integrated with other modes of transportation, particularly existing public transit and commuter rail lines. Routes will provide access to existing and future transit facilities and hubs including local buses, GO, VIA Rail etc.
Attractive & Interesting	Routes should take advantage of attractive and scenic areas, views and vistas. Routes should provide users with the opportunity to experience the cultural and natural heritage found throughout the County.
Comfort & Safety	Reducing risk to users and providing comfortable facilities will be a key consideration when selecting routes to form the network. The route responds to active transportation suggestions and recommendations provided by user groups and members of the public.
Accessible	Where feasible, off-road routes will be designed to meet applicable legislation and standards. It is recognized however that not all off-road routes will be accessible in all locations. Off-road routes will be appropriately signed to communicate the level of accessibility.
Context-Sensitive	Facility design will comply with approved County and local municipal standards, policies and approvals. Implementing the plan in locations that have unique features or site-specific constraints may require further investigation. Solutions for these projects are to be developed on a site-by-site basis.
Sustainable	Routes will be selected with their sustainability in mind. Considerations include route location, alignment, materials and design, operation and maintenance.
Cost-Effective	The cost to implement and maintain the active transportation network plus the supporting facilities and amenities should be phased over time. They should be designed to be affordable and appropriate in scale for the County but should not compromise user safety. The timing of implementation will be assessed based on the capital and operating plans of the County and its partners. Where possible, partnerships should be explored with local municipalities to coordinate the development of County and local active transportation linkages.

Should the County proceed with the development of a formal AT Master Plan and network strategy, there may be some instances where alternate routes that were not originally identified may be more desirable. There may also be scenarios where opportunities offered by unopened road allowances, hydro rights-of-way, abandoned rail corridors, open spaces, future roadway improvements, partnerships and funding initiatives become available. For these network changes or additions, the Route Selection Principles can be a valuable tool to evaluate alternative alignments or route locations.

9.2.6 Step 4: Prepare the AT Route Network Concept

With the application of the route selection criteria, the study team was able to proceed with developing an AT route network concept. The concept, illustrated on **Figures 9.2.6-1 to 9.2.6-4**, consists of proposed on and off-road linkages in the urban and rural areas of the County. Key elements of the AT route network concept include:

- ▶ Key north-south and east-west connections which are intended to facilitate connectivity through the County and local municipalities;
- ▶ Key north-south and east-west connections which are intended to facilitate connectivity through the County and local municipalities;
- ▶ Extensions to existing on and off-road active transportation and trail facilities, such as the Trans Canada Trail and Georgian Bay Cycling Route;
- ▶ Off-road connections through parks, open spaces and utility corridors such as hydro corridors; and
- ▶ Urban and rural connections to help facilitate utilitarian and recreational travel to local municipalities and communities.

**FIGURE 9.2.6-1
ACTIVE TRANSPORTATION NETWORK CONCEPT
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



Legend

Existing Routes¹

- Off-Road Route
- On-Road Route on County Road
- On-Road Route on Local Road

Proposed Routes

- Proposed Off-Road Route
- Proposed On-Road Route on County Road
- Proposed On-Road Route on Local Road

Connections

- Intra-Municipal Connection
- Inter-Municipal Connection

Road Network

- Highway
- County Road
- Local Road

Other

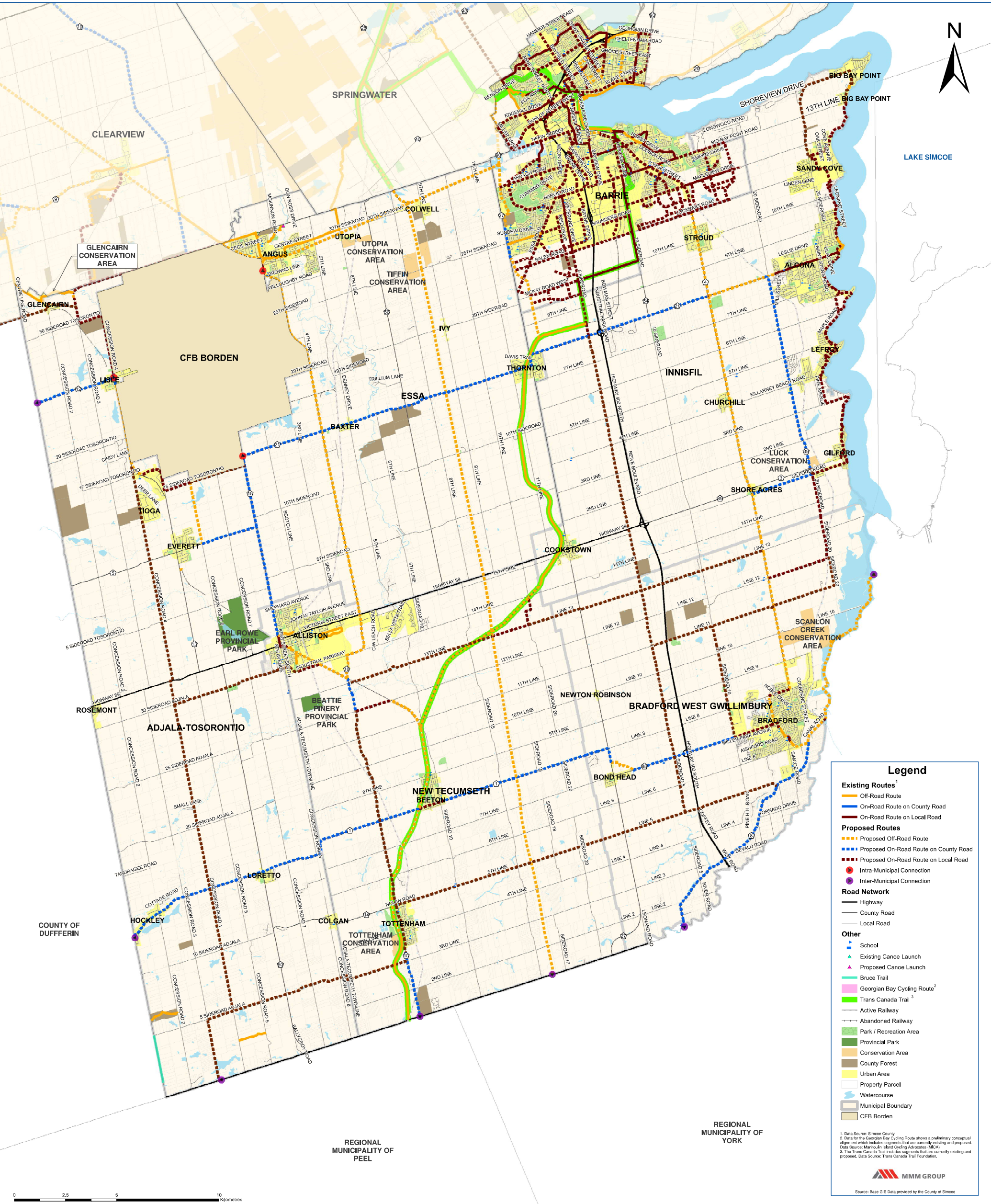
- School
- Existing Canoe Launch
- Proposed Canoe Launch
- Bruce Trail
- Georgian Bay Cycling Route²
- Trans Canada Trail³
- Active Railway
- Abandoned Railway
- Park / Recreation Area
- Provincial Park
- Conservation Area
- County Forest
- Urban Area
- Property Parcel
- Watercourse
- Municipal Boundary
- CFB Borden

1. Data Source: Simcoe County
2. Data for the Georgian Bay Cycling Route shows a preliminary conceptual alignment which includes segments that are currently existing and proposed. Data Source: Manitowlin Island Cycling Advocates (MICA).
3. The Trans Canada Trail includes segments that are currently existing and proposed. Data Source: Trans Canada Trail Foundation.

