

**TRAFFIC IMPACT STUDY ADDENDUM**  
**TRIBUTE COLGAN 1 AND TRIBUTE COLGAN 2**  
**RESIDENTIAL DEVELOPMENT**  
**TOWNSHIP OF ADJALA-TOSORONTIO**  
**TRIBUTE COLGAN 2 LIMITED**

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Identification	Date	Description of Work
First Draft Submission	November 3, 2017	Project Team Review
Second Draft Submission	November 24, 2017	Internal Review
Third Draft Submission	November 29, 2017	Project Team Review
Final Submission	December 11, 2017	Submission to Township/County

## 1 EXECUTIVE SUMMARY

CF Crozier & Associates Inc. (Crozier) was retained by Tribute Colgan 2 Limited to complete an addendum to the original Traffic Impact Study (TIS) (Crozier, November 2017) to address the traffic impacts of the proposed Tribute Colgan 2 Redline Revision to Draft Plan Approval. The proposed development is located in the Village of Colgan, Township of Adjala-Tosorontio, County of Simcoe.

The original TIS was completed to meet Draft Plan Conditions for Colgan 1 and Colgan 2. The original Draft Plan Approval was issued on December 9, 2010, and an extension of Draft Plan Approval has been granted until November 26, 2021 for both subdivisions.

This addendum to the TIS is being prepared to support the Official Plan Amendment, Zoning By-law Amendment and Redline Revision to Draft Plan Approval Applications for Colgan 2. The Colgan 2 Redline Revision Draft Plan consists of an additional 22 single detached units.

Analysis of traffic operations at the study intersections indicate the following:

- The intersections are currently operating with acceptable traffic operations under 2017 existing conditions.
- The intersections are anticipated to continue operating with acceptable traffic operations under 2022, 2025, 2030, and 2035 future background and future total traffic conditions.
- Westbound and eastbound left-turn lanes are not warranted at the intersection of County Road 14 and Street "A" under 2022 (Phase 1) future total conditions.
- A westbound left-turn lane with a minimum storage of 15 metres is warranted at the intersection of County Road 14 and Street "A" under 80 km/h posted speed limit and 2035 (Full Build-out) future total traffic volume conditions.
- It is recommended that the posted speed limit of 50 km/h on County Road 14 be extended to the western limits of the site to improve safety and walkability for future residents, and to be consistent with the urban conditions east of Concession Road 8.
- With a posted speed limit of 50 km/h, a westbound left-turn lane would not be warranted at the intersection of County Road 14 and Street "A".
- Westbound and eastbound left-turn lanes are not warranted at the intersection of County Road 14 and Concession Road 8 under 2022 (Phase 1) and 2035 (Full Build-out) future total conditions.
- Signal warrants were undertaken at the intersection of County Road 14 and Street "A", and the results indicate that signals are not warranted under 2035 total traffic conditions. Therefore, it is not recommended that the intersection of County Road 14 and Street "A" be signalized.

Analysis of sight distances at the accesses on Concession Road 8 and County Road 14 indicate that the proposed development accesses can be supported from a sight distance perspective.

The additional units yielded by the Redline Revision to Draft Plan Approval do not have a material impact on the traffic operations of the boundary road network.

The analysis undertaken within was completed on the basis of the approved Colgan 1 Draft Plan (December 3, 2010) and the Colgan 2 Redline Revision Draft Plan (December 7, 2017). Any minor changes to the Plans will not materially affect the conclusions contained within this report.

The Official Plan Amendment, Zoning By-law Amendment, and Redline Revision to Draft Plan Approval Applications for Colgan 2 can be supported from a traffic operations and safety perspective, with the above noted recommendations.

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## 2 INTRODUCTION

### 2.1 Background

CF Crozier & Associates Inc. (Crozier) was retained by Tribute Colgan 2 Limited to complete an addendum to the original Traffic Impact Study (TIS) (Crozier, November 2017) to address the traffic impacts of the proposed Tribute Colgan 2 Redline Revision to Draft Plan Approval. The proposed development is located in the Village of Colgan, Township of Adjala-Tosorontio, County of Simcoe.

The original TIS was completed to meet Draft Plan Conditions for Colgan 1 and Colgan 2. The original Draft Plan Approval was issued on December 9, 2010, and an extension of Draft Plan Approval has been granted until November 26, 2021 for both subdivisions. The Colgan 2 Redline Revision Draft Plan consists of an additional 22 single detached units.

### 2.2 Purpose

This TIS addendum is being prepared to support the Official Plan Amendment, Zoning By-law Amendment and Redline Revision to Draft Plan Approval Applications for Colgan 2.

The purpose of the addendum was to assess the impacts of the proposed additional 22 units on the boundary road network and to recommend any required mitigation measures, if warranted.

The study reviews the following main aspects of the proposed residential development from a transportation engineering perspective:

- Existing, future background, and future total traffic operations at the study intersections
- Forecasted trip generation of the proposed development
- Auxiliary lane requirements at the intersection of County Road 14 and Street "A"
- Auxiliary lane requirements at the intersection of County Road 14 and Concession Road 8
- Signal warrant at the intersection of County Road 14 and Street "A"
- Sight distance requirements at the site accesses on Concession Road 8 and County Road 14

The Terms of Reference for the study were confirmed with staff from the County of Simcoe, with correspondence included in **Appendix A**.

The study has been prepared based on the "General Guidelines for Traffic Impact Studies" established by the County of Simcoe, and agreed upon Terms of Reference with the County of Simcoe, with the associated analyses and findings outlined herein.

### 2.3 Development Proposal

The subject property is bisected by County Road 14, resulting in a north and south portion of the lands. Colgan 1 references the south portion of the lands, while Colgan 2 references the north portion of the lands.

Colgan 1 is Draft Plan Approved for a total of 315 single detached units. Colgan 2 is Draft Plan Approved for 260 single detached units, 47 townhouse units, and a 170 bed retirement home. Colgan 2 also proposes an approximate 0.77 hectare commercial block. The Colgan 2 Redline Revision to the Draft Plan proposes an additional 22 single detached units.

The developments propose five full-moves site accesses onto Concession Road 8; three accesses serve Colgan 1 to the south of County Road 14, while the remaining two accesses service Colgan 2

to the north of County Road 14. In addition, the development proposes a shared intersection on County Road 14, which provides an additional access to the north and south portions of the subject lands.

The approved Colgan 1 Draft Plan (December 3, 2010) and the Colgan 2 Redline Revision Draft Plan (December 7, 2017) have been included as **Figure 1a** and **Figure 1b**, respectively.

The development is proposed to be completed in two phases. During Phase 1, Colgan 1 would be serviced by Street "A", Street "H" and Street "F", and Colgan 2 would be serviced by Street "A" and Street "B". Table 1 summarizes the proposed unit count in each of the phases. For the purpose of this analysis, it was assumed that Phase 1 would be completed by the year 2022, and full build-out would be achieved by the year 2025.

**Table 1: Proposed Phasing**

Draft Plan	Unit Type	December 2010 Draft Plan Approved	December 2017 Redline Revision
<b>Phase 1</b>			
Colgan 1	Single Family Detached	175 units	175 units
Colgan 2	Single Family Detached	174 units	174 units
	Townhomes	19 units	19 units
	Commercial	0.77 ha	0.77 ha
<b>Phase 2</b>			
Colgan 1	Single Family Detached	140 units	140 units
Colgan 2	Single Family Detached	86 units	108 units
	Townhomes	28 units	28 units
	Retirement Home	170 beds	170 beds

### 3 EXISTING CONDITIONS

#### 3.1 Development Lands

Colgan 1 is approximately 80.71 hectares (199.4 acres) in size; Colgan 2 is approximately 39.83 hectares (98.4 acres). The subject lands are currently used for agricultural purposes.

The location of the subject property is reflected on the development Site Location Plan included as **Figure 2**.

#### 3.2 Study Area

The subject lands are bounded by Concession Road 8 and existing residential areas to the east, agricultural lands to the north and south, and a combination of agricultural lands, environmentally protected lands and existing residential areas to the west. County Road 14 bisects the subject lands into a north and south portion.



The study area encompasses the boundary road network surrounding the subject lands, and is described in Section 3.3.

### 3.3 Boundary Road Network

The boundary road network is described in Table 2 below.

**Table 2: Boundary Road Network Summary**

Road	Lanes	Posted Speed (km/h)	Classification	Jurisdiction
County Road 14	2	80 km/h (west of CR 8)	Secondary Arterial	County of Simcoe
		50 km/h (east of CR8)		
County Road 50	4	80 km/h	Primary Arterial	County of Simcoe
Concession Road 8	2	50 km/h	Local	Township of Adjala-Tosorontio
Adjala Tecumseth Townline	2	60 km/h (north of CR 14)	Local	Township of Adjala-Tosorontio/ Town of New Tecumseth
		50 km/h (south of CR 14)		
St. James Lane	2	40 km/h (assumed)	Local	Private

### 3.4 Key Intersections

The following are the key intersections contained within this study area. **Figure 3** illustrates the existing traffic controls and lane configurations at each intersection.

- County Road 14 and County Road 50
- County Road 14 and Concession Road 8
- County Road 14 and Adjala Tecumseth Townline
- Concession Road 8 and St. James Lane

### 3.5 Traffic Data

Turning movement counts for the intersections of County Road 14 and County Road 50, County Road 14 and Concession Road 8, and County Road 14 and Adjala Tecumseth Townline were undertaken by Ontario Traffic Inc. staff from 6 a.m. to 10 a.m. and 3 p.m. to 7 p.m. on Tuesday, September 12, 2017.

The traffic count data is summarized in **Appendix B. Figure 4** illustrates the 2017 existing traffic volumes.

Peak hour factors (PHF) associated with the weekday a.m. and p.m. peak hours were calculated for each intersection within the study area based on the existing traffic volumes. Table 3 outlines the PHFs as calculated and applied to the model for their respective intersections.

**Table 3: Peak Hour Factors**

Intersection	Peak Hour	Peak Hour Factor
County Road 14 and County Road 50	Weekday A.M. (6:15-7:15)	0.93
	Weekday P.M. (4:15-5:15)	0.95
County Road 14 and Concession Road 8	Weekday A.M. (7:00-8:00)	0.95
	Weekday P.M. (3:45-4:45)	0.85
County Road 50 and Adjala Tecumseth Townline	Weekday A.M. (6:45-7:45)	0.90
	Weekday P.M. (4:15-5:15)	0.93
Concession Road 8 and St. James Lane	Weekday A.M. (8:45-9:45)	0.93
	Weekday P.M. (3:45-4:45)	0.94

### 3.6 Intersection Operations

The operations of the critical intersections were analyzed on the basis of the traffic volumes illustrated in **Figure 4**. Table 4 summarizes the 2017 traffic levels of service for the counts taken at the study intersections under existing conditions.

The operations of the critical intersections in the study area were analyzed using Synchro 9 Software. Level of Service (LOS) definitions are included in **Appendix C** and detailed capacity analysis worksheets are included in **Appendix D**.

**Table 4: 2017 Existing Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	B	12.4 s	0.18 (SBT)
		P.M.	B	12.4 s	0.18 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	A	9.4 s	0.01 (NB)
		P.M.	A	9.3 s	0.05 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	7.5 s	0.11 (SB)
		P.M.	A	8.0 s	0.22 (NB)
Concession Road 8 and St. James Lane	Stop	A.M.	A	8.8 s	0.02 (WB)
		P.M.	A	8.8 s	0.03 (WB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

The metrics summarized above indicate that the boundary road network is currently operating at a LOS "B" or better during all time periods with minimal delays and reserve capacity for increases in traffic volumes.

