

December 21, 2015

Our Ref: TBC

Eden Oak Homes (McNabb) Inc.
1443 Hurontario Street
Mississauga, ON L5G 3H5

Attention: Mr. Romas Kartavicius

Dear Mr. Kartavicius:

**Re: Traffic Impact Study Update Letter
Eden Oak Homes – Proposed Residential Subdivision Red Lined Revision
Town of Collingwood**

Cole Engineering Group Ltd. (Cole Engineering) is pleased to submit this Traffic Impact Study (TIS) Update Letter outlining the traffic impacts associated with the proposed Red Lined Draft Plan prepared for Eden Oak Homes (McNabb) Inc. (the “Client”). The new site plan, provided in **Appendix A**, includes changes summarized in **Table 1**.

Table 1- Former and Current Site Statistics

Unit Type	Previous Proposal (2009)	Current Proposal (2015)	Change
Single Detached Unit	342	259	-83
Townhouse Unit	0	119	+119
Net Difference			+36

Ainley Group Consulting Engineers and Planners (Ainley Group) previously submitted a TIS Update, dated January 2009, provided in **Appendix B**. This report determined site generated trips using the a.m. and p.m. peak hour of generator trip rates for a Single-Family Detached Housing land use contained in the *Trip Generation Manuals, 6th Edition*, published by the Institute of Transportation Engineers (ITE), summarized in **Table 2**. The Ainley study was based on an older version of the Draft Plan, which included 344 single-family detached units.

Table 2- Ainley Group Site Trip Generation Summary

Land Use	Unit	Parameter	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing	344	Net Trips	64	191	255	208	117	325
		Trip rates	0.19	0.55	0.74	0.60	0.34	0.94

Cole Engineering has calculated the site generated trips with the new site statistics (259 single-family detached and 119 townhouse units) using the information contained in the *ITE Trip Generation Manuals, 9th Edition*. In order to be consistent with the calculations in the Ainley Group report, the a.m. and p.m.

peak hour of generator trip rates were used for trip generation calculations, which are summarized in **Table 3**.

Table 3- Updated Site Trip Generation based on New Site Statistics

Land Use	Units	Parameter	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing	259	Gross Trips	52	147	199	169	95	264
		Rate (trips / unit)	0.20	0.57	0.77	0.65	0.37	1.02
		Non-auto Reduction (5%)	3	7	10	8	5	13
		Net Trips	49	140	189	161	90	251
		Revised rates	0.19	0.54	0.73	0.62	0.35	0.97
Residential Condominium / Townhouse	119	Gross Trips	11	47	58	49	27	76
		Rate (trips / unit)	0.09	0.40	0.49	0.41	0.23	0.64
		Non-auto Reduction (5%)	1	2	3	2	2	4
		Net Trips	10	45	55	47	25	72
		Revised rates	0.08	0.38	0.46	0.39	0.22	0.61
TOTAL TRIPS			59	185	244	208	115	323

With the new site statistics, the development is expected to generate 244 two-way (59 inbound and 185 outbound) trips during the roadway morning peak hour and 323 two-way (208 inbound and 115 outbound) trips during the roadway afternoon peak hour. Compared to the original TIS analysis of 344 single-family detached residential units, site generated trips has reduced by 11 two-way (five (5) inbound and six (6) outbound) trips during the roadway morning peak hour and two (2) two-way (both outbound) trips during the roadway afternoon peak hour.

The Transportation Tomorrow Survey (TTS) was consulted to determine by which mode of transportation people living in the area (TTS zones 8567 (subject site zone), 8568 and 8605) use to travel to work during the morning peak period. The modes of transportation utilized within the study area are summarized in **Table 4**.

Table 4- TTS Mode Split Data

TTS Zones	Walk	Other	Auto Passenger	Transit excluding GO	Cycle	Auto Driver	Motorcycle	Total
8567	80	37	337	21	46	2286	14	2821
8568	0	0	164	43	14	1157	0	1378
8605	49	0	48	0	0	397	0	494
Total	129	37	549	64	60	3840	14	4693
Percent	3%	1%	12%	1%	1%	82%	0%	100%

Based on the TTS results, approximately 95% of work trips are made by an automobile, either a driver or passenger, which results in a non-auto mode of 5%. This is reflected in the “Non-auto Reduction” rate of 5% used in **Table 3** to determine new auto trips generated by the proposed development.

