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Atherley Transportation Study

NEEDS & JUSTIFICATION

Township of Ramara

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	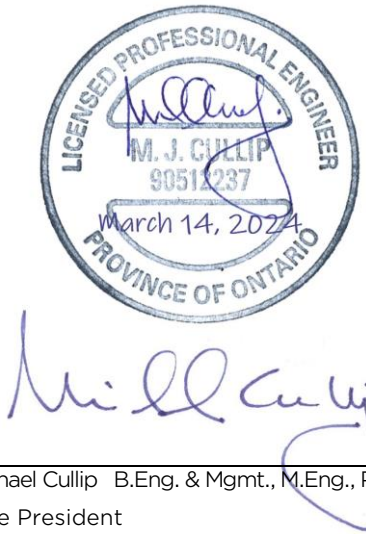
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Issue	Date	Description
1	March 14, 2024	Final Report

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1 Introduction

The Township of Ramara has retained Tatham Engineering Limited to prepare a Transportation Needs and Justification Study for the Village of Atherley-Uptergrove.

1.1 STUDY AREA

The study area focuses on the Village of Atherley-Uptergrove (hereafter referred to as Atherley), including the Highway 12 corridor from Courtland Street to Plum Point Road. The study area limits are illustrated in Figure 1.

1.2 STUDY PURPOSE

The Highway 12 corridor is experiencing increased traffic volumes through the Atherley study area due to ongoing development within the immediate and surrounding areas, in addition to non-local growth associated with the inter-regional role and function of the highway. To address existing and future road network operations and facilitate future development within the community, the Township is considering new road corridors and localized improvements.

This study aims to examine the proposed road network changes being considered by the Township and analyze the impact of these improvements on the operations of the overall study area road system.

1.3 STUDY OBJECTIVES

Study objectives have been established considering traffic operations and desired changes to the study road network. The objectives of the study are:

1. Identify and inventory the existing road system and intersections considering jurisdiction, number of lanes, cross-sections, speed limits, intersection configurations, intersection control, etc.
2. Establish baseline traffic volumes for the road network by reviewing available traffic data and completing new traffic counts at the various study area intersections.
3. Complete an assessment of the existing traffic operations to establish an operational baseline and determine if any system improvements are required under existing conditions.
4. Establish the need and justification for the desired future road network within the study area. This includes consideration for new higher-order municipal roads to serve future development, intersection closures and/or reconfigurations to reduce the number of access

points to the highway, and the redistribution of the existing traffic volumes to reflect the new road network.

5. Establish background growth rates for the area based on historical and projected future growth within the Township and adjacent municipalities, and apply these rates to the existing traffic volumes (as re-distributed to the new road corridors as appropriate) to determine the future volumes on the road network independent of any growth in the Atherley area.

6. Through consultation with Township staff, identify planned and potential development parcels within the Atherley area and their anticipated build-out rates and associated traffic volumes resulting on the area road system based on anticipated origins/destinations and travel routes.

7. Complete an operational assessment of the study area road network to consider the future total traffic volumes for each horizon year and establish any additional system needs (over and above the new road network) to accommodate development within the Atherley area.

1.4 MTO CONSULTATION

Prior to the commencement of the study, a Terms of Reference encompassing the above scope was submitted to MTO (Ministry of Transportation of Ontario) for review and acceptance. The submitted Terms of Reference and subsequent correspondence with MTO and Simcoe County staff is provided in Appendix A.

1.5 REPORT FORMAT

In context of the study objectives, the report has been organized as follows:

- Chapter 1: introduction and study purpose;
- Chapter 2: existing conditions, detailing the road system, traffic volumes and corresponding traffic operations;
- Chapter 3: future road network, detailing and justifying new roads and intersection improvements, providing conceptual plans for each, reassigning existing traffic volumes through this new network, and determining background growth in traffic volumes;
- Chapter 4: future development within the study area and associated details, including location, land use, trip estimates, and trip assignment;

- Chapter 5: future conditions, considering background growth in traffic volumes and realized build-out of identified developments at each future horizon, and corresponding traffic operations

- Chapter 6: summary of the report and key findings.

2 Existing Conditions

This chapter will discuss the existing conditions within the study area, namely the current road network, traffic volumes and traffic operations.

2.1 ROAD NETWORK

The existing road network to be addressed by this study consists of the following roads (limits of which reflect the study area) and their respective intersections:

- Highway 12
- County Road 44 (Rama Road)
- Balsam Road
- Concession Road 11
- Courtland Street
- Henry Street
- McNeil Street
- Orkney Heights
- Plum Point Road
- Sideroad 25
- Layzee Acres access

2.1.1 Road Sections

Aerial imagery of the road system is provided in Figure 2, with further details provided below.

Highway 12

- Class 2B Arterial under the jurisdiction of the Ministry of Transportation of Ontario (MTO), as per MTO's *Highway Corridor Management Manual*[1]
- oriented east-west through the study area
- urban cross-section (curb and gutter, paved boulevard, etc.) to the west of County Road 44 and a predominantly rural cross-section (open ditches, paved and unpaved shoulders, etc.) to the east of County Road 44
- 2 travel lanes per direction from the west limit of the study area to 200 metres east of County Road 44 with a two-way left turn lane west of Henry Street
- 1 lane per direction from 200 metres east of County Road 44 to the east study area limit
- bicycle lanes from the west limit of study area to 200 metres east of County Road 44

[1] *Highway Corridor Management Manual.* Ontario Ministry of Transportation. April 2022.

- posted speed limit of 60 km/h west of Balsam Road and 80 km/h east of Balsam Road
- assumed planning capacity of 1,000 vehicles per hour per lane (vphpl), reflective of a Class 2B Arterial highway

County Road 44 (Rama Road)

- classified as a controlled access Primary Arterial under the jurisdiction of the County of Simcoe as per the County's *Official Plan*[2]
- oriented north-south providing 2 lanes of travel per direction within the study area
- rural cross-section with posted speed limit of 60 km/h throughout the study area
- assumed planning capacity of 1,000 vphpl, reflective of its classification as a controlled access primary arterial road

Township Roads

Other than Highway 12, County Road 44 and the Layzee Acres access road, all other roads within the study area fall under the jurisdiction of the Township. Each road is classified as a local road (based on that presented in *Schedule B – Roads Plan* of the *Township of Ramara Official Plan*[3]) with an assumed planning capacity of 400 vphpl and a 2-lane, rural cross-section. The speed limits and the orientation of each road are summarized in Table 1.

Table 1: Township Roads

ROAD	ORIENTATION	SPEED LIMIT
Balsam Road	east-west	50 km/h
Concession Road 11	east-west	60 km/h
Courtland Street	north-south	40/50 km/h North-South of Caroline Street
Henry Street	north-south	40 km/h
McNeil Street	north-south	50 km/h
Orkney Heights	north-south	50 km/h
Plum Point Road	north-south	40 km/h
Sideroad 25	north-south	40 km/h

[2] *County of Simcoe Official Plan*. County of Simcoe Planning Department. Consolidated February 2023.
[3] *Official Plan of the Township of Ramara*. Township of Ramara. Consolidated January 1, 2016.

Layzee Acres Access

- private road serving Layzee Acres (a recreational vehicle sales development), Ramara Centre (a community recreation centre and park) and Ramara Public Library
- oriented north-south providing 1 lane of travel per direction
- rural cross-section with assumed speed limit of 30 km/h
- assumed planning capacity of 200 vphpl given private road function

2.1.2 Intersections

The study area includes 11 key intersections for review, details of which, including approach lane configurations and control, are summarized in Table 2 and illustrated in Figure 2. For the purpose of this study, all roads intersecting Highway 12 are assumed to be oriented north-south at Highway 12.

Table 2: Study Area Intersections – Existing

INTERSECTION	CONTROL	INTERSECTION APPROACH CONFIGURATION			
		NB	SB	EB	WB
Hwy 12 & Courtland Street	stop (Courtland Street)	LR	-	T+T+R	L+T+T
Hwy 12 & Henry Street	stop (Henry Street)	Ch.R	-	T+TR	T+T
Hwy 12 & Rama Road	signalized	-	L + ChR	L+L+T+T	T+TR
Hwy 12 & Balsam Road	stop (Balsam Road)	LR	-	T+R	LT
Hwy 12 & McNeil Street	stop (McNeil Street)	LR	-	TR	LT
Hwy 12 & Conc Road 11	stop (Conc Road 11)	-	LR	LT	TR
Hwy 12 & Layzee Acres	stop (Lazy Acres)	L + ChR	-	T+R	L+T
Hwy 12 & Orkney Heights	stop (Orkney Heights)	LR	-	T+R	LT
Hwy 12 & Sideroad 25	stop (Sideroad 25)	-	LR	LT	T+R
Hwy 12 & Plum Point Road	stop (Plum Point Road)	LR	-	TR	LT
Courtland St & Balsam Rd	stop (Courtland Street)	LTR	LTR	LTR	LTR

L – left
T – thru
R – right
LT – shared left-thru
TR – shared thru-right
LR – shared left-right
LTR – shared left-thru-right
ChR – channelized right

2.2 TRAFFIC VOLUMES

To establish existing traffic volumes on the road network, 8-hour traffic counts were conducted at each of the key intersections on Wednesday August 23, 2023 (reflective of peak summer traffic conditions) during the following periods:

- AM 07:00 to 09:00 (2 hours);
- Mid-day 11:00 to 14:00 (3 hours); and
- PM 15:00 to 18:00 (3 hours).

As the AM and PM peak hour volumes are considered more critical (i.e. greater volumes as compared to the mid-day peak hours), only these periods have been carried forward in this study. The observed AM and PM peak hour volumes are illustrated in Figure 3, with detailed traffic count sheets provided in Appendix B.

2.3 TRAFFIC OPERATIONS

The assessment of existing conditions, which considers operations at the study area intersections and midblock locations of the key roads, provides the baseline against which future traffic volumes and operations can be compared.

2.3.1 Intersection Operations

A road system's capacity and operations are effectively dictated by its intersections, recognizing that intersections are considered pinch points in a road network where capacity constraints are greatest. The intersection operations were reviewed based on the following:

- the 2023 traffic volumes (representative of peak summer conditions);
- the existing configuration and control of each intersection; and
- procedures outlined in the *2000 Highway Capacity Manual*[4] (using Synchro v.11 software).

For signalized intersections, the analysis considers:

- the average delay (measured in seconds);
- level of service (LOS); and
- volume to capacity (v/c) for each signalized movement.

For unsignalized intersections, the analysis considers the same metrics but assesses only critical movements, namely those operating under stop control.

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[4] *Highway Capacity Manual.* Transportation Research Board, Washington DC, 2000.

With respect to the noted metrics:

- level of service 'A' corresponds to the best operating condition with minimal delays, whereas level of service 'F' corresponds to poor operations resulting from high intersection delays (additional details regarding Level of Service definitions are provided in Appendix C); and
- a v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity, while v/c of 1.0 indicates capacity has been reached.

To ensure the model accurately represents existing conditions, the overall peak hour factor (PHF) and heavy vehicle percentage for each movement were established based on the actual traffic counts and incorporated into the Synchro model (to ensure a conservative approach, a minimum 2% heavy vehicles was considered as is reflective of the model default value). The existing signal timing plan in use at the intersection of Highway 12 with Rama Road was obtained from MTO and verified though field observations.

A summary of the analysis is provided in Table 3 with detailed operations worksheets provided in Appendix D. Any movements operating at LOS F or at/above capacity (v/c ≥ 1.00) have been bolded in the summary table. As indicated, each intersection within the study area currently provides acceptable operations (LOS D or better) during each peak period, with reserve capacity remaining. As such, no improvements are required to address operational or capacity constraints under existing conditions.

2.3.2 Road Operations

Road operations consider the peak hour directional volumes on the subject road sections in relation to the assumed lane capacities. The capacity thresholds contained herein reflect those typically assumed for each class of road (i.e. local, collector, arterial). A summary of the volume to capacity ratios (i.e. the degree to which the available capacity is utilized) is provided in Table 4 for the existing conditions, with the following noted:

- a volume-to-capacity ratio (v/c) ratio below 1.0 indicates there is available capacity remaining on that road section;
- a v/c ratio at or above 1.0 indicates that road capacity has been reached or surpassed (bolded in the summary tables); and
- congestion is more likely to occur as the v/c ratio approaches/exceeds 1.0.

Table 3: Intersection Operations – 2023

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 12 & Courtland Street	NB LR	stop	14	B	0.07	22	C	0.09
Highway 12 & Henry Street	NB R	stop	0	A	0.00	14	B	0.00
Highway 12 & Rama Road (County Road 44)	EB L	signal	19	B	0.49	24	C	0.64
	EB T	signal	3	A	0.13	6	A	0.36
	WB TR	signal	12	B	0.42	18	B	0.54
	SB L	signal	42	D	0.58	27	C	0.30
	SB R	free	1	A	0.18	1	A	0.36
	overall	signal	9	A	0.47	12	B	0.60
Highway 12 & Balsam Road	NB LR	stop	14	B	0.04	18	C	0.04
Highway 12 & McNeil Street	NB LR	stop	18	C	0.03	29	D	0.04
Highway 12 & Concession Road 11	SB LR	stop	13	B	0.04	14	B	0.05
Highway 12 & Layzee Acres	NB LR	stop	14	B	0.05	28	D	0.17
Highway 12 & Orkney Heights	NB LR	stop	14	B	0.06	27	D	0.10
Highway 12 & Sideroad 25	SB LR	stop	12	B	0.02	21	C	0.06
Highway 12 & Plum Point Road	NB LR	stop	16	C	0.13	28	D	0.20
Courtland Street & Balsam Road	NB LTR	stop	9	A	0.06	9	A	0.05
	SB LTR	stop	9	A	0.03	9	A	0.07

Table 4: Road Operations – 2023

ROAD SECTION & LOCATION		CAPACITY (vphpl)[1]	AM PEAK HOUR V/C RATIO		PM PEAK HOUR V/C RATIO	
			NB/EB	SB/WB	NB/EB	SB/WB
Highway 12	W of Courtland St	1,000	0.30	0.38	0.63	0.54
	E of Rama Rd	1,000	0.15	0.26	0.40	0.29
	E of Concession 11	1,000	0.30	0.50	0.76	0.56
	E of Plum Point Rd	1,000	0.29	0.42	0.69	0.51
Courtland Street	S of Highway 12	400	0.08	0.05	0.05	0.19
	S of Balsam Rd	400	0.12	0.06	0.11	0.17
Henry Street	S of Highway 12	400	0.00	0.00	0.00	0.01
Rama Road	N of Highway 12	1,000	0.34	0.28	0.51	0.58
Balsam Road	S of Highway 12	400	0.04	0.02	0.03	0.06
McNeil Street	S of Highway 12	400	0.02	0.03	0.02	0.03
Concession Rd 11	N of Highway 12	400	0.02	0.04	0.07	0.05
Layzee Acres	S of Highway 12	400	0.05	0.09	0.07	0.05
Orkney Heights	S of Highway 12	400	0.05	0.02	0.04	0.06
Sideroad 25	N of Highway 12	400	0.02	0.03	0.06	0.03
Plum Point Road	S of Highway 12	400	0.12	0.07	0.09	0.12

[1] capacity denoted as vehicles per hour per lane

As indicated, Highway 12 and Rama Road operate below their assumed planning capacity ($v/c \leq 0.76$ and $v/c \leq 0.58$, respectively) throughout the study area. All other road segments are observed to operate well below their respective planning capacity ($v/c \leq 0.19$). Therefore, no improvements are required to increase road capacity of the study area road network under existing conditions.

3 Future Road Network

This chapter will provide additional details on the proposed future road network, including the new road corridors and the reconfiguration and closure of intersections along the Highway 12 corridor.

3.1 HIGHWAY 12

Per correspondence with MTO, no improvements are currently planned along the Highway 12 corridor through the study area, independent of those explored in this study. As such, the existing configuration of Highway 12 within the study area has been maintained to the extent possible, barring localized improvements at future intersections.

3.2 NEW ROAD CORRIDORS

To facilitate future development within the Atherley area, the Township is proposing the construction of 3 new road corridors, as illustrated in Figure 4. These corridors are intended to function as Township collector roads, providing connectivity between existing/future developments and the principal travel routes through the study area (i.e. Highway 12 and Rama Road). Furthermore, these corridors will provide new routes for existing local traffic, reducing the impact of any intersection closures along the Highway 12 corridor (discussed in Section 3.3).

Details of, and justification for, each proposed corridor are discussed below. Design elements for each proposed corridor have considered Township design standards and relevant design guidelines, such as the *Geometric Design Guide for Canadian Roads*[5]. Commentary on the likely project type and corresponding required Municipal Class Environmental Assessment is based on a review of Table A of Appendix 1 of the *Municipal Class Environmental Assessment*[6] document (MCEA) and scope/cost estimates contained herein.

3.2.1 Rama Road Extension

Rama Road (County Road 44) currently has a southern terminus at Highway 12. The Township proposes extending the road approximately 500 metres south to Balsam Road. The extension would connect to the north leg of the intersection of Courtland Street with Balsam Road, providing a convenient and direct route for traffic travelling between the built-up area of Atherley and the area's principal travel routes. Key design elements and justification for the selected

[5] *Geometric Design Guide for Canadian Roads*. Transportation Association of Canada. June 2017.
[6] *Municipal Class Environmental Assessment*. Municipal Engineers Association. March 2023.

alternative are summarized in Table 5; a conceptual alignment drawing is provided in Appendix E (Drawing E1).

Table 5: Rama Road Extension

CRITERIA	DESCRIPTION	JUSTIFICATION OR DETAILS	DESIGN REFERENCE
Road Length	520 m	▪ To connect Highway 12/County Road 44 to Courtland Street. Provides direct connection to new east-west corridor	Ramara
Right-of-Way	26 m	▪ To accommodate two lanes, shoulders and utilities.	Ramara Collector
Number of Lanes	2 lanes (1 per direction)	▪ To accommodate projected traffic volumes (400 vph per direction or less)	Traffic Study Operations
Assumed Design Speed	70 km/h	▪ County Road 44 speed limit is 60 km/h. ▪ Curves were designed for a design speed of 70 km/h (190 m radius). ▪ Higher design speed (i.e. +20 km/h) cannot be accommodated without locating horizontal curves within the Balsam Street intersection.	TAC
Design Alignment		▪ Selected to establish a smooth, uninterrupted flow for primary traffic transitioning from County Road 44 to the new East-West corridor. ▪ Requires realignment of Courtland Street between Balsam Road and Highway 12	
Vertical Alignment	Predominantly flat terrain	▪ The new corridor is proposed in a mostly flat area, requiring minimal grading.	
Horizontal Alignment	Minimum of 190 m curve radius	▪ Minimum curve radius of 190 m in compliance with a 70 km/h design speed. ▪ Existing intersection at Highway 12 must be modified, including additional traffic signals on the north leg.	TAC
Class EA	Project 34	▪ Schedule B Class EA will be required due to the estimated construction costs expected to be less than $3 million.	MCEA Document

3.2.2 New North-South Corridor

The Township proposes constructing a new north-south corridor halfway between Rama Road and Sideroad 25 to enhance north-south connectivity and provide access to potential future development sites. This corridor would connect Orkney Beach Road and Concession Road 12, with an alignment generally following the lot line between Lot 27 and Lot 28, Geographic Township of Mara. This is the current alignment of the Layzee Acres access road, which is assumed to be incorporated into the new corridor. Key design elements and justification for the

selected alternative are summarized in Table 6; a conceptual alignment drawing is provided in Appendix E (Drawing E2).