## 4 FUTURE BACKGROUND CONDITIONS

### 4.1 Horizon Years

As noted previously, it is anticipated that the first phase of the development will be completed by the year 2022, and full build-out will be achieved by the year 2025. Accordingly, the year 2022 will be analyzed with the addition of the Phase 1 traffic volumes, and in accordance with the Terms of Reference established with the County of Simcoe, the year of full build-out (2025) will be analyzed, as well as five years (2030) and ten years (2035) beyond full build-out.

### 4.2 Growth Rate

Per correspondence with the County of Simcoe, a growth rate of two percent compounded per annum was applied to County Road 14 and County Road 50. For consistency, the same industry standard two percent growth rate was applied to the traffic volumes at all subject intersections.

### 4.3 Future Roadway Improvements

As part of the proposed development, Concession Road 8 is anticipated to be paved from County Road 14 to the north and south limits of the development. No further capacity improvements have been identified for the boundary roads within the study horizons.

### 4.4 Intersection Operations

The 2022 through 2035 future background traffic levels of service are outlined in Table 5 through Table 8 below. These operations are based on the future background traffic volumes illustrated in **Figures 5 through 8**, with detailed capacity analyses included in **Appendix D**. LOS definitions are included in **Appendix C**.

**Table 5: 2022 Future Background Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	B	13.0 s	0.20 (SBT)
		P.M.	B	13.2 s	0.20 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	A	9.5 s	0.02 (NB)
		P.M.	A	9.5 s	0.06 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	7.6 s	0.13 (SB)
		P.M.	A	8.2 s	0.25 (NB)
Concession Road 8 and St. James Lane	Stop	A.M.	A	8.8 s	0.02 (WB)
		P.M.	A	8.8 s	0.03 (WB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 6: 2025 Future Background Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	B	13.5 s	0.22 (SBT)
		P.M.	B	13.7 s	0.21 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	A	9.5 s	0.02 (NB)
		P.M.	A	9.5 s	0.06 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	7.7 s	0.13 (SB)
		P.M.	A	8.4 s	0.27 (NB)
Concession Road 8 and St. James Lane	Stop	A.M.	A	8.8 s	0.02 (WB)
		P.M.	A	8.8 s	0.03 (WB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 7: 2030 Future Background Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	B	14.5 s	0.24 (SBT)
		P.M.	B	14.7 s	0.23 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	A	9.6 s	0.02 (NB)
		P.M.	A	9.7 s	0.07 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	7.8 s	0.15 (SB)
		P.M.	A	8.5 s	0.29 (NB)
Concession Road 8 and St. James Lane	Stop	A.M.	A	8.9 s	0.03 (WB)
		P.M.	A	8.9 s	0.04 (WB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 8: 2035 Future Background Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	C	15.7 s	0.26 (SBT)
		P.M.	C	16.1 s	0.25 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	A	9.7 s	0.02 (NB)
		P.M.	A	9.8 s	0.08 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	7.9 s	0.17 (SB)
		P.M.	A	8.8 s	0.33 (N)
Concession Road 8 and St. James Lane	Stop	A.M.	A	8.9 s	0.03 (WB)
		P.M.	A	8.9 s	0.04 (WB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

The metrics listed above indicate that the boundary road network is expected to operate at a LOS "C" or better under 2035 future background conditions, with minimal delays and reserve capacity for increases in traffic volumes.

## 5 SITE GENERATED TRAFFIC

The proposed development will result in additional vehicles on the boundary road network that previously did not exist. The proposed development will also result in additional turning movements at the boundary road intersections.

### 5.1 Trip Generation

The following trip generation calculations for the residential development were conducted based on the approved Colgan 1 Draft Plan (December 3, 2010) and the Colgan 2 Redline Revision Draft Plan (December 7, 2017), which consists of an additional 22 single detached units when compared to the approved Colgan 2 Draft Plan.

The trip generation of the single detached residential lots was forecasted using the fitted curve equations provided in the ITE Trip Generation Manual, 10<sup>th</sup> Edition, under the Land Use Category 210 "Single Family Detached Dwelling".

The trip generation of the townhouse residential lots was forecasted using the fitted curve equations provided in the ITE Trip Generation Manual, 10<sup>th</sup> Edition, under the Land Use Category 220 "Multifamily Housing (Low-Rise)".

The trip generation of the retirement home was forecasted using the average rates provided in the ITE Trip Generation Manual, 10<sup>th</sup> Edition, under the Land Use Category 254 "Assisted Living".

The trip generation of the 0.77 hectare (1.9 acre) commercial block was forecasted using the average rates provided in the ITE Trip Generation Manual under the Land Use Category 820 "Shopping Centre". A maximum lot coverage of 20% was assumed in accordance with the Township of Adjala-Tosorontio Zoning By-Law No. 03-57 regulations, which translates to 16,600 square feet of commercial use.

Commercial plazas in Tottenham similar to the proposed development in size and surrounding population density were also used for reference when determining a suitable lot coverage.

As defined by the ITE Trip Generation Handbook, 3rd Edition, primary trips are trips made for the specific purpose of visiting the generator and pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Accordingly, these trips do not increase the volume of vehicles on the roadway.

Table F.9 of the ITE Trip Generation Handbook estimates a 34% pass-by trip rate for Category 820 "Shopping Centre" during the weekday p.m. peak period. As no data was available for the weekday a.m. peak period, the p.m. peak hour 34% pass-by trip rate was applied.

The forecasted primary and pass-by trip generation for Phase 1 of the development is tabulated in Table 9. The forecasted trip generation for the full build-out of the development is tabulated in Table 10.

**Table 9: Phase 1 Trip Generation**

Use	Trip Type	Peak Hour	Number of Trips		
			Inbound	Outbound	Total
L.U. 210: Single Family Detached Housing (Colgan 1: 175 Units)	Primary	Weekday A.M.	32	97	129
	Primary	Weekday P.M.	110	64	174
L.U. 210: Single Family Detached Housing (Colgan 2: 174 Units)	Primary	Weekday A.M.	31	97	128
	Primary	Weekday P.M.	109	64	173
L.U. 220: Multifamily Housing (Low-Rise) (Colgan 2: 19 Units)	Primary	Weekday A.M.	2	8	10
	Primary	Weekday P.M.	8	5	13
L.U. 820: Shopping Centre (GFA 16,600 sq.ft.)	Primary	Weekday A.M.	7	4	11
	Pass-By	Weekday A.M.	3	2	5
	Primary	Weekday P.M.	20	22	42
	Pass-By	Weekday P.M.	10	11	21
<b>Total</b>	<b>Primary</b>	<b>Weekday A.M.</b>	<b>72</b>	<b>206</b>	<b>278</b>
	<b>Pass-By</b>	<b>Weekday A.M.</b>	<b>3</b>	<b>2</b>	<b>5</b>
	<b>Primary</b>	<b>Weekday P.M.</b>	<b>247</b>	<b>155</b>	<b>402</b>
	<b>Pass-By</b>	<b>Weekday P.M.</b>	<b>10</b>	<b>11</b>	<b>21</b>

**Table 10: Full Build-out Trip Generation**

Use	Trip Type	Peak Hour	Number of Trips		
			Inbound	Outbound	Total
L.U. 210: Single Family Detached Housing (Colgan 1: 315 Units)	Primary	Weekday A.M.	57	171	228
	Primary	Weekday P.M.	193	113	306
L.U. 210: Single Family Detached Housing (Colgan 2: 282 Units)	Primary	Weekday A.M.	51	154	205
	Primary	Weekday P.M.	173	102	275
L.U. 220: Multifamily Housing (Low-Rise) (Colgan 2: 47 Units)	Primary	Weekday A.M.	5	18	23
	Primary	Weekday P.M.	19	11	30
L.U. 254: Assisted Living (Colgan 2: 170 Beds)	Primary	Weekday A.M.	20	12	32
	Primary	Weekday P.M.	17	27	44
L.U. 820: Shopping Centre (GFA 16,600 sq.ft.)	Primary	Weekday A.M.	7	4	11
	Pass-By	Weekday A.M.	3	2	5
	Primary	Weekday P.M.	20	22	42
	Pass-By	Weekday P.M.	10	11	21
<b>Total</b>	<b>Primary</b>	<b>Weekday A.M.</b>	<b>140</b>	<b>359</b>	<b>499</b>
	<b>Pass-By</b>	<b>Weekday A.M.</b>	<b>3</b>	<b>2</b>	<b>5</b>
	<b>Primary</b>	<b>Weekday P.M.</b>	<b>422</b>	<b>275</b>	<b>697</b>
	<b>Pass-By</b>	<b>Weekday P.M.</b>	<b>10</b>	<b>11</b>	<b>21</b>

## 5.2 Trip Distribution and Assignment

### 5.2.1 Residential Trip Distribution

The residential trips generated by the proposed development were distributed to the boundary road network based on Transportation Tomorrow Survey (TTS) published data for trips external to the nearby Community of Tottenham. TTS data has been included in **Appendix E**.

The residential trip distribution for the proposed development is summarized in Table 11 below. It is noted that TTS revealed a relatively high proportion of trips to and from the Community of Tottenham were contained within the Town of New Tecumseth.

**Table 11: Residential Trip Distribution**

Time Period	Direction	
	Entering	Exiting
Weekday A.M.	62% from Adjala-Tec Townline (north) 19% from Adjala-Tec Townline (south) 7% from County Road 50 (north) 6% from County Road 50 (south) 6% from Concession Road 8 (south)	30% to Adjala-Tec Townline (north) 40% to Adjala-Tec Townline (south) 2% to County Road 50 (north) 16% to County Road 50 (south) 12% to Concession Road 8 (south)
Weekday P.M.	30% from Adjala-Tec Townline (north) 40% from Adjala-Tec Townline (south) 2% from County Road 50 (north) 16% from County Road 50 (south) 12% from Concession Road 8 (south)	62% to Adjala-Tec Townline (north) 19% to Adjala-Tec Townline (south) 7% to County Road 50 (north) 6% to County Road 50 (south) 6% to Concession Road 8 (south)

Under full build-out conditions, the development proposes one shared access to County Road 14 (Street "A") and five accesses to Concession Road 8; two accesses north of County Road 14 (Street "B" and Street "I") and three accesses south of County Road 14 (Street "H", Street "F" and Street "C"). Under Phase 1 conditions, it was assumed that vehicles would utilize the shared access on County Road 14, as well as Street "H" and Street "F" for trips from Colgan 1 and Street "B" for trips from Colgan 2. External trips originating from and/or destined for locations to the east and west of the subject site were distributed primarily to Street "A" for both Colgan 1 and Colgan 2, with a portion of the trips distributed to the Concession Road 8 Accesses proportionally between all site accesses according to the number of units within close proximity of each access.

Since multiple routes to and from locations directly south of the proposed development (i.e. Brampton, Milton, Mississauga) exist in relation to the subject lands, it was assumed that trips to and from the southernmost site access would be made via Concession Road 8. Approximately 35% of all units within Colgan 1 were assumed to use this access for southbound trips based on proximity and convenience. This translates to 12% and 6% of all outbound trips for the a.m. and p.m. peak hours, respectively. Two kilometres of this roadway are anticipated to remain unpaved south of the development limits upon full build-out, however, alternative routes would require a significant detour and were not assumed to be attractive. Southbound trips to and from the remaining site accesses were assumed to be made via County Road 50 and Adjala Tecumseth Townline. These assumptions are based on preferable driving conditions in addition to the proximity of each site access to the nearest respective travel route.