The Red Lined Draft Plan results in a marginal decrease in site generated trips for the morning peak period and no change for the afternoon peak period. Therefore, an update to the previously submitted TIS Update prepared by Ainley Group is not required.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

COLE ENGINEERING GROUP LTD.



Jillian Britto, EIT
Transportation Analyst



Joseph E. Gowrie, P. Eng.
Project Manager, Traffic

JB:

Encl. Appendix A – Proposed Red Lined Draft Plan
 Appendix B – Eden Oak Homes Traffic Impact Study Update prepared by Ainley Group, dated
 May 2009


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APPENDIX A
Proposed Red Lined Draft Plan

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NOTE: BUILDER TO
VERIFY LOCATION
OF ALL HYDRANTS,
STREET LIGHTS,
TRANSFORMERS
AND OTHER
SERVICES. IF MIN.
DIMENSIONS ARE
NOT MAINTAINED
BUILDER IS TO
RELOCATE AT HIS
OWN EXPENSE.

DRAWN BY	
SCALE 1:300	
PROJECT No. 15034	

APPENDIX B

**Eden Oak Homes Traffic Impact Study Update Prepared
By Ainley Group, Dated May 2009**

TOWN OF COLLINGWOOD
EDEN OAK (McNABB) DRAFT PLAN OF SUBDIVISION
TRAFFIC IMPACT STUDY UPDATE
TRACEY LANE / FINDLAY STREET AND
HURONTARIO STREET INTERSECTION

(May 2009)

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May, 2009
File No. 105026

**TOWN OF COLLINGWOOD
EDEN OAK (McNABB) DRAFT PLAN OF SUBDIVISION
TRAFFIC IMPACT STUDY UPDATE
TRACEY LANE/FINDLAY STREET AND
HURONTARIO STREET INTERSECTION**

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Appendix B – Left Turn Warrants
Appendix C – Level of Service Data and Calculation Sheets
Appendix D – Projected Traffic Volumes
Appendix E – Traffic Signal Warrant Work Sheets
Appendix F – Synchro 7 Output Reports

**EDEN OAK (McNABB) DRAFT PLAN OF SUBDIVISION
TRAFFIC IMPACT STUDY UPDATE
TRACEY LANE/FINDLAY STREET AND
HURONTARIO STREET INTERSECTION**

1.0 INTRODUCTION

1.1 Project Description

Ainley Group has been retained by Stuart and Valerie McNabb and Eden Oak Homes to conduct a traffic impact study update for the proposed development. This site is 27.5 hectares in size and historically has been used for agriculture. The Town of Collingwood, as part of the Development Approval process, has requested a traffic impact study be prepared to assess potential impacts of the development.

The proposed development will provide 344 residential lots for single-family homes. Construction within the Development is expected to begin in 2009 with full build out to be completed by the year 2019. For the traffic analysis, it was assumed that 50% build out for the development will occur by 2014 with full build out completed by 2019.

1.2 Peak Hours for Study

For the purpose of this study, the traffic has been analyzed for summer weekday am/pm peak hours to determine which will have the greatest impact on the road network within the study area.

1.3 Study Area

The site is located to the north and east of the intersection of Hurontario Street / County Road 124 and Poplar Sideroad, as shown on the Site Plan, Figure 1.