Table 6: New North-South Corridor

CRITERIA	DESCRIPTION	JUSTIFICATION OR DETAILS	DESIGN REFERENCE
Road Length	2.7 km	▪ To connect Orkney Beach Road to Concession Road 12	
Right-of-Way	26 m	▪ To accommodate two lanes, shoulders and utilities.	Ramara Collector
Number of Lanes	2 lanes (1 per direction)	▪ To accommodate projected traffic volumes (100 vph per direction or less)	Traffic Study Operations
Assumed Design Speed	80 km / h	▪ Based on assumed posted speed of 60 km/h + 20 km/h.	TAC
Design Alignment		▪ Utilizes the existing ROW off Orkney Beach Road and the existing town-owned property and lane at Layzee Acres/Ramara Centre. ▪ Culvert crossings required for various water crossings/municipal drains. ▪ Will require crossing of an unevaluated wetland near Concession Road 12. ▪ Alignment curved to ensure 90-degree crossing of Highway 12. ▪ After Concession Road 11, the road was realigned to the west to avoid the airport.	
Vertical Alignment	Various slopes between 2% and 4%	▪ Moderately rolling terrain.	
Horizontal Alignment	Minimum of 300 m curve radius	▪ Minimum curve radius of 300 m in compliance with an 80 km/h design speed.	TAC
Class EA	Project 34	▪ Schedule C Class EA will be required due to the estimated construction costs exceeding $3 million	MCEA Document

3.2.3 New East-West Corridor

The Township proposes constructing a new east-west corridor halfway between Highway 12 and Orkney Beach Road to enhance east-west connectivity and provide access to potential future development sites. This corridor will also provide an alternative travel route for local traffic and help to reduce the impact of any intersection closures along the Highway 12 corridor. The corridor would connect Courtland Street to the west and Plum Point Road to the east, generally following an alignment parallel to and approximately 1 km south of Concession Road 11 and Balsam Road. Connections to Kurtis Drive and McNeil Street (Strong Court) have been provided to afford better connectivity. Key design elements and justification for the selected alternative

are summarized in Table 7; a conceptual alignment drawing is provided in Appendix E (Drawing E3).

Table 7: New East-West Corridor

CRITERIA	DESCRIPTION	JUSTIFICATION OR DETAILS	DESIGN REFERENCE
Road Length	3.4 km	▪ To connect Courtland Street to Plum Point Road	
Right-of-way	26 m	▪ To accommodate two lanes, shoulders and utilities.	Ramara Collector
Number of Lanes	2 lanes (1 per direction)	▪ To accommodate projected traffic volumes (200 vph per direction, or less)	Traffic Study Operations
Assumed Design Speed	80 km/h	▪ Based on assumed posted speed of 60 km/h + 20 km/h.	TAC
Design Alignment		▪ Alignment at the west end is driven by the location of a Natural Area Protection, as shown in the Township Official Plan. ▪ Connection to Plum Point Road is through Township-owned property between 4626 and 4636 Plum Point Road. ▪ Connection to Courtland Street provides 80 m sightline, which exceeds the minimum standard of 65 m (based on a 50 km/h design speed and a 40 km/h posted speed limit on Courtland Street). ▪ Large rise in topography at Orkney Heights. Will require road grade of 4% to 5%. ▪ Culvert crossings required for various water crossings / municipal drains. ▪ The available sightline from the new corridor at Orkney Heights, looking north, is 130m (due to a crest). This exceeds the minimum required, which is 85 m (based on a 60 km/h design speed and a 50 km/h posted speed limit). ▪ The proposed access on Plum Point Road doesn't comply with MTO's 400-meter setback requirement. A queueing assessment completed at the 2043 horizon indicates that the available separation (approx. 200m) is sufficient. ▪ Potential to connect to the Lakepoint Village development at the east end. ▪ Will require crossing of an unevaluated wetland between Orkney Heights and Plum Point Road.	
Vertical Alignment	Various slopes between 1.5% and 5%	▪ Large rise in topography at Orkney Heights.	
Horizontal Alignment	300 m and 800 m	▪ Minimum curve radius of 300 m in compliance with an 80 km/h design speed.	TAC
Class EA	Project 34	▪ Schedule C Class EA will be required due to the estimated construction costs exceeding $3 million	MCEA Document

3.2.4 Road Corridor Costs

Table 8 shows the construction cost estimates for the new road corridors. Due to the limited level of detailed analysis of this assignment, the estimates are considered preliminary. They do not include property acquisition costs, utility relocations, future environmental assessments, or detailed engineering.

Table 8: Road Corridor Costs

PROJECT	COST
Rama Road Extension	$2,000,000
North-South Corridor	$7,250,000
East-West Corridor	$10,400,000

3.3 INTERSECTION CLOSURES & REALIGNMENTS

In conjunction with the proposed new road corridors, the Township is proposing the closure or reconfiguration of several intersections along the Highway 12 corridor, as illustrated in Figure 4. Reduction in the number of total intersections along Highway 12 offers many advantages, such as improved road operations, improved road safety, and more efficient use of resources if and when future intersection improvements are required.

3.3.1 Highway 12 & Courtland Street

The intersection of Highway 12 with Courtland Street is proposed to be closed. The intersection is located approximately 150 metres east of the intersection of Highway 12 with Creighton Street (a signalized intersection), which is below the minimum intersection spacing recommended by TAC along such a road (200 metres minimum, 400 metres desirable along an arterial road) and by MTO in their *Highway Corridor Management Manual* (800 metres minimum, 1,600 metres desirable on a Class 2B highway). The alternative travel routes for traffic impacted by this closure are not considered unreasonable – an additional travel distance of approximately 1.1 km or less is needed to reach the intersection of Highway 12 and Creighton Street. Further reductions in travel distance can be realized if this closure is completed after the completion of the Rama Road extension.

Two design alternatives have been considered at this intersection, as denoted in Drawing F1 of Appendix F and summarized in Table 9. As indicated, Alternative A involves the termination of Courtland Street in a cul-de-sac, whereas Alternative B involves the closure of the entire portion of Courtland Street between Highway 12 and Patricia Drive, with Courtland Street joined into

Patricia Drive via a 90° elbow. Based on the lesser property requirements and lower cost of implementation, the preferred alternative would be Alternative B.

Table 9: Courtland Street Closure at Highway 12

ALTERNATIVE	JUSTIFICATION OR DETAILS
Alternative A	▪ Cul-de-sac on Courtland Street (Type B). ▪ Assumed 8m setback from MTO ROW, as per MTO policy.
Alternative B	▪ Closure of Courtland Street at Highway 12 and the removal of the road terminus. Driveway will be required to service 8 Courtland Street. ▪ No property purchase required.

Based on the preferred alternative noted above, a Class EA is not required as this project will fall under MCEA *Project 24a*, defined as "retirement of existing roads and road related facilities."

3.3.2 Highway 12 & Henry Street

The intersection of Highway 12 and Henry Street is proposed to be closed. In that the spacing between Henry Street and adjacent intersections is below that recommended by TAC and MTO. Furthermore, minimal traffic was observed on Henry Street at the intersection, owing to the limited access to/from Highway 12 (recall Henry Street is configured as a right-in, right-out at Highway 12) and the limited number of dwellings served by Henry Street. As such, minimal impact on existing traffic volumes is anticipated should this closure be pursued.

Two design alternatives have been considered at this intersection as denoted in Drawing F2 of Appendix F and summarized in Table 10.

Table 10: Henry Street Closure at Highway 12

ALTERNATIVE	JUSTIFICATION OR DETAILS
Alternative A	▪ Cul-de-Sac design Type B. ▪ Assumed 8m seatback from MTO ROW, as per MTO policy. ▪ This alternative will require the full property acquisition of 793 Highway 12.
Alternative B	▪ Cul-de-Sac design Type A. ▪ Assumed 8m seatback from MTO ROW, as per MTO policy. ▪ This alternative requires property from 3 adjacent lots. To avoid impacts to the building at 793 Highway 12, slight modifications to the Township standard cul-de-sac may be required along with a small retaining wall. ▪ Significant tree removal will be required at 793 Highway 12.

As indicated, Alternative A impacts fewer properties overall (1 property) but requires the full acquisition of the property at 793 Atherley Road due to the impacts to the existing residence. Alternative B impacts more properties (3 properties) overall, however does not necessarily require removal of any existing structures. As such, Alternative B is the preferred alternative.

This project may fall under MCEA *Project 33* as property acquisitions will be necessary to accommodate the preferred alternative, which in turn necessitates a Schedule B Class EA. However, the Class EA process is driven by the project proponent, and each project should be evaluated on a case-by-case basis with regard to its anticipated environmental impact. A Class EA may not be necessary due to the small footprint, limited scope, and low probability of environmental impacts. However, if adjacent property owners are unwilling to sell the necessary property to the Township, a completed Class EA would be beneficial in case the expropriation process is triggered.

3.3.3 Highway 12 & Balsam Road/Concession Road 11/McNeil Street

The intersections of Highway 12 with Balsam Road and Concession Road 11 are proposed to be closed. Both Balsam Road and Concession Road 11 intersect Highway 12 at shallow angles, which result in larger conflict areas, poorer driver visibility, greater difficulty in completing some turning manoeuvres, and increased potential for more severe collisions. Each intersection is also located approximately 50 metres away from the intersection at McNeil Street which results in further conflict points due to the overlap of vehicles accelerating/decelerating at adjacent intersections.

The intersection of Highway 12 with McNeil Street will remain. Concession 11 will be closed at Highway 12, but extended to connect with a new road that will provide access into future developments north of Highway 12 and east of Rama Road, ultimately connecting to Rama Road. This extension and intersection work is intended to be completed as part of such development. The conceptual plan is shown in Appendix F (Drawing F3) and respects existing property boundaries. MTO's required 400 m offset from the new road to Highway 12 is not achieved due to existing property boundaries so any future development application will need to address potential queuing and other operational issues that could result.

Should these closures occur, traffic on Balsam Road would be required to travel either via Creighton Street or McNeil Street to reach Highway 12, both of which result in under 1 km of additional travel distance for a given trip. Traffic on Concession Road 11 would no longer be able to directly access Highway 12 but would utilize the new road connection through the development lands to Ramara Road.

Two design alternatives have been considered at the Balsam Road intersection, both of which consider variations to the standard Township cul-de-sac. Details of each are summarized in Table

11 and illustrated in Drawings F4 and F5 of Appendix F. Each alternative has considered a cul-de-sac design Type B (per Ramara STD No. 212) with an 8 metre setback from the MTO ROW.

Table 11: Balsam Road Closure at Highway 12

ALTERNATIVE	JUSTIFICATION OR DETAILS
Alternative A	▪ Cul-de-sac set back from existing structures at 5734 Highway 12, requiring some property acquisition but likely avoiding a full buy-out. ▪ Will likely require realignment of a nearby watercourse/ditch. ▪ Property at 3 Balsam Road will require direct access to Highway 12.
Alternative B	▪ Will require full property acquisition of 5734 Highway 12 and demolition of existing structures. ▪ Avoids watercourse. ▪ Access to 3 Balsam Road maintained via relatively long driveway to new cul-de-sac (approximately 30 m).

The construction of the new road to the north of Highway 12 falls under MCEA *Project 14b*, which is defined as a new collector road required as a condition of approval under the planning process. If this road is built along with a development application and is intended to be a public road, an Archaeological Screening Process and Collector Road Screening Process will need to be carried out. The results of these processes will determine whether a Schedule B Class EA will be required for the project (Schedule C if construction costs are anticipated to exceed $3 million). As the road closures at Concession 11 and Balsam Road will most likely coincide with the construction of the new road to the north, they should be included in the corresponding Class EA.

3.3.4 Highway 12 & Orkney Heights

The intersection of Highway 12 with Orkney Heights is proposed to be closed. The intersection is currently spaced less than 800 metres from the nearest adjacent intersections, thus does not meet current MTO spacing requirements. It is recommended that this closure does not occur until, at minimum, completion of the southern portion of the new north-south corridor or western portion of the new east-west corridor. This will ensure that the travel impact to local traffic using Orkney Heights is minimized; should Orkney Heights be closed prior to either of these corridors opening, local traffic would be forced to travel via Courtland Street to reach Highway 12, adding upwards of 7 km per direction to some local trips.

One design alternative was reviewed, as illustrated in Figure F6 of Appendix F. Since the Township owns 4604 Orkney Heights, the Township's preference is to extend the road through this property and locate the cul-de-sac on 5490 Highway 12. This 90-degree bend in the road will require warning signs for approaching vehicles but is not expected to be an issue as limited traffic

is expected to utilize the cul-de-sac. Additional design will be required to determine impacts on the existing watercourse.

Since the proposed work includes the construction of a new road within a new corridor, MCEA *Project 34* applies. A Schedule B Class EA will be required.

3.3.5 Highway 12 & Sideroad 25/Plum Point Road

Currently, Sideroad 25 and Plum Point Road intersect Highway 12 approximately 45 metres apart. This is not a desirable configuration, as the offset can result in the two intersections interfering with each other during typical operation and makes crossing Highway 12 more difficult as two sequential turning manoeuvres are required.

To address the existing configuration's shortcomings, the Township is proposing to realign Sideroad 25 eastward to intersect Highway 12 opposite Plum Point Road (as per Drawing F7 of Appendix F). Sideroad 25 was chosen for realignment (as opposed to Plum Point Road) due to the lower number of properties impacted:

- Sideroad 25 realignment – 2 properties impacted (5163 and 5215 Highway 12), 1 structure removal required at 5215 Highway 12 and
- Plum Point Road realignment – 4 properties impacted (5236 Highway 12, 4636, 4642 and 4652 Plum Point Road), structure removals required at all properties including removal of a service station.

This project falls under MCEA *Project 33* due to the scale of the work and the change in the location of the road. A *Schedule B* Class EA will be required as the project cost is not expected to exceed $3 million.

3.3.6 Intersection Closure/Realignment Costs

Table 12 shows the construction cost estimates for the intersection reconfigurations. Due to the limited level of detailed analysis of this assignment, the estimates are considered preliminary. They do not include property acquisition costs, utility relocations, future environmental assessments, or detailed engineering.

Table 12: Intersection Closure/Realignment Costs

PROJECT	COST
Highway 12 & Courtland Street	$70,000
Highway 12 & Henry Street	$200,000
Highway 12 & Balsam Road/Concession Road 11/McNeil Street (excluding new road to the north)	$200,000
New road north of Highway 12, to Rama Road (to service development)	$2,100,000
Highway 12 & Orkney Heights	$320,000
Highway 12 & Sideroad 25/Plum Point Road	$550,000

4 Future Traffic Volumes

This chapter details the development of the future traffic forecasts considering:

- the implications of the new road corridors and intersection closures/realignments;
- historical growth; and
- development growth.

Horizon years of 2033 and 2043 (10 and 20-year planning horizons) have been considered.

4.1 IMPLICATIONS OF FUTURE ROAD NETWORK

Based on the proposed future road network detailed in Chapter 3, which includes the closure of multiple intersections along Highway 12, traffic volumes currently travelling to/from Highway 12 via a road segment whose connection to Highway 12 is to be closed (namely Courtland Street, Henry Street, Balsam Road, Concession Road 11 and Orkney Heights) have been re-assigned to alternative routes. The reassignment has considered both the existing road network where connections to Highway 12 have been maintained (i.e. McNeil Street, Sideroad 25 and Plum Point Road) and the proposed new road corridors, and takes into account the travel direction of each trip and the closest available (and reasonable) alternative route, attempting to minimize the additional distance each re-assigned trip must travel.

The 2023 volumes, re-assigned to the revised road network, are illustrated in Figure 5 (detailed figures illustrating the individual movements impacted by the reassignment are provided in Appendix G).

4.2 BACKGROUND GROWTH

4.2.1 Population

Historical Growth

Population data from the 2011, 2016 and 2021 censuses was reviewed to determine recent historical growth trends within the Township of Ramara, City of Orillia, County of Simcoe (excluding Barrie and Orillia) and adjacent upper-tier municipalities. The associated population levels and resulting growth rates are summarized in Table 13. As indicated, Ramara's population increased by approximately 1.1% per annum between 2011 and 2021, whereas the County's population increased by approximately 2.3% over the same period. The population of the adjacent jurisdictions increased at comparable rates to Ramara, averaging between 0.8% and 1.4% per annum over the 2011 to 2021 period.

Table 13: Historical Population Growth

AREA	POPULATION			ANNUAL GROWTH RATE		
	2011	2016	2021	2011-16	2016-21	2011-21
Ramara	9,275	9,488	10,377	0.46%	1.81%	1.13%
Simcoe County	279,414	307,035	351,929	1.90%	2.77%	2.33%
Orillia	30,586	31,166	33,411	0.38%	1.40%	0.89%
Muskoka District	58,017	60,599	66,674	0.87%	1.93%	1.40%
Durham Region	608,124	645,862	696,992	1.21%	1.54%	1.37%
Kawartha Lakes	73,219	75,423	79,247	0.59%	0.99%	0.79%

Projected Growth

Future population projections for each of the noted areas have been obtained from the respective Official Plans (Simcoe, Durham[7]), Transportation Master Plan (Orillia[8]), or growth reports (Muskoka[9], Kawartha Lakes[10], Ramara[11]) and are summarized in Table 14.

Table 14: Future Population Growth

AREA	HORIZON YEAR		POPULATION		ANNUAL GROWTH RATE
	Base	Future	Base	Future	
Ramara	2019	2031	10,380	13,000	1.89%
Simcoe County	2021	2031	351,929	416,000	1.69%
Orillia	2016	2036	31,165	44,000	1.74%
Muskoka District	2016	2036	60,600	71,700	0.84%
Durham Region	2016	2031	729,030	960,000	1.85%
Kawartha Lakes	2011	2031	79,526	100,000	1.15%

[7] *Durham Regional Official Plan*. Durham Region. Consolidated May 26, 2020.
[8] *City of Orillia Multi-Modal Transportation Master Plan*. City of Orillia & Stantec. November 2019.
[9] *Muskoka District 2019 Growth Strategy*. Hemson Consulting. February 8, 2019.
[10] *City of Kawartha Lakes Growth Management Strategy*. MHBC Planning & UEM. May 2011.
[11] *Simcoe County Residential Land Budget 2019 – Ramara*. Hemson Consulting. March 2021.

It is noted that the presented base populations may not reflect the census population at the noted base year due to differences between forecast growth and realized growth in the years since publication of the source reports.

As indicated, growth in Ramara, Simcoe County and adjacent regions is expected to be 0.8% to 1.9% over the next 10 to 15 years, assuming the noted population targets are met.

4.2.2 Traffic Volumes

MTO publishes Annual Average Daily Traffic (AADT) and Summer Average Daily Traffic (SADT) volumes for all provincial highways[12]. Traffic volumes on Highway 12 between Creighton Street and Sideroad 25 were investigated from 2014 to 2019 (the latest 5-year published data) to determine historical annual growth, as summarized in Table 15. As indicated, the average daily volumes increased 3.2% per year over the 5-year period, whereas the summer volumes increased 3.0% annually.

Table 15: Highway 12 Daily Volumes

YEAR	HIGHWAY 12 VOLUMES			
	AADT & Annual Growth		SADT & Annual Growth	
2014	11,600	-	13,800	-
2015	12,000	3.4%	14,300	3.6%
2016	12,400	3.3%	14,800	3.5%
2017	12,800	3.2%	15,000	1.4%
2018	13,200	3.1%	15,500	3.3%
2019	13,600	3.0%	16,000	3.2%
2014 to 2019		**3.2%**		**3.0%**

4.2.3 Background Growth Rates

In considering the historical growth and growth projections in and around the Atherley area, the following growth rates have been applied to the study area road network:

- Highway 12 – 2.0% per annum;

[12] *Provincial Highways Traffic Volumes 1988-2019*. Ministry of Transportation of Ontario.

- Rama Road – 1.0% per annum; and
- all other roads – no growth.

Higher growth was applied to Highway 12, recognizing its function as an interregional link that will be more impacted by growth outside of the immediate study area. This ensures a conservative estimate of future traffic volumes on the road. A lesser growth rate was applied to Rama Road, acknowledging its function as a primary route within the study area but with limited growth expected in the areas served by the road (northeast Simcoe County and Muskoka District). No growth was applied to the remaining roads within the study area, acknowledging that each serves a more local function within the study area and whose growth will be primarily driven by local development (for which the resulting traffic volumes will be considered separately as detailed below and in Chapter 5).