The residential trips generated by the proposed development under Phase 1 conditions and full build-out conditions were assigned to the boundary road network per the distributions in **Figure 9** and **Figure 11**, respectively. The trip assignment for the residential trips under Phase 1 conditions and full build-out conditions are illustrated in **Figure 10** and **Figure 12**, respectively.

### 5.2.2 Primary Commercial Trip Distribution

The commercial portion of the proposed development is expected to generate trips primarily arriving from and departing to the residential units within the subject development, since the surrounding area is largely rural. Accordingly, the primary trip distribution for the proposed commercial development was estimated by taking into account the ratio of residential units within Colgan 1 and Colgan 2, as well as the most convenient route of travel to and from the commercial plaza from the surrounding residences.



45% of the trips are anticipated to arrive from and depart to Colgan 2, located within the same block of the development as the commercial plaza. These trips are internal to the proposed development and will not affect the boundary road network. 35% of all primary commercial trips are anticipated to arrive from and depart to Colgan 1, located south of County Road 14. These trips are all expected to enter and exit via the proposed shared access on County Road 14. This route represents the shortest path for the majority of units within Colgan 1, and avoids left turn movements onto Concession Road 8 and County Road 14 that would be required should motorists choose to use one of the site accesses fronting Concession Road 8.

The remaining 20% of trips were assumed to arrive from and depart to external lands surrounding the proposed development. These trips were further stratified with respect to residential, employment, and institutional opportunities in the area. 10% of the trips were assumed to arrive from and depart to the Village of Colgan, southeast of the proposed development, while the remaining 10% were assumed to be distributed evenly to the northwest and southwest via County Road 50.

The primary trip distribution for the commercial development is summarized in **Figure 13**, with the resulting trip assignment illustrated in **Figure 14**.

### 5.2.3 Pass-By Commercial Trip Distribution

The pass-by commercial trip distribution of the proposed development was determined using existing travel patterns at the intersection of County Road 14 and Concession Road 8. The trips were assigned to and from the development under the assumption that Street "A" represents the most convenient route of travel.

The pass-by trip distribution for the commercial development is summarized in **Figure 15**, with the resulting trip assignment illustrated in **Figure 16**.

## 6 TOTAL FUTURE CONDITIONS

### 6.1 Basis of Assessment

The traffic impacts arising from the proposed development were assessed on the basis of the site generated traffic, illustrated in **Figures 10, 12, 14** and **16**, being superimposed on the future background traffic volumes in **Figures 5** through **8**. The resulting total traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in **Figures 17** through **20** for the 2022 through 2035 horizon years.

### 6.2 Auxiliary Lane Assessment

Left-turn lane warrants were undertaken for eastbound and westbound left-turn lanes at the intersection of County Road 14 and Street "A" and the intersection of County Road 14 and Concession Road 8. The warrants were undertaken using the Ontario Ministry of Transportation (MTO) Geometric Design Standards for Ontario Highways (GDSOH). The warrants were undertaken for the weekday a.m. and p.m. peak hours, under 2022 and 2035 future total conditions.

Left-turn lane warrants were not undertaken at the site accesses on Concession Road 8 as the volume of advancing and opposing vehicles are too low to warrant left-turn lanes on the MTO GDSOH warrant charts.

### 6.2.1 County Road 14 and Street “A”

In keeping with the traffic engineering convention of design speeds 20 km/h in excess of the posted speed limit for higher speed roads, a 100 km/h design speed was selected for County Road 14. It is noted that the eastbound speed limit transitions from 80 km/h to 50 km/h hour at the eastern limits of the site.

As the proposed development will increase pedestrian and cyclist volumes on the road network, it is recommended that the 50 km/h posted speed limit continue to the western limits of the site to facilitate a safer, walkable community. Furthermore, the proposed development will extend the urban limits of Colgan, and extending the 50 km/h speed limit is consistent with the urban conditions to the east of the site. Accordingly, a left-turn lane warrant was undertaken for the site using a 60 km/h design speed, representing a 10 km/h increase from the proposed 50 km/h posted speed limit.

The left-turn lane warrant charts for 60 km/h and 100 km/h design speed roads have been included in **Appendix F**. Table 12 summarizes the results of the left-turn lane warrant under 2022 (Phase 1) future total conditions. Table 13 summarizes the results of the left-turn lane warrant under 2035 (Full Build-out) future total conditions.

**Table 12: Left-Turn Lane Warrant  
2022 Future Total Traffic Volumes**

Intersection	Peak Hour	V <sub>A</sub>	V <sub>O</sub>	%LT in V <sub>A</sub>	Design Speed 100 km/h		Design Speed 60 km/h	
					Warranted	Figure	Warranted	Figure
Westbound Left-turn Lane								
County Road 14 and Street “A”	A.M.	84	69	17%	Not warranted	EA-23	Not warranted	EA-7
	P.M.	184	103	29%	Not warranted	EA-24	Not warranted	EA-8
Eastbound Left-turn Lane								
County Road 14 and Street “A”	A.M.	69	84	10%	Not warranted	EA-22	Not warranted	EA-6
	P.M.	103	184	20%	Not warranted	EA-23	Not warranted	EA-7

The results summarized in Table 12 indicate that eastbound and westbound left-turn lanes are not warranted at the intersection of County Road 14 and Street “A” under 2022 (Phase 1) future total conditions.

**Table 13: Left-turn Lane Warrant  
2035 Future Total Traffic Volumes**

Intersection	Peak Hour	V <sub>A</sub>	V <sub>O</sub>	%LT in V <sub>A</sub>	Design Speed 100 km/h		Design Speed 60 km/h	
					Warranted	Figure	Warranted	Figure
Westbound Left-turn Lane								
County Road 14 and Street "A"	A.M.	126	97	24%	Not warranted	EA-24	Not warranted	EA-8
	P.M.	272	152	37%	Warranted 15 metres	EA-24	Not warranted	EA-8
Eastbound Left-turn Lane								
County Road 14 and Street "A"	A.M.	97	126	11%	Not warranted	EA-22	Not warranted	EA-6
	P.M.	152	272	22%	Not warranted	EA-23	Not warranted	EA-7

The results summarized in Table 13 indicate that a westbound left-turn lane with a minimum storage of 15 metres is warranted under 100 km/h design speed conditions, however it is not warranted under 60 km/h design speed conditions.

Analysis of the future total traffic volumes was completed with an 80 km/h posted speed limit and a westbound left-turn lane with a storage of 15 metres.

### 6.2.2 County Road 14 and Concession Road 8

In keeping with the traffic engineering convention of design speeds 10 km/h in excess of the posted speed limit for lower speed roads, a 60 km/h design speed was selected for County Road 14.

The left-turn lane warrant charts for 60 km/h design speed roads have been included in **Appendix F**. Table 14 summarizes the results of the left-turn lane warrant under 2022 (Phase 1) future total conditions. Table 15 summarizes the results of the left-turn lane warrant under 2035 (Full Build-out) future total conditions.

**Table 14: Left-Turn Lane Warrant at Concession Road 8  
2022 Future Total Traffic Volumes**

Intersection	Peak Hour	V <sub>A</sub>	V <sub>O</sub>	%LT in V <sub>A</sub>	Design Speed 60 km/h	
					Warranted	Figure
Westbound Left-turn Lane						
County Road 14 and Concession Road 8	A.M.	104	145	13%	Not Warranted	EA-7
	P.M.	272	128	26%	Not Warranted	EA-8
Eastbound Left-turn Lane						
County Road 14 and Concession Road 8	A.M.	145	104	1%	Not Warranted	EA-6
	P.M.	128	272	4%	Not Warranted	EA-6

**Table 15: Left-turn Lane Warrant at Concession Road 8  
2035 Future Total Traffic Volumes**

Intersection	Peak Hour	V <sub>A</sub>	V <sub>O</sub>	%LT in V <sub>A</sub>	Design Speed 60 km/h	
					Warranted	Figure
Westbound Left-turn Lane						
County Road 14 and Concession Road 8	A.M.	166	217	10%	Not Warranted	EA-6
	P.M.	390	190	16%	Not Warranted	EA-7
Eastbound Left-turn Lane						
County Road 14 and Concession Road 8	A.M.	217	166	2%	Not Warranted	EA-6
	P.M.	190	390	4%	Not Warranted	EA-6

The results summarized in Table 14 and Table 15 indicate that eastbound and westbound left-turn lanes are not warranted at the intersection of County Road 14 and Concession Road 8 under 2022 (Phase 1) and 2035 (Full Build-out) future total conditions.

### 6.3 Intersection Operations

The 2022 through 2035 future total traffic operations of the boundary road network are summarized in Table 16 through Table 19. The detailed capacity analysis is included in **Appendix D**, and LOS definitions are included in **Appendix C**.

**Table 16: 2022 Future Total Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	B	13.8 s	0.20 (SBT)
		P.M.	B	13.6 s	0.20 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	B	11.3 s	0.07 (NB/SB)
		P.M.	B	14.9 s	0.11 (NB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	8.2 s	0.21 (EBR)
		P.M.	B	10.4 s	0.47 (NB)
Concession Road 8 and Street "H"	Stop	A.M.	A	9.0 s	0.03 (EB)
		P.M.	A	9.2 s	0.02 (EB)
Concession Road 8 and St. James Lane/Street "F"	Stop	A.M.	A	9.1 s	0.03 (EB)
		P.M.	A	9.4 s	0.03 (WB)
Concession Road 8 and Street "B"	Stop	A.M.	A	8.5 s	0.04 (EB)
		P.M.	A	8.4 s	0.03 (EB/NB)
County Road 14 and Street "A"	Stop	A.M.	B	10.3 s	0.08 (NB/SB)
		P.M.	B	11.9 s	0.11 (SB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 17: 2025 Future Total Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	C	15.5 s	0.25 (WB)
		P.M.	B	14.7 s	0.21 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	B	13.1 s	0.16 (SB)
		P.M.	C	20.9 s	0.29 (SB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	9.0 s	0.28 (EBR)
		P.M.	B	13.1 s	0.60 (NB)
Concession Road 8 and Street "H"	Stop	A.M.	A	9.0 s	0.02 (SB)
		P.M.	A	9.3 s	0.05 (SB)
Concession Road 8 and St. James Lane/Street "F"	Stop	A.M.	A	9.1 s	0.03 (EB/WB)
		P.M.	A	9.6 s	0.04 (WB)
Concession Road 8 and Street "C"	Stop	A.M.	A	8.6 s	0.05 (EB)
		P.M.	A	8.7 s	0.03 (NB/SB)
Concession Road 8 and Street "B"	Stop	A.M.	A	8.7 s	0.06 (EB)
		P.M.	A	8.6 s	0.05 (EB)
Concession Road 8 and Street "I"	Stop	A.M.	A	8.4 s	0.03 (EB)
		P.M.	A	8.4 s	0.03 (EB)
County Road 14 and Street "A"	Stop	A.M.	B	11.6 s	0.14 (NB)
		P.M.	C	15.4 s	0.21 (SB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 18: 2030 Future Total Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	C	16.8 s	0.29 (WB)
		P.M.	C	16.0 s	0.23 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	B	13.3 s	0.17 (SB)
		P.M.	C	21.8 s	0.30 (SB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	9.2 s	0.29 (EBR/SB)
		P.M.	B	14.0 s	0.65 (NB)
Concession Road 8 and Street "H"	Stop	A.M.	A	9.0 s	0.02 (SB)
		P.M.	A	9.4 s	0.06 (SB)
Concession Road 8 and St. James Lane/Street "F"	Stop	A.M.	A	9.2 s	0.03 (EB/WB)
		P.M.	A	9.7 s	0.04 (WB)
Concession Road 8 and Street "C"	Stop	A.M.	A	8.6 s	0.05 (EB)
		P.M.	A	8.7 s	0.03 (NB/SB)
Concession Road 8 and Street "B"	Stop	A.M.	A	8.7 s	0.06 (EB)
		P.M.	A	8.6 s	0.05 (EB)
Concession Road 8 and Street "I"	Stop	A.M.	A	8.4 s	0.03 (EB)
		P.M.	A	8.4 s	0.03 (EB)
County Road 14 and Street "A"	Stop	A.M.	B	11.7 s	0.16 (NB)
		P.M.	C	15.8 s	0.22 (SB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