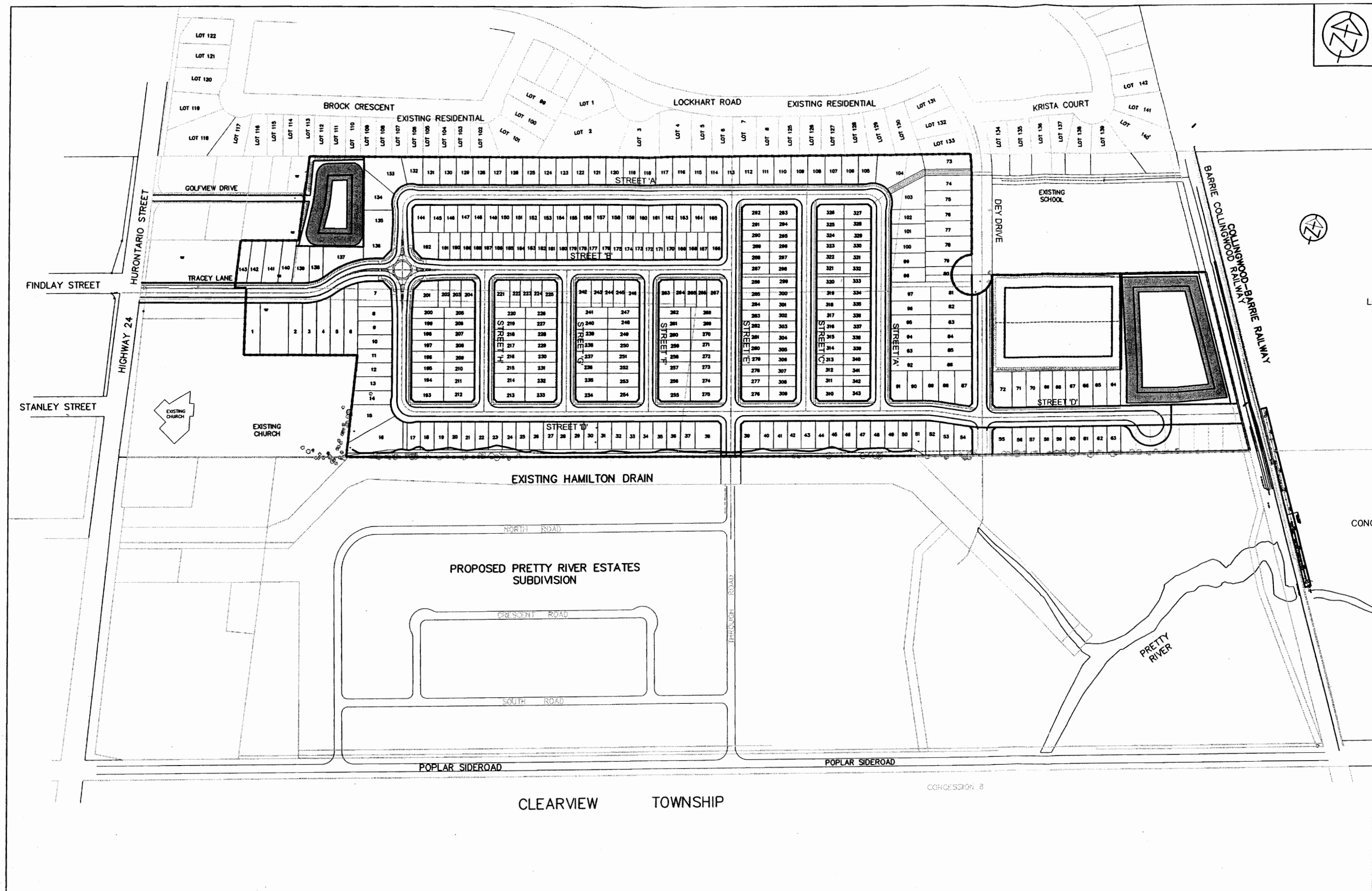
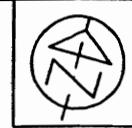
This study update will determine the impact of the proposed development on the intersection of Tracey Lane / Findlay Street and Hurontario Street. The intersection will be examined using the existing background traffic as well as the 5 year (2014) and 10 year (2019) projections of the background traffic. The 5 year and 10 year projections will also include the anticipated traffic generated by the Eden Oak Homes development, Pretty River Estates development, a proposed development located on High Street and Poplar Sideroad (with an access via Findlay Street) and a proposed Home Hardware Store on the northeast corner of Poplar Sideroad and Hurontario Street.


2.0 EXISTING CONDITIONS

2.1 Road Network

The road system being studied in this report update is Hurontario Street from Poplar Sideroad to Lockhart Road (the western boundary), Findlay Street and Tracey Lane (major access to the development).

Tracey Lane is two lane road which is a publicly owned and maintained, but does not meet any of the current Town of Collingwood design standards. Tracey Lane is the eastbound leg of the 4 way unsignalized intersection, which includes Hurontario Street and Findlay Street. Tracey Lane is offset to the south of Findlay Street and is presently serving as a residential entrance to a non-working farm and a local church.