While the noted growth rates on Highway 12 are somewhat less than the historical growth rates realized from the traffic volumes, additional consideration will be give to development specific growth which will further increase the highway volumes.

4.2.4 Background Traffic Volumes

The resulting background traffic volumes for each future horizon are illustrated in Figure 6 and Figure 7 and are based on the 2023 traffic volumes adjusted to reflect the noted background growth rates, with consideration for the future road network and the implications that such will have on travel patterns through the area.

4.3 DEVELOPMENT GROWTH

The Township of Ramara's *Official Plan Amendment No. 10* (OPA 10) established the Atherley-Uptergrove Secondary Plan (AUSP). The AUSP was intended in part to guide future development in the Atherley-Uptergrove area by establishing select "development areas" for future residential and commercial development. These development areas were intended to accommodate all development within the AUSP between 2001 and 2031. In total, the AUSP established:

- 5 residential development zones (referred to as R1 through R5), totalling 273 hectares of land; and
- 2 commercial development zones (referred to as C1 and C2), totalling 37 hectares of land.

The location of each development zone is illustrated in Figure 8 and Figure 9.

Since the passing of OPA 10, the remaining land within the identified development areas has decreased as new development has been completed. A breakdown of the initial land allocated in 2007 and the remaining undeveloped land (estimated from aerial imagery) as of 2023 for each development area is provided in Table 16.

Table 16: Future Development – OPA 10 Areas

DEVELOPMENT ZONES		2007 LAND ALLOCATION	2023 UNDEVELOPED LAND
Residential Zones	R1	67 ha	67 ha
	R2	58	53
	R3	46	36
	R4	37	37
	R5	65	26
	Total	**273 ha**	**219 ha**
Commercial Zones	C1	18	11.6
	C2	19	19
	Total	**37 ha**	**30.6 ha**

As indicated, approximately 219 hectares of land remain available for residential development, whereas 30.6 hectares remain available for commercial development.

OPA 10 notes that servicing capacity was to be allocated in all residential development zones, excluding Zone R4, which was to be reserved for future development (presumably after the other zones were built out). Furthermore, Zone R5 included an approved 38 hectare mobile home development known as Uptergrove Estates (now known as Lakepoint Village), with allocation for up to 300 residential units. This development has been considered independently from Zone R5 (as detailed below); thus, the land area assigned to this development was subtracted from Zone R5.

4.3.1 Residential Development

Zones R1 to R5

As per discussions with Township planning staff, each future residential development zone has considered the following:

- a minimum unit density of 35 units per hectare; and
- a unit mix consisting of:
  - 60% detached units;

- 20% townhouse units; and
- 20% low-rise apartment/stacked townhouse units.

In addition to these criteria, it is assumed that 25% of the gross land area within each zone is required to accommodate infrastructure such as roads, parks, and stormwater management facilities (i.e. the total unit count for each zone is based on 75% of the gross land area).

Development details for each residential development zone are summarized in Table 17 and are based on the development criteria noted above and available undeveloped land in each zone. Combined, the full build-out of Zone R1 through Zone R5 will see the construction of 5,749 new residential units within the Atherley area, not including the 300 units already approved in the Lakepoint Village development. Based on a unit occupancy rate of 2.3 persons per unit (as assumed in the Township's *Ward Boundary Review*[13]), this results in a population increase of approximately 13,200 persons.

Table 17: Future Development – Residential

ZONE	AVAILABLE AREA (HA)		RESIDENTIAL UNITS			
	Gross Area	Net Area	Singles	Towns	Apartments	Total
R1	67	50.25	1055	352	352	1,759
R2	53	39.75	835	278	278	1,391
R3	36	27	567	189	189	945
R4	37	27.75	583	194	194	971
R5	26	19.5	409	137	137	683
Total	**219**	**164.25**	**3,449**	**1,150**	**1,150**	**5,749**

Lakepoint Village

Lakepoint Village is a 38 hectare mobile home development located within the bounds of zone R5. The development is approved for up to 300 dwelling units, of which approximately 80 have been completed as of 2023.

[13] *Ramara Ward Boundary Review*. StrategyCorp Inc. February 2021.

4.3.2 Commercial Development

For the commercial zones, the future gross floor area (GFA) has been assumed to reflect a lot coverage of 15%. Considering the available undeveloped area, this results in the following commercial gross floor areas as per Table 18.

Table 18: Future Development – Commercial

DEVELOPMENT ZONE	AVAILABLE AREA (HA)	GROSS FLOOR AREA	
		Percent	Area (m2)
C1	11.6	15%	17,400
C2	19	15%	28,500
Total	**30.6**	**15%**	**45,900**

4.3.3 Trip Generation

Trip Rates

To determine the number of vehicle trips to be generated by the future developments, trip generation rates published in the *ITE Trip Generation Manual, 11th Edition*[14], were considered for the following land uses:

- single family detached (ITE land use code 210);
- single family attached (215) for townhouse units;
- multi-family low-rise (220) for apartments/stacked townhouse units;
- mobile home park (240); and
- office park (750).

ITE defines an office park as a *"suburban subdivision or planned unit development that contains general office buildings and support services, such as banks, restaurants and service stations."* The Township's *Zoning Bylaw*[15] permits multiple office uses (business, professional, administrative, medical) within *Village Commercial* areas in addition to banks, restaurants, service stations, retail establishments, and other personal services. Given the similarities in the ITE definition and the Township's permitted uses in commercial areas, the *office park* trip rates were considered appropriate.

[14] *ITE Trip Generation Manual, 11th Edition*. Institute of Transportation Engineers. September 2021.
[15] *Township of Ramara Zoning Bylaw No. 2005.85*. Township of Ramara. October 24, 2005.

The associated trip rates are summarized in Table 19.

Table 19: Future Development – Trip Rates

ITE LAND USE	VARIABLE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single family detached (ITE 210)	unit	0.18	0.52	0.70	0.59	0.35	0.94
single family attached (ITE 215)	unit	0.15	0.33	0.48	0.32	0.25	0.57
multifamily – low-rise (ITE 220)	unit	0.10	0.30	0.40	0.32	0.19	0.51
mobile home park (ITE 240)	unit	0.08	0.31	0.39	0.36	0.22	0.58
office park (ITE 750)	1,000 ft^2 GFA	1.18	0.15	1.33	0.18	1.12	1.30

Trip Estimates

The number of vehicle trips generated by each development site within the Atherley-Uptergrove area during the weekday AM and PM peak periods has been determined based on the proposed land use, development size and trip generation rates identified above. The corresponding trip estimates are summarized in Table 20 and reflect the full build-out of each development zone. As indicated, when fully built out, the future development zones are expected to generate 4,200 trips during the weekday AM peak hour and 5,300 trips during the weekday PM peak hour (combined total of both inbound and outbound trips).

These estimates will not consist of entirely new trips on the network. For the commercial/retail sites, it is common practice to consider non-primary trips – these are trips which are already on the road network for another reason (such as a home-to-work trip), which will visit a commercial site as they pass by, generating a *pass-by* trip. ITE data suggests that up to 33% of vehicle trips generated by a commercial site consist of such trips. Additionally, it is anticipated that there will be interactions between the different land uses proposed within the study area. Trips between residential and commercial areas are expected, resulting in trips which are contained entirely within the study area rather than assigned to the wider road network and beyond the study area. For the purpose of this study, it has been assumed that all trips generated by future developments will be primary trips (i.e. new trips assigned to the network), which ensures a conservative approach.

Table 20: Future Development – Trip Estimates

DEVELOPMENT ZONE	SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
R1	1,759 units	278	770	1,048	852	520	1,372
R2	1,391 units	220	609	829	674	411	1,085
R3	945 units	149	414	563	458	279	737
R4	971 units	154	425	579	471	287	757
R5	683 units	108	299	407	331	202	533
Lakepoint Village	300 units	25	92	117	108	66	174
Residential Total	**6,049 units**	**934**	**2,610**	**3,543**	**2,894**	**1,765**	**4,658**
C1	187,292 ft^2	222	27	249	34	209	243
C2	306,771 ft^2	363	45	408	56	343	399
Commercial Total	**494,063 ft^2**	**585**	**72**	**657**	**90**	**552**	**642**
Development Total		**1,519**	**2,682**	**4,201**	**2,984**	**2,317**	**5,301**

4.3.4 Trip Distribution & Assignment

The distribution of the development-generated trips has been derived based on travel patterns observed in the *2016 Transportation Tomorrow Survey* (TTS). The *TTS* is a comprehensive travel survey conducted every 5 years in the Greater Golden Horseshoe. The COVID-19 pandemic delayed the 2021 TTS; thus, the 2016 TTS represents the most recent data available.

It is noted that the primary travel routes to/from the south are located east (Highway 12) and west (Highway 11) of the study area. Therefore, trips travelling to/from locations in the south (Barrie, York Region, Toronto, etc.) have been distributed to the east and west on Highway 12. Based on the travel data within the TTS, the following distribution was considered:

- to/from the north – 5%;
- to/from the east – 10%; and
- to/from the west – 85%.

As indicated, most traffic will travel to/from the west. This is not unexpected given the proximity of the City of Orillia (which functions as a primary economic centre in the area) and Highway 11 (a key travel route providing access to the south).

Further consideration was given to local traffic patterns observed in the 2023 traffic counts, the type of development being considered, and the expected travel routes for each development zone based on their location within the study area. The resulting assignment of development-generated trips to the road network for each horizon year is detailed in Figure 10 for the 2033 horizon and Figure 11 for the 2043 horizon, and is based on the assumed development phasing detailed in Section 4.4. The trip assignments for each development zone (reflective of full build-out) are provided in Appendix H.

4.4 DEVELOPMENT GROWTH LIMITATIONS

4.4.1 Highway 12 Capacity Constraints

As detailed above, a full build-out of all proposed developments within the Atherley area results in up to 5,300 new vehicle trips on the adjacent road network. Based on the travel patterns observed in the 2016 TTS and expected travel routes for development-generated traffic, a significant portion of these trips are expected to travel to/from the west via Highway 12. Through this respective area, Highway 12 maintains a 4 to 5-lane cross-section (i.e. 2 travel lanes per direction with some sections containing a centre two-way left turn lane), crosses The Narrows (a water channel connecting Lake Couchiching with Lake Simcoe), and passes through a built-up area in east Orillia. Assuming a capacity of 1,000 vehicles per hour per lane, Highway 12 therefore has a capacity of 4,000 vehicles (1,000 x 2 lanes per direction). While it is acknowledged that not all of the 5,300 new vehicle trips will be oriented to/from the west, suffice to say that the existing highway will not provide sufficient capacity to accommodate the future background traffic volumes (predicated largely on existing volumes which amount to over 2,300 vehicles during the PM peak hour thus consuming more than 50% of the available capacity) plus the full extent of the new development trips.

Neither MTO nor the City of Orillia (as per the *City of Orillia Multimodal Transportation Master Plan*) have identified any future road expansion work along the Highway 12 corridor. Furthermore, any expansion of Highway 12 through this area (i.e. west of Rama Road) will be costly, requiring a bridge expansion/reconstruction, property acquisitions (to accommodate increased ROWs), multiple structure removals, etc. Based on these factors, widening Highway 12 to the west to increase capacity is not considered a feasible assumption. Therefore, all background and development-related future traffic must be accommodated within the existing capacity of Highway 12, west of Rama Road. This capacity constraint will ultimately limit the level of future development possible within the Atherley area, as discussed below.

4.4.2 Development Thresholds

Phasing and build-out of the proposed development areas has been determined based on:

- Full build-out of Lakepoint Village by the 2033 horizon (this is considered a reasonable assumption given that Lakepoint Village is already approved and partially constructed).
- Residential development is evenly distributed between all residential development zones, excluding Zone R4 as it was identified in OPA 10 as being reserved for future development (thus not considered until the build-out of the other residential zones is realized).
- Commercial development is evenly distributed between both commercial zones and keeps pace with the build-out of the residential development zones.
- Feasible build-out levels for the 2043 horizon have been established through an iterative road network operations assessment reflective of the maximum level of build-out that can reasonably be accommodated given the noted capacity constraints on Highway 12 west of Rama Road, amounting to 40% of the previously noted development levels.
- Build-out levels for the 2033 horizon were established at approximately 35% of the build-out levels established for the 2043 horizon (or 15% of the previously noted development levels), as discussed with Township planning staff.

The resulting build-out levels for the various development zones are summarized in Table 21, as are the corresponding developable zone areas and potential development sizes (units or GFA).

Table 21: Future Development – Supportable Build-Out

ZONE	AVAILABLE AREA (ha)	POTENTIAL SIZE	BUILD-OUT THRESHOLD		
			2023	2033	2043
R1	67	1,759 units	0%	15%	40%
R2	53	1,391 units	0%	15%	40%
R3	36	945 units	0%	15%	40%
R4	37	971 units	0%	0%	0%
R5	26	683 units	0%	15%	40%
Lakepoint Village	38	300 units	25%	100%	100%
C1	11.6	187,292 ft^2	0%	15%	40%
C2	19	306,771 ft^2	0%	15%	40%

To establish the supportable development threshold in terms of residential units and commercial gross floor area, the build-out levels were applied to the full build-out potential (as noted in Table 21 and previously discussed in Section 4.3). The resulting development levels for the 2033 and 2043 horizons are summarized in Table 22. As indicated, the road network can accommodate the construction of approximately 2,200 new residential units and 18,360 m^2 (197,600 ft^2) of new commercial space. Development over and above this threshold will require additional capacity on Highway 12 (west of Rama Road).

Table 22: Future Development – Supportable Size

DEVELOPMENT ZONE	DEVELOPMENT SIZE		
	Potential[1]	2033 Horizon	2043 Horizon[2]
R1	1,759 units	264 units	704 units
R2	1,391 units	209 units	556 units
R3	945 units	142 units	378 units
R4	971 units	0 units	0 units
R5	683 units	102 units	273 units
Lakepoint Village	300 units	300 units	300 units
Residential Total	**6,049 units**	**1,017 units**	**2,211 units**
C1	187,292 ft^2	28,094 ft^2	74,917 ft^2
C2	306,771 ft^2	46,016 ft^2	122,708 ft^2
Commercial Total	**494,063 ft^2**	**74,110 ft^2**	**197,625 ft^2**

[1] The maximum development size reflects full build-out of the development zones regardless of road capacity constraints.
[2] The number of residential units and commercial GFA that can theoretically be accommodated by the road network without additional capacity on Highway 12.

4.4.3 Trip Generation

The trip estimates for the residential and commercial development zones have been revised to reflect the noted development thresholds identified in Table 22. The resulting trip estimates for the 2033 and 2043 horizons are provided in Table 23 and Table 24, respectively.

As indicated, when considering the noted development thresholds, the development zones are expected to generate 1,520 new trips during the AM peak hour and 1,920 new trips during the PM peak hour at the 2043 horizon.

Table 23: Future Development – 2033 Trip Estimates

DEVELOPMENT ZONE	SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
Zone R1	264 units	42	116	158	128	78	206
Zone R2	209 units	33	91	124	101	62	163
Zone R3	142 units	22	62	84	69	42	111
Zone R4	0 units	0	0	0	0	0	0
Zone R5	102 units	16	45	61	50	30	80
Lakepoint Village	300 units	25	92	117	108	66	174
Residential Total	**1,017 units**	**138**	**406**	**544**	**456**	**278**	**734**
Zone C1	28,094 ft^2	33	4	37	5	31	36
Zone C2	46,016 ft^2	54	7	61	8	52	60
Commercial Total	**74,110 ft^2**	**87**	**11**	**98**	**13**	**83**	**96**
Development Total		**225**	**417**	**642**	**468**	**361**	**829**

Table 24: Future Development – 2043 Trip Estimates

DEVELOPMENT ZONE	SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
Zone R1	704 units	111	308	419	341	208	549
Zone R2	556 units	88	244	332	270	164	434
Zone R3	378 units	60	166	225	183	112	295
Zone R4	0 units	0	0	0	0	0	0
Zone R5	273 units	43	120	163	132	81	213
Lakepoint Village	300 units	25	92	117	108	66	174
Residential Total	**2,211 units**	**327**	**929**	**1,256**	**1,034**	**631**	**1,665**
Zone C1	74,917 ft^2	89	11	100	14	84	97
Zone C2	122,708 ft^2	145	18	163	22	137	160
Commercial Total	**197,625 ft^2**	**234**	**29**	**263**	**36**	**221**	**257**
Development Total		**561**	**958**	**1,519**	**1,070**	**852**	**1,922**

4.5 FUTURE TRAFFIC VOLUMES

Traffic projections for the future horizon years are provided in Figure 12 and Figure 13, premised on the following:

- the existing 2023 traffic counts (Figure 3);
- future background traffic volumes considering the assumed annual growth rates with consideration for the future road network and the implications that such will have on travel patterns through the area (Figure 6 and Figure 7); and
- traffic volumes associated with future development growth (Figure 10 and Figure 11).

5 Future Traffic Operations

This chapter provides an operational assessment of the road network in context of the new road corridors and intersection reconfigurations/closures (detailed in Chapter 3) and in consideration of the future traffic volumes for the 2033 and 2043 horizon years (detailed in Chapter 4). The following areas are addressed:

- operations of the road network, including operations of the key intersections; road capacity assessment; queueing assessment; and
- potential improvements to the study area road network (over and above those considered in Chapter 3).

5.1 INTERSECTION OPERATIONS

The operations of the future key intersections were reviewed at each horizon year under future total conditions. The future road network discussed in Chapter 3 has been implemented; the configuration of each intersection under future conditions is summarized in Table 25 and is consistent with the existing intersection configurations throughout the study area.

Table 25: Study Area Intersections – Future

INTERSECTION	CONTROL	INTERSECTION APPROACH CONFIGURATION			
		NB	SB	EB	WB
Hwy 12 & Rama Road	signalized	L+TR	L+T+ChR	L+L+T+T	L+T+TR
Hwy 12 & McNeil Street	stop (McNeil Street)	LR	-	T+R	L+T+T
Hwy 12 & N/S Collector	stop (N/S Collector)	LT+ChR	LTR	L+T+R	L+T+R
Hwy 12 & Sideroad 25/ Plum Point Road	stop (SR 25/Plum Point Road)	LTR	LTR	L+T+R	L+T+R
Courtland St & Balsam Rd	stop (Balsam Rd)	LTR	LTR	LTR	LTR
Rama Road Extension & Courtland Street	stop (Courtland Street)	LT	TR	LR	-

L – left
T – thru
R – right

LT – shared left-thru
TR – shared thru-right
LR – shared left-right

LTR – shared left-thru-right
ChR – channelized right

Further to the above, the following were also incorporated into the analyses:

- at the intersection of Highway 12 with McNeil Street, it was assumed that the 4-lane cross-section already present on Highway 12 (which terminates approximately 175 metres west of the intersection) would be extended to McNeil Street as part of the intersection reconfiguration; and
- signal timings at the intersection of Highway 12 with Rama Road were adjusted to accommodate the addition of a south leg at the intersection and optimized at each horizon to ensure peak performance was maintained.

Results of the operational analyses are summarized in Table 26 through Table 29, with detailed worksheets provided in Appendix I.

5.1.1 2033 Horizon

Results of the 2033 operational analyses (summarized in Table 26) indicate that the road network can generally accommodate the weekday AM peak hour volumes. Most movements at each intersection provide acceptable operations (LOS D or better), with only the northbound movement at Highway 12 and Plum Point Road operating poorly (LOS F) – although with a tolerable delay of less than 60 seconds.

Notwithstanding the otherwise acceptable operations during the AM peak hour, the conditions deteriorate during the PM peak hour, with each of the unsignalized intersections along the Highway 12 corridor experiencing poor operations (LOS F) with high delays. This is largely due to the significant through volumes present on Highway 12.