**Table 19: 2035 Future Total Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and County Road 50	Stop	A.M.	C	19.0 s	0.33 (WB)
		P.M.	C	17.8 s	0.25 (NBT)
County Road 14 and Concession Road 8	Stop	A.M.	B	13.5 s	0.17 (SB)
		P.M.	C	23.0 s	0.32 (SB)
County Road 14 and Adjala Tecumseth Townline	Stop	A.M.	A	9.4 s	0.31 (SB)
		P.M.	C	15.2 s	0.69 (NB)
Concession Road 8 and Street "H"	Stop	A.M.	A	9.0 s	0.02 (SB)
		P.M.	A	9.4 s	0.06 (SB)
Concession Road 8 and St. James Lane/Street "F"	Stop	A.M.	A	9.2 s	0.03 (EB/WB)
		P.M.	A	9.8 s	0.04 (WB)
Concession Road 8 and Street "C"	Stop	A.M.	A	8.6 s	0.05 (EB)
		P.M.	A	8.7 s	0.03 (NB/SB)
Concession Road 8 and Street "B"	Stop	A.M.	A	8.7 s	0.06 (EB)
		P.M.	A	8.6 s	0.05 (EB)
Concession Road 8 and Street "I"	Stop	A.M.	A	8.4 s	0.03 (EB)
		P.M.	A	8.4 s	0.03 (EB)
County Road 14 and Street "A"	Stop	A.M.	B	11.9 s	0.16 (NB)
		P.M.	C	16.1 s	0.23(SB)

Note: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

The boundary road network is expected to continue operating at a LOS "C" or better at all intersections in the weekday a.m. and p.m. peak hours, when compared with future background traffic operations.

#### 6.4 Signalization of County Road 14 and Street "A"

It is understood that one of the Conditions of Draft Plan Approval was for the implementation of signals at the intersection of County Road 14 and Street "A". The analysis above indicates that the intersection operates with acceptable levels of service and minimal delay through all horizon years under two-way stop-controlled conditions. Accordingly, we do not find it necessary nor do we recommend the implementation of signals at the intersection of County Road 14 and Street "A". Nonetheless, the intersection was analyzed as signalized with a cycle length of 60 seconds in order to demonstrate the expected operations; Table 20 below summarizes the results.



**Table 20: Signalized 2035 Future Total Level of Service**

Intersection	Control	Peak Hour	Level of Service	Control Delay	Maximum v/c ratio
County Road 14 and Street "A"	Future Signal	A.M.	A	9.8 s	0.34 (EB)
		P.M.	B	12.6 s	0.47 (EB)

The signalized intersection of County Road 14 and Street "A" is expected to improve to a LOS "A" and "B" in the weekday a.m. and p.m. peak hours, respectively, when compared with stop-controlled conditions. Further, the control delay is expected to improve by 2.1 seconds and 3.5 seconds in the weekday a.m. and p.m. peak hours, respectively. While signalizing the intersection of County Road 14 and Street "A" is anticipated to improve the operations of the intersection, the improvements are marginal and signalization is not recommended.

A signal warrant analysis was also undertaken for the intersection of County Road 14 and Street "A" for the 2035 horizon year. The analysis followed the procedures specified in Chapter 4 of the "Ontario Traffic Manual – Book 12", March 2012. Justifications 1 (Minimum Vehicular Volume), 2 (delay to Cross Traffic), 3 (Combination of Justifications 1 and 2), 4 (4-Hour Volume) and 7 (Projected Volumes) were selected as the most appropriate warrants with which to assess the intersections.

The average hour volume was determined using the following formula from OTM Book 12:

$$AHV = \frac{amPHV + pm PHV}{4}$$

Where:

AHV = Average Hour Volume  
PHV = Peak Hour Volume

This assessment determined that signals are not warranted under 2035 future total conditions, which further supports the recommendation to not signalize the intersection.

The signal warrant sheets have been included in **Appendix G**.

## 7 SIGHT DISTANCE ANALYSIS

Sight distance analysis was conducted to confirm that there is sufficient sight distance for drivers exiting from the proposed site accesses. The measured sight distances on Concession Road 8 were compared to the standards set out in the Township of Adjala-Tosorontio Roads By-law No. 12-31 (Amended June, 2013). The measured sight distances on County Road 14 were compared to the standards set out in the County of Simcoe Entrance By-law No. 5544.

Sight distance was measured from the proposed accesses using the following assumptions:

- A standard driver eye height of 1.05 metres for a passenger car;
- A three-metre setback from the approximate extension of the outer curb to represent a vehicle waiting at the stop line to exit the site; and,
- An object height of 1.05 metres at the centre of the upstream and downstream lane.

Concession Road 8 has a posted speed limit of 50 km/h, which was used to determine the sight distance requirements, as described in By-law No. 12-31. County Road 14 has a posted speed limit of

80 km/h, which was used to determine the sight distance requirements, as described in By-law No. 5544. As discussed previously, it is recommended that the posted speed limit of 50 km/h be extended to the western limits of the site. However, in order to maintain a conservative analysis, the sight distance assessment was undertaken using an 80 km/h posted speed limit. Table 21 summarizes the results of the sight distance assessment.

**Table 21: Sight Distance Assessment**

Location	Required Sight Distance	Available Sight Distance	
		Left	Right
Concession Road 8 and Street "I"	65 m	+150 m	+150 m
Concession Road 8 and Street "B"	65 m	+150 m	+150 m
Concession Road 8 and Street "H"	65 m	+150 m	+150 m
Concession Road 8 and Street "F"	65 m	+150 m	+150 m
Concession Road 8 and Street "C"	65 m	+150 m	+150 m
County Road 14 and Street "A" (North side of County Road 14)	230 m	+500 m	+250 m
County Road 14 and Street "A" (South side of County Road 14)	230 m	+500 m	+250 m

As shown above, the available sight distances exceed the County of Simcoe and Adjala-Tosorontio minimum requirements. Therefore, it can be reasonably justified that there is adequate sight distance for vehicles turning onto Concession Road 8 and County Road 14.

Relevant By-law excerpts have been included in **Appendix H**.

## 8 CONCLUSIONS

The detailed analysis contained within this report has resulted in the following key findings:

- Under existing traffic conditions, the intersections within the study area are operating efficiently at a LOS "B" or better during the weekday a.m., and p.m. peak hours.
- Examination of the 2022 through 2035 future background traffic conditions indicates that the study area is anticipated to continue operating efficiently with all study intersections operating at a LOS "C" or better;
- Westbound and eastbound left-turn lanes are not warranted at the intersection of County Road 14 and Street "A" under 2022 (Phase 1) future total conditions.
- A westbound left-turn lane with a minimum storage of 15 metres is warranted at the intersection of County Road 14 and Street "A" under 80 km/h posted speed limit and 2035 (Full Build-out) future total conditions.
- It is recommended that the posted speed limit of 50 km/h on County Road 14 be extended to the western limits of the site to improve safety and walkability for future residents. With a posted speed limit of 50 km/h, a westbound left-turn lane would not be warranted at the intersection of County Road 14 and Street "A".

- Westbound and eastbound left-turn lanes are not warranted at the intersection of County Road 14 and Concession Road 8 under 2022 (Phase 1) and 2035 (Full Build-out) future total conditions.
- Examination of the 2022 through 2035 future total traffic conditions indicates that the study area is anticipated to continue operating efficiently with all study intersections operating at a LOS "C" or better;
- The intersection of County Road 14 and Street "A" is expected to operate efficiently with minor delays as a two-way stop-controlled intersection under 2035 total traffic conditions. Signal warrants were undertaken, and the results indicate that signals are not warranted under 2035 total traffic conditions. Therefore, it is not recommended that the intersection of County Road 14 and Street "A" be signalized.
- The results of the sight distance analysis indicate that all accesses are supportable from a sight distance perspective.

It is concluded that the additional 22 units yielded by the Redline Revision to Draft Plan Approval will not have a material impact on the traffic operations of the boundary road network.

The analysis undertaken within was completed on the basis of the approved Colgan 1 Draft Plan (December 3, 2010) and the Colgan 2 Redline Revision Draft Plan (December 7, 2017). Any minor changes to the Plans will not materially affect the conclusions contained within this report.

The Official Plan Amendment, Zoning By-law Amendment, and Redline Revision to Draft Plan Approval Applications for Colgan 2 can be supported from a traffic operations and safety perspective, with the above noted recommendations.

Prepared by,

**C.F. CROZIER & ASSOCIATES INC.**



Alexander J. W. Fleming, MBA, P.Eng.  
Associate

/mf,jm

**C.F. CROZIER & ASSOCIATES INC.**



Madeleine N. Ferguson  
E.I.T.

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ADDENDUM.docx

# APPENDIX A

## Correspondence

## Madeleine Ferguson

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**From:** Doherty, Chris <Chris.Doherty@simcoe.ca>  
**Sent:** Wednesday, September 06, 2017 11:22 AM  
**To:** Madeleine Ferguson  
**Cc:** Brad Dickieson  
**Subject:** RE: Traffic Impact Study Terms of Reference - Tribute Colgan 1 [1000-3958] & 2 [1000-4243]

Hi Madeline, the terms of reference and scope of study is acceptable to the County. Unfortunately we do not have any intersection counts on file for the study intersections.

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:** Madeleine Ferguson [mailto:mferguson@cfcrozier.ca]  
**Sent:** Wednesday, September 06, 2017 9:53 AM  
**To:** Doherty, Chris <Chris.Doherty@simcoe.ca>  
**Cc:** Brad Dickieson <bdickieson@cfcrozier.ca>  
**Subject:** Traffic Impact Study Terms of Reference - Tribute Colgan 1 [1000-3958] & 2 [1000-4243]

Hello Chris,

C.F. Crozier & Associates has been retained to complete a Transportation Impact Study for the proposed residential developments on the lands located directly west of the existing Village of Colgan. The properties are referenced as "Colgan 1" and "Colgan 2". Colgan 1 is located on the south side of County Road 14, Colgan 2 is located on the north side of County Road 14, and both properties are bounded by Concession Road 8 to the east. Both properties propose one access to County Road 14 by way of a proposed shared roundabout, as you have previously discussed with Ryan MacLaughlan from our Office. Colgan 1 proposes three accesses to Concession Road 8 and Colgan 2 proposes two accesses to Concession Road 8. The developments propose a total of 826 units; the unit break down for both developments is summarized below.