NOTES				Not Valid Unless Signed And Dated				SCALE: N.T.S.		TOWN OF COLLINGWOOD EDEN OAK HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO		 CONSULTING ENGINEERS PLANNERS	
				PRELIMINARY				DESIGN: D.L.M.					
				CAUTION: The information contained in this drawing is solely for the intended recipient. Any copying, distribution or use by others without the express written consent of Ainley & Associates Limited, is prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator.				DRAWN: A.P.					
								CHECKED: D.L.M.					
								DATE: MAR/09		SITE PLAN FIGURE 1		CONTRACT No.	
												DWG. No. 105026-FIG1	

Findlay Street is a local residential street. Hurontario Street has been reconstructed (2007) to an urban standard with a through lane in each direction and a continuous left turn lane.

Hurontario Street has a posted speed limit of 50 km/hr and a design speed of 70 km/hour will be used for this study. Findlay Street and Tracey Lane have been assigned a design speed of 50 km/hr for this study.

2.2 Traffic Counts

Background traffic volumes for Tracey Lane / Findlay Street and Hurontario Street were obtained using the Lockhart Road / Campbell Street and Hurontario Street data along with the data from the High Street & Poplar Sideroad Residential Development Traffic Impact Assessment report submitted to the Town of Collingwood by Consult Tatham Transportation Consultants in November 2004.

As per recommendations made in the Georgian Triangle Area Transportation study, which indicated that summer volumes were found to be 20% to 40% higher than in the winter, this study will consider summer a.m. and p.m. peak hour volumes. As discussed with the Town, all of the traffic counts taken during the fall or winter will be increased by 30%.

Table 1 shows the existing Level of Service (LOS) for each leg of the existing unsignalized intersection being studied for this report update. Appendix A contains the Level of Service Criteria for unsignalized intersections. Appendix B contains the information for the left turn warrants for Tracey Lane / Findlay Street and Hurontario intersection. Appendix C contains the calculations to show the level of service for Tracey Lane / Findlay Street and Hurontario intersection.

TABLE 1: EXISTING LOS FOR THE TRACEY LANE/ FINDLAY STREET AND HURONTARIO ST INTERSECTION

Street Name	Traffic Approach	LOS	
		a.m. Peak Hour	p.m. Peak Hour
Tracey Lane	West Bound	C	C
Findlay Street	East Bound	E	E
Hurontario Street	North Bound	A	A
	South Bound	A	A

2.3 Background Traffic Growth

For this study, background traffic projections are required for 2014 (assuming 50% build out) and 2019, (100% development build out). Growth factor rates were based on information from the Town and are estimated to be 4.5% per annum. This growth factor was applied to all of the background traffic volumes from all of the streets. The projected background traffic volumes and calculations are contained in Appendix D.

3.0 SITE TRAFFIC GENERATION

3.1 Site Trip Traffic

The ITE Trip Generation Manual (6th edition) was used to estimate the number of trips (i.e. vehicle movements) to be generated by the Eden Oak Homes development. Land Use 210 from the ITE Trip Generation Manual is for single-family detached housing. The average vehicle trips generated

versus the number of dwelling units for a weekday will be used to determine the a.m. and p.m. peak hour traffic. In both cases, we have used the a.m. or p.m. peak hour of generator to determine the average vehicle trips.

3.2 Traffic Generated

For the proposed 344 residential lots and using the equation found on page 266 of the ITE Trip Generation Manual (Book 1), the average vehicle trip end versus dwelling units on a weekday morning is 254 trips. The directional split for the trips is 25% entering and 75% exiting. Therefore, the development generates 64 trips to the site and 191 trips exiting the site during the a.m. peak hour. Calculations are shown in Appendix D.

For the proposed 344 residential lots and using the equation found on page 294 of the ITE Trip Generation Manual (Book 1), the average vehicle trip end versus dwelling units on a weekday afternoon is 326 trips. The directional split for the trips is 64% entering and 36% exiting. Therefore, the development generates 208 trips to the site and 117 trips exiting the site during the p.m. peak hour. Calculations are shown in Appendix D.

Since this update references the original report, we have continued to the trip generation calculations from the ITE Trip Generation Manual 6th edition. We have compared these trip generations to the ITE Trip Generation Manual 8th edition with an increase/decrease to the site generated traffic of $\pm 2.5\%$. The only increase was to the am peak hour traffic entering the site.

4.0 SITE TRAFFIC DISTRIBUTION

4.1 Method of Distribution

The distribution of site-generated traffic was based on existing travel patterns for the roads and streets within the study area. Adjustments were made to the traffic distributions to take into account any site-specific destinations such as downtown Collingwood, Town of the Blue Mountains, Wasaga Beach, etc. This split was based in part on existing traffic patterns (northbound movement) but a greater emphasis was placed on the southbound movement rather than the through movement due a higher probability of specific site destinations outside of Collingwood being associated with the southbound movement.