Traffic signal warrants were completed to address the delays based on Justification 7 methodologies (projected volumes) outlined in *Ontario Traffic Manual (OTM) Book 12 – Traffic Signals*. Free-flow conditions were assumed at each assessed intersection, recognizing that each exists within a generally rural area, with operating speeds above 70 km/h and limited high-volume accesses. Completed signal warrants at each intersection are provided in Appendix J.

Based on the results of the warrant review, traffic signals are warranted at the intersection of Highway 12 with Sideroad 25/Plum Point Road, whereas the volumes at the intersections of Highway 12 with McNeil Street and the North-South Collector do not warrant traffic signals.

The intersection of Highway 12 with Sideroad 25/Plum Point Road was reassessed under signal control, assuming a basic two-phase timing plan (provided in Appendix I). The results of the reassessment are summarized in Table 27. As indicated, the intersection is expected to provide good operations (LOS C or better) under signal control.

Table 26: Intersection Operations – 2033

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 12 & Rama Road (County Road 44)	EB L	signal	32	C	0.75	34	C	0.85
	EB T	signal	8	A	0.24	12	B	0.66
	WB L	signal	41	D	0.32	37	C	0.33
	WB TR	signal	18	B	0.60	19	B	0.65
	NB L	signal	38	D	0.68	33	C	0.53
	NB TR	signal	27	C	0.05	28	C	0.04
	SB L	signal	27	C	0.17	31	C	0.44
	SB T	signal	26	C	0.01	28	C	0.04
	SB R	free	1	A	0.28	1	A	0.48
	overall	signal	17	B	0.65	17	B	0.79
Highway 12 & McNeil Street	NB LR	stop	19	C	0.17	**53**	**F**	0.34
Highway 12 & North-South Collector	NB LTR	stop	30	D	0.21	**193**	**F**	0.82
	SB LTR	stop	23	C	0.13	**70**	**F**	0.41
Highway 12 & Sideroad 25/Plum Point Road	NB LTR	stop	**59**	**F**	0.77	**455**	**F**	**1.70**
	SB LTR	stop	14	B	0.03	**51**	**F**	0.22
Courtland Street & Balsam Road	EB LTR	stop	11	B	0.01	11	B	0.04
	WB LTR	stop	11	B	0.03	12	B	0.04
Rama Road Extension & Courtland Street	EB LR	stop	9	A	0.02	10	A	0.01

Concerning the intersections of Highway 12 with McNeil Street and the North-South Collector, vehicles experiencing high delays at either intersection are expected to divert to the nearest signalized intersection (i.e. at Rama Road or Plum Point Road) to access Highway 12. Furthermore, the poor operations are limited to the PM peak hour, with improved operations expected outside of this time period. As such, the poor operations are considered tolerable at this horizon.

Table 27: Intersection Operations – 2033 + Improvements

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 12 & Sideroad 25/ Plum Point Road	EB L	signal	6	A	0.01	4	A	0.02
	EB T	signal	8	A	0.45	10	B	0.76
	EB R	signal	6	A	0.04	4	A	0.11
	WB L	signal	6	A	0.02	4	A	0.09
	WB T	signal	9	A	0.60	7	A	0.57
	WB R	signal	6	A	0.00	4	A	0.01
	NB LTR	signal	17	B	0.50	29	C	0.63
	SB LTR	signal	14	B	0.01	21	C	0.07
	overall	signal	9	A	0.57	9	A	0.74

5.1.2 2043 Horizon

Results of the 2043 operational analyses (summarized in Table 28) indicate that the road network – specifically the Highway 12 corridor – will be operating at or over capacity. This is not unexpected as the intent of establishing the development thresholds in Section 4.4 was to determine the maximum level of development that could be reasonably accommodated in light of the capacity constraints on Highway 12, west of Rama Road. All intersections, excluding the intersections of Highway 12 with McNeil Street and the North-South Collector, provide acceptable operations (LOS E or better). As such, no improvements are required at these intersections beyond the changes in configuration assumed as part of the future road network.

With respect to the intersections of Highway 12 with McNeil Street and the North-South Collector, each is expected to provide poor operations (LOS F) with high delays (exceeding 5 minutes) on the minor approaches. This is due to the high volume of through traffic on Highway 12, which limits the opportunity for traffic on the minor approaches to enter and/or cross Highway 12. Traffic signal warrants were again reviewed for each intersection, considering the 2043 traffic volumes. The completed warrants are provided in Appendix J. Based on the results of the warrants, signals are not warranted at either intersection.

Table 28: Intersection Operations – 2043

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 12 & Rama Road (County Road 44)	EB L	signal	68	E	0.98	61	E	0.98
	EB T	signal	13	B	0.34	22	C	0.86
	WB L	signal	69	E	0.54	57	E	0.51
	WB TR	signal	36	D	0.84	37	D	0.84
	NB L	signal	74	E	0.95	76	E	0.90
	NB TR	signal	30	C	0.07	37	D	0.07
	SB L	signal	30	C	0.11	40	D	0.37
	SB T	signal	29	C	0.02	37	D	0.08
	SB R	free	1	A	0.42	3	A	0.66
	overall	signal	34	C	0.91	31	C	0.93
Highway 12 & McNeil Street	NB LR	stop	36	E	0.47	**357**	**F**	**1.32**
Highway 12 & North-South Collector	NB LTR	stop	**57**	**F**	0.36	**834**	**F**	**1.99**
	SB LTR	stop	**61**	**F**	0.47	**885**	**F**	**2.23**
Highway 12 & Sideroad 25/Plum Point Road	EB L	signal	8	A	0.02	5	A	0.03
	EB T	signal	11	B	0.59	23	C	0.92
	EB R	signal	8	A	0.05	5	A	0.16
	WB L	signal	8	A	0.04	9	A	0.38
	WB T	signal	15	B	0.76	9	A	0.69
	WB R	signal	7	A	0.00	5	A	0.01
	NB LTR	signal	22	B	0.66	44	D	0.76
	SB LTR	signal	15	B	0.01	27	C	0.07
	overall	signal	15	B	0.73	18	B	0.89
Courtland Street & Balsam Road	EB LTR	stop	12	B	0.02	13	B	0.05
	WB LTR	stop	13	B	0.04	14	B	0.06
Rama Road Extension & Courtland Street	EB LR	stop	11	B	0.03	13	B	0.02

Notwithstanding the unmet warrants, the operations of each intersection were reviewed again to consider the implementation of traffic signals to address the poor operating conditions. The intersections were initially assessed with a basic 2-phase timing plan optimized to ensure optimal operations. Results of the reassessment are summarized in Table 29 (detailed worksheets and timing plans provided in Appendix I).

Table 29: Intersection Operations – 2043 + Improvements

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 12 & McNeil Street	EB T	signal	9	A	0.60	39	D	**1.02**
	EB R	signal	6	A	0.02	3	A	0.07
	WB L	signal	6	A	0.03	5	A	0.21
	WB T	signal	8	A	0.53	4	A	0.38
	NB LR	signal	19	B	0.33	48	D	0.43
	overall	signal	9	A	0.54	24	C	0.96
Highway 12 & North-South Collector	EB L	signal	3	A	0.02	2	A	0.07
	EB T	signal	4	A	0.44	19	B	0.93
	EB R	signal	3	A	0.02	2	A	0.02
	WB L	signal	3	A	0.03	3	A	0.10
	WB T	signal	6	A	0.68	6	A	0.66
	WB R	signal	3	A	0.01	2	A	0.03
	NB LTR	signal	27	C	0.28	51	D	0.29
	SB LTR	signal	28	C	0.36	53	D	0.38
	overall	signal	6	A	0.66	15	B	0.89

As indicated, both intersections are expected to provide acceptable operations (LOS D or better) with the implementation of traffic signals, though it is noted that the eastbound through movement at McNeil Street is expected to operate over capacity during the PM peak period. This can be addressed by extending the second eastbound travel lane (which terminates at McNeil Street as a right turn lane) through the intersection, similar to the existing configuration at the intersection of Highway 12 with Rama Road – two eastbound through lanes are carried through the intersection, reducing to one eastbound lane approximately 275 metres east of Rama Road. Extending this lane to the east and through the intersection of McNeil Street will provide additional through capacity to ensure all movements at the intersection operate under capacity.

With respect to the spacing of these intersections, MTO's *Highway Corridor Management Manual* references OTM Book 12 with respect to appropriate spacing of signalized intersections where such may not meet the 800 metre minimum spacing requirement (i.e. between Rama Road and McNeil Street). *Chapter 3.7 – Signal Spacing* of OTM Book 12 notes that, should the signals at McNeil Street or the North-South Collector be installed, coordination of all the traffic signals through Atherley should be considered to reduce progression impacts (it may be necessary to complete a coordination/progression assessment to ensure that the signals along the corridor can be effectively coordinated).

5.2 ROAD OPERATIONS

The midblock road operations were assessed for each horizon, the results of which are summarized in Table 30 and Table 31.

Table 30: Road Operations – 2033

ROAD SECTION & LOCATION		CAPACITY (vphpl)	AM PEAK HOUR V/C RATIO		PM PEAK HOUR V/C RATIO	
			NB/EB	SB/WB	NB/EB	SB/WB
Highway 12	W of Rama Rd	1,000	0.43	0.60	0.92	0.76
	E of Rama Rd	1,000	0.21	0.37	0.55	0.40
	E of Concession 11	1,000	0.42	0.72	**1.08**	0.77
	E of Plum Point Rd	1,000	0.38	0.53	0.87	0.65
Courtland Street	S of Balsam Rd	400	0.34	0.14	0.26	0.42
Rama Road	N of Highway 12	1,000	0.48	0.42	0.69	0.78
	S of Highway 12	600	0.25	0.11	0.17	0.35
McNeil Street	N of Highway 12	400	0.01	0.01	0.01	0.01
	S of Highway 12	400	0.13	0.08	0.09	0.16
North-South Collector	N of Highway 12	600	0.03	0.05	0.07	0.06
	S of Highway 12	600	0.06	0.07	0.07	0.06
Sideroad 25	N of Highway 12	400	0.03	0.03	0.07	0.05
Plum Point Road	S of Highway 12	400	0.41	0.16	0.30	0.46

Table 31: Road Operations – 2043

ROAD SECTION & LOCATION		CAPACITY (vphpl)	AM PEAK HOUR V/C RATIO		PM PEAK HOUR V/C RATIO	
			NB/EB	SB/WB	NB/EB	SB/WB
Highway 12	W of Rama Rd	1,000	0.60	0.89	**1.28**	**1.04**
	E of Rama Rd	1,000	0.27	0.48	0.70	0.50
	E of Concession 11	1,000	0.54	0.93	**1.38**	0.98
	E of Plum Point Rd	1,000	0.50	0.67	**1.10**	0.84
Courtland Street	S of Balsam Rd	400	0.72	0.27	0.52	0.84
Rama Road	N of Highway 12	1,000	0.70	0.64	0.95	**1.07**
	S of Highway 12	600	0.58	0.23	0.39	0.71
McNeil Street	N of Highway 12	400	0.01	0.01	0.01	0.01
	S of Highway 12	400	0.24	0.12	0.16	0.28
North-South Collector	N of Highway 12	600	0.05	0.08	0.11	0.09
	S of Highway 12	600	0.06	0.07	0.07	0.06
Sideroad 25	N of Highway 12	400	0.04	0.03	0.07	0.06
Plum Point Road	S of Highway 12	400	0.61	0.23	0.44	0.68

As indicated, most road sections will continue to operate under capacity through the 2033 horizon; however, by 2043, many sections of Highway 12 will operate near or over capacity during the PM peak hour. Notwithstanding the midblock volume-to-capacity ratios, the signalized intersection operations along the Highway 12 corridor indicate acceptable performance and capacity along Highway 12. Recall that intersections reflect capacity pinch points in a road network. Therefore, if the signalized intersections are operating acceptably, then it can reasonably be assumed that the midblock operations will operate acceptably as well. As such, the capacity of Highway 12 is considered sufficient to accommodate the 2043 traffic volumes.

5.3 QUEUE OPERATIONS

As noted in Section 3.2.3 and evident of Drawing E3 of Appendix E, the proposed separation between the intersections of Highway 12 with Plum Point Road and the new East-West Collector with Plum Point Road is less than the minimum 400 metre separation required by MTO. A queueing assessment was completed along Plum Point Road to ensure that the proposed separation of approximately 200 metres is appropriate.

The queueing assessment was conducted using *SimTraffic*, the traffic microsimulation module that accompanies Synchro software. The queueing assessment has considered the 2043 total traffic volumes and average results of 5 simulation runs, each consisting of a 15-minute seed time and 60-minute run time. Traffic volumes at the future intersection of Plum Point Road and the East-West Collector were estimated based on the reassignment of existing traffic to Plum Point Road and the assignment of development traffic through the area. This intersection was assumed to operate with Plum Point Road under stop control (i.e. two-way stop control), as this configuration resulted in the longest queues forming on Plum Point Road. It is noted that this is opposite to the expected configuration of the intersection should it be built – i.e. Plum Point Road would be expected to operate freely with the East-West Collector operating under stop control. This configuration would result in negligible southbound queues forming on Plum Point Road.

The results of the queueing assessment are summarized in Table 32, with detailed worksheets provided in Appendix I. The storage length along Plum Point Road reflects the estimated separation between the stop bars on Plum Point Road at the intersections with Highway 12 and the East-West Collector. The 50th percentile queues reflect the average queue length exceeded 50% of the time, whereas the 95th percentile queues represent queues which are exceeded only 5% of the time. As indicated, the queues expected to form on Plum Point Road are all under 50 metres in length. As such, southbound queues at the East-West Collector are not expected to spill back and interfere with Highway 12 operations and vice versa.

Based on the findings of the queueing assessment, the proposed separation of the East-West Collector from Highway 12 on Plum Point Road is considered sufficient in that queues from one intersection will not extend to or through the other. Notwithstanding, it is recommended that the intersection of Plum Point Road with the East-West Collector be configured with the stop control on the East-West Collector to negate further concerns.

Table 32: Queueing Operations – 2043

INTERSECTION & MOVEMENTS		STORAGE	WEEKDAY AM PEAK HOUR		WEEKDAY PM PEAK HOUR	
			50th	95th	50th	95th
Highway 12 & Plum Point Road	NB LTR	200 m	24 m	45 m	22 m	37 m
East-West Collector & Plum Point Road	SB LTR	200 m	10 m	16 m	13 m	20 m

5.4 NEED FOR IMPROVEMENTS

Results of the operational assessments under future conditions indicate that the future road network is expected to operate acceptably by the 2043 horizon. Signalization of the intersection of Highway 12 with Sideroad 25/Plum Point Road is warranted by the 2033 horizon to accommodate future traffic volumes. While not warranted based on a signal warrant review, signals may also be considered at the intersections of Highway 12 with McNeil Street and with the future North-South Collector to ensure acceptable performance of the intersections through the 2043 horizon.

The separation between Highway 12 and East-West Collector along Plum Point Road is sufficient to accommodate expected vehicle queues. As such, the intersection location of the East-West Collector on Plum Point Road is considered acceptable.

6 Summary

This report has reviewed the proposed future road network required to serve the future development of the Atherley-Uptergrove area in the Township of Ramara. The study has reviewed the traffic impacts of proposed future developments within the study area and determined the level of development which the proposed future road network can accommodate.

6.1 FUTURE ROAD NETWORK

To support future development within the study area and to address other operational, geometric, and/or safety concerns, the Township of Ramara is proposing:

- the construction of 3 new road corridors; and
- closure or reconfiguration/realignment of multiple intersections along the Highway 12 corridor.

6.1.1 New Road Corridors

Three new municipal collector roads are proposed to be constructed to allow for more direct access to development lands and reduce the impact of the proposed intersection closures. The proposed corridors consist of:

- an extension of Rama Road southward from Highway 12 to Balsam Road;
- a new east-west road parallel to Concession Road 11 and Balsam Road, between Courtland Street and Plum Point Road; and
- a new north-south road generally following the same alignment as the existing Layzee Acres access, between Concession Road 10 and Concession Road 12.

6.1.2 Intersections

The existing intersections of Highway 12 with Courtland Street, Henry Street, Balsam Road, Concession Road 11, and Orkney Heights are proposed to be closed, with each road being terminated as either a cul-de-sac or at another nearby road. The closures are anticipated to be minor, with traffic redirected to new and/or existing roads that maintain a connection to Highway 12. It is recommended that these closures be planned such that the new proposed road corridors nearest to each closure are complete prior to the closures occurring. This will ensure that the impact on affected trips is minimized to the extent possible.

The intersections of Highway 12 with Rama Road and with the Layzee Acres access are proposed to be reconstructed to accommodate the construction of new road connections, which will add a new leg to each intersection. Sideroad 25 is proposed to be realigned opposite Plum Point Road to eliminate the substandard offset between the intersections.

It is assumed that, at minimum, these reconstructed intersections will provide auxiliary eastbound and westbound left and right turn lanes on Highway 12, as are currently provided at many existing intersections within the study area.

6.2 FUTURE DEVELOPMENT

Future development within the study area was determined using criteria established through consultation with Township planning staff and considering the current development areas within the Atherley-Uptergrove Secondary Plan (as established by OPA 10). Based on these details, full build-out of all noted development areas would result in approximately 6,050 new residential units and 45,900 m^2 of commercial space. Based on the anticipated trip generation of this level of development (up to 5,300 new trips on the study area road network) and practical constraints within the road network, development of this scale was not considered feasible. Ultimately, further review of supportable levels of development indicated that the road network could accommodate the traffic generated by the addition of approximately 2,200 new residential units and 18,400 m^2 of commercial space (approximately 40% development).

6.3 TRAFFIC OPERATIONS

In addressing the traffic operations within the study area, the key intersections identified for review were assessed under existing (2023) and future (2033 and 2043) horizon periods. The assessments under existing conditions considered the existing road network, whereas the assessments under future conditions considered the proposed future road network.

6.3.1 Intersection Operations

Under existing conditions, the existing key intersections were found to provide acceptable operations (LOS D or better) and required no improvements to accommodate current traffic volumes.

Under future conditions, some of the intersections along Highway 12 were found to provide poor operations (LOS F, delays of 1 to 3 minutes) by the 2033 horizon, with operations deteriorating further by the 2043 horizon (LOS F, delays of 10 minutes or longer). Traffic signals warrants were reviewed at the unsignalized intersections where poor operations are anticipated. Based on this review, traffic signals were warranted at the intersection of Highway 12 with Sideroad 25/Plum Point Road. Upon implementation of traffic signals, the intersection will perform acceptably

through the 2043 horizon. Traffic signals were not warranted at the intersections of Highway 12 with McNeil Street or Highway 12 with the North-South Collector. Regardless, implementing traffic signals at these intersections would ensure that each operates acceptably through the 2043 horizon (should such be implemented).

The remaining intersections along the Rama Road corridor were found to operate acceptably (LOS E or better) through the 2043 horizon, with no improvements required (beyond signal timing optimizations) to accommodate future traffic volumes.