### Colgan 1

- Single Family Detached Homes: 322 Units

### Colgan 2

- Single Family Detached Homes: 287 Units
- Townhomes: 47 Units
- Retirement Home: 170 Beds

The following contains the proposed Terms of Reference for the Traffic Impact Study, which will consider both properties combined. An aerial photo illustrating the site location has been attached.

The proposed Terms of Reference, consistent with the County of Simcoe "General Guidelines for Traffic Impact Studies", are as follows:

1. Analysis of weekday a.m. and p.m. peak hours will be sufficient to determine the traffic related effects of the subject development;
2. Analysis of the intersections of County Road 14 with County Road 50, Concession Road 8, and Adjala Tecumseth Townline, as well as the site entrances, will suffice;
3. Analysis of the study horizon years of full buildout (2025) and five (2030) and ten (2035) years beyond full build out will be acceptable;
4. An industry standard growth rate of 2% is assumed for all study intersections on the boundary road network. Please advise if this is agreeable;
5. Trip distributions will be based on Transportation Tomorrow Survey data, or existing travel patterns.

The Transportation Impact Study will also examine other typical elements such as sight distance and auxiliary turn-lane requirements at the site entrances.

We appreciate any feedback you may have on this approach to the TIS, and kindly request any recent turning movement counts at the noted study intersections.

Thank you and kind regards,

| **MADELEINE FERGUSON** E.I.T. | C.F. CROZIER & ASSOCIATES

| 40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3

| [cfcrozier.ca](http://cfcrozier.ca) | [mferguson@cfcrozier.ca](mailto:mferguson@cfcrozier.ca) | tel 705 446 3510



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# APPENDIX B

## Traffic Data

# Ontario Traffic Inc.

## Morning Peak Diagram

### Specified Period

**From:** 6:00:00  
**To:** 10:00:00

### One Hour Peak

**From:** 6:15:00  
**To:** 7:15:00

**Municipality:** Colgan  
**Site #:** 0725500001  
**Intersection:** County Rd 50 & County Rd 14  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 50 runs N/S

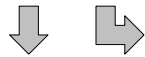
North Leg Total: 732  
North Entering: 614  
North Peds: 0  
Peds Cross:  $\times$

Heavys	0	0	1
Trucks	32	4	37
Cars	553	23	576
<b>Totals</b>	<b>585</b>	<b>27</b>	

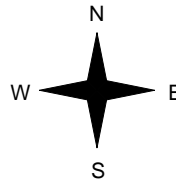


Heavys	0
Trucks	23
Cars	95
<b>Totals</b>	<b>118</b>

East Leg Total: 70  
East Entering: 39  
East Peds: 3  
Peds Cross:  $\times$



County Rd 50



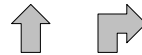
	Cars	Trucks	Heavys	Totals
Upward arrow	5	1	0	6
Downward arrow	31	2	0	33
<b>Totals</b>	<b>36</b>	<b>3</b>	<b>0</b>	

County Rd 14



Cars	Trucks	Heavys	Totals
27	4	0	31

County Rd 50



Cars	584
Trucks	34
Heavys	0
<b>Totals</b>	<b>618</b>



Cars	90	4	94
Trucks	22	0	22
Heavys	0	0	0
<b>Totals</b>	<b>112</b>	<b>4</b>	

Peds Cross:  $\times$   
South Peds: 0  
South Entering: 116  
South Leg Total: 734

## Comments



# Ontario Traffic Inc.

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00  
**To:** 19:00:00

### One Hour Peak

**From:** 16:15:00  
**To:** 17:15:00

**Municipality:** Colgan  
**Site #:** 0725500001  
**Intersection:** County Rd 50 & County Rd 14  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 50 runs N/S

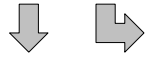
North Leg Total: 836  
North Entering: 225  
North Peds: 0  
Peds Cross:  $\times$

Heavys	0	0	0
Trucks	30	2	32
Cars	174	16	193
<b>Totals</b>	<b>204</b>	<b>18</b>	

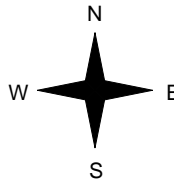


Heavys	0
Trucks	36
Cars	575
<b>Totals</b>	<b>611</b>

East Leg Total: 114  
East Entering: 54  
East Peds: 1  
Peds Cross:  $\times$



County Rd 50



	Cars	Trucks	Heavys	Totals
	34	4	0	38
	15	1	0	16
	49	5	0	

County Rd 14



	Cars	Trucks	Heavys	Totals
	55	5	0	60

Cars	189
Trucks	31
Heavys	0
<b>Totals</b>	<b>220</b>



County Rd 50

Cars	541	39	580
Trucks	32	3	35
Heavys	0	0	0
<b>Totals</b>	<b>573</b>	<b>42</b>	

Peds Cross:  $\times$   
South Peds: 0  
South Entering: 615  
South Leg Total: 835

## Comments

# Ontario Traffic Inc.

## Total Count Diagram

**Municipality:** Colgan  
**Site #:** 0725500001  
**Intersection:** County Rd 50 & County Rd 14  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 50 runs N/S

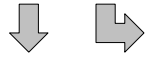
North Leg Total: 4989  
 North Entering: 2565  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	0	0	1
Trucks	268	19	288
Cars	2148	123	2276
<b>Totals</b>	<b>2416</b>	<b>142</b>	

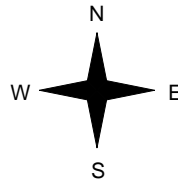


Heavys	0
Trucks	242
Cars	2182
<b>Totals</b>	<b>2424</b>

East Leg Total: 613  
 East Entering: 322  
 East Peds: 16  
 Peds Cross:  $\times$



County Rd 50



	Cars	Trucks	Heavys	Totals
	149	23	0	172
	139	8	3	150
	288	31	3	

County Rd 14



	Cars	Trucks	Heavys	Totals
	261	30	0	291

Cars	2287
Trucks	276
Heavys	3
<b>Totals</b>	<b>2566</b>



County Rd 50

Cars	2033	138	2173
Trucks	219	11	230
Heavys	0	0	0
<b>Totals</b>	<b>2252</b>	<b>149</b>	

Peds Cross:  $\times$   
 South Peds: 1  
 South Entering: 2403  
 South Leg Total: 4969

### Comments

# Ontario Traffic Inc. Traffic Count Summary

Intersection: County Rd 50 & County Rd 14

Count Date: 12-Sep-17

Municipality: Colgan

<b>North Approach Totals</b>						<b>South Approach Totals</b>						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	22	593	2	617	0	714	7:00:00	0	93	4	97	0
8:00:00	25	494	0	519	0	646	8:00:00	0	120	7	127	0
9:00:00	19	346	1	366	0	522	9:00:00	1	144	11	156	0
10:00:00	18	268	1	287	0	441	10:00:00	0	137	17	154	0
15:00:00	0	0	0	0	0	1	15:00:00	0	1	0	1	0
16:00:00	10	207	0	217	0	563	16:00:00	0	324	22	346	0
17:00:00	11	200	2	213	0	783	17:00:00	0	532	38	570	0
18:00:00	20	185	1	206	0	803	18:00:00	1	560	36	597	1
19:00:00	17	123	0	140	0	495	19:00:00	0	341	14	355	0
<b>Totals:</b>	142	2416	7	2565	0	4968		2	2252	149	2403	1

<b>East Approach Totals</b>						<b>West Approach Totals</b>						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	26	0	5	31	4	31	7:00:00	0	0	0	0	0
8:00:00	30	0	20	50	1	50	8:00:00	0	0	0	0	0
9:00:00	24	0	16	40	2	40	9:00:00	0	0	0	0	0
10:00:00	12	0	10	22	3	22	10:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	19	0	38	57	2	57	16:00:00	0	0	0	0	0
17:00:00	18	0	32	50	0	50	17:00:00	0	0	0	0	0
18:00:00	11	0	31	42	2	42	18:00:00	0	0	0	0	0
19:00:00	10	0	20	30	2	30	19:00:00	0	0	0	0	0
<b>Totals:</b>	150	0	172	322	16	322		0	0	0	0	0

### Calculated Values for Traffic Crossing Major Street

Hours Ending:	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00
Crossing Values:	26	30	24	12	19	18	12	10

# Ontario Traffic Inc.

Count Date: 12-Sep-17    Site #: 0725500001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	3	3	134	134	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
6:30:00	7	4	264	130	0	0	0	0	14	8	1	1	0	0	0	0	1	1	0	0
6:45:00	11	4	416	152	0	0	1	1	20	6	1	0	0	0	0	0	1	0	0	0
7:00:00	19	8	566	150	0	0	3	2	27	7	1	0	0	0	0	0	1	0	0	0
7:15:00	26	7	687	121	0	0	4	1	38	11	1	0	0	0	0	0	1	0	0	0
7:30:00	28	2	827	140	0	0	5	1	44	6	1	0	0	0	0	0	1	0	0	0
7:45:00	33	5	952	125	0	0	7	2	53	9	1	0	0	0	0	0	1	0	0	0
8:00:00	40	7	1025	73	0	0	7	0	62	9	1	0	0	0	0	0	1	0	0	0
8:15:00	44	4	1113	88	0	0	7	0	72	10	1	0	0	0	0	0	1	0	0	0
8:30:00	48	4	1191	78	0	0	8	1	84	12	1	0	0	0	0	0	1	0	0	0
8:45:00	53	5	1258	67	0	0	9	1	96	12	1	0	0	0	0	0	1	0	0	0
9:00:00	55	2	1322	64	1	1	11	2	111	15	1	0	0	0	0	0	1	0	0	0
9:15:00	62	7	1381	59	1	0	12	1	124	13	1	0	0	0	0	0	1	0	0	0
9:30:00	66	4	1444	63	1	0	14	2	139	15	1	0	0	0	0	0	1	0	0	0
9:45:00	69	3	1502	58	2	1	14	0	146	7	1	0	0	0	0	0	1	0	0	0
10:00:00	70	1	1546	44	2	0	14	0	155	9	1	0	0	0	0	0	1	0	0	0
10:00:14	70	0	1546	0	2	0	14	0	155	0	1	0	0	0	0	0	1	0	0	0
15:00:00	70	0	1546	0	2	0	14	0	155	0	1	0	0	0	0	0	1	0	0	0
15:15:00	72	2	1582	36	2	0	15	1	163	8	1	0	0	0	0	0	1	0	0	0
15:30:00	75	3	1633	51	2	0	16	1	169	6	1	0	0	0	0	0	1	0	0	0
15:45:00	76	1	1669	36	2	0	16	0	178	9	1	0	0	0	0	0	1	0	0	0
16:00:00	78	2	1718	49	2	0	16	0	190	12	1	0	0	0	0	0	1	0	0	0
16:15:00	79	1	1761	43	2	0	16	0	202	12	1	0	0	0	0	0	1	0	0	0
16:30:00	82	3	1803	42	2	0	17	1	210	8	1	0	0	0	0	0	1	0	0	0
16:45:00	85	3	1840	37	3	1	17	0	218	8	1	0	0	0	0	0	1	0	0	0
17:00:00	87	2	1884	44	4	1	18	1	224	6	1	0	0	0	0	0	1	0	0	0
17:15:00	95	8	1935	51	5	1	18	0	232	8	1	0	0	0	0	0	1	0	0	0
17:30:00	99	4	1970	35	5	0	18	0	236	4	1	0	0	0	0	0	1	0	0	0
17:45:00	101	2	2007	37	5	0	18	0	241	5	1	0	0	0	0	0	1	0	0	0
18:00:00	107	6	2044	37	5	0	18	0	249	8	1	0	0	0	0	0	1	0	0	0
18:15:00	112	5	2080	36	5	0	19	1	250	1	1	0	0	0	0	0	1	0	0	0
18:30:00	117	5	2110	30	5	0	19	0	257	7	1	0	0	0	0	0	1	0	0	0
18:45:00	120	3	2133	23	5	0	19	0	263	6	1	0	0	0	0	0	1	0	0	0
19:00:00	123	3	2148	15	5	0	19	0	268	5	1	0	0	0	0	0	1	0	0	0
19:01:21	123	0	2148	0	5	0	19	0	268	0	1	0	0	0	0	0	1	0	0	0
19:15:00	123	0	2148	0	5	0	19	0	268	0	1	0	0	0	0	0	1	0	0	0
19:15:15	123	0	2148	0	5	0	19	0	268	0	1	0	0	0	0	0	1	0	0	0