MMM GROUP
Source: Base GIS Data provided by the County of Simcoe



FIGURE 9.2.6-2 ACTIVE TRANSPORTATION NETWORK CONCEPT
ADJALA-TOSORONTIO, ESSA, NEW TECUMSETH, INNISFIL, BARRIE & BRADFORD WEST GWILLIMBURY
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE



Legend

Existing Routes¹

- Off-Road Route
- On-Road Route on County Road
- On-Road Route on Local Road

Proposed Routes

- Proposed Off-Road Route
- Proposed On-Road Route on County Road
- Proposed On-Road Route on Local Road
- Intra-Municipal Connection
- Inter-Municipal Connection

Road Network

- Highway
- County Road
- Local Road

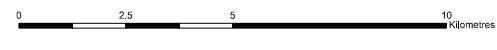
Other

- School
- Existing Canoe Launch
- Proposed Canoe Launch
- Bruce Trail
- Georgian Bay Cycling Route²
- Trans Canada Trail³
- Active Railway
- Abandoned Railway
- Park / Recreation Area
- Provincial Park
- Conservation Area
- County Forest
- Urban Area
- Property Parcel
- Watercourse
- Municipal Boundary
- CFB Borden

1. Data Source: Simcoe County
2. Data for the Georgian Bay Cycling Route shows a preliminary conceptual alignment which includes segments that are currently existing and proposed. Data Source: Maribou-Inland Cycling Advocates (MICA).
3. The Trans Canada Trail includes segments that are currently existing and proposed. Data Source: Trans Canada Trail Foundation.

MMM GROUP

Source: Base GIS Data provided by the County of Simcoe





Legend

Existing Routes¹

- Off-Road Route
- On-Road Route on County Road
- On-Road Route on Local Road

Proposed Routes

- Proposed Off-Road Route
- Proposed On-Road Route on County Road
- Proposed On-Road Route on Local Road
- Intra-Municipal Connection
- Inter-Municipal Connection

Road Network

- Highway
- County Road
- Local Road

Other

- School
- Existing Canoe Launch
- Proposed Canoe Launch
- Bruce Trail
- Georgian Bay Cycling Route²
- Trans Canada Trail³
- Active Railway
- Abandoned Railway
- Park / Recreation Area
- Provincial Park
- Conservation Area
- County Forest
- Urban Area
- Property Parcel
- Watercourse
- Municipal Boundary
- CFB Borden

1. Data Source: Simcoe County
2. Data for the Georgian Bay Cycling Route shows a preliminary conceptual alignment which includes segments that are currently existing and proposed. Data Source: Mainland Island Cycling Advocates (MICA)
3. The Trans Canada Trail includes segments that are currently existing and proposed. Data Source: Trans Canada Trail Foundation.

MMM GROUP

Source: Base GIS Data provided by the County of Simcoe

**FIGURE 9.2.6-4
ACTIVE TRANSPORTATION NETWORK CONCEPT
SEVERN, TAY, ORILLIA, ORO-MEDONTE & RAMARA
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



Legend

Existing Routes ¹	Other
Off-Road Route	School
On-Road Route on County Road	Existing Canoe Launch
On-Road Route on Local Road; Road Route	Proposed Canoe Launch
Proposed Routes	Georgian Bay Cycling Route ²
Proposed Off-Road Route	Trans Canada Trail ³
Proposed On-Road Route on County Road	Active Railway
Proposed On-Road Route on Local Road	Abandoned Railway
Intra-Municipal Connection	Park / Recreation Area
Inter-Municipal Connection	Provincial Park
Road Network	Conservation Area
Highway	County Forest
County Road	Urban Area
Local Road	Property Parcel
	Watercourse
	Municipal Boundary

1. Data Source: Simcoe County
2. Data for the Georgian Bay Cycling Route shows a preliminary conceptual alignment which includes segments that are currently existing and proposed. Data Source: Muskoka Island Cycling Association (MICA)
3. The Trans Canada Trail includes segments that are currently existing and proposed. Data Source: Trans Canada Trail Foundation.

MMM GROUP
Source: Base GIS Data provided by the County of Simcoe

Table 9.2.6-1 provides an overview of the proposed on and off-road connections which are intended to form part of a County-wide active transportation network. The links which have been identified can be found on both local and County roads. The major of the on-road facilities are proposed on local municipal roads. This reflects the local municipal input received in the development of the routes and also reflects that local roads with possibly lower traffic volumes and lower vehicle travel speeds often are more conducive to active transportation than higher volume, higher speed roads, such as some County roads.

Table 9.2.6-1: Summary of Proposed On and Off-road Facilities

	On-Road Facilities (km)	Off-Road Facilities (km)	Total (km)
County	192.9	0	192.9
Local Municipal	695.2	297.6	992.8

The links identified as part of the Route Network Concept are not to be considered proposed routes. The network concept is intended to be used by the County once the TMPU has been adopted as the basis from which a County-wide Active Transportation Network could be developed. More detailed field investigation and analysis should be completed to confirm the preferred alignment and to determine the most appropriate facility type for each route segment. Once the TMPU has been adopted, the County and its partners are encouraged to assess these linkages in further detail, either internally or with the support of an external consultant.

9.3 Designing an AT Network: Selecting the Appropriate Facilities

The TMPU sets out proposed on and off-road route alignments but does not identify proposed or preferred facilities. In late 2013, the Ontario Traffic Council (OTC) finalized a set of guidelines and standards - Ontario Traffic Manual (OTM) Book 18: Cycling Facilities.



The guidelines were developed by MMM Group collaboratively with the OTC and representatives from a number of Ontario municipalities. They are intended to be used by those responsible for the planning, design and implementation of active transportation facilities province-wide. As part of the TMPU, the study team identified a set of design guidelines which could be used when designing and developing AT facilities (please see technical **Appendix G**). The design guidelines that have been prepared for the County are consistent with the guidelines outlined in OTM Book 18, and address a range of active transportation facilities from shared to fully separated – please see **Figure 9.3-1** for additional details.



Figure 9.3-1 – Potential Active Transportation Facility Types

When ultimately selecting a preferred facility type, the County is encouraged to use the Facility Selection Tool identified in OTM Book 18. The tool is a three step process which helps practitioners responsible for the selection, design and implementation of a facility type. Figure 9.3-2 illustrates the three-step process, and a brief description of each of the steps is provided in Table 9.3-1. Before applying the proposed process, the following elements should be considered:

- ▶ Levels of skill, experience and confidence can vary widely;
- ▶ No single type of facility design alternative will suit every user;
- ▶ Designers need to gather information on existing and future conditions in order to identify the needs and safety for users in a specific location;
- ▶ The choice to provide a separated versus non-separated facility is not a simple “yes or no” answer, it is based on the consideration of a number of key factors;
- ▶ Criteria or thresholds to select one facility type over another need to be flexible to be able to accommodate each site’s unique set of characteristics; and
- ▶ No facility design can overcome a lack of operator skill or attention by a user.