6.3.2 Road Operations

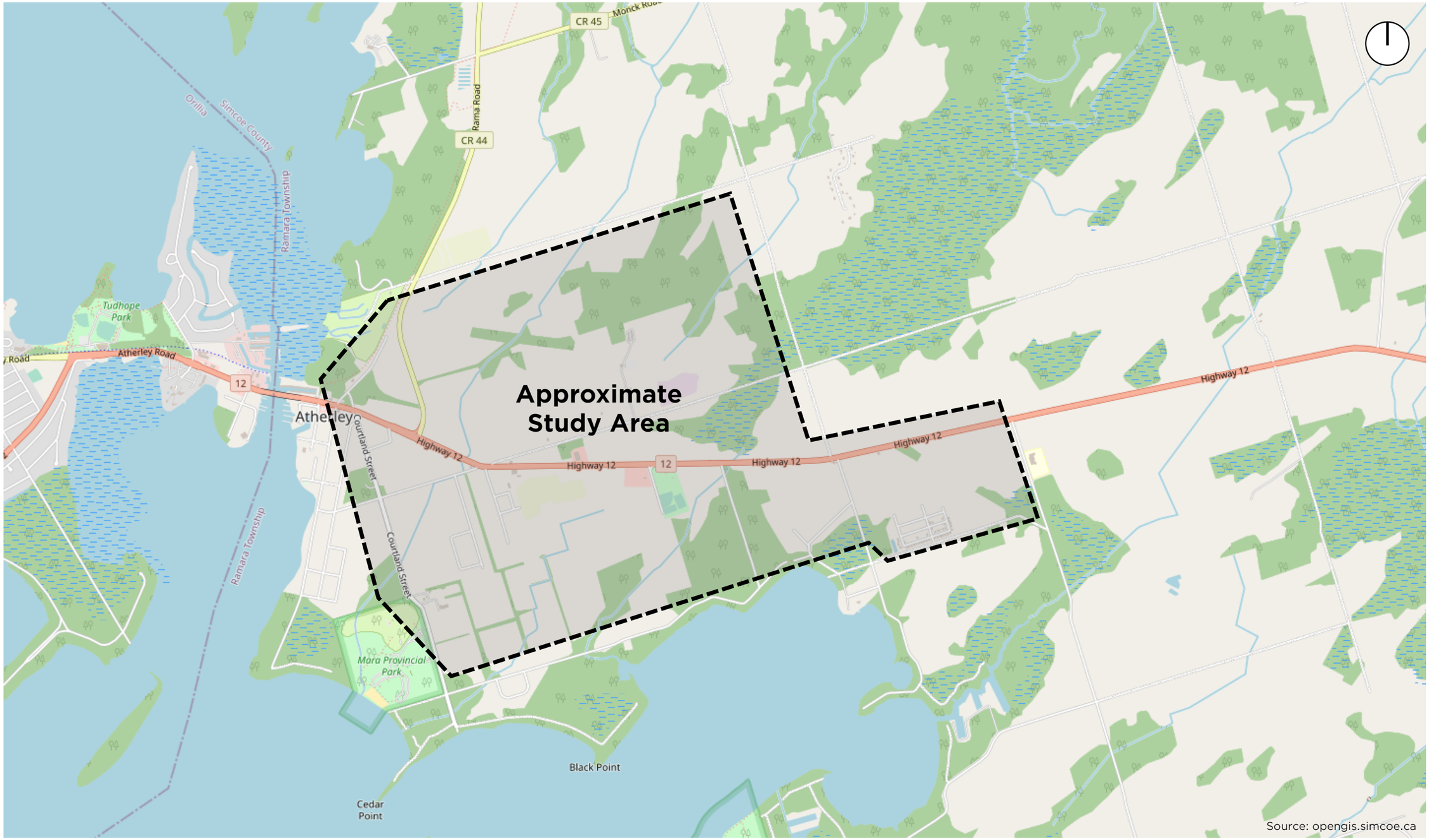
A review of the volume-to-capacity ratios of the study area roads between the key intersections (i.e. the road itself) was conducted to ensure that the road network can accommodate the existing and future traffic volumes.

The existing road network was found to be sufficient to accommodate the existing traffic volumes. By the 2033 horizon, one section of Highway 12 was observed to operate at/above the assumed planning capacity of the road during the PM peak hour. By the 2043 horizon, most sections of Highway 12 were observed to operate over the assumed planning capacity of the road during the PM peak hour. Recognizing, however, that the capacity of a road is ultimately dictated by the capacity of its intersections (which was demonstrated to be acceptable in the intersection operations review), the available midblock capacity on Highway 12 is considered sufficient to accommodate the 2043 traffic volumes.

No capacity constraints were observed on the remaining study area road sections through the 2043 horizon.

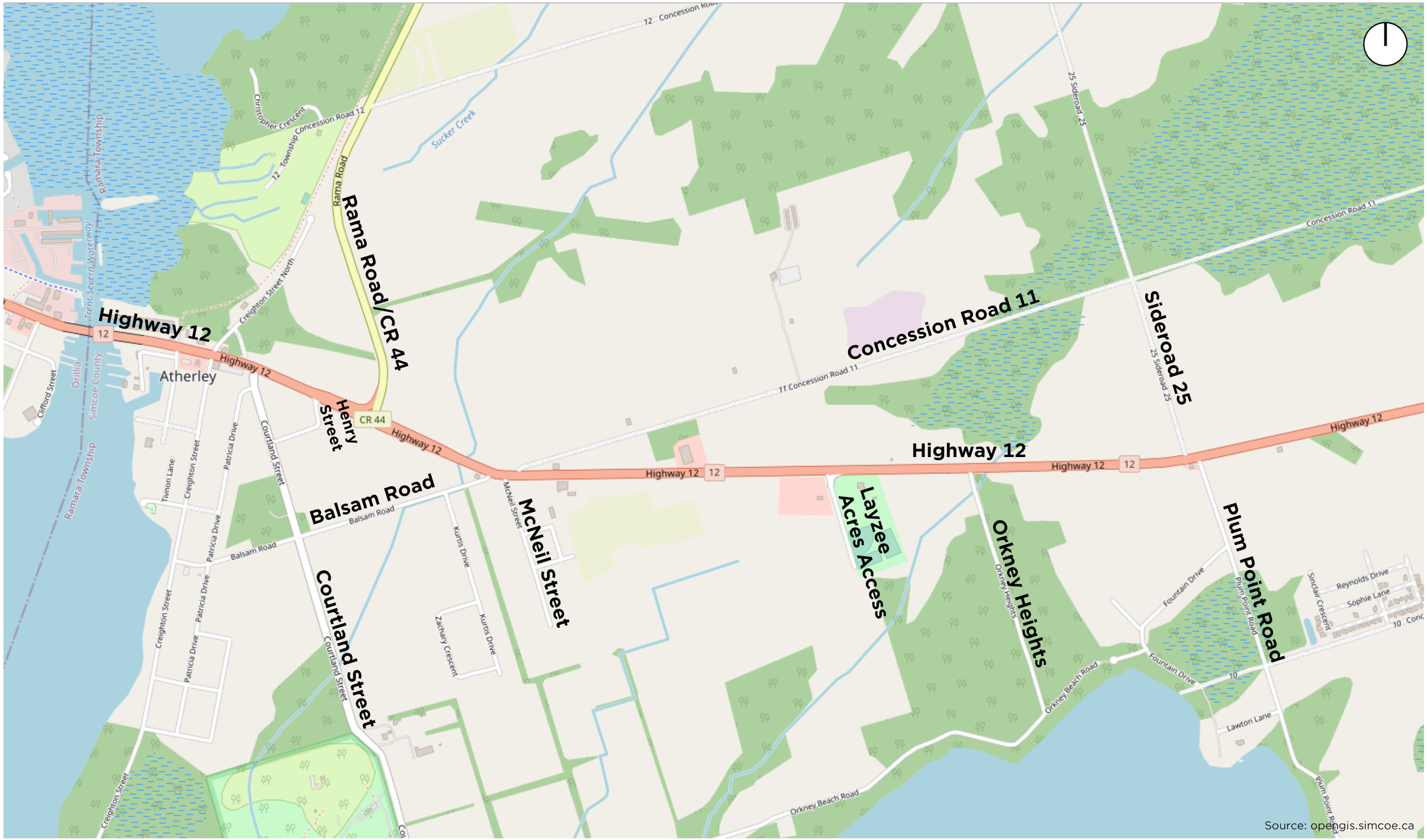
6.3.3 Queue Operations

The proposed separation of the East-West Collector from Highway 12 is less than the 400 metres required by MTO. The queuing of traffic on Plum Point Road between Highway 12 and the proposed East-West Collector was reviewed to ensure that queues forming on Plum Point Road do not result in disruptions to Highway 12's operations. Based on the assessment results, the proposed separation is sufficient to accommodate the 2043 traffic volumes.



ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

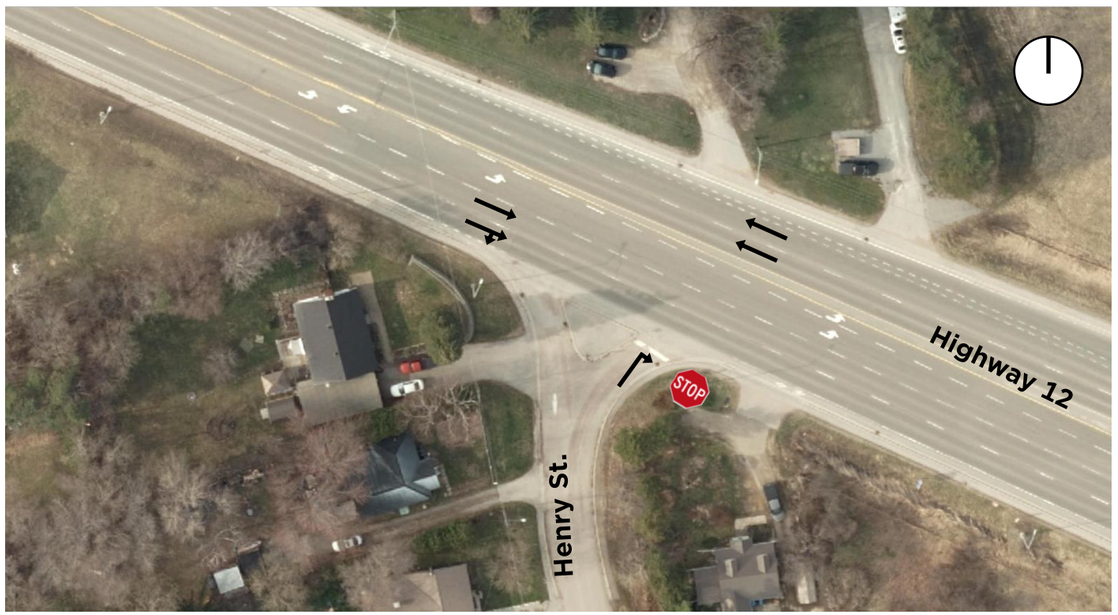
Figure 1: Study Area



ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

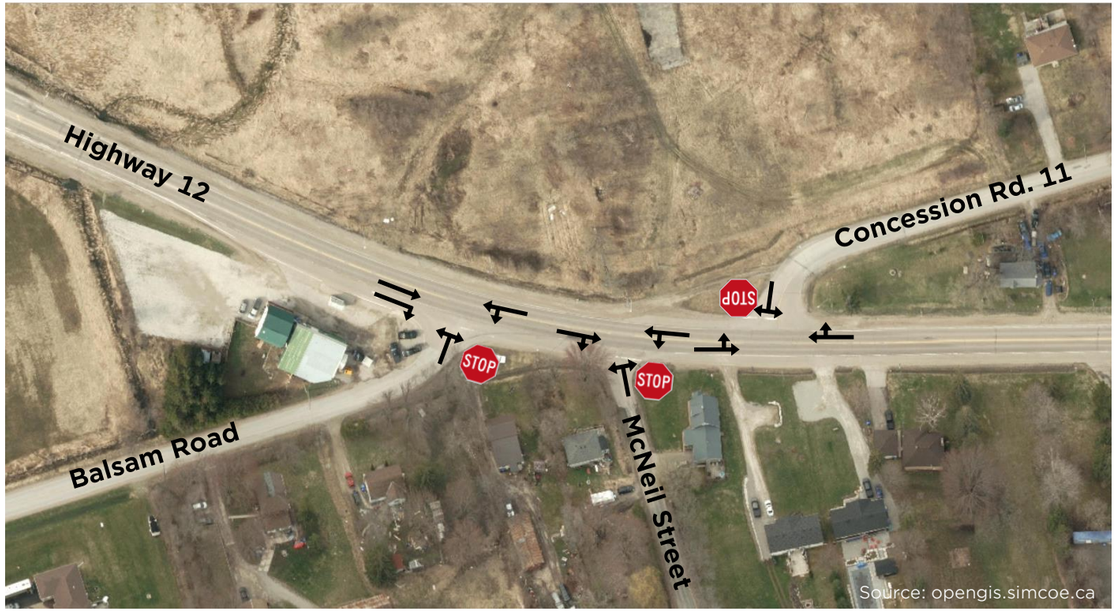
Figure 2A: Road Network

Intersection of Highway 12 & Courtland Street



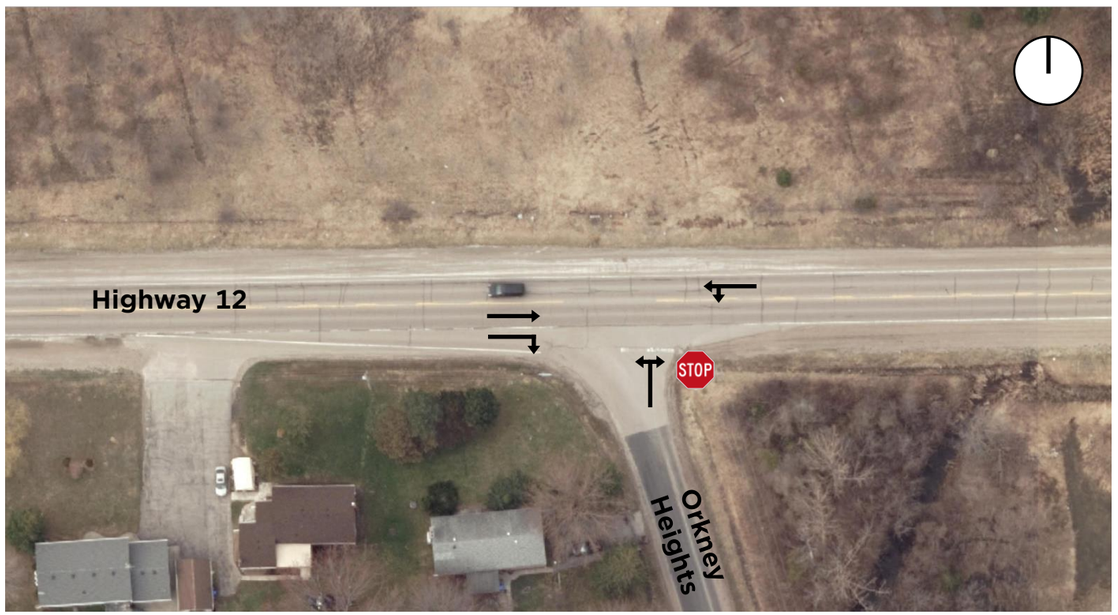
Intersection of Highway 12 & Henry Street

Intersection of Highway 12 & Rama Road

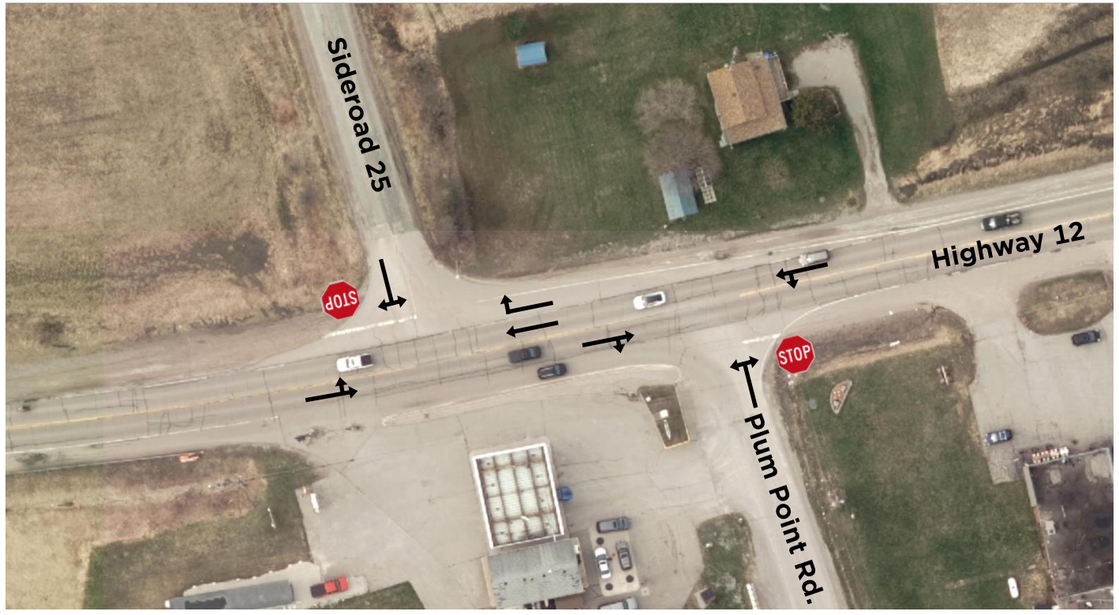


Intersections of Highway 12 with Balsam Road, McNeil Street, and Concession Road 11

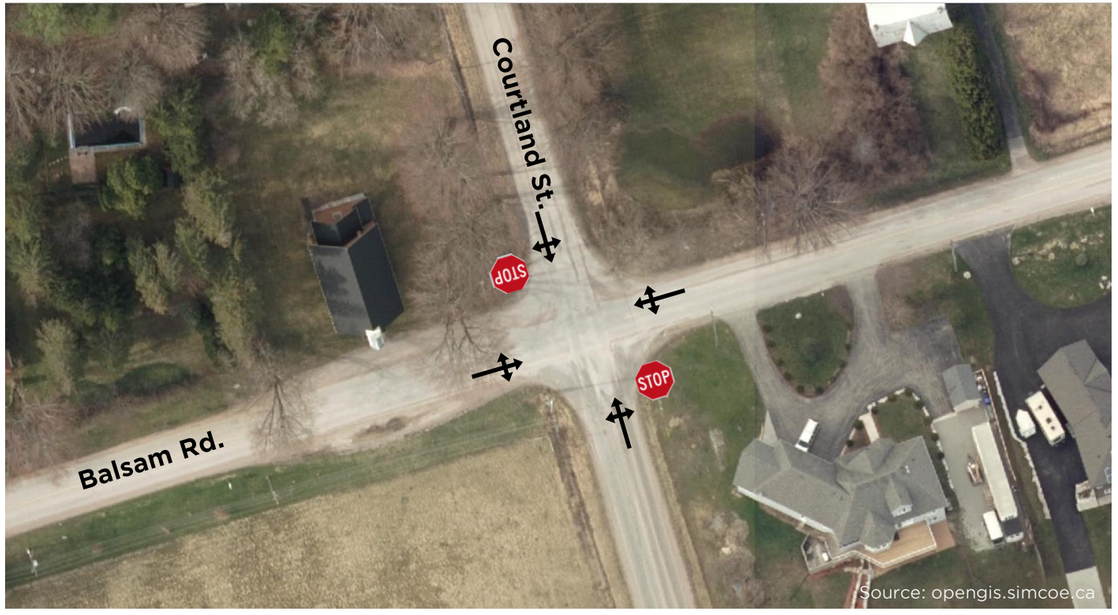
Intersection of Highway 12 & Layzee Acres Access