# Ontario Traffic Inc.

Count Date: 12-Sep-17 Site #: 0725500001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6:30:00	9	9	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	
6:45:00	14	5	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	2	1	
7:00:00	24	10	0	0	4	1	2	2	0	0	1	1	0	0	0	0	0	4	2	
7:15:00	31	7	0	0	5	1	2	0	0	0	1	0	0	0	0	0	0	4	0	
7:30:00	33	2	0	0	14	9	2	0	0	0	1	0	0	0	0	0	0	5	1	
7:45:00	42	9	0	0	18	4	2	0	0	0	1	0	0	0	0	0	0	5	0	
8:00:00	53	11	0	0	22	4	3	1	0	0	3	2	0	0	0	0	0	5	0	
8:15:00	62	9	0	0	22	0	4	1	0	0	3	0	0	0	0	0	0	5	0	
8:30:00	65	3	0	0	25	3	4	0	0	0	3	0	2	2	0	0	0	7	2	
8:45:00	69	4	0	0	27	2	4	0	0	0	3	0	2	0	0	0	0	7	0	
9:00:00	73	4	0	0	36	9	4	0	0	0	5	2	3	1	0	0	0	7	0	
9:15:00	74	1	0	0	39	3	4	0	0	0	7	2	3	0	0	0	0	7	0	
9:30:00	79	5	0	0	41	2	4	0	0	0	7	0	3	0	0	0	0	7	0	
9:45:00	80	1	0	0	41	0	4	0	0	0	7	0	3	0	0	0	0	7	0	
10:00:00	85	5	0	0	43	2	4	0	0	0	8	1	3	0	0	0	0	10	3	
10:00:14	85	0	0	0	43	0	4	0	0	0	8	0	3	0	0	0	0	10	0	
15:00:00	85	0	0	0	43	0	4	0	0	0	8	0	3	0	0	0	0	10	0	
15:15:00	88	3	0	0	56	13	4	0	0	0	10	2	3	0	0	0	0	10	0	
15:30:00	92	4	0	0	63	7	4	0	0	0	12	2	3	0	0	0	0	12	2	
15:45:00	100	8	0	0	68	5	4	0	0	0	13	1	3	0	0	0	0	12	0	
16:00:00	104	4	0	0	74	6	4	0	0	0	15	2	3	0	0	0	0	12	0	
16:15:00	108	4	0	0	79	5	5	1	0	0	15	0	3	0	0	0	0	12	0	
16:30:00	113	5	0	0	92	13	5	0	0	0	15	0	3	0	0	0	0	12	0	
16:45:00	116	3	0	0	99	7	5	0	0	0	17	2	3	0	0	0	0	12	0	
17:00:00	121	5	0	0	103	4	5	0	0	0	18	1	3	0	0	0	0	12	0	
17:15:00	123	2	0	0	113	10	6	1	0	0	19	1	3	0	0	0	0	13	1	
17:30:00	124	1	0	0	119	6	7	1	0	0	20	1	3	0	0	0	0	14	1	
17:45:00	126	2	0	0	121	2	7	0	0	0	22	2	3	0	0	0	0	14	0	
18:00:00	129	3	0	0	129	8	8	1	0	0	23	1	3	0	0	0	0	14	0	
18:15:00	130	1	0	0	136	7	8	0	0	0	23	0	3	0	0	0	0	15	1	
18:30:00	132	2	0	0	142	6	8	0	0	0	23	0	3	0	0	0	0	16	1	
18:45:00	136	4	0	0	146	4	8	0	0	0	23	0	3	0	0	0	0	16	0	
19:00:00	139	3	0	0	149	3	8	0	0	0	23	0	3	0	0	0	0	16	0	
19:01:21	139	0	0	0	149	0	8	0	0	0	23	0	3	0	0	0	0	16	0	
19:15:00	139	0	0	0	149	0	8	0	0	0	23	0	3	0	0	0	0	16	0	
19:15:15	139	0	0	0	149	0	8	0	0	0	23	0	3	0	0	0	0	16	0	





# Ontario Traffic Inc.

## Morning Peak Diagram

### Specified Period

**From:** 6:00:00  
**To:** 10:00:00

### One Hour Peak

**From:** 7:00:00  
**To:** 8:00:00

**Municipality:** Colgan  
**Site #:** 1725500002  
**Intersection:** County Rd 14 & County Rd 8  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 14 runs W/E

North Leg Total: 3  
North Entering: 2  
North Peds: 0  
Peds Cross:  $\times$

Heavys	0	0	0	0
Trucks	0	0	1	1
Cars	1	0	0	1
Totals	1	0	1	



Heavys	0
Trucks	0
Cars	1
Totals	1

East Leg Total: 100  
East Entering: 42  
East Peds: 0  
Peds Cross:  $\times$

Heavys	0
Trucks	4
Cars	40
Totals	44

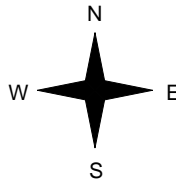


County Rd 8

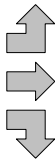
Cars	1	0	0	1
Trucks	35	3	0	38
Heavys	3	0	0	3
Totals	39	3	0	



County Rd 14



Heavys	0
Trucks	0
Cars	0
Totals	0
Heavys	0
Trucks	5
Cars	45
Totals	50
Heavys	0
Trucks	0
Cars	4
Totals	4
Heavys	0
Trucks	5
Cars	49
Totals	



County Rd 14



Cars	52	6	0	58
Trucks				
Heavys				
Totals				

Peds Cross:  $\times$   
West Peds: 0  
West Entering: 54  
West Leg Total: 98

Cars	7
Trucks	0
Heavys	0
Totals	7



County Rd 8

Cars	4	0	7	11
Trucks	1	0	0	1
Heavys	0	0	0	0
Totals	5	0	7	

Peds Cross:  $\times$   
South Peds: 0  
South Entering: 12  
South Leg Total: 19

## Comments



# Ontario Traffic Inc.

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00

**To:** 19:00:00

### One Hour Peak

**From:** 15:45:00

**To:** 16:45:00

**Municipality:** Colgan  
**Site #:** 1725500002  
**Intersection:** County Rd 14 & County Rd 8  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 14 runs W/E

North Leg Total: 1  
 North Entering: 0  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	0	0	0	0



Heavys	0
Trucks	0
Cars	1
Totals	1

East Leg Total: 134  
 East Entering: 77  
 East Peds: 0  
 Peds Cross:  $\times$

Heavys	0
Trucks	10
Cars	66
Totals	76

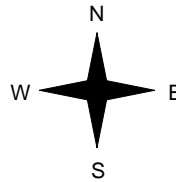


County Rd 8

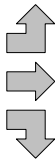
Cars	1	0	0	1
Trucks	54	6	0	60
Heavys	15	1	0	16
Totals	70	7	0	77



County Rd 14



Heavys	0
Trucks	0
Cars	0
Totals	0
Heavys	0
Trucks	2
Cars	33
Totals	35
Heavys	0
Trucks	0
Cars	19
Totals	19
Heavys	0
Trucks	2
Cars	52
Totals	54



County Rd 14



Cars	53	4	0	57
Trucks				
Heavys				
Totals				

Peds Cross:  $\times$   
 West Peds: 0  
 West Entering: 54  
 West Leg Total: 130

Cars	34
Trucks	1
Heavys	0
Totals	35



Cars	12	0	20	32
Trucks	4	0	2	6
Heavys	0	0	0	0
Totals	16	0	22	38

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 38  
 South Leg Total: 73

## Comments

# Ontario Traffic Inc.

## Total Count Diagram

**Municipality:** Colgan  
**Site #:** 1725500002  
**Intersection:** County Rd 14 & County Rd 8  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** County Rd 14 runs W/E

North Leg Total: 32  
 North Entering: 13  
 North Peds: 1  
 Peds Cross:  $\times$

Heavys	0	0	0	0
Trucks	0	0	1	1
Cars	4	6	2	12
<b>Totals</b>	<b>4</b>	<b>6</b>	<b>3</b>	



Heavys	0
Trucks	2
Cars	17
<b>Totals</b>	<b>19</b>

East Leg Total: 785  
 East Entering: 391  
 East Peds: 1  
 Peds Cross:  $\times$

Heavys	0
Trucks	39
Cars	333
<b>Totals</b>	<b>372</b>

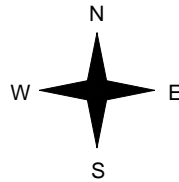


County Rd 8

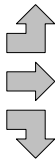
Cars	9	Trucks	1	Heavys	0	<b>Totals</b>	10
	292		31		0		323
	54		4		0		58
<b>Totals</b>	<b>355</b>	<b>36</b>	<b>0</b>				



County Rd 14



Heavys	0	Trucks	0	Cars	3	<b>Totals</b>	3
	0		21		283		304
	0		1		54		55
<b>Totals</b>	<b>0</b>	<b>22</b>	<b>340</b>				



County Rd 14



Peds Cross:  $\times$   
 West Peds: 3  
 West Entering: 362  
 West Leg Total: 734

Cars	114	Cars	37	5	72	114
Trucks	5	Trucks	8	1	15	24
Heavys	0	Heavys	0	0	0	0
<b>Totals</b>	<b>119</b>	<b>Totals</b>	<b>45</b>	<b>6</b>	<b>87</b>	



County Rd 8



Peds Cross:  $\times$   
 South Peds: 1  
 South Entering: 138  
 South Leg Total: 257

### Comments

# Ontario Traffic Inc. Traffic Count Summary

Intersection: County Rd 14 & County Rd 8

Count Date: 12-Sep-17

Municipality: Colgan

<b>North Approach Totals</b>						North/South Total Approaches	<b>South Approach Totals</b>					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	1	1	1	3	0	10	7:00:00	2	0	5	7	0
8:00:00	1	0	1	2	0	14	8:00:00	5	0	7	12	0
9:00:00	0	0	2	2	0	8	9:00:00	0	0	6	6	0
10:00:00	0	0	0	0	0	24	10:00:00	8	0	16	24	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	26	16:00:00	10	0	16	26	0
17:00:00	0	0	0	0	0	31	17:00:00	11	0	20	31	0
18:00:00	1	0	0	1	0	16	18:00:00	5	1	9	15	0
19:00:00	0	2	0	2	1	16	19:00:00	4	3	7	14	1
<b>Totals:</b>	3	3	4	10	1	145		45	4	86	135	1
<b>East Approach Totals</b>						East/West Total Approaches	<b>West Approach Totals</b>					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	5	20	1	26	0	68	7:00:00	0	39	3	42	0
8:00:00	3	38	1	42	0	96	8:00:00	0	50	4	54	0
9:00:00	2	34	1	37	0	78	9:00:00	1	37	3	41	0
10:00:00	6	14	1	21	0	59	10:00:00	0	34	4	38	0
15:00:00	0	0	0	0	0	1	15:00:00	0	1	0	1	0
16:00:00	7	61	3	71	0	119	16:00:00	0	36	12	48	1
17:00:00	13	64	1	78	0	129	17:00:00	0	32	19	51	0
18:00:00	12	50	2	64	1	112	18:00:00	0	41	7	48	0
19:00:00	10	42	0	52	0	91	19:00:00	2	34	3	39	2
<b>Totals:</b>	58	323	10	391	1	753		3	304	55	362	3
<b>Calculated Values for Traffic Crossing Major Street</b>												
Hours Ending:	7:00	8:00	9:00	10:00		16:00	17:00	18:00	19:00			
Crossing Values:	4	6	0	8		11	11	8	9			









# Ontario Traffic Inc.

## Morning Peak Diagram

### Specified Period

**From:** 6:00:00  
**To:** 10:00:00

### One Hour Peak

**From:** 6:45:00  
**To:** 7:45:00

**Municipality:** Colgan  
**Site #:** 1725500003  
**Intersection:** Adjala Tecumseth Townline & Cour  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Adjala Tecumseth Townline runs N.