4.2 Assignment of Traffic to the Network

Traffic distribution remained the same as outlined in the previous Traffic Study Report prepared by Ainley and Associates in March 2006.

5.0 NON-SITE TRAFFIC PROJECTIONS

5.1 Design Year

Construction within the Development is expected to begin in 2009 with full build out to be completed by the year 2019. It was decided that the intersection of Tracey Lane/Findlay Street and Hurontario Street would be analyzed in 2014 (assumes a 50% build out) and 2014 (assumes 100% build out).

5.2 Other Developments in Study Area

The following developments are also within the study area and site-generated traffic for each site has been included in the study:

- Pretty River Estates Development
- High Street & Poplar Sideroad Residential Development
- Home Hardware Development

The information for the Pretty River Estates was obtained from a Traffic Impact Assessment prepared by Ainley Group December 2001. The information for the High Street & Poplar Sideroad Residential Development was obtained from the Traffic Impact Assessment report submitted by Cansult Tatham Transportation to the Town of Collingwood in 2005. The information for the Home Hardware Development was obtained from the Traffic Impact Assessment report submitted by Cansult Tatham Transportation to the Town of Collingwood in 2004. For the purposes of this report, it was assumed that Pretty River Estates Development and the High Street & Poplar Sideroad Residential Development would both reach 50% build out in 2014 and have full build out by 2019.

5.3 Background Traffic

The background traffic volumes used for this traffic impact assessment were obtained from existing traffic counts and from counts done on February 8, 2006. The existing traffic counts were increased by a 4.5% per annum growth factor to project the counts to 2006. As discussed with the Town, all of the traffic counts taken during the fall or winter were also increased by 30%. This is based on recommendations made in the Georgian Triangle Area Transportation study, which indicated that summer volumes were found to be 20% to 40% higher than in the winter.

5.4 Future Traffic

For this study, background traffic projections are required for 2014 and 2019. Growth factor rates for future traffic were based on information from the Town of Collingwood Staff and are estimated to be 4.5% per annum. This growth factor was applied to all of the background traffic volumes from each street. The projected background traffic volumes and calculations are contained in Appendix D.

The intersection has been analyzed for the projected 2014 and 2019 background traffic. Table 2 shows the results of this analysis for the Level of Service (LOS) for each leg of the existing unsignalized intersection being studied for this report. Appendix A contains the Level of Service Criteria for unsignalized intersections. Appendix C contains the calculations to show the level of service for Tracey Lane / Findlay Street and Hurontario intersection.

6.0 TRAFFIC ASSIGNMENTS

This section of the report will look at the assignment of the peak period of traffic, recommended access design and recommended intersection improvements for the intersection of Tracey Lane/Findlay Street and Hurontario Street.

6.1 Assignment of Peak Period Traffic

Based on the initial background traffic data and the projected 2014 and 2019 traffic data, the a.m. peak hour will be used for the remaining analysis to determine if traffic signals are warranted and to

determine cycle timings. Table 2 shows the LOS for the unsignalized intersection for the 2014 and 2019 future background plus the site-generated traffic.

TABLE 2: PROJECTED LOS FOR THE UNSIGNALIZED INTERSECTION OF TRACEY LANE/FINDLAY STREET AND HURONTARIO STREET BASED ON FUTURE BACKGROUND PLUS SITE-GENERATED TRAFFIC

Street Name	Traffic Approach	LOS (2014)		LOS (2019)	
		a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour
Tracey Lane	West Bound	E	D	F	E
Findlay Street	East Bound	F	E	F	F
Hurontario Street	North Bound	A	A	D	C
	South Bound	B	A	B	C