Intersection of Highway 12 & Orkney Heights

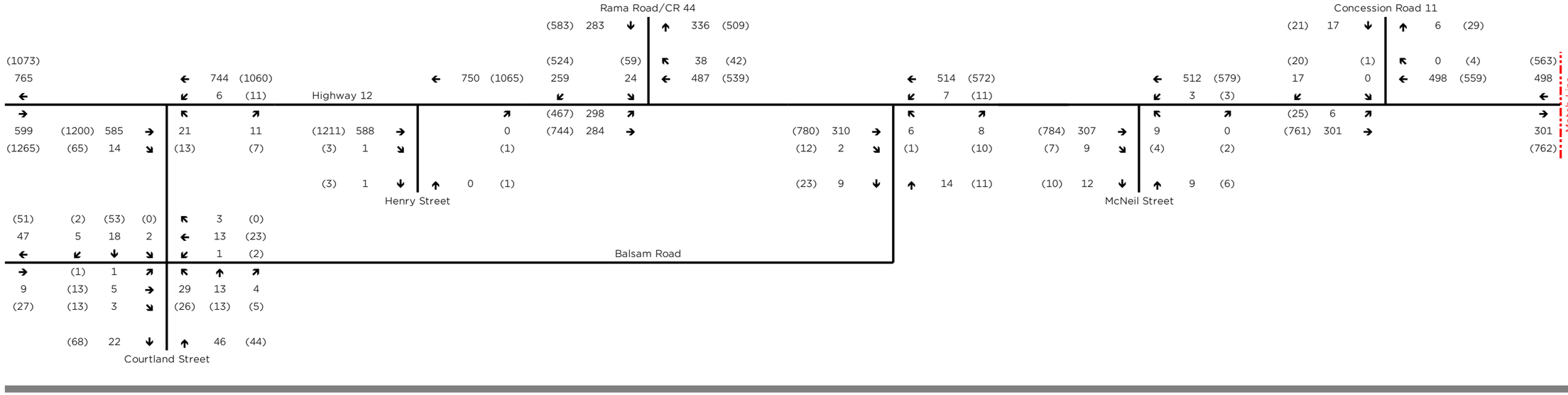


Intersections of Highway 12 with Sideroad 25 and Plum Point Road

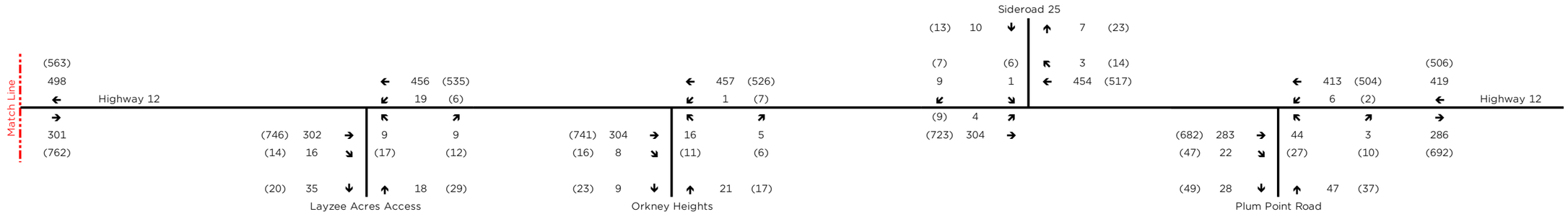


Intersection of Balsam Road & Courtland Street

West Study Area



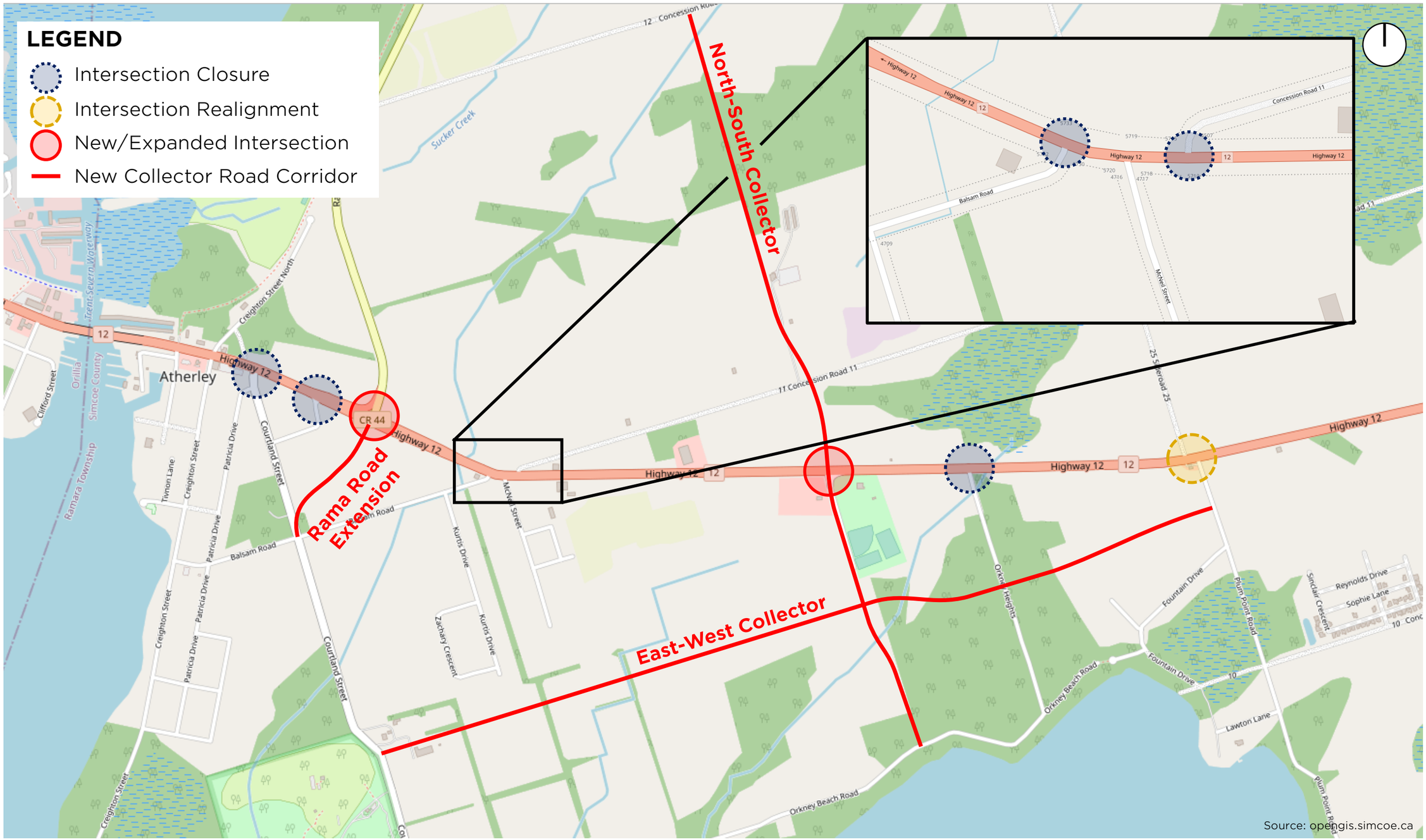
East Study Area



100 Weekday AM Peak Hour
(100) Weekday PM Peak Hour

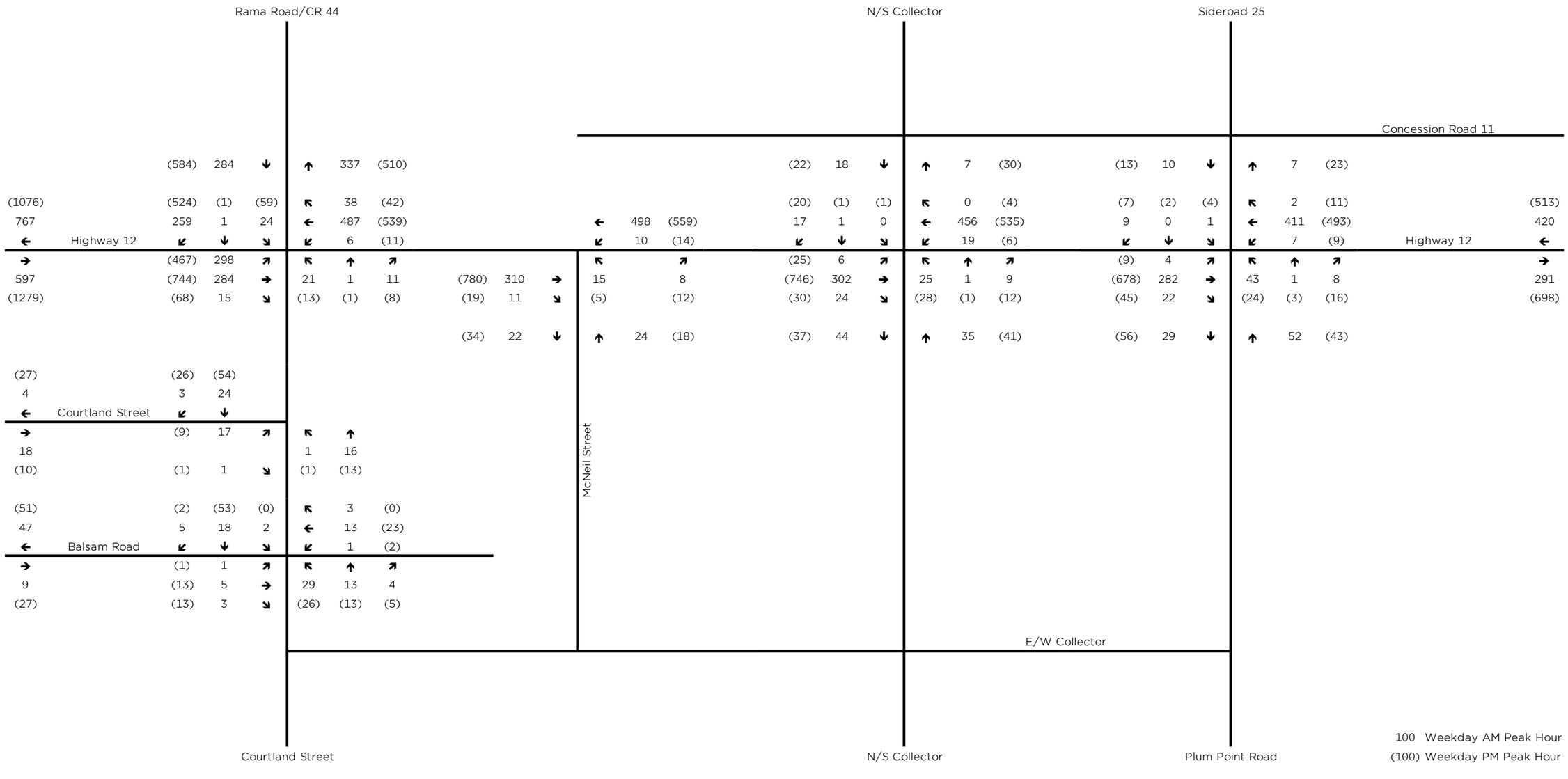
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 3: Traffic Volumes – 2023



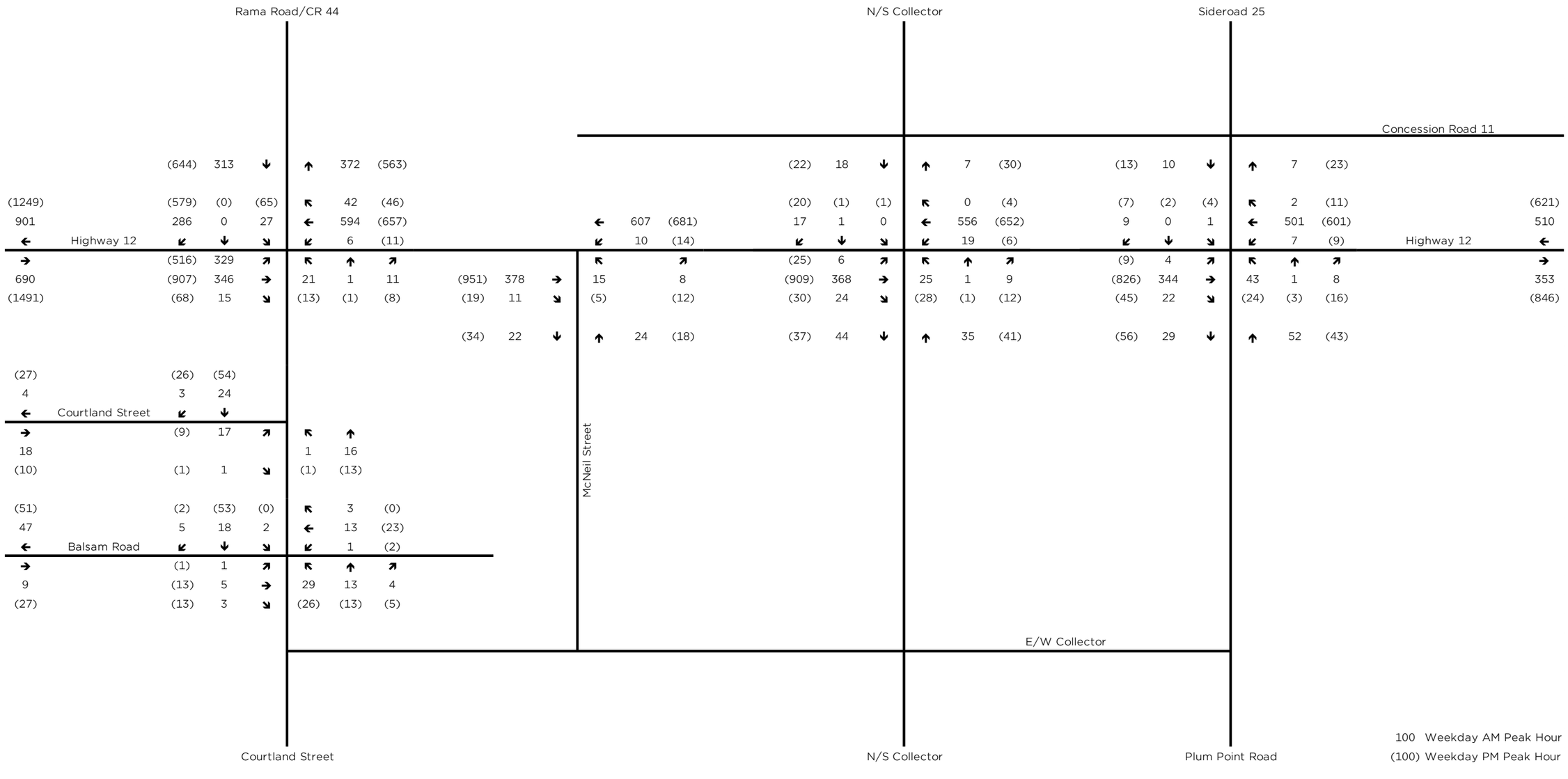
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 4: Proposed Future Road Network



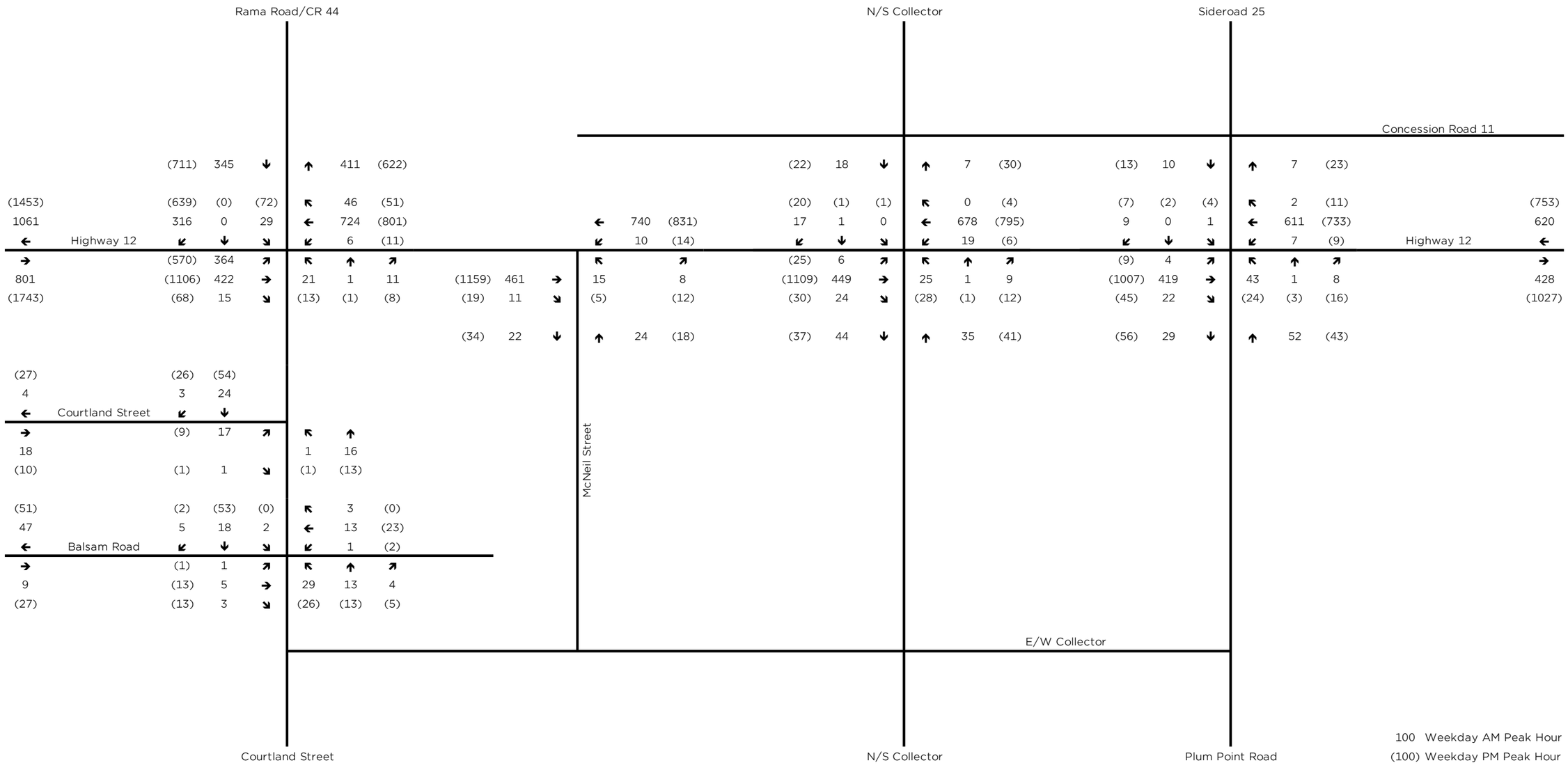
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 5: Traffic Volumes – 2023 Re-Assigned



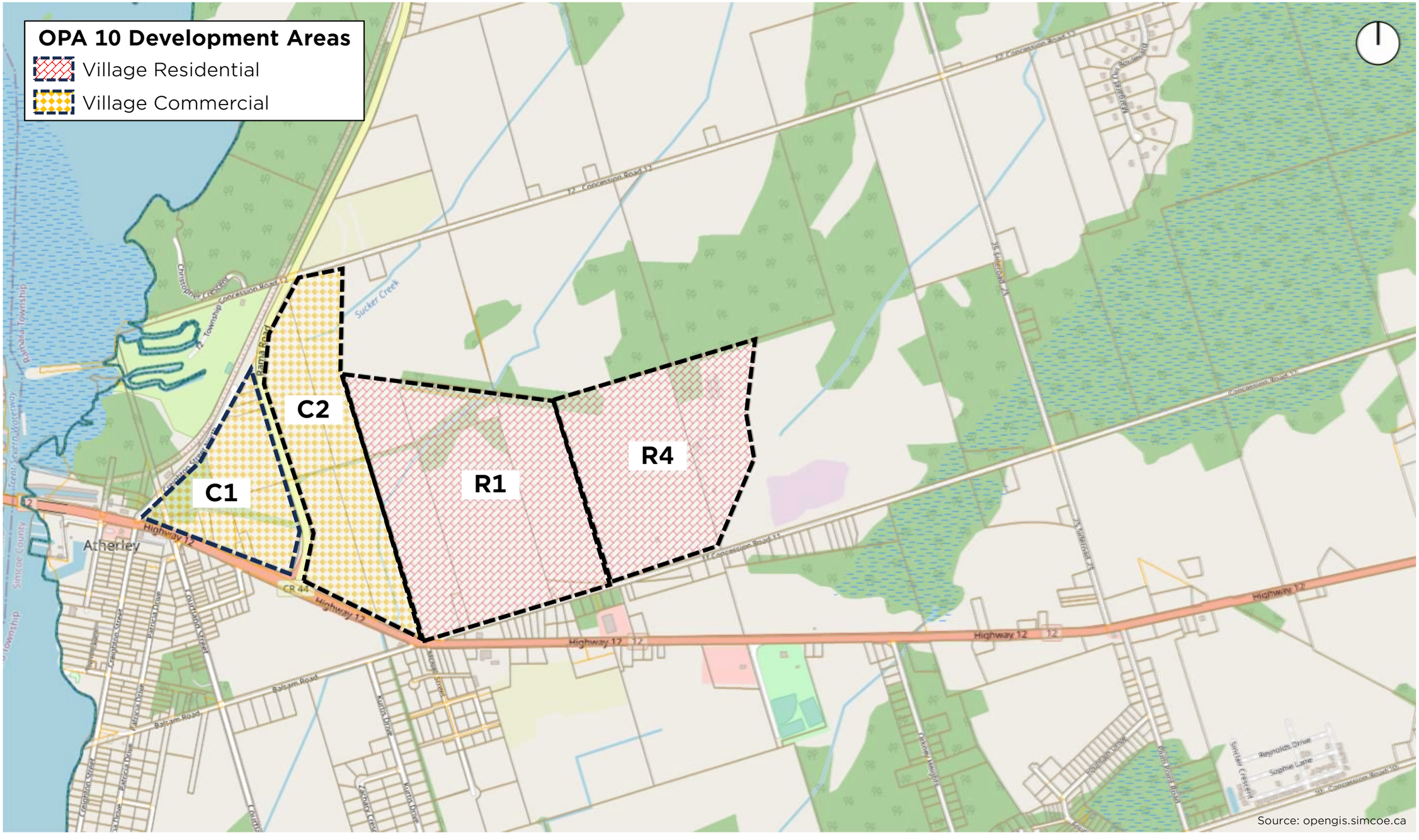
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 6: Traffic Volumes – 2033 Background