North Leg Total: 143  
North Entering: 89  
North Peds: 0  
Peds Cross:  $\times$

Heavys	0	0	0
Trucks	1	2	3
Cars	9	77	86
<b>Totals</b>	<b>10</b>	<b>79</b>	



Heavys	0
Trucks	12
Cars	42
<b>Totals</b>	<b>54</b>

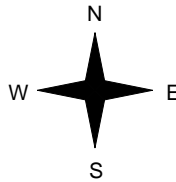
Heavys	0	Trucks	2	Cars	38	Totals	40
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Adjala Tecumseth Townline



County Rd 14



Heavys	0	Trucks	2	Cars	11	Totals	13
0	4	40	44				
0	6	51					



Adjala Tecumseth Townline

Peds Cross:  $\times$   
West Peds: 0  
West Entering: 57  
West Leg Total: 97

Cars	117
Trucks	6
Heavys	0
<b>Totals</b>	<b>123</b>



Cars	29	31	60
Trucks	1	10	11
Heavys	0	0	0
<b>Totals</b>	<b>30</b>	<b>41</b>	

Peds Cross:  $\times$   
South Peds: 0  
South Entering: 71  
South Leg Total: 194

## Comments



# Ontario Traffic Inc.

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00

**To:** 19:00:00

### One Hour Peak

**From:** 16:15:00

**To:** 17:15:00

**Municipality:** Colgan  
**Site #:** 1725500003  
**Intersection:** Adjala Tecumseth Townline & Cour  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Adjala Tecumseth Townline runs N.

North Leg Total: 196  
 North Entering: 79  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	0	0	0
Trucks	2	3	5
Cars	12	62	74
<b>Totals</b>	<b>14</b>	<b>65</b>	



Heavys	0
Trucks	4
Cars	113
<b>Totals</b>	<b>117</b>

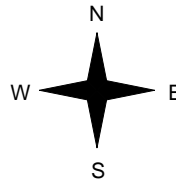
Heavys	0
Trucks	5
Cars	75
<b>Totals</b>	<b>80</b>



Adjala Tecumseth Townline



County Rd 14



Heavys	0
Trucks	2
Cars	12
<b>Totals</b>	<b>14</b>
<hr/>	
0	2
0	40
<b>Totals</b>	<b>42</b>
0	4
	52



Adjala Tecumseth Townline



Peds Cross:  $\times$   
 West Peds: 2  
 West Entering: 56  
 West Leg Total: 136

Cars	102
Trucks	5
Heavys	0
<b>Totals</b>	<b>107</b>



Cars	63	101
Trucks	3	2
Heavys	0	0
<b>Totals</b>	<b>66</b>	<b>103</b>
		164
		5
		0

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 169  
 South Leg Total: 276

## Comments

# Ontario Traffic Inc.

## Total Count Diagram

**Municipality:** Colgan  
**Site #:** 1725500003  
**Intersection:** Adjala Tecumseth Townline & Cour  
**TFR File #:** 1  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Adjala Tecumseth Townline runs N.

North Leg Total: 1187  
 North Entering: 620  
 North Peds: 1  
 Peds Cross:  $\bowtie$

Heavys	0	0	0
Trucks	12	33	45
Cars	72	503	575
<b>Totals</b>	<b>84</b>	<b>536</b>	



Heavys	0
Trucks	34
Cars	533
<b>Totals</b>	<b>567</b>

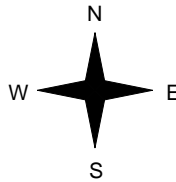
Heavys	0
Trucks	37
Cars	354
<b>Totals</b>	<b>391</b>



Adjala Tecumseth Townline



County Rd 14



Heavys	0
Trucks	11
Cars	74
<b>Totals</b>	<b>85</b>

0	26	284	310
0	37	358	



Adjala Tecumseth Townline



Peds Cross:  $\bowtie$   
 West Peds: 2  
 West Entering: 395  
 West Leg Total: 786

Cars	787
Trucks	59
Heavys	0
<b>Totals</b>	<b>846</b>



Cars	282	459	741
Trucks	25	23	48
Heavys	0	0	0
<b>Totals</b>	<b>307</b>	<b>482</b>	

Peds Cross:  $\bowtie$   
 South Peds: 0  
 South Entering: 789  
 South Leg Total: 1635

### Comments

# Ontario Traffic Inc. Traffic Count Summary

Intersection: Adjala Tecumseth Townline & Cou    Count Date: 12-Sep-17    Municipality: Colgan

<b>North Approach Totals</b>						<b>South Approach Totals</b>						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	0	91	18	109	0	136	7:00:00	8	19	0	27	0
8:00:00	0	78	11	89	1	156	8:00:00	30	37	0	67	0
9:00:00	0	67	7	74	0	128	9:00:00	29	25	0	54	0
10:00:00	0	59	5	64	0	107	10:00:00	16	27	0	43	0
15:00:00	0	3	0	3	0	4	15:00:00	1	0	0	1	0
16:00:00	0	63	9	72	0	231	16:00:00	62	97	0	159	0
17:00:00	0	70	13	83	0	241	17:00:00	65	93	0	158	0
18:00:00	0	52	13	65	0	229	18:00:00	51	113	0	164	0
19:00:00	0	53	8	61	0	175	19:00:00	45	69	0	114	0
<b>Totals:</b>	0	536	84	620	1	1407		307	480	0	787	0
<b>East Approach Totals</b>						<b>West Approach Totals</b>						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	0	0	0	0	0	46	7:00:00	5	0	41	46	0
8:00:00	0	0	0	0	0	60	8:00:00	13	0	47	60	0
9:00:00	0	0	0	0	0	43	9:00:00	7	0	36	43	0
10:00:00	0	0	0	0	0	50	10:00:00	12	0	38	50	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	52	16:00:00	12	0	40	52	0
17:00:00	0	0	0	0	0	52	17:00:00	15	0	37	52	2
18:00:00	0	0	0	0	0	50	18:00:00	11	0	39	50	0
19:00:00	0	0	0	0	0	42	19:00:00	10	0	32	42	0
<b>Totals:</b>	0	0	0	0	0	395		85	0	310	395	2
<b>Calculated Values for Traffic Crossing Major Street</b>												
Hours Ending:	7:00	8:00	9:00	10:00		16:00	17:00	18:00	19:00			
Crossing Values:	5	14	7	12		12	15	11	10			









# Ontario Traffic Inc.

## Morning Peak Diagram

### Specified Period

**From:** 6:00:00  
**To:** 10:00:00

### One Hour Peak

**From:** 8:45:00  
**To:** 9:45:00

**Municipality:** Colgan  
**Site #:** 1725500004  
**Intersection:** Concession Rd 8 & St James Lane  
**TFR File #:** 4  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Concession Rd 8 runs N/S

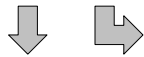
North Leg Total: 35  
North Entering: 13  
North Peds: 0  
Peds Cross:  $\times$

Heavys	0	0	0
Trucks	1	0	1
Cars	4	8	12
<b>Totals</b>	<b>5</b>	<b>8</b>	

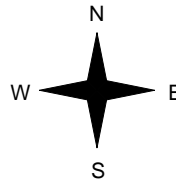


Heavys	0
Trucks	8
Cars	14
<b>Totals</b>	<b>22</b>

East Leg Total: 31  
East Entering: 19  
East Peds: 5  
Peds Cross:  $\times$



Concession Rd 8



	Cars	Trucks	Heavys	Totals
	10	7	0	17
	2	0	0	2
	<b>12</b>	<b>7</b>	<b>0</b>	

St James Lane



Cars	Trucks	Heavys	Totals
12	0	0	12

Cars	6
Trucks	1
Heavys	0
<b>Totals</b>	<b>7</b>



Cars	4	4	8
Trucks	1	0	1
Heavys	0	0	0
<b>Totals</b>	<b>5</b>	<b>4</b>	

Peds Cross:  $\times$   
South Peds: 0  
South Entering: 9  
South Leg Total: 16

## Comments



# Ontario Traffic Inc.

## Afternoon Peak Diagram

### Specified Period

**From:** 15:00:00

**To:** 19:00:00

### One Hour Peak

**From:** 15:45:00

**To:** 16:45:00

**Municipality:** Colgan  
**Site #:** 1725500004  
**Intersection:** Concession Rd 8 & St James Lane  
**TFR File #:** 4  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Concession Rd 8 runs N/S

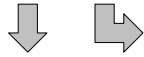
North Leg Total: 75  
 North Entering: 36  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	0	0	0
Trucks	0	1	1
Cars	19	16	35
<b>Totals</b>	<b>19</b>	<b>17</b>	

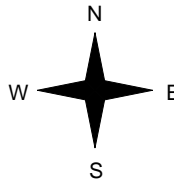


Heavys	0
Trucks	6
Cars	33
<b>Totals</b>	<b>39</b>

East Leg Total: 51  
 East Entering: 27  
 East Peds: 6  
 Peds Cross:  $\times$



Concession Rd 8

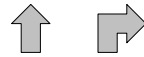


	Cars	Trucks	Heavys	Totals
Northbound	18	1	0	19
Southbound	8	0	0	8
<b>Totals</b>	<b>26</b>	<b>1</b>	<b>0</b>	

St James Lane



Concession Rd 8



Cars	27
Trucks	0
Heavys	0
<b>Totals</b>	<b>27</b>



Cars	15	7	22
Trucks	5	0	5
Heavys	0	0	0
<b>Totals</b>	<b>20</b>	<b>7</b>	

Cars	Trucks	Heavys	Totals
23	1	0	24

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 27  
 South Leg Total: 54

## Comments

# Ontario Traffic Inc.

## Total Count Diagram

**Municipality:** Colgan  
**Site #:** 1725500004  
**Intersection:** Concession Rd 8 & St James Lane  
**TFR File #:** 4  
**Count date:** 12-Sep-17

**Weather conditions:**  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Concession Rd 8 runs N/S

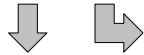
North Leg Total: 258  
 North Entering: 121  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	0	0	0
Trucks	3	3	6
Cars	77	38	115
<b>Totals</b>	<b>80</b>	<b>41</b>	<b>121</b>