6.2 Recommended Access Design

The intersection is an offset intersection with Tracey Lane located slightly to the south of Findlay Street. Tracey Lane and Findlay Street have a two-lane cross section and Hurontario Street will have a 3 lane cross section (one through lane in each direction and a continuous left turn lane). Tracey Lane will operate at level of service E, Findlay Street will operate at level of service F and Hurontario Street will operate at level of service B or better at the end of 2014. By the end of 2016, Tracey Lane will operate at level of service F, Findlay Street will operate at level of service F and Hurontario Street will operate at level of service D or better. Hurontario Street will operate at an acceptable level of service but the side streets will experience very long to extreme traffic delays. When the need for dedicated left turn lanes on Hurontario Street was checked, it was determined the separate left turn lanes were warranted on both legs for the 2009 background traffic volumes. A 25m storage length would be required for both the northbound to westbound traffic movement and for the southbound to eastbound traffic movement. When checked against the 2014 and 2019 traffic volumes, the storage length requirements for both left turn movements would be 35m+. The addition of the continuous left turn lane on Hurontario Street (constructed 2007) has eliminated the need to construct dedicated left turn lanes. However, pavement markings should be modified to meet the required storage requirements.

The design tables for left turn storage requirements and the poor level of service on the two side streets indicates that the warrants for traffic signals should be checked to determine if signals are required. At present, this intersection does not warrant traffic signals. By checking the 2014, the warrants for signals are not satisfied and traffic signals are not required at 50% build out in 2014. Checking the 2019 background traffic and the site-generated traffic for this intersection, the warrants were 95% and 100% satisfied. A further check of the 2017 background traffic and the site generated traffic for this intersection, showed that the warrants were 80% and 100% satisfied. All of the traffic signal warrants calculations can be found in Appendix E

6.3 Recommended Improvements for the Intersection of Tracey Lane / Findlay Street and Hurontario Street

It is recommended that traffic signals be constructed at the intersection of Hurontario Street and Tracey Lane / Findlay Street by 2017, but this could be delayed to 2019 if the construction build out does not proceed at the assumed rate or the traffic growth is less than 4.5%. Since Tracey Lane is presently offset to the south of Findlay Street, it is recommended that the Tracey Lane and Findlay Street be realigned to eliminate the offset.

The software package, Synchro 7, was used to determine the LOS, preliminary signal timing, queue lengths, and delays using the 2019 a.m. peak hour traffic data. Two intersection configurations were used in the Synchro 7 analysis. The first intersection configuration analyzed was as follows:

Tracey Lane (WB)	1 lane for combined through, right turn and left turn movements
Findlay Street (EB)	1 lane for combined through, right turn and left turn movements
Hurontario Street (NB)	1 lane for combined through and right turn movements and a dedicated lane for left turn movements
Hurontario Street (SB)	1 lane for combined through and right turn movements and a dedicated lane for left turn movements

With the exception of realigning Tracey Lane and Findlay Street, Hurontario Street is not changed from its present configuration. Based on the above intersection configuration, Tracey Lane would operate at LOS D, Findlay Street would operate at LOS F, Hurontario Street (NB) would operate at LOS E and, Hurontario Street (SB) would operate at LOS B. The volume to capacity (v/c) ratio of 1 is exceeded on Findlay Street and the northbound Hurontario Street through lane. These 2 legs of the intersections will experience long queue lengths and delays associated with not being able to move the vehicles through efficiently through the intersection. Delays of greater than 60 seconds will occur on 3 legs of the intersection with Findlay Street experiencing delays of 160.8 seconds. It must be noted that these delays will occur during the am peak hour. Table 3 shows the LOS, v/c ratio, queue lengths and delays for Intersection Option 1.

**TABLE 3: TRACEY LANE/FINDLAY STREET AND HURONTARIO STREET
INTERSECTION CONFIGURATION OPTION 1**

	Findlay Street	Tracey Lane	Hurontario Street		Hurontario Street	
	EBTLR	WBTLR	NBL	NBTR	SBL	SBTR
LOS	F	D	A	E	E	A
v/c Ratio	1.12	0.47	0.07	1.09	0.65	0.73
Queue Length (m)	101.5	39.4	2.8	619.1	14.1	165.5
Cars in Queue (Based on 7m /car)	15	6	1	88	2	24
Total Delay (s)	160.8	39.3	3.3	78.8	65.1	9.7

The second intersection configuration analyzed was as follows:

Tracey Lane (WB)	1 lane for combined through, right turn and left turn movements
Findlay Street (EB)	1 lane for combined through, right turn and left turn movements
Hurontario Street (NB)	1 dedicated through lane, 1 lane for combined through and right turn movements and a dedicated lane for left turn movements
Hurontario Street (SB)	1 dedicated through lane, 1 lane for combined through and right turn movements and a dedicated lane for left turn movements