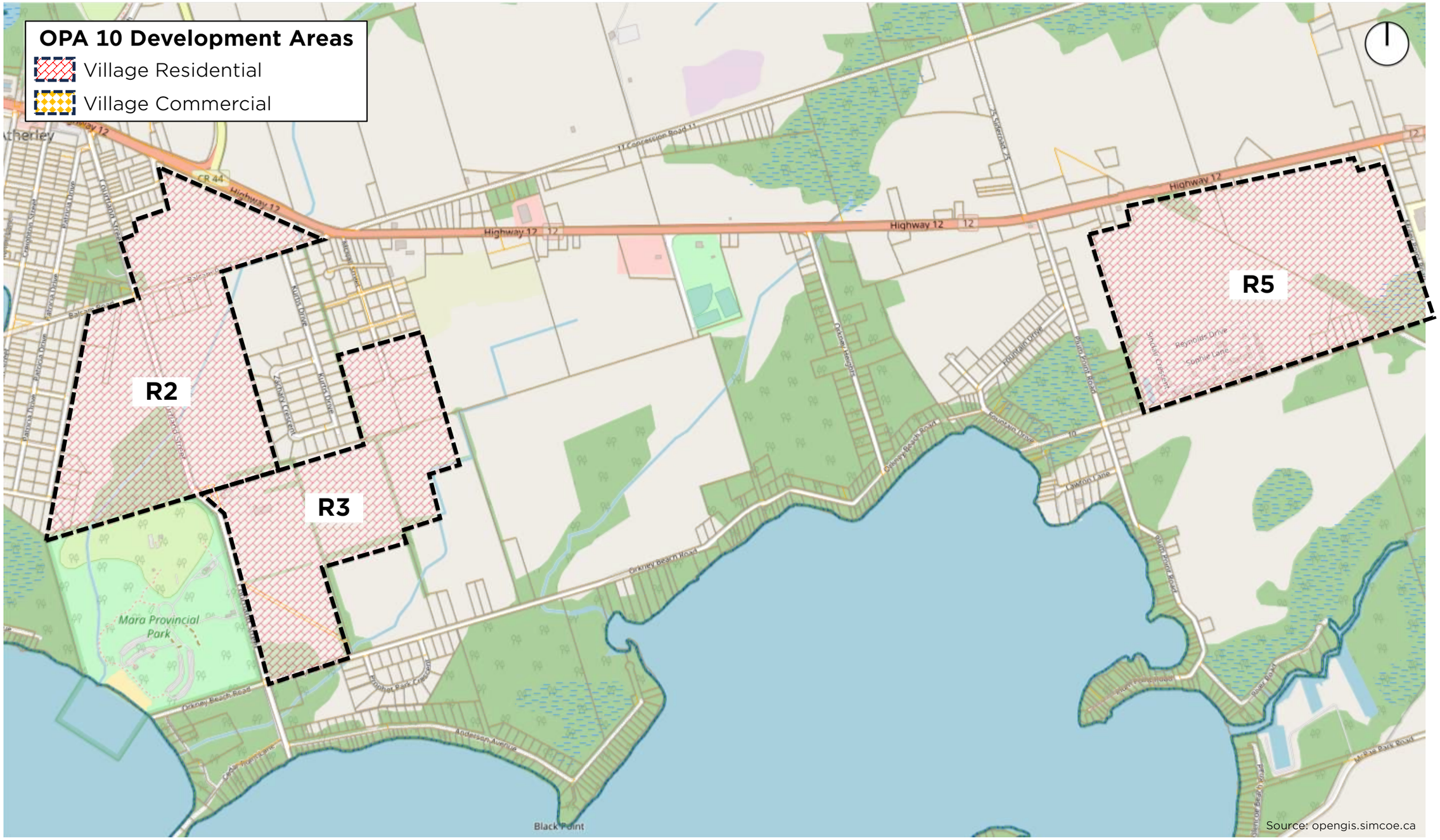
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 7: Traffic Volumes – 2043 Background



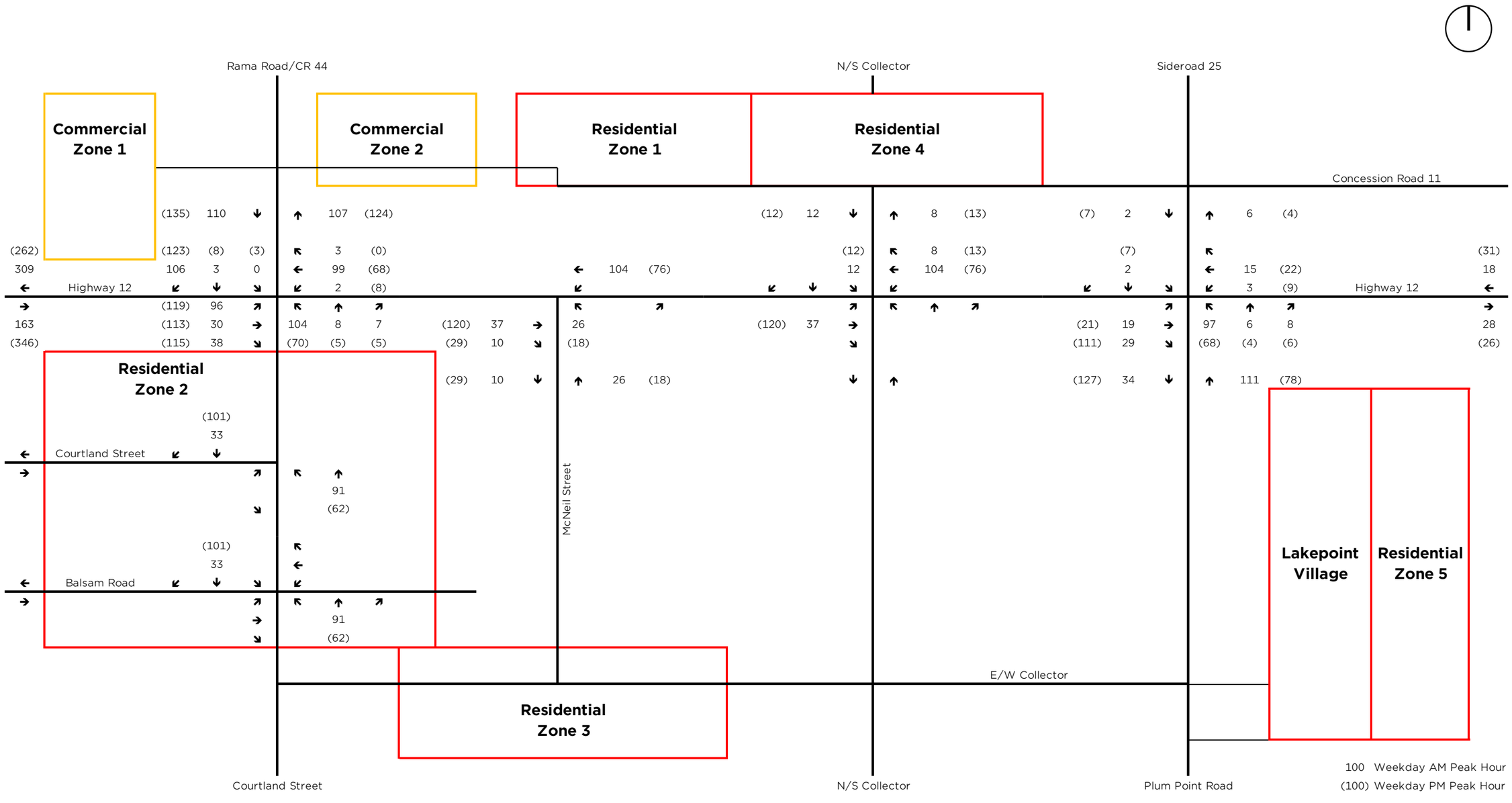
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 8: OPA 10 Development Areas – North



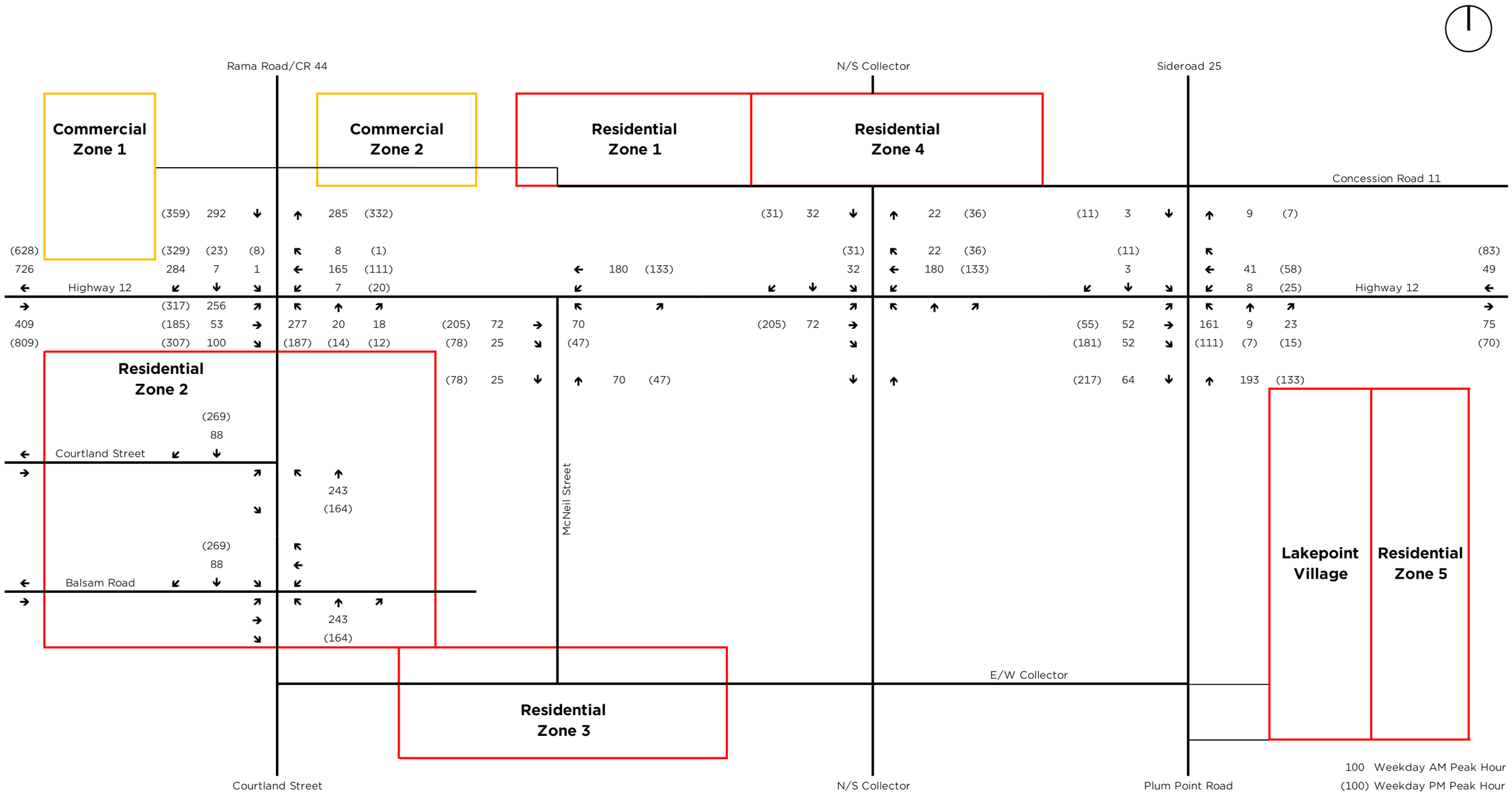
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 9: OPA 10 Development Areas – South



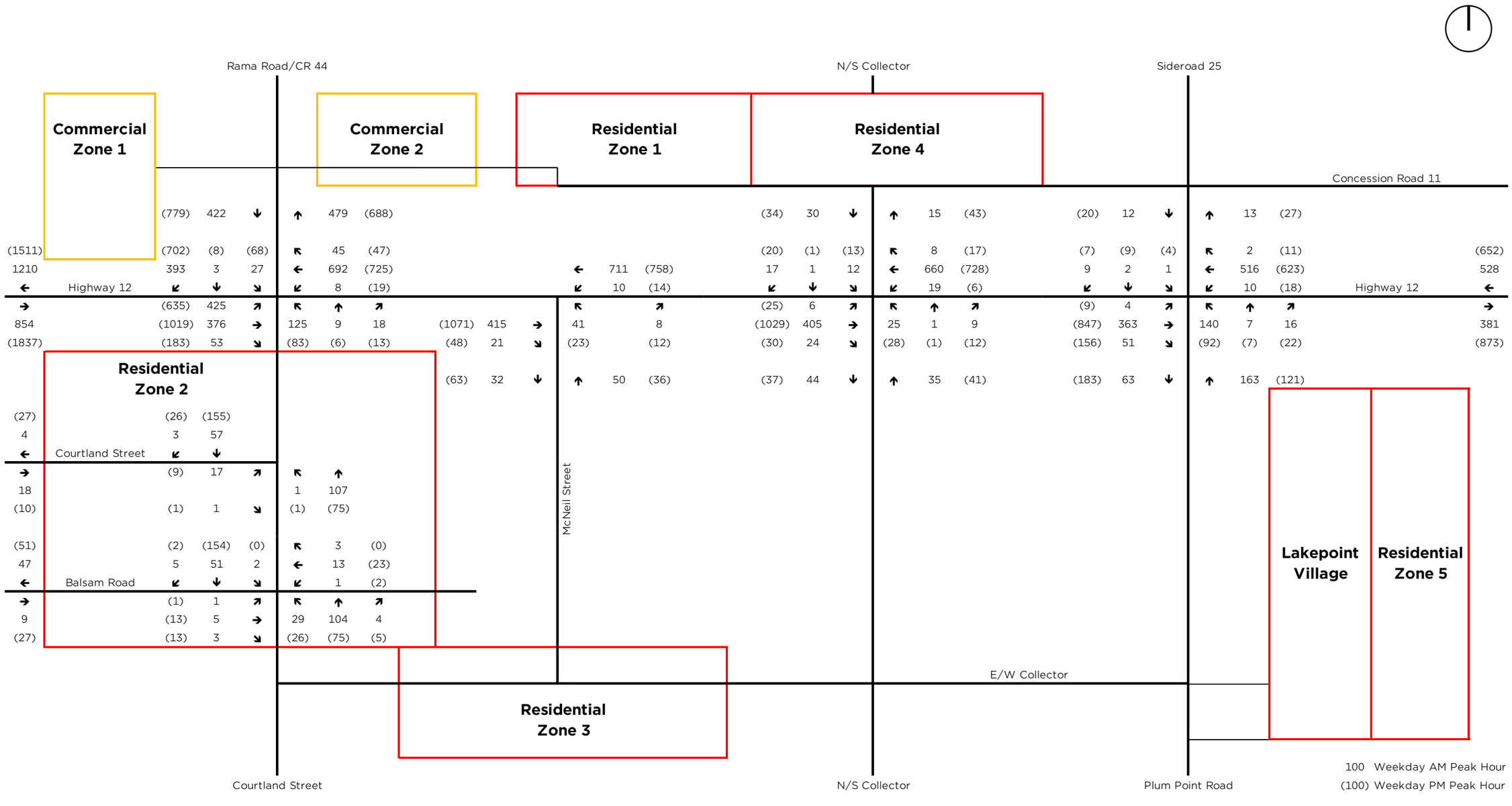
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 10: Traffic Volumes – 2033 Development



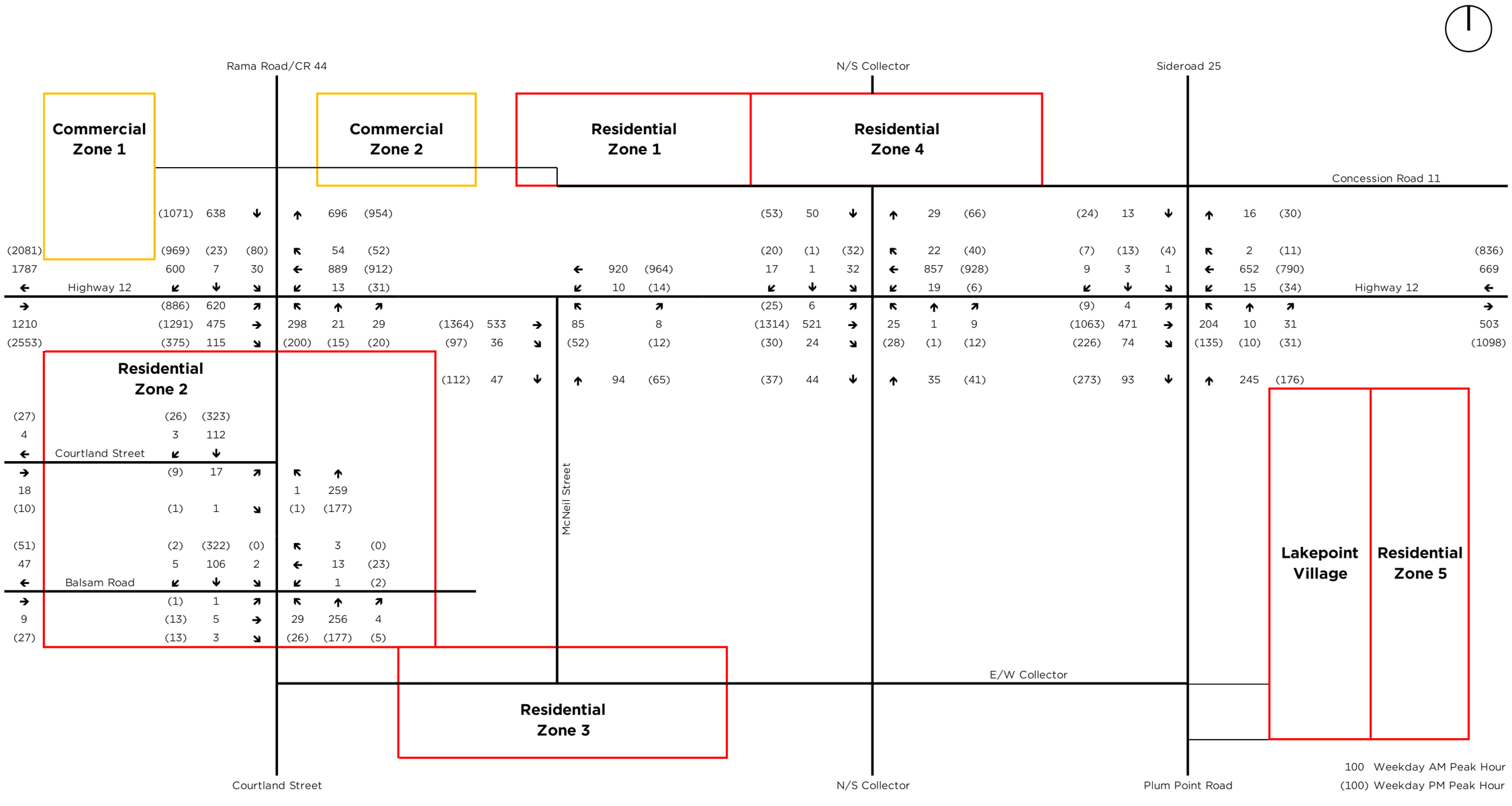
ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 11: Traffic Volumes – 2043 Development



ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 12: Traffic Volumes – 2033 Total



ATHERLEY TRANSPORTATION STUDY - NEEDS & JUSTIFICATION

Figure 13: Traffic Volumes – 2043 Total

Appendix A:
Study Terms of Reference

TATHAM ENGINEERING

10 Diana Drive, Building 8, Unit 7
Orillia, Ontario L3V 8K8

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E info@tathameng.com
tathameng.com

ATHERLEY NEEDS & JUSTIFICATION STUDY
TOWNSHIP OF RAMARA
TERMS OF REFERENCE

OUR UNDERSTANDING

The Highway 12 corridor through the Village of Atherley-Uptergrove (Atherley) area has become increasingly congested due to increased development in the immediate and surrounding areas and increases in through traffic, given the inter-regional role and function of the highway. In addition, numerous intersections throughout the corridor have inadequate spacing, intersect Highway 12 at suboptimal angles, and/or experience numerous collisions.