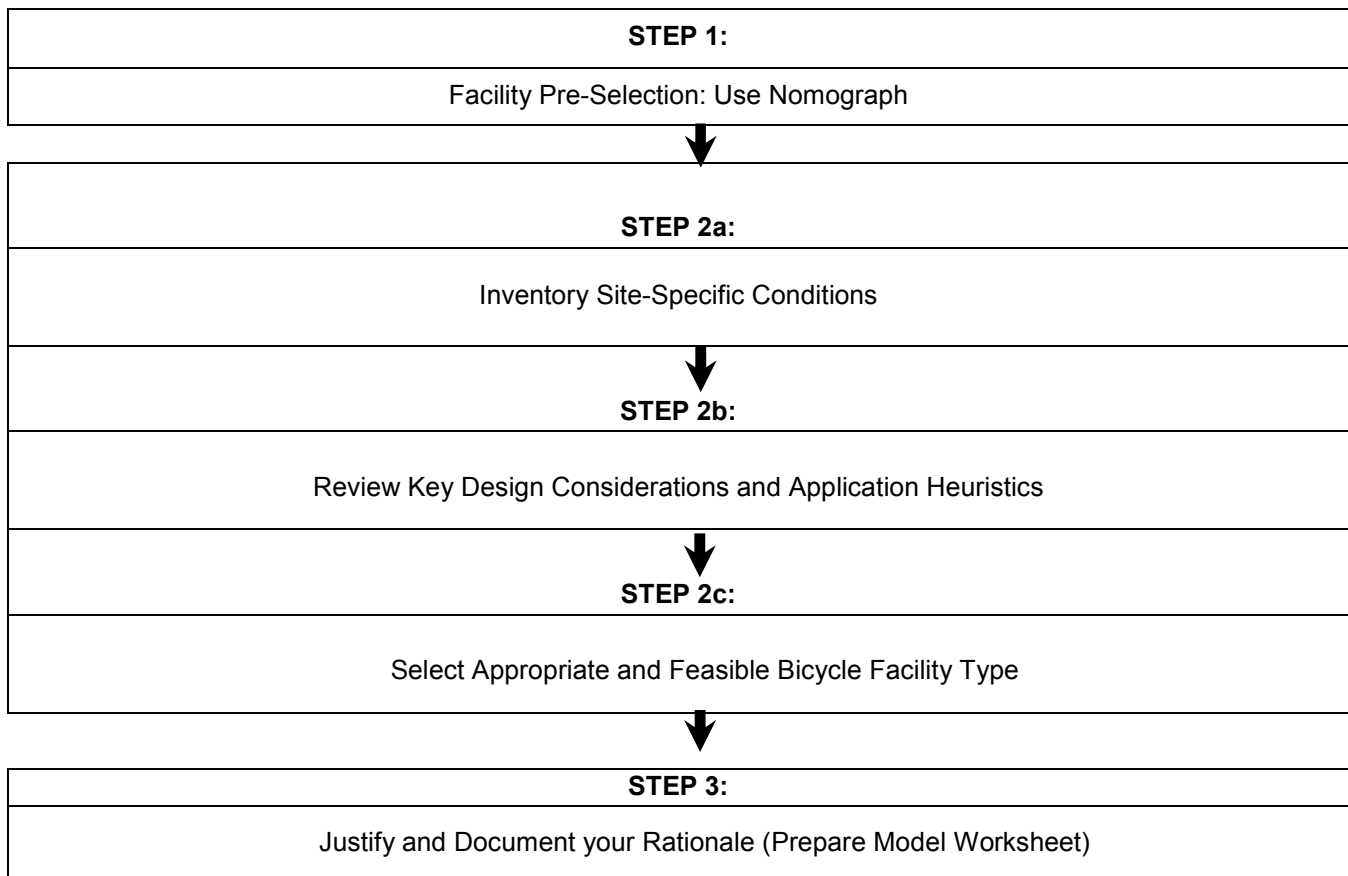


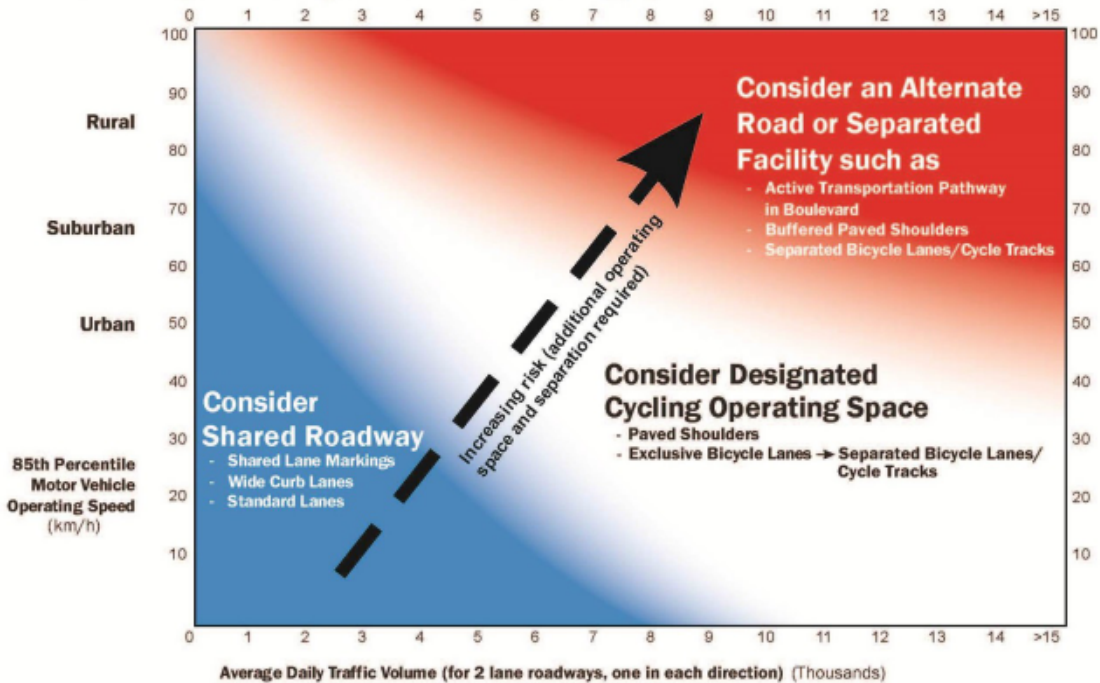
Figure 9.3-2 - Three Step Facility Selection Process - Source: OTM Book 18



Table 9.3-1: Facility Selection Process Description

Step 1
Step 1 allows practitioners to pre-select the desired bicycle facility type based on the motor vehicle operating speed and the average daily traffic volume. This step is accomplished through the use of the ‘Desirable Bicycle Facility Pre-Selection Nomograph’ illustrated in Figure 3.3 in OTM Book 18 and presented in Figure 9.3-3 below.
Step 2
Step 2 guides practitioners to take a more detailed look at site specific characteristics in order to determine the appropriateness of the pre-selected facility type. Practitioners use this step to critically evaluate the situation in order to select the most appropriate facility type.
Step 3
Step 3 guides practitioners in documenting their rationale for their final decision. Sections 3.2.2.1 to 3.2.2.3 provide more detailed information about each step.

STEP 1 of 3
Desirable Bicycle Facility Pre-selection Nomograph



Footnotes: - This nomograph is the first of a three step bicycle facility selection process, and should not be used by itself as the justification for facility selection (see Steps 2 and 3). The nomograph simply helps practitioners pre-select a desirable bicycle facility type, however the context of the situation governs the final decision.

- The nomograph has been adapted for the North American context and is based on international examples and research for two lane roadways. It is, however, still applicable for multi-lane roadways. For these situations, designers should consider the operating speed, total combined traffic volume and traffic mix of the vehicles traveling in the lanes immediately adjacent to the cycling facilities.

- Consider a Separated Facility or an Alternate Road for roadways with an ADT greater than 15,000 vehicles and an operating speed of greater than 50 km/h.

- For rural and suburban locations this nomograph assumes good sightlines are provided for all road users. In urban areas, there are typically more frequent conflict points at driveways, midblock crossings and intersections (especially on multi-lane roads), as well as on road segments with on-street parking. This needs to be considered when assessing risk exposure in urban environments since it will influence the selection of a suitable facility type.

Figure 9.3-4 is a proposed worksheet which is intended to be used by practitioners when undertaking the facility selection process. For all other details please refer to Section 3.2 of OTM Book 18.