Tracey Lane and Findlay Street remain the same as Option 1 but Hurontario Street will have to be widened from Lockhart Road to Poplar Sideroad for the addition of north and southbound through lane. Based on the above intersection configuration, Tracey Lane would operate at LOS B, Findlay Street would operate at LOS C, Hurontario Street (NB) would operate at LOS A and, Hurontario Street (SB) would operate at LOS A. The volume to capacity (v/c) ratios range from 0.07 to 0.70. The longest delay is expected to be 25.8 seconds on Findlay Street and is mainly due to the signal

timing. Table 4 shows the LOS, v/c ratio, queue lengths and delays for Intersection Option 2. Appendix F contains the output reports from Synchro 7

**TABLE 4: TRACEY LANE/FINDLAY STREET AND HURONTARIO STREET
INTERSECTION CONFIGURATION OPTION 2**

	Findlay Street	Tracey Lane	Hurontario Street			Hurontario Street		
	EBTLR	WBTLR	NBL	NBT	NBTR	SBL	SBT	SBTR
LOS	C	B	A	A	A	A	A	A
v/c Ratio	0.57	0.36	0.07	0.7	0.7	0.25	0.47	0.47
Queue Length (m)	29.4	19.5	3.3	89.5	89.5	7.3	43.6	43.6
Cars in Queue (Based on 7m /car)	4	3	1	13	13	1	6	6
Total Delay (s)	25.8	17.7	5.4	9	9	11	5.8	5.8

7.0 CONCLUSIONS

This study has been conducted to address the impact the Eden Oak Development and several other developments will have on the intersection of Tracey Lane/Findlay Street and Hurontario Street. The following are the findings and recommendations of the study.

7.1 Site Generated Traffic

The Eden Oak Development will provide 344 residential lots for single-family homes. Construction within the Development is expected to begin 2009 with full build out to be completed by the year 2019. The development is expected generate 254 trips during the a.m. peak hour and generate 326 trips during the p.m. peak hour.

Tracey Lane will become a major access point to the development and should be upgraded to meet the Town of Collingwood requirements for a local residential street.

7.2 Traffic Volumes

The existing traffic volumes were obtained from traffic counts at the intersections of Lockhart Road and Dey Drive and Lockhart Road / Campbell Street and Hurontario Street on February 8, 2006. Intersection traffic volumes for County Road 124 / Hurontario Street and Poplar Sideroad were obtained from the Simcoe County Transportation Department. The traffic counts were completed in the fall of 2002. Background traffic volumes for Tracey Lane / Findlay Street and Hurontario Street were obtained using data from the traffic count for Lockhart Road / Campbell Street and Hurontario Street along with the data from the High Street & Poplar Sideroad Residential Development Traffic Impact Assessment report submitted to the Town of Collingwood by Consult Tatham Transportation Consultants in November 2004 and adjusted to reflect 2006 count data. All of the fall traffic data was increased by 30% to account for higher summer traffic volumes as recommended by the Georgian Triangle Area Transportation Study.

As part of the study, future traffic volumes excluding site-generated traffic were determined based on recommendations from the Georgian Triangle Area Transportation Study and discussion with the staff at the Town of Collingwood. Background traffic projections were determined for 2014 (assuming 50% build out) and 2019 (assuming 100% build out). An annual growth factor rate of 4.5% per annum was applied to all of the background traffic volumes from all of the streets.

The following developments are also within the study area:

- Pretty River Estates Development
- High Street & Poplar Sideroad Residential Development
- Home Hardware Development

The site generated traffic volume for each development was included with the future background traffic volumes to account for potential impact the additional traffic will have on the study areas. For the 2 residential developments, it was also assumed that these developments would reach 50% build out by 2014 and 100% build out by 2019.

7.3 Recommended Improvements

Using the total future traffic determined in this study, the impact of the proposed development on the intersection of Tracey Lane / Findlay Street and Hurontario Street was reviewed. The intersection will operate at an unacceptable level of service as an unsignalized intersection. It is recommended that this intersection be signalized by 2017. It is also recommended that an additional north and southbound through lane be provided in conjunction with signalization from Lockhart Road to Poplar Sideroad to improve the LOS of the intersection and reduce delay times caused by the high north and southbound traffic movements.

Respectfully submitted,

AINLEY & ASSOCIATES LIMITED

L. M. MacLeod, P. Eng.