To provide some relief on the existing road system and better service future development through the community, the Township is looking to develop several new north-south and east-west road corridors with connectivity to the highway. In conjunction with this work, the Township would also like to review the closure or reconfiguration of several intersections along the highway to improve safety and reduce traffic on the adjacent lower-order roads.

The Township has asked Tatham Engineering to provide a proposal to prepare a *Needs and Justification Study* to further consider and address these high-level network changes, specifically:

- identify the location and configuration of new road corridors and intersections;
- prepare conceptual plans for intersection reconfigurations along Highway 12; and
- analyze the impact of these changes on area traffic operations.

Additional details as to the corresponding study elements are detailed below.

WORK PLAN

Our work plan is summarized below and further itemized in the attached time-task chart, reflective of the following:

- Meetings & Management;
- New Road Corridors;
- Highway 12 Intersections;
- Traffic Operations; and
- Report.

Part 1: Meetings & MTO Coordination

This component of the project will encompass the anticipated project meetings and MTO coordination.

Township Meetings

We propose 2 meetings with Township staff:

- Meeting 1 will be an in-person project initiation meeting to reinforce our understanding of the project and confirm our work program, project deliverables, fees and the overall project schedule. Following the meeting, we suggest a site visit to review existing conditions and identify and further define possible constraints and opportunities for improvement, taking advantage of the Township's insight and history within the project area.
- Meeting 2 will be held virtually after submitting the draft report to the Township.

MTO Coordination

As this assignment involves Highway 12, which is under the jurisdiction of the MTO, the study will be completed in collaboration with them to ensure methodologies and outcomes align with provincial standards and priorities. As such, a Terms of Reference will be prepared for circulation to the MTO to solicit any initial feedback and confirmation on the appropriateness of the study methodology.

We have also allowed for a meeting with MTO after submitting the final draft report (after resolution of any Township comments).

Part 2: New Road Corridors

The Township has identified the following corridors for new collector roads (refer also to Figure 1):

- the East-West corridor to extend from Courtland Street to the east of Plum Point Road; and
- the North-South corridor to extend from Orkney Beach Road to Concession Road 12.

There is also the need for a new road connection from the intersection of County Road 44 and Highway 12 to the intersection of Balsam Road and Courtland Street.

We will review the Township's zoning by-law and publicly available mapping and refine the provided corridors, considering existing land uses, environmental impacts, road geometry, topography, constructability, and associated costs. Given that this study will only help to establish the needs and justification from a traffic operations perspective, it will not include consideration for natural sciences, archeological, or geotechnical investigations, as these studies will be required during future Class Environmental Assessments where the exact location of the road corridor will be defined. As such, alignments will be drawn on aerial imagery and will be approximate in location. The mapping aims to provide the Township and development community with a road map for future road network planning.

Part 3: Highway 12 Intersections

The Township has identified numerous intersections along Highway 12 that could be candidates for closure or other improvements to address safety issues and to limit the amount of through traffic on adjacent residential streets (refer to Figure 2). All of the noted intersections will be inventoried with respect to intersection configuration and control, spacing, and available sight lines. Current MTO access management guidelines will be reviewed in context of the existing intersection spacings. Collision history will be requested from the Township and MTO to identify any safety concerns as may be evident from the collision records (it is assumed that collision records will be readily available for compilation and review). Based on these initial tasks, commentary will be provided with respect to candidacy for closure or realignment.

We will review the intersections identified for possible closure to determine if any negative implications may result (i.e. will the closure of the intersection result in any undue inconvenience to the general public or make conditions worse at other intersections). If the intersection can be closed, we will provide conceptual plans showing how this can be done while still providing access to adjacent residents and businesses and appropriate turn-around facilities for maintenance vehicles, snowplows, and waste collection vehicles. For those intersections identified for realignment, we will review the current road and intersection alignments in context of current standards and identify improvement options and any associated property requirements.

Conceptual drawings (using an aerial photo base) will be developed for the following intersections:

- Highway 12 and Courtland Street (closure);
- Highway 12 and Caroline Street (closure);
- Highway 12 and Balsam/McNeil/Concession 11 (realignment);
- Highway 12 and new North-South Collector;
- Highway 12 and Orkney Heights (closure); and
- Highway 12 and Side Road 25/Plum Point Road (realignment).

Up to two conceptual plans and a cost estimate for the preferred alternative will be prepared for each location.

Part 4: Traffic Operations

Study Area

A traffic operations assessment will be conducted to inform the development of the proposed road network. In this regard, the assessment will review the various improvements currently under consideration to determine their impact on the overall study area road network. The study area will include

the Highway 12 corridor between Courtland Street and Plum Point Road and will consider the following intersections:

- Highway 12 & Courtland Street
- Highway 12 & Caroline Street
- Highway 12 & Rama Road/County Road 44
- Highway 12 & Balsam Road
- Highway 12 & McNeil Street
- Highway 12 & Concession Road 11
- Highway 12 & Layzee Acres access
- Highway 12 & Orkney Heights
- Highway 12 & Sideroad 25
- Highway 12 & Plum Point Road
- Courtland Street & Balsam Road

MTO will be contacted at the onset of the study to establish any planned highway improvements to be considered, request available traffic data for the study area, and identify any other considerations MTO may have with respect to the scope of the study.

Traffic Counts

A traffic count program will be developed to establish the existing conditions on the road network. Ideally, traffic counts will be conducted during the summer months to capture peak summer conditions (as is typically required by MTO). The traffic count program will consider any recent traffic count data made available by MTO (traffic count data should be no older than 2 years). The study area road network operations will be assessed based on the traffic data collected to establish the baseline conditions. For purposes of this proposal, we have carried an allowance to complete the traffic count program, following confirmation of information available from MTO.

Traffic Forecasts

Future traffic volumes will be established for 10 and 20 year horizon periods (2033 and 2043) based on anticipated background growth for the wider area (recognizing that Highway 12 is an inter-regional facility that conveys traffic from a larger geographical area than the subject study area), along with future growth associated with the development of lands within the Atherley area. Development-related traffic will be established through a review of available draft plans for the area or, where a draft plan does not yet exist, through a review of the applicable zoning, permitted uses and anticipated residential/employment densities. The developable lands to be included in the assessment will be identified in coordination with Township planning staff. The future development traffic will be assigned to the road network with consideration given to the new road corridors and proposed intersection improvements. Similarly, the traffic volumes currently on the local road network will be re-assigned through the road network based on the same proposed improvements.

Traffic Analysis

The proposed road network will be assessed under the future 2033 and 2043 horizons. It is noted that the intent is to assess the impact of the proposed road network modifications on the study area intersections identified above and recommend improvements at these intersections as required to ensure acceptable operations are achieved. Further, the proposed intersection of the new east-west corridor with Plum Point Road will be reviewed to ensure adequate separation from Highway 12. Assessment of the proposed new road corridors will be limited to a review of the future traffic volumes assigned to them in context of the anticipated functional road classification (i.e. arterial, collector or local) and associated lane capacities, with the intent of identifying potential lane requirements (i.e. 2, 3 or 4 lane corridors).

At the intersection of Highway 12 / Sideroad 25 / Plum Point Road, we will complete a traffic signal warrant analysis to determine if signals are warranted as requested by the Township. It is also understood that a police station may be constructed at this intersection. We will require any drawings and reports in relation to this development to assist in our work.

Part 5: Report

The *Needs and Justification Study* report will document the methodology and findings of the above work stages and associated tasks, and will specifically include:

- new road corridor drawings, cost estimates and commentary;
- intersection improvements (eg. closures, realignments, etc.) outlining expected risks, challenges, opportunities, and the anticipated MTO Environmental Assessment classification; and
- existing and future operations, as well as any recommended improvements and the timing of such.

As previously noted, a draft report will be submitted to the Township, following which any comments will be addressed and a final draft issued for submission to MTO. We have included effort to address a single round of review comments from the Township and also from the MTO, following which it is expected that a final report can be issued.

Exclusions

Our fees do not include tasks not otherwise detailed in our work plan, including:

- traffic analysis of different combinations of intersection closures;
- detail design work;
- topographic or legal surveys;
- public consultation;
- presentations to Council;

- master plan process, as per the Municipal Class Environmental Assessment process;
- natural sciences, archeological, and geotechnical investigations;
- work relating to utility relocations; and
- meetings beyond what is outlined in the proposal.

I:\Proposals\Transportation\Ramara - Atherley Needs and Justification\Atherley Needs & Justification - Terms of Reference.docx

ATHERLEY NEEDS & JUSTIFICATION STUDY

Figure 1: Proposed Road Corridors

ATHERLEY NEEDS & JUSTIFICATION STUDY

Figure 2: Intersection Modifications

From: Jennifer Conners
Sent: Thursday, September 28, 2023 2:49 PM
To: Matthew Buttrum
Subject: FW: Atherley Needs and Justification Study - Terms of Reference 323884

From: Doherty, Chris <Chris.Doherty@simcoe.ca>
Sent: Thursday, September 14, 2023 12:23 PM
To: Jennifer Conners <jconners@tathameng.com>
Cc: John Velick <jvelick@tathameng.com>; David Perks <dperks@tathameng.com>
Subject: RE: Atherley Needs and Justification Study - Terms of Reference 323884

Afternoon Jennifer,

Thanks for reaching out. The County has no comments or concerns with the project at this time. If you could keep us in the loop though as the project proceeds that would be great and you can use me as the County contact. I don't see us really providing much input to be honest but would still like to understand what will be happening and while not likely, any effects it could have on our County roads. Thanks again and have a great weekend.

Regards,

Chris Doherty, C. Tech.
Engineering Technician
County of Simcoe
Transportation and Engineering Department
Tel: 705-726-9300 Ext 1161
Fax: 705-727-7984

From: Jennifer Conners <jconners@tathameng.com>
Sent: Thursday, September 14, 2023 9:28 AM
To: Doherty, Chris <Chris.Doherty@simcoe.ca>
Cc: John Velick <jvelick@tathameng.com>; David Perks <dperks@tathameng.com>
Subject: [EXTERNAL] FW: Atherley Needs and Justification Study - Terms of Reference 323884

Hi Chris, Good morning.

Tatham is currently working with the Township of Ramara on a Needs and Justification Study for the Atherley-Uptergrove area. I'm reaching out to you to share information about this project and to confirm whether Simcoe would like to provide any input. Specifically, we would like to know if Simcoe has any concerns or additional factors that we should take into consideration.

In summary, the Highway 12 corridor in the Village of Atherley-Uptergrove is experiencing increasing congestion due to rising local development. Numerous intersections along the highway are problematic, either due to poor spacing, bad angles, or a high rate of accidents. To address these issues and improve transportation options for future community development, the Township is exploring the construction of new north-south and east-west road corridors that will connect to the highway. Alongside this, there is also interest in reviewing the closure or reconfiguration of several intersections along the highway to improve safety and reduce traffic on adjacent lower-order roads. For more details, please find the project's terms of reference attached to this email.

We have been in touch with MTO, who have provided some comments regarding the project, which you'll find below.

Please let us know if you have any questions and/or comments on the above scope and feel free to contact us to discuss any aspects of this email.
I will be pleased to provide any additional information you might require.

Best regards,
Jen

Jennifer Conners
Engineering Intern

jconners@tathameng.com **T** 705-733-9037 x2078
41 King Street, Unit 4, Barrie, Ontario L4N 6B5

tathameng.com

From: John Velick <jvelick@tathameng.com>
Sent: Thursday, September 7, 2023 4:04 PM
To: Walied Zekry <WZekry@ramara.ca>
Cc: David Perks <dperks@tathameng.com>; Jennifer Conners <jconners@tathameng.com>
Subject: RE: Atherley Needs and Justification Study - Terms of Reference 323884

Hi Walied,

Below are some draft responses to MTO. I wanted to circulate to you first to see if you wanted to add/change anything – particularly on points 1 and 2.

Comment 4 is going to be tricky as there is no practical place for the connection further south. We will review the queues to see if there is any conflict with Highway 12, but MTO may not allow the connection so close.

John

John Velick P.Eng.
Manager - Transportation

jvelick@tathameng.com **T** 705-444-2565 x2110
115 Sandford Fleming Drive, Suite 200, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Dorton, Peter (MTO) <Peter.Dorton@ontario.ca>
Sent: Thursday, August 31, 2023 3:32 PM
To: David Perks <dperks@tathameng.com>
Cc: Walied Zekry <WZekry@ramara.ca>; 'Jennifer Stong' <JStong@ramara.ca>; Craft, Glenn (MTO) <Glenn.Craft@ontario.ca>; Janke, Aaron (MTO) <Aaron.Janke@ontario.ca>; Kandiah, Nanda (MTO) <Nanda.Kandiah@ontario.ca>; Brown, Francesca (MTO) <Francesca.Brown@ontario.ca>; Blaney, Cameron (MTO) <Cameron.Blaney@ontario.ca>
Subject: FW: Atherley Needs and Jus fica on Study - Terms of Reference

---

Hi David:

Here are a few thoughts on these Terms of Reference.

1. I see no mention of an Atherley – Uptergrove Secondary Plan in these Terms. Assuming that this N & J Study will be in support of an updated Secondary Plan, it would help to see exactly which areas are being considered for future development and potential land use changes, and will require / benefit from road network changes. Land use planning and transportation planning should be occurring in concert. The Township has an existing 2007 Secondary Plan and transportation background study. There are no plans to alter any of the land uses, so there is no intention to revise the plan. However, the transportation aspect is outdated and is the main focus of the current study.

2. Have you considered extending the study limits to the west end of Highway 12 in Ramara Twp. (limit currently ends at Courtland St.; note also that the intersection to the east of Courtland is Henry St., not Caroline St.). We would not recommend extending the project limits. There are only two intersections to the west – Creighton Street and Queen Street. Creighton Street is already signalized, so we do not anticipate any modifications. Queen Street (south) services a marina, so we would not want to close it as it would divert commercial traffic through the residential neighbourhood to the south. The entrance to the marina on the north cannot be moved.

3. You may want to consider showing closure of Concession Rd. 11 at Highway 12, to be realigned to the north and intersecting with CR44 / Rama Rd. at a point 400m north of Highway 12. Acknowledged.

4. Proposed new East – West Rd. intersection with Plum Point Rd. is only 200m south of Highway 12, well below our minimum spacing criteria of 400m. Detailed long term analysis will be needed to justify this; you may want to consider showing this intersection further south. Acknowledged.

5. Related to this, we note this East - West Rd. appears to connect easterly to future phase of Lakepoint Village. Assuming this to be what is proposed, and given that Lakepoint Village also access to Concession Rd. 10 (aka Melrose Dr.), perhaps there is no longer a need for the new Highway 12 / Upterheights Dr. intersection being planned for by developers of Lakepoint Village (Alliance Homes). This is something the Township wishes to explore as well.

6. Consider the re-alignments shown for Conc. Rd. 11, McNeil St. and Balsam Rd. at Highway 12 to be closures instead, depending on new alternate connections recommended in this study. Acknowledged.

7. Please note that MTO has no Highway 12 projects planned in this area, and we consider this study to be a municipal initiative, to support future developments. Assume that any recommended highway improvements will be at Township expense, and subject to MTO reviews and approvals. Acknowledged.

8. Finally, please confirm comments have also been solicited / received from Simcoe County, as CR44 is included in the study. The County will be circulated for comments.

Please feel free to contact me if you have any questions.

Thanks,
Peter Dorton | Senior Project Manager
Highway Corridor Management Section | Central Operations | Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON. M3M 0B7
Telephone: 437-833-9396 | Email: peter.dorton@ontario.ca
Web: highway corridor management | ontario.ca

Ontario

From: Dorton, Peter (MTO)
Sent: August 11, 2023 1:18 PM
To: David Perks <dperks@tathameng.com>
Cc: Walied Zekry <WZekry@ramara.ca>; Schmid, Kelly (MTO) <Kelly.Schmid@ontario.ca>; Brown, Francesca (MTO) <Francesca.Brown@ontario.ca>
Subject: RE: Atherley Needs and Justification Study - Terms of Reference

Hi David.

I'll share this with our Traffic Office and ask that they reply directly to you on the traffic count program (I am on vacation for the next week).
It could be 3 weeks or so before we will have comments on the Terms of Reference.

Thanks,
Peter Dorton | Senior Project Manager
Highway Corridor Management Section | Central Operations | Ministry of Transportation
159 Sir William Hearst Avenue, 7th Floor, Toronto, ON M3M 0B7
Telephone: 437-833-9396 | Email: peter.dorton@ontario.ca
Web: highway corridor management | ontario.ca

Ontario

From: David Perks <dperks@tathameng.com>
Sent: August 11, 2023 12:08 PM
To: Dorton, Peter (MTO) <Peter.Dorton@ontario.ca>
Subject: Atherley Needs and Justification Study - Terms of Reference

Hi Peter,

The Township of Ramara has retained Tatham Engineering to conduct a transportation needs and justification study for the Atherley-Uptergrove area, which includes the Highway 12 corridor. I understand that you have been in communication with Walied Zekry from the Township and have some understanding of the Township's goals with respect to the study. I have attached a Terms of Reference for the study for MTO review and comment. Given the time of year, we are in a bit of a time crunch with respect to getting the traffic counts conducted prior to the end of August, in this respect could you confirm the following:

- does MTO have any traffic count data available at the study area intersections identified in the attached Terms of Reference. We don't need the data just yet, but want to know if MTO has any recent data that may reduce the number of required counts.
- our traffic count program includes 8 hour counts (2hr AM, 3hr Midday and 3hr PM) to be conducted during a weekday. I just wanted to confirm whether MTO will require Saturday counts? A majority of future development will be residential in nature, although there will likely be some commercial/employment areas. I expect the weekday PM to be the critical design hour in terms of traffic on Highway 12 and volumes generated by future development.

While we ultimately need MTO's input/approval of the Terms of Reference, the traffic count program is the most pressing item as the end of summer approaches. If you could advise on the above points at your earliest convenience then we can move forward with the traffic count program. Discussion on the overall Terms of Reference can occur in the coming weeks.

Thanks Peter. Let me know if you have any questions.

Regards,
David

TATHAM ENGINEERING

David Perks M.Sc., PTP
Transportation Planner, Group Leader

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