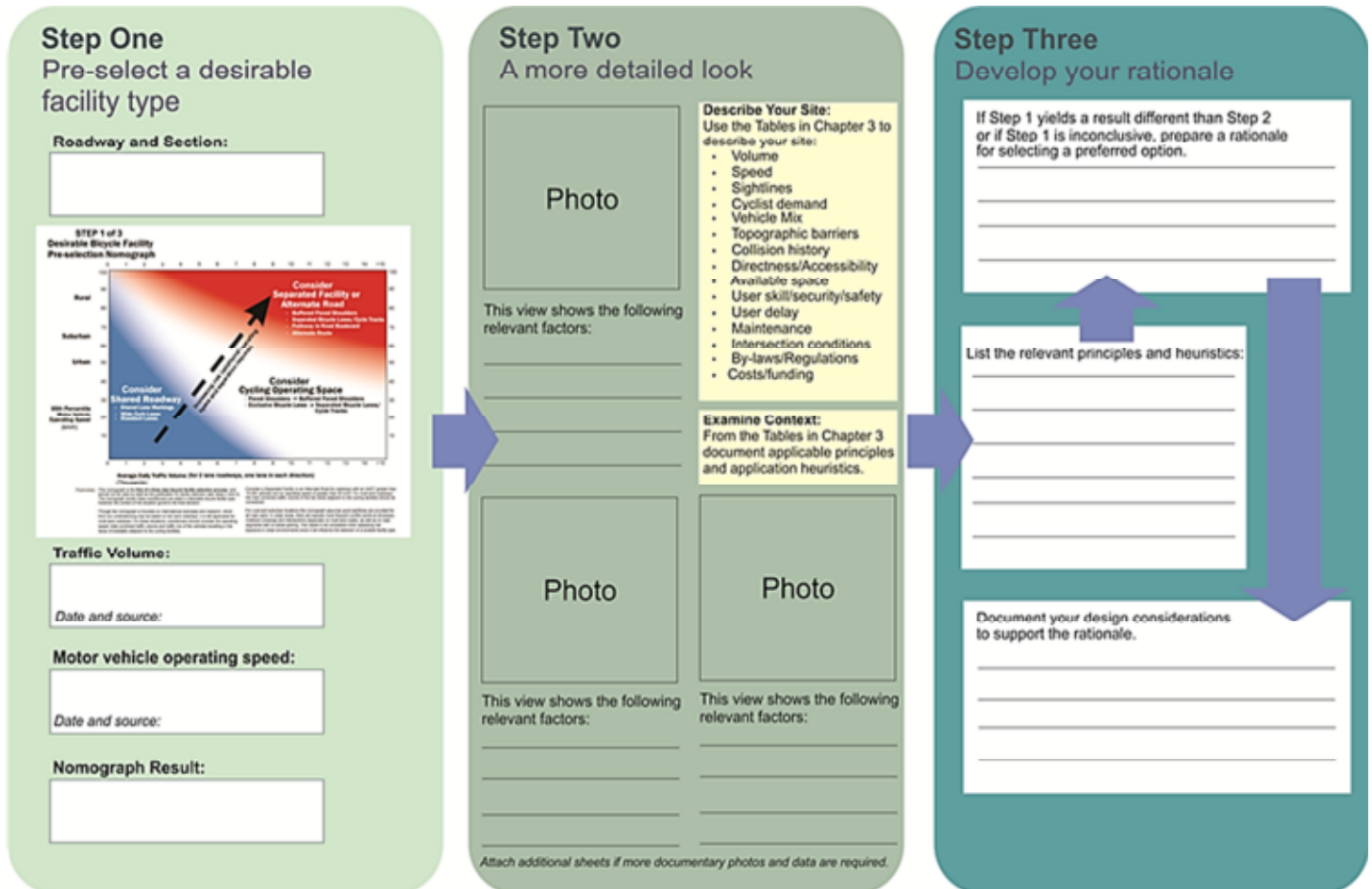


Figure 9.3-4 – Model Worksheet for the Facility Type Selection Tool – Source: OTM Book 18

9.4 Moving Forward: Developing, Implementing & Promoting AT County-Wide

The information included in the TMPU has been developed to provide Simcoe County with a basic understanding of the steps that may be needed to develop a County-wide Active Transportation Network or Master Plan. It is clear that there is significant support for the County to devote time and effort, in collaboration with its partners, to the coordination, management and promotion of active transportation related initiatives. There is public, stakeholder and staff interest in continuing the County’s commitment to becoming a destination for active transportation and recreational pursuits.

Building on the work completed as part of the TMPU, the County is encouraged to proceed with the next steps identified in the nine-step network development figure presented in Section 6.2.2. Additional details regarding these steps are provided in Table 9.4-1.

Table 9.4-1 Next Steps to Develop an Active Transportation Master Plan for Simcoe County

Step 5	<p>Undertake Field Investigation</p> <ul style="list-style-type: none"> ▶ Field investigations should be conducted throughout the County to examine candidate routes and collect additional information, including photographs and measurements that help to inform the development of the active transportation network concept.
Step 6	<p>Prepare Draft County-wide Active Transportation Network</p> <ul style="list-style-type: none"> ▶ Refine the route network concept using route selection principles, information collected in the field combined with the technical expertise of the consultant with additional input from County and local municipal staff.
Step 7	<p>Determine Facility Types An appropriate facility type should be suggested for each route by considering a number of factors such as:</p> <ul style="list-style-type: none"> ▶ Geographic location (urban vs. rural); ▶ Facility types recommended in other previously completed plans and studies conducted within the County and local municipalities; ▶ Roadway characteristics such as cross sections, traffic volume and speed, sight lines, truck volumes, etc.; and ▶ Observations made by the study team will then be balanced by the comments received from the Steering Committee and the public.
Step 8	<p>Determine Route Priorities & Phased Implementation Plan</p> <ul style="list-style-type: none"> ▶ The Implementation Plan should be developed to respond to priorities identified by the Steering Committee and the public. ▶ Note that as part of the implementation of individual routes, a more detailed assessment will be undertaken to confirm the route and facility type.
Step 9	<p>Prepare Route / Network Costing</p> <ul style="list-style-type: none"> ▶ Costing should be prepared for full build-out of the network but also organized based on short, medium and long-term investments consistent with the implementation schedule.

The development of an AT Master Plan for the County will require coordination among staff at the County and local level with input from local community partners and stakeholders. In Simcoe County these could include:

- ▶ Simcoe Muskoka District Health Unit;
- ▶ Simcoe Muskoka Catholic District School Board;
- ▶ Simcoe County District School Board;
- ▶ Niagara Escarpment Commission;
- ▶ Toronto and Region Conservation Authority;
- ▶ Nottawasaga Valley Conservation Authority;
- ▶ Lake Simcoe Region Conservation Authority;
- ▶ Tourism Simcoe County;

- ▶ Ontario Trails Council;
- ▶ Trans Canada Trail Foundation;
- ▶ Huronia Trails and Greenways; and
- ▶ Georgian Bay Cycling Route – Manitoulin Island Cycling Advocates.

In partnership with the organizations and groups listed above, it is suggested that the County and its local partners develop an AT Master Plan terms of reference, and complete an AT Master Plan to guide future design, development and implementation. The master plan would build on previous successes and initiatives at the County and local level. It will be those who have the day-to-day knowledge of the County-wide planning process, engineering, design and maintenance which will help to develop an implementable long-range AT Master Plan.

County staff should also consider assembling a group of local stakeholders, interest groups and affected agencies to sustain the momentum of the TMPU. The County should consider developing a steering committee or technical advisory committee that would help to develop the plan. A committee could also be responsible for identifying potential AT opportunities as well as priority projects.

Even though infrastructure is the cornerstone of increasing levels of active transportation, it is also important to educate residents and visitors through promotion and outreach initiatives. The County and its local partners in collaboration with a number of interest groups such as the Simcoe County Trails Group and Huronia Trails & Greenways Group have already established individual promotion and outreach initiatives including online databases, mapping, fact sheets, trail events, etc. As the County and its partners move forward, it is suggested that a local champion, such as the Simcoe Muskoka District Health Unit, be identified to be a steward for AT promotion and outreach. As part of an AT master plan or as a separate initiative, the County, its local partners, the Health Unit or the local Regional Tourism Organization should explore the development of an active transportation related promotion and outreach strategy geared towards people of all ages and abilities.

There are numerous other considerations for AT which would need to be addressed in a Master Plan to ensure that a network and associated recommendations are realistic and feasible for the County. These include:

- ▶ Route Maintenance;
- ▶ Land Acquisition & Securement Strategies;
- ▶ Route Prioritization Directives (e.g. the development of a riverside trail system along the Nottawasaga River, water based routes, pedestrian bridge improvements, etc.);
- ▶ Implementation Tools and Strategies; and
- ▶ Partnership & Funding Strategies.

If the County is able to secure the funding and partnership to proceed with these steps, they are strongly encouraged to prepare an AT Master Plan. The goal would be to prepare a long-term vision and strategic blueprint for AT County-wide which would build upon the routes and linkages previously developed by the County's local partners and interest groups. The Master Plan could be geared towards identifying a long-term strategy to connect the County's key utilitarian and recreational destinations, inter-municipal linkages, touring routes and connections to surrounding communities while highlighting its areas of cultural and natural significance.

Potential funding opportunities which are currently available which could be explored by the County and its partners include:

- ▶ Federal/Provincial Gas Tax;
- ▶ Transport Canada’s MOST (Moving On Sustainable Transportation) and Eco Mobility (TDM) grant programs;
- ▶ Federation of Canadian Municipalities Green Municipal Fund;
- ▶ Ontario Ministry of Health grant programs and partnership streams such as the Healthy Communities Fund, and promotional initiatives related to health, active living and active transportation;
- ▶ Ontario Ministry of Environment Community Go Green Fund (CGGF);
- ▶ Ontario Ministry of Transportation Demand Management Municipal Grant program;
- ▶ Various Federal and Provincial Infrastructure stimulus programs that are offered from time to time;
- ▶ The Ontario Trillium Foundation that was recently expanded in response to the money collected throughout the Province by casinos;
- ▶ Human Resources Development Canada program that enables personnel positions to be made available to various groups and organizations; and
- ▶ Potential funding that might emerge from the Province in rolling out the Ontario Trails Strategy or the #CycleON province-wide cycling strategy.

There are significant opportunities available for the residents and visitors of Simcoe County to utilize active transportation as a means of highlighting the County and the unique communities and natural features found within it. The interest that has been generated through the TMPU study should be leveraged, and those currently involved in the promotion and development of active transportation programs or facilities should be engaged in any future endeavors.

9.5 Active Transportation Recommendations

The AT findings included in the TMP Update are supported by a set of recommendations which are intended to guide the future of AT facility design and development County-wide over the next 20+ years. The active transportation recommendations which should be considered by the County and its partners are as follows. They have been organized based on four “themes” – infrastructure development, coordination and collaboration, policy development, and outreach and promotion.

Infrastructure Development

- AT 1:** As part of a County-wide Active Transportation network, additional links to existing active transportation infrastructure, both on and off-road should be considered in partnership with the County’s local municipalities plus other influential stakeholders and interest groups.
- AT 2:** The County should consider abandoned railways as primary opportunities for the development of off-road active transportation infrastructure. The links should be acquired for use by the County and its local municipalities for future development opportunities.
- AT 3:** The County should consider the use of hydro and other utility corridors as well as waterways as potential off-road active transportation connections, in partnership with local municipalities.

- AT 4:** The County should use the Route Selection Criteria prepared for the AT component of the TMPU, should adapt it as necessary based on internal discussions, use them as a means of refining the route network concept and to prioritize routes and linkages.
- AT 5:** As part of the County-wide Active Transportation Master Plan, the County should use the design guidelines and standards included as part of the TMPU report to guide the design and development of on and off-road active transportation facilities, and should incorporate other design guidelines and considerations where necessary.
- AT 6:** The County should use the Ontario Traffic Council OTM Book 18 as well as other key references for the selection of appropriate on-road cycling facilities as they develop a County-wide active transportation network.

Coordination & Collaboration

- AT 7:** The County should use the mapping of existing on and off-road active transportation facilities prepared for the Transportation Master Plan Update to update their database of route information, and be incorporated into local municipal mapping and tourism information as necessary.
- AT 8:** The County should develop an Active Transportation Master Plan terms of reference and follow it up with the completion of an AT Plan in partnership with the local municipalities as a blueprint for future AT related development County-wide.
- AT 9:** As part of an Active Transportation Master Plan for the County, the County and its partners should review and re-evaluate the Trails Connecting Communities Program, and where possible, expand the criteria and eligibility for co-operative funding to facilitate the development of local municipal AT Plans as well as future strategic County initiatives.
- AT 10:** The County should assemble a group of local municipal representatives, stakeholders, interest groups and affected agencies to develop an active transportation steering committee or technical advisory committee to help develop the Active Transportation Master Plan, building on the County's previous initiatives e.g. the Trails Strategy.
- AT 11:** In order to facilitate the development of an Active Transportation Master Plan, the County and its partners should explore additional funding sources and opportunities including those included in the TMPU report.

Policy Development

- AT 12:** The database of routes contained in the County's Transportation Master Plan Update should be used as the basis from which to develop the County-wide Active Transportation Master Plan and Implementation Strategy.
- AT 13:** As part of a County-wide Active Transportation Master Plan, the County should consider additional active transportation routes and linkages including water and cross-country skiing routes.

Outreach & Promotion

- AT 14:** County staff should build upon past initiatives and existing active transportation facilities and programming to further promote active forms of transportation collaboratively with the Simcoe Muskoka District Health Unit and local municipalities.



- AT 15:** The County should identify an existing staff position to serve as the County's primary coordinator and contact for active transportation planning, design and 'healthy communities' promotion and outreach.
- AT 16:** The County should continue to promote AT related tourism initiatives such as long-distance cycling tours, high endurance cycling competitions such as the Centurian, plus the Welcome Cyclists' Program at the County and local level to promote active transportation modes as a more viable form of tourism County-wide.



10.0 OTHER MULTI-MODAL TRANSPORTATION OPTIONS

Air, marine and rail all present additional transportation options for people and goods. While currently not the primary means of travel in the County, they provide opportunities for economic development and traffic management as the County looks to the ultimate horizon year of 2065. This chapter describes future considerations for each of these three transportation modes.

10.1 Air

There are seven airports in the County of Simcoe, including:

- ▶ Barrie Springwater Airport;
- ▶ Base Borden Airfield – Military use only;
- ▶ Collingwood Regional Airport (in Clearview);
- ▶ Lake Simcoe Regional Airport (in Oro-Medonte);
- ▶ Lake St. John Airport (in Ramara);
- ▶ Mara Airport (in Orillia); and
- ▶ Huronia (Tiny, Midland, Penetanguishene) Airport (in Tiny).

The three main airports in the County, based on the airport activity, are Lake Simcoe Regional Airport, Collingwood Regional Airport and Huronia Airport.

These three airports could influence traffic and land use patterns, especially for the 2041 and 2065 ultimate horizon years. Airports are often used successfully as economic development tools for a region. Stakeholder feedback from airports in the County suggests that this is a desired outcome that should be pursued by multiple interested parties. Both the Lake Simcoe Regional Airport and the Collingwood Regional Airport have Customs Port of Entry status, which could be promoted to foster international goods movement and air passenger traffic.

One example of how an airport could be used as an economic development tool is the opportunities presented by the Lake Simcoe Regional Airport. As the County continues to grow and urban pressures increase on the GTHA to expand outward, there is an opportunity for this airport to cater to greater passenger traffic, but more importantly freight movement. The impending closure of the Buttonville Airport in Markham provides an opportunity to attract aircraft and air operations to Simcoe County. The presence of the airport could encourage the County to consider large scale recreational facilities along the northern edge of Lake Simcoe, which would in turn also support marine travel. This concept, considered as a post-2031 opportunity, is diagrammed in **Figure 10.1-1**.

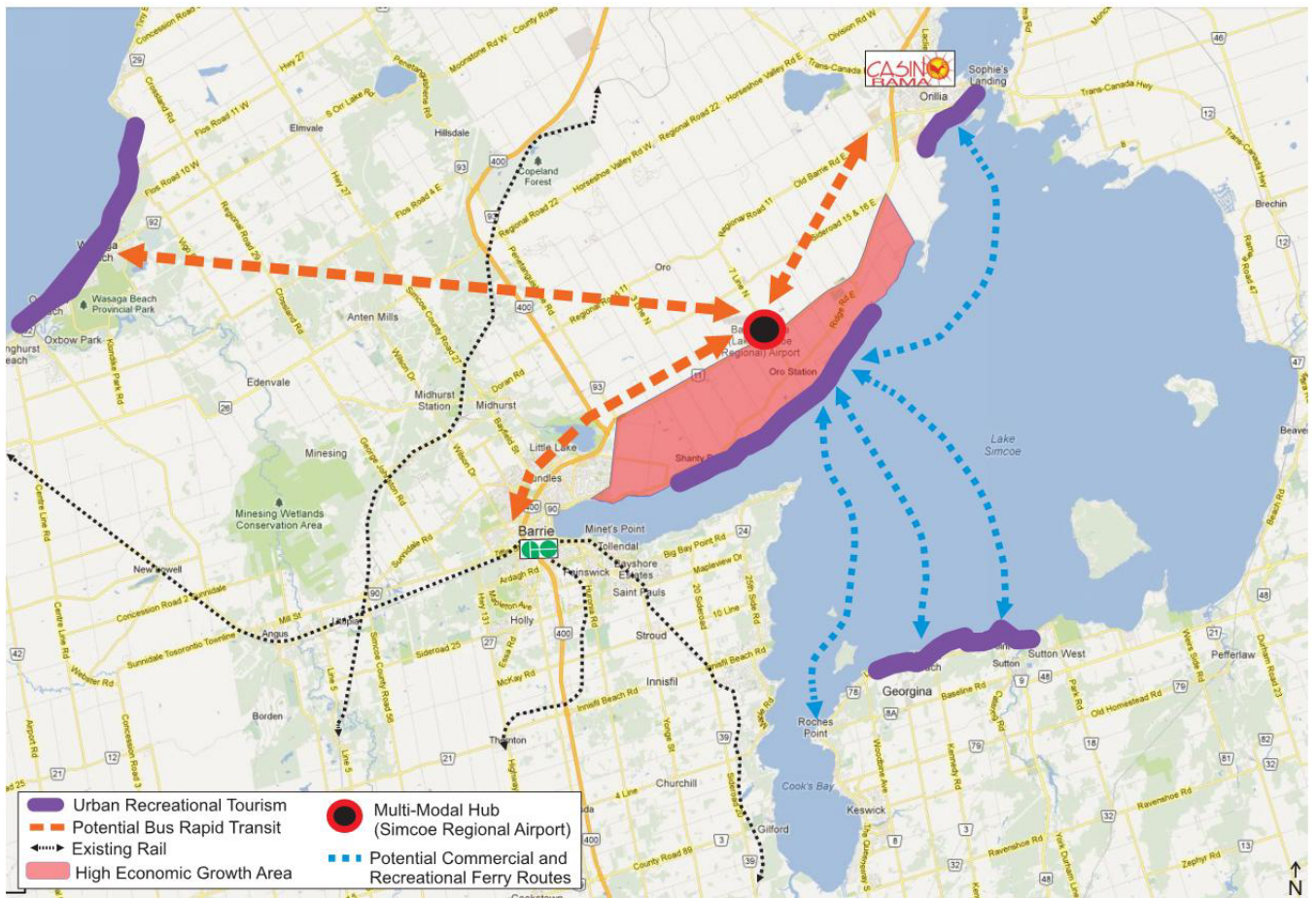


Figure 10.1-1: Lake Simcoe Regional Airport as a Multi-Modal Hub

10.2 Marine

At present, there are limited opportunities for commercial marine travel to and from Simcoe County. There is some potential in exploring opportunities for connecting municipalities west and north of Simcoe County, but with the relatively low roadway congestion on the surrounding network and the predominantly recreational nature of the trips, such an endeavor is unlikely to succeed, at least in the short term. However, if a situation as described

in the preceding section on air travel were to develop which spurred further marine development, then marine travel could begin to take on an additional role as a travel option beyond its current role of recreational boating. Marine travel between York Region and Simcoe County is seen as an ultimate horizon solution. As shown in **Figure 10.1-1**, there are opportunities for exploring the potential of ferry services connecting the northern municipalities of York Region, such as Sutton and Georgina, to the Highway 11 employment lands, Lake Simcoe Regional Airport, and the recreational facilities along the northern edge of Lake Simcoe. Additionally, with existing marine facilities in the City of Barrie and the marina at Big Bay Point in Innisfil, along with further waterfront construction in Innisfil, there are the beginnings of a network of possible origins and destinations for marine travel. Opportunities also could develop along the Trent Severn Waterway and Georgian Bay for commuter trips or tourism.

From a goods movement perspective, Midland Harbour has existing facilities that are used to transport freight. Ways to develop this existing opportunity could be further explored.

10.3 Rail

While at present the County does not own or control rail lines operating within its boundaries, it can advocate and plan for better usage of these facilities to promote passenger and goods movement. Passenger rail travel has been covered in the Transit chapter (Chapter 5.0) and has described how expanded GO train service could help alleviate a portion of the number of commuter trips by motor vehicle.

Rail could also be a solution for goods movement, since transporting goods on trains could help manage traffic flows on County roads. Rail already is being used for goods movement in the county, such as to move new vehicles manufactured at the Honda plant in Alliston. Existing rail corridors should be protected to allow for transit, goods movement or even AT facilities, where appropriate. In fact, “rails with trails” strategies have been implemented safely in other jurisdictions and should be considered along select corridors in the County. Encouraging the location of industrial land uses along rail lines could help generate increased usage of rail as an option to move goods within settlement areas.

One opportunity to promote rail usage would be for the County to purchase the Barrie Collingwood Railway (BCRY), as noted in the Transit chapter. Doing so would open opportunities not only for future passenger service but also goods movement. The County also could use this corridor for Active Transportation in the short term, and combine Active Transportation and rail facilities in this corridor in the future using a “Rails to Trails” concept.

Currently, all buses stop at the BCRY railway crossings, even though the rails are not being utilized. The County could cover the tracks and erect a sign to advise those on the road approaches that railway equipment does not operate over the grade crossing. The signs and grade crossing warning system lights and gate arms should be covered or removed. Doing so would improve the flow of traffic and overall safety at these unused rail crossings, especially where buses are forced to stop and open their doors which can result in rear-end collisions. The tracks and railway crossing signs and associated equipment could be uncovered at some point in the future when some type of rail service began again.

10.4 Recommendations for Other Multi-Modal Transportation Options

Air

- ▶ Capitalize on the Customs Port of Entry Status at the Lake Simcoe Regional Airport and the Collingwood Regional Airport by establishing a working group to promote economic development.

Marine

- ▶ As a long term measure, consider marine facilities as a means to ferry passengers between destinations along Lake Simcoe.

Rail

- ▶ Preserve and consider existing rail facilities as multi-modal opportunities for people and goods movement, as well as possibilities to combine Active Transportation facilities along these corridors.
- ▶ Purchase the Barrie-Collingwood Railway (BCRY). Preserve and consider opportunities to use the corridor for active transportation, passenger movement and goods movement.
- ▶ Prepare a BCRY Viability and Management Study to outline the corridor's uses and how adjacent development can be treated.

Ridesharing, or carpooling, is a well-established and effective TDM measure that could provide great benefits to the County given the number of residents who live in the Simcoe area but travel to various municipalities for work. It is recommended that the County promotes its use as much as possible, both for public and private sector employees. Preferential parking and financial incentives should be considered as part of this initiative.

There are nine Provincially-owned carpool lots and one County-owned carpool lot in Simcoe County today. The Provincial lots are located:

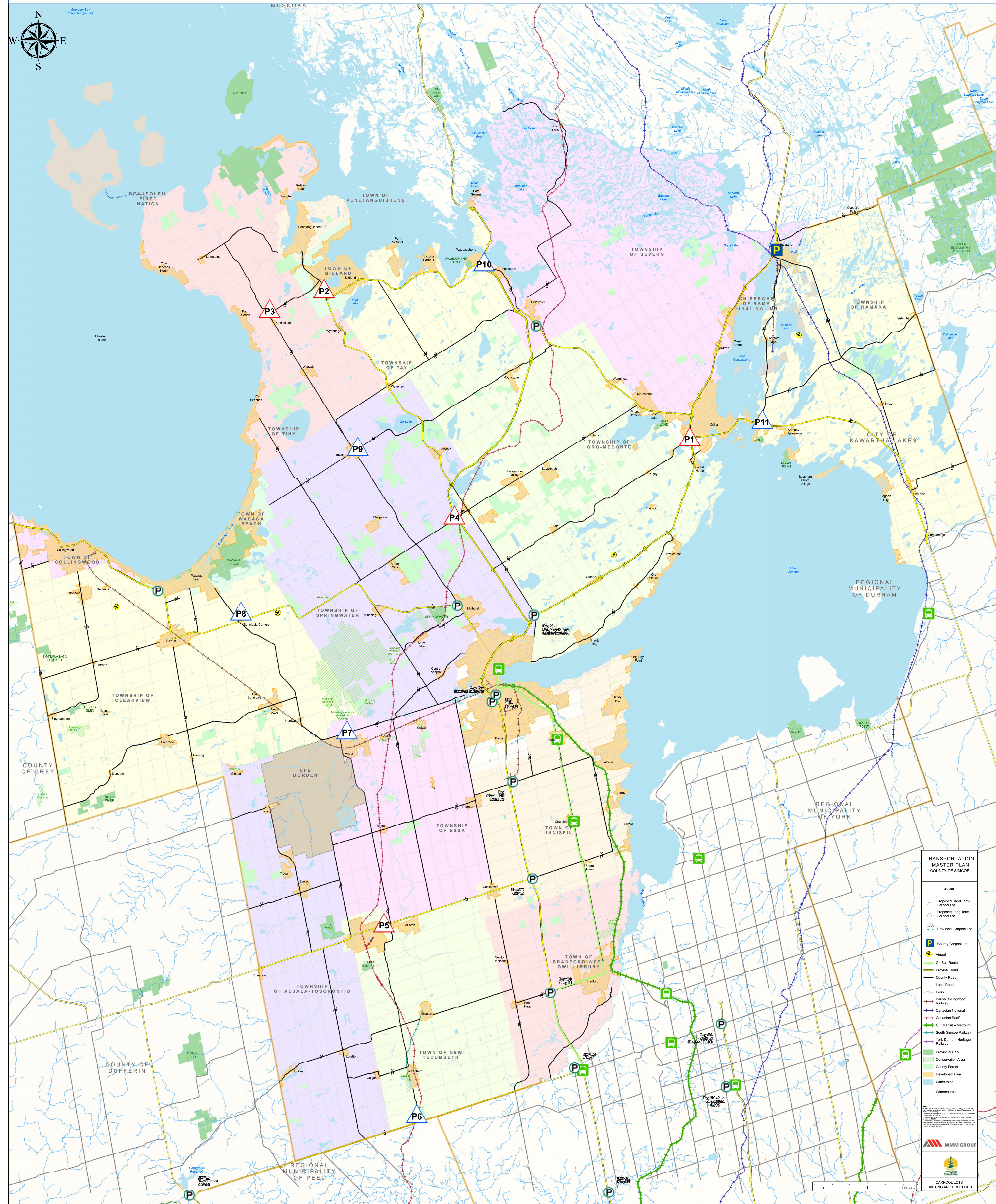
- ▶ Bradford; Highway 400 & County Road 88
- ▶ Cookstown; Highway 400 & County Road 89
- ▶ Innisfil; Highway 400 & County Road 21
- ▶ Barrie; Highway 400 & Essa Road
- ▶ Barrie; Highway 400 & Essa Road/Ardagh Road
- ▶ Oro-Medonte; Highway 11 & Penetanguishene Road
- ▶ Coldwater; Highway 12 & Lower Big Chute Road
- ▶ Midhurst; Highway 26 & County Road 27
- ▶ Wasaga Beach; Highway 26 & Mosley Street

The County-owned carpool lot is located in Washago on County Road 169. The location of the existing carpool lots are shown in **Figure 11.1-1**.

Five priority locations have been identified for potential future carpool lots. These were selected due to their location in population and employment centres, proximity to major roadways, availability of existing transit connections and available land. Priority locations include:

1. Orillia; vicinity of Lakehead Campus and Rotary Place. Near Highway 11 and 12 interchange. Also near University Avenue and Old Barrie Road.
2. Midland; vicinity of County Road 93, Balm Beach Road, Yonge Street. Also near Mountain View and Huronia Mall
3. Perkinsfield; vicinity of Perkinsfield Park, located on County Road 6.
4. Craighurst; vicinity of Highway 400 & Horseshoe Valley Road interchange. Near Simcoe Paramedic Dispatch Station.
5. Alliston; vicinity of Smart Centre Alliston (Walmart), County Road 89 and 10.

**FIGURE 11.1-1
EXISTING AND PROPOSED CARPOOL LOTS
COUNTY OF SIMCOE TRANSPORTATION MASTER PLAN UPDATE**



TRANSPORTATION MASTER PLAN COUNTY OF SIMCOE

LEGEND

- △ Proposed Short Term Carpool Lot
- △ Proposed Long Term Carpool Lot
- Provincial Carpool Lot
- County Carpool Lot
- ✈ Airport
- Go Bus Route
- Provincial Road
- County Road
- Local Road
- Ferry
- Brimley-Collingwood Railway
- Canadian National
- Canadian Pacific
- GO Transit - Metrolinx
- South Simcoe Railway
- York-Durham Heritage Railway
- Provincial Park
- Conservation Area
- County Forest
- Developed Area
- Water Area
- Watercourse

MMM GROUP

CAMMUN

CARPOOL LOTS EXISTING AND PROPOSED

Six additional carpool locations have been considered for longer term implementation. These may be developed once the success of the priority locations is measured and as demand grows through future growth of population and employment in the county. The locations to consider in the long term include:

6. South New Tecumseth
7. Angus
8. Sunnidale Corners
9. Elmvale
10. Waubaushene
11. Atherly

The priority carpool lot locations and the longer term considerations for carpool lots are numbered on **Figure 11.1-1**. Additional information on the location and rationale for the priority and longer-term carpool lots is provided in **Appendix H**.

In recent years, teleworking initiatives have become more popular with technological advances that allow employees to carry out their day-to-day requirements without the need to physically be at their place of employment. This initiative is obviously successful as a TDM measure since no trips are made by any travel mode, and no costs are borne by employers or taxpayers to establish this program.

Despite utilizing passenger vehicles, carsharing programs are another effective method of reducing SOV trips while still allowing for employee flexibility in terms of travel to and from meetings and conferences. Since the people who would use the carshare program would (typically) be employees who use alternative travel modes to get to and from their place of employment, the number of peak hour vehicular trips is still reduced on the road network.

In terms of diverting peak period trips, flextime programs are another effective method of influencing the travel behaviour of the labour force. By stipulating core work hours and allowing employees the flexibility of determining what hours best suit their needs, the majority of trips to and from work are made outside of the standard a.m. and p.m. peak hours. Not only does this reduce traffic congestion during the peak periods, but it also increases the likelihood of shorter travel times for commuters by allowing them to avoid the most heavily congested travel periods.

Although not a popular choice among those affected by it, charging for parking that would otherwise be free at attractions and/or places of employment can be another highly effective TDM measure. The benefits of this approach are threefold: first, parking demand is reduced since there will inevitably be people who choose alternatives to paying for parking; second, the use of sustainable modes of transportation, including carpooling, can increase which also helps to reduce traffic congestion; and third, the revenues generated from paid parking can be used for a variety of improvements (e.g. landscaping, security) or re-invested into other TDM initiatives such as discounted transit passes or carsharing, for example.

Since it is unreasonable to expect all SOV motorists to change their travel behaviour on a full-time basis, initiatives such as the *Clean Air Commute* and *Bike to Work Day* are excellent methods of introducing people to

alternative modes, and for rewarding those who participate. These events, and others like them, enable commuters to log their travel patterns and determine how many pollutant tonne are avoided by the alternative travel choices they make. Prizes such as mountain bikes and iPads that are won by participants through random draws, or which are won for success in the event, further increase the effectiveness of the initiative since people are not only rewarded for their involvement, but they are also made aware how their “typical” travel choices impact the environment. There are multiple examples of successful events in the GTHA through the Smart Commute program (www.smartcommute.ca). Smart Commute and its associated initiatives will be discussed in greater detail later in this Section.

In recent years, there has been a measurable shift in attitudes towards transportation infrastructure. Rather than attempting to increase roadway capacity which ultimately leads to greater traffic volumes, many improvements have been focused on facilities that are designed to encourage Active Transportation modes such as walking and cycling, for example. The most common of these improvements are on-street bike lanes/routes and multi-use paths, but elements such as enhanced landscaping, the incorporation of weather protection elements in built form, and Crime Prevention through Environmental Design (CPTED) have also been shown to increase the use of alternative travel modes. CPTED, in particular, focuses on minimizing the likelihood of crime occurring by linking environmental characteristics and travel behaviours with properly designed buildings and amenities. When coupled with special events that are designed to increase awareness of and participation in AT, many municipalities experience greater sustained use of many Active Transportation modes.

As a travel mode that is capable of transporting relatively large volumes of people with minimal impacts to road networks and the environment, public transit and improvements associated with it are one of the most common and beneficial TDM measures available today. In areas where transit service is frequent, reliable, efficient and well-connected to the greater transportation network, transit ridership is, generally, much greater than in locations with limited or inconsistent service. Service and infrastructure improvements, especially in areas where the existing conditions are less than desirable, can facilitate a meaningful shift in travel behaviour.

11.2 Parking

With respect to parking management, there are two primary means to achieve the desired results: implementing solutions to maximize the *efficiency* of parking facilities, and initiatives designed to reduce parking *demand*. The following initiatives comprise both approaches, with the former three being those that improve efficiency while the latter three influence parking demand:

- ▶ **Shared Parking** – Providing one parking lot for two or more non-competing uses reduces the amount of space required for parking, while also minimizing the total overall supply that would otherwise be needed.
- ▶ **Parking Maximums** – Rather than establishing minimum parking requirements, this approach stipulates maximums so that parking is not over-supplied at any given development.
- ▶ **Parking Pricing** – Directly charging employees or patrons for the use of parking facilities.
- ▶ **Financial Incentives** – Providing commuters with tangible financial rewards such as discounted transit passes or monetary payments.
- ▶ **Unbundled Parking** – Separating the cost of parking from residential units, and even at places of employment, rewards people who do not own a motor vehicle by allowing them to opt out of unnecessary parking.

- ▶ **Active Transportation Improvements** – As noted earlier, these typically include special events and incentives to discourage private automobile use in favour of modes such as walking, cycling or in-line skating.

Shared parking can be an effective means to improve parking efficiency by combining two or more parking facilities into one centralized location. This enables developments to make better use of their property while at the same time limiting the risk associated with providing too much parking at a given site. Additional benefits can include reduced costs for developers since they do not need to each supply parking on their property, as well as landscaping and urban design benefits that can result from limiting the amount of space dedicated to parking facilities. The greatest benefits tend to be realized in mixed-use developments and in locations where there are a number of destinations within reasonable walking distance of one another.

Rather than requiring new developments to supply a minimum amount of parking, the establishment of parking maximums can prove to be more effective at making efficient use of parking facilities by eliminating the opportunity for a development to provide parking that exceeds their actual needs. By utilizing a “work backwards” approach to supplying parking, a more rigorous examination of the actual needs of a development can be undertaken, which can ultimately lead to more accurate parking supplies.

The introduction of parking pricing is generally not embraced by those affected by it, but it is one of the most common and effective ways of making efficient use of parking facilities. By requiring people to pay for parking that would otherwise be free, commuters must decide if using a passenger vehicle is the most cost-effective way to make their work or leisure trip. Parking pricing not only provides revenue to the development itself but also tends to reduce the supply that is necessary since a percentage of people will opt for alternative travel modes in order to realize monetary savings. Given the financial implications associated with parking pricing, this initiative should be, at a minimum, considered in conjunction with financial incentives to further promote the use of alternative travel modes.

Another effective way of managing parking is to provide commuters with rewards for choosing travel options other than a single occupant vehicle. One of the most common incentives used are discounted monthly transit passes, and more recently in the Greater Toronto and Hamilton Area (GTHA), free PRESTO cards. PRESTO is a seamless regional transit fare card system which is currently supported by The Government of Ontario, GO Transit and nine transit service providers in the GTHA plus Ottawa. Additionally, some employers will pay a nominal fee each pay period to employees who do not drive SOVs for helping to reduce the parking demand at that particular workplace. Both incentives have positive effects on parking demand due in large part to the tangible benefits that qualifying commuters receive.

One of the more common demand strategies in recent years has been the unbundling of parking in residential developments. Instead of incorporating the cost to provide parking in the total fee to purchase a unit, potential residents are given the option of paying for a parking space (or spaces) that they will utilize, or opting out in the event that they do not own a car and, therefore, do not have a need for parking. Both developers and residents benefit from this arrangement since developers can sell surplus spaces to those who are interested, while residents who do not own a vehicle are not forced into paying (often times) substantial fees for an amenity that they will not use.

11.3 Recommendations

As noted previously, not all TDM measures are necessarily best suited for implementation in all locations. Factors such as geography, existing conditions and population, among others, can all directly impact which initiatives are more or less effective than others. Ideally, most if not all of the preceding TDM and parking measures will be implemented in the County of Simcoe in the long term, but the following recommended initiatives are those that should be focused on in the short term.

11.3.1 Transportation Demand Management

The following TDM measures should be considered for implementation in the County to create the foundation for future TDM programs:

- ▶ **Carpooling** – Consider establishing carpool lots at select locations in the county;
- ▶ **Public Transit Improvements** – Work with transit providers to identify opportunities to improve on existing services;
- ▶ **Telework** – When and where permitting, allow employees to work from home;
- ▶ **Automobile Use** – Institute special events such as the Clean Air Commute and pursue sustainable transportation options, such as investigating and considering Federal Vehicle Incentive and Charging Incentive Programs for electric vehicles; and
- ▶ **Active Transportation Improvements** – Improve upon and encourage the use of Active Transportation facilities.

11.3.2 Parking

The parking initiatives listed below should be explored by Simcoe County in order to increase parking efficiency and reduce parking demand:

- ▶ **Shared Parking** – Encourage new developments to explore options to provide centralized parking facilities rather than lots dedicated to specific uses.
- ▶ **Parking Maximums** – Explore this concept in greater detail to determine if there is the potential for substantial benefits in terms of parking efficiency.
- ▶ **Parking Pricing** – Investigate the effects that charging for parking would have on parking demand at County facilities. Consider what other measures would need to be in place, such as convenient transit access and active transportation access, before parking pricing should be implemented.
- ▶ **Financial Incentives** – Offer discounted transit passes to County employees, and encourage local municipal governments and private sector businesses to do the same.
- ▶ **Active Transportation Improvements** – To be considered as part of a future Active Transportation Master Plan.

11.3.3 Recommended Transportation Demand Management Implementation Strategy

The implementation of a TDM strategy is no simple task. A wide range of internal and external partners and agencies must support the strategy in order for it to have a legitimate chance for success. An important first step that should be strongly considered is the development of a Simcoe County chapter of Smart Commute. As noted

on their website, Smart Commute “is a program of Metrolinx and the municipalities in the Greater Toronto and Hamilton Area. We help employers and commuters, like you, explore different commute choices like carpooling, cycling and transit. Our goal is to ease gridlock, improve air quality and reduce greenhouse gas emissions while making your commute less expensive and more enjoyable. Smart Commute offers a wide array of services to make commuting easier in the GTHA, including:

- ▶ Carpooling and vanpooling: exclusive ridematching programs for employers;
- ▶ Site assessments and surveys to understand employee commute behaviour;
- ▶ Shuttle programs;
- ▶ Emergency Ride home programs;
- ▶ Employee work arrangement solutions: telework, compressed work weeks and flex hours, workshops, lunch-and-learns and seminars;
- ▶ Incentives and promotions;
- ▶ Electric Vehicle programs; and
- ▶ Clean Air Commute.

Additionally, “in just five years, Carpool Zone users have saved over \$10 million and prevented 24,000 tonnes of greenhouse gas emissions; the equivalent of about 9 million bricks.” These tangible results show that Smart Commute is a highly effective program that can greatly benefit employers, employees and the regions where these initiatives are utilized.

While there is no set formula for the successful execution of TDM, there is a general process that can be undertaken that provides for the greatest opportunity for long-term success. The following four-step process is recommended for the County to facilitate the enactment of a TDM Plan:

Commitment:

- ▶ Establish a TDM Working Group to oversee the development of the TDM Plan. Membership in a TDM Working Group could include, but is not necessarily limited to, representatives from:
 - ▶ The County of Simcoe;
 - ▶ Local municipal governments;
 - ▶ Transit providers; and
 - ▶ Major employers in Simcoe County.
- ▶ The TDM Working Group would work together to create a cohesive vision and to establish open and effective lines of communication;
- ▶ Allocate sufficient staff and funds to properly initiate, promote, implement and continue the TDM Plan; and
- ▶ Work to improve travel options for City/County staff as a means to encourage others to follow suit.

Planning:

- ▶ Develop a TDM Plan that focuses on short, medium and long-term goals;
- ▶ Support the Plan by combining its goals and objectives into other policies and plans, namely the County's Official Plan;
- ▶ Support the Plan by requiring new developments to incorporate TDM measures as part of the development approval process; and
- ▶ Ensure that TDM is addressed in infrastructure and public works projects.

Services

- ▶ Offer affordable travel choices for commuters through initiatives such as discounted transit passes;
- ▶ Work towards increasing the reliability, efficiency, safety and convenience of alternative travel modes;
- ▶ Establish a centralized TDM information database that is accessible to all users via the internet, telephone and print media; and
- ▶ Work with both the public and private sectors to enhance the commuting options that are available within and adjacent to the County.

Promotion

- ▶ Brand the TDM Plan so that it becomes engrained within the County's culture;
- ▶ Initiate new and continue to promote and endorse existing special events within the County;
- ▶ Establish a marketing campaign designed to increase awareness of and support for TDM; and
- ▶ Create opportunities to showcase businesses and individuals who are "champions" of TDM through special events aimed at rewarding positive efforts and increasing awareness.

In addition to the above, the County should consult the "Canadian Guidelines for the Measurement of Transportation Demand Management Initiatives" which includes, among other items, a TDM evaluation framework. At a minimum, this document would enable Simcoe to more easily develop a customized framework for evaluating its own TDM measures, both at the outset of the Plan and as part of a monitoring system to ensure the effectiveness of each initiative and the Plan as a whole.

11.3.4 Recommended Parking Implementation Strategy

Along with the implementation of a TDM strategy, Simcoe County should consider simultaneously undertaking a related parking management strategy since there are many complementary elements for both. In order to accomplish this, the following implementation strategy should be considered:

- ▶ Review existing conditions and determine areas for improvement, as well as potential opportunities;
- ▶ Investigate in greater detail the recommended parking management initiatives proposed for the County; and
- ▶ Revise or create, as necessary, policies and By-laws to reflect the chosen parking management initiatives.

It is strongly recommended that the County of Simcoe develops and implements its TDM and related parking strategy in concert with a newly-developed Simcoe chapter of Smart Commute to ensure consistency with its goals and objectives, as well as to minimize the likelihood of missed opportunities.