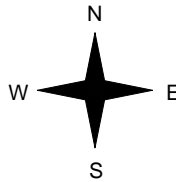


Heavys	0
Trucks	24
Cars	113
<b>Totals</b>	<b>137</b>

East Leg Total: 158  
 East Entering: 89  
 East Peds: 14  
 Peds Cross:  $\times$



Concession Rd 8

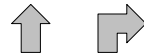


Cars	Trucks	Heavys	Totals
54	13	0	67
22	0	0	22
<b>76</b>	<b>13</b>	<b>0</b>	<b>89</b>

St James Lane



Concession Rd 8



Cars	99	Cars	59	28	87
Trucks	3	Trucks	11	0	11
Heavys	0	Heavys	0	0	0
<b>Totals</b>	<b>102</b>	<b>Totals</b>	<b>70</b>	<b>28</b>	<b>98</b>



Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 98  
 South Leg Total: 200

### Comments

# Ontario Traffic Inc. Traffic Count Summary

Intersection: Concession Rd 8 & St James Lane													Count Date: 12-Sep-17		Municipality: Colgan	
North Approach Totals						South Approach Totals										
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds				
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total					
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0				
7:00:00	1	9	0	10	0	17	7:00:00	0	5	2	7	0				
8:00:00	4	3	0	7	0	17	8:00:00	0	8	2	10	0				
9:00:00	3	4	0	7	0	12	9:00:00	0	4	1	5	0				
10:00:00	7	3	0	10	0	19	10:00:00	0	4	5	9	0				
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0				
16:00:00	4	15	0	19	0	37	16:00:00	0	14	4	18	0				
17:00:00	17	16	0	33	0	56	17:00:00	0	17	6	23	0				
18:00:00	3	16	0	19	0	34	18:00:00	0	10	5	15	0				
19:00:00	2	14	0	16	0	27	19:00:00	0	8	3	11	0				
<b>Totals:</b>	41	80	0	121	0	219		0	70	28	98	0				
East Approach Totals						West Approach Totals										
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds				
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total					
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0				
7:00:00	0	0	2	2	0	2	7:00:00	0	0	0	0	0				
8:00:00	4	0	4	8	0	8	8:00:00	0	0	0	0	2				
9:00:00	0	0	2	2	3	2	9:00:00	0	0	0	0	4				
10:00:00	2	0	20	22	2	22	10:00:00	0	0	0	0	0				
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0				
16:00:00	0	0	12	12	0	12	16:00:00	0	0	0	0	0				
17:00:00	9	0	15	24	6	24	17:00:00	0	0	0	0	0				
18:00:00	6	0	5	11	3	11	18:00:00	0	0	0	0	0				
19:00:00	1	0	7	8	0	8	19:00:00	0	0	0	0	0				
<b>Totals:</b>	22	0	67	89	14	89		0	0	0	0	6				
Calculated Values for Traffic Crossing Major Street																
Hours Ending:	7:00	8:00	9:00	10:00		16:00	17:00	18:00	19:00							
Crossing Values:	0	4	0	2		0	9	6	1							









# APPENDIX C

## Level of Service Definitions



## Level of Service Definitions

### Two-Way Stop Controlled Intersections

<b>Level of Service</b>	<b>Control Delay per Vehicle (seconds)</b>	<b>Interpretation</b>
A	$\leq 10$	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	$> 10$ and $\leq 15$	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	$> 15$ and $\leq 25$	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	$> 25$ and $\leq 35$	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	$> 35$ and $\leq 50$	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	$> 50$	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

## Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	$\leq 10$	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	$> 10$ and $\leq 20$	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	$> 20$ and $\leq 35$	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	$> 35$ and $\leq 55$	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	$> 55$ and $\leq 80$	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	$> 80$	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

# APPENDIX D

## Detailed Capacity Analysis Worksheets

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2017 Existing - AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	33	6	112	4	27	585	
Future Volume (Veh/h)	33	6	112	4	27	585	
Sign Control	Stop		Free		Free		
Grade	0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	35	6	120	4	29	629	
Pedestrians	3						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)	1						
Median type	None			None			
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	496	63			127		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	496	63			127		
tC, single (s)	6.9	7.2			4.4		
tC, 2 stage (s)							
tF (s)	3.6	3.5			2.4		
p0 queue free %	93	99			98		
cM capacity (veh/h)	481	939			1362		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	41	60	60	4	29	314	314
Volume Left	35	0	0	0	29	0	0
Volume Right	6	0	0	4	0	0	0
cSH	564	1700	1700	1700	1362	1700	1700
Volume to Capacity	0.07	0.04	0.04	0.00	0.02	0.18	0.18
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.5	0.0	0.0
Control Delay (s)	12.4	0.0	0.0	0.0	7.7	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	12.4	0.0			0.3		
Approach LOS	B						
Intersection Summary							
Average Delay			0.9				
Intersection Capacity Utilization			26.2%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2017 Existing - AM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	50	4	3	38	1	5	0	7	1	0	1
Future Volume (Veh/h)	0	50	4	3	38	1	5	0	7	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	53	4	3	40	1	5	0	7	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	41			57			102	102	55	108	104	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			57			102	102	55	108	104	40
tC, single (s)	4.1			4.1			7.3	6.5	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1581			1560			835	790	1018	679	789	1036

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	44	12	2
Volume Left	0	3	5	1
Volume Right	4	1	7	1
cSH	1581	1560	933	820
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.3	0.1
Control Delay (s)	0.0	0.5	8.9	9.4
Lane LOS		A	A	A
Approach Delay (s)	0.0	0.5	8.9	9.4
Approach LOS			A	A

Intersection Summary

Average Delay		1.3		
Intersection Capacity Utilization		14.5%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2017 Existing - AM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	13	44	30	41	79	10
Future Volume (vph)	13	44	30	41	79	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	49	33	46	88	11

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	14	49	79	99
Volume Left (vph)	14	0	33	0
Volume Right (vph)	0	49	0	11
Hadj (s)	0.76	-0.55	0.34	0.00
Departure Headway (s)	5.7	4.3	4.5	4.1
Degree Utilization, x	0.02	0.06	0.10	0.11
Capacity (veh/h)	606	788	779	853
Control Delay (s)	7.6	6.4	8.0	7.7
Approach Delay (s)	6.7		8.0	7.7
Approach LOS	A		A	A

Intersection Summary			
Delay		7.5	
Level of Service		A	
Intersection Capacity Utilization	20.5%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 5: Concession Road 8 & St. James Lane

2017 Existing - AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	2	5	4	8	5
Future Volume (Veh/h)	17	2	5	4	8	5
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	18	2	5	4	9	5
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	35	12			14	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	35	12			14	
tC, single (s)	6.4	6.6			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.7			2.2	
p0 queue free %	98	100			99	
cM capacity (veh/h)	973	964			1610	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	20	9	14			
Volume Left	18	0	9			
Volume Right	2	4	0			
cSH	972	1700	1610			
Volume to Capacity	0.02	0.01	0.01			
Queue Length 95th (m)	0.5	0.0	0.1			
Control Delay (s)	8.8	0.0	4.7			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	4.7			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.6			
Intersection Capacity Utilization			17.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2017 Existing - PM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	↶	↷	↕	↷	↶	↕	
Traffic Volume (veh/h)	16	38	573	42	18	204	
Future Volume (Veh/h)	16	38	573	42	18	204	
Sign Control	Stop		Free		Free		
Grade	0%		0%		0%		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly flow rate (vph)	17	40	603	44	19	215	
Pedestrians	1						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)	1						
Median type			None		None		
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	750	302			648		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	750	302			648		
tC, single (s)	6.9	7.1			4.3		
tC, 2 stage (s)							
tF (s)	3.6	3.4			2.3		
p0 queue free %	95	94			98		
cM capacity (veh/h)	331	667			874		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	57	302	302	44	19	108	108
Volume Left	17	0	0	0	19	0	0
Volume Right	40	0	0	44	0	0	0
cSH	950	1700	1700	1700	874	1700	1700
Volume to Capacity	0.06	0.18	0.18	0.03	0.02	0.06	0.06
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.5	0.0	0.0
Control Delay (s)	12.4	0.0	0.0	0.0	9.2	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	12.4	0.0			0.7		
Approach LOS	B						
Intersection Summary							
Average Delay	0.9						
Intersection Capacity Utilization	25.8%		ICU Level of Service			A	
Analysis Period (min)	15						



HCM Unsignalized Intersection Capacity Analysis  
 2: Concession Road 8 & County Road 14

2017 Existing - PM  
 10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	35	19	16	60	1	16	0	22	0	0	0
Future Volume (Veh/h)	0	35	19	16	60	1	16	0	22	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	41	22	19	71	1	19	0	26	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	72			63			162	162	52	188	172	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	72			63			162	162	52	188	172	72
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			97	100	97	100	100	100
cM capacity (veh/h)	1541			1514			747	725	996	750	715	996
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	63	91	45	0								
Volume Left	0	19	19	0								
Volume Right	22	1	26	0								
cSH	1541	1514	873	1700								
Volume to Capacity	0.00	0.01	0.05	0.00								
Queue Length 95th (m)	0.0	0.3	1.2	0.0								
Control Delay (s)	0.0	1.6	9.3	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.6	9.3	0.0								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			2.9									
Intersection Capacity Utilization			20.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2017 Existing - PM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	14	42	66	103	65	14
Future Volume (vph)	14	42	66	103	65	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	47	73	114	72	16

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	16	47	187	88
Volume Left (vph)	16	0	73	0
Volume Right (vph)	0	47	0	16
Hadj (s)	0.74	-0.61	0.13	0.00
Departure Headway (s)	5.9	4.5	4.3	4.3
Degree Utilization, x	0.03	0.06	0.22	0.10
Capacity (veh/h)	578	750	821	826
Control Delay (s)	7.8	6.6	8.5	7.7
Approach Delay (s)	6.9		8.5	7.7
Approach LOS	A		A	A

Intersection Summary			
Delay		8.0	
Level of Service		A	
Intersection Capacity Utilization	26.4%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 5: Concession Road 8 & St. James Lane

2017 Existing - PM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	19	20	7	17	19
Future Volume (Veh/h)	8	19	20	7	17	19
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	20	21	7	18	20
Pedestrians	6					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	86	30			34	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	30			34	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	98			99	
cM capacity (veh/h)	904	1030			1543	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	29	28	38			
Volume Left	9	0	18			
Volume Right	20	7	0			
cSH	987	1700	1543			
Volume to Capacity	0.03	0.02	0.01			
Queue Length 95th (m)	0.7	0.0	0.3			
Control Delay (s)	8.8	0.0	3.5			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	3.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.1			
Intersection Capacity Utilization			18.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2022 Future Background AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵	↵	↕↕	↵	↵	↕↕
Traffic Volume (veh/h)	36	7	124	4	30	646
Future Volume (Veh/h)	36	7	124	4	30	646
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	39	8	133	4	32	695
Pedestrians	3					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	548	70			140	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	548	70			140	
tC, single (s)	6.9	7.2			4.4	
tC, 2 stage (s)						
tF (s)	3.6	3.5			2.4	
p0 queue free %	91	99			98	
cM capacity (veh/h)	445	930			1347	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	47	66	66	4	32	348	348
Volume Left	39	0	0	0	32	0	0
Volume Right	8	0	0	4	0	0	0
cSH	536	1700	1700	1700	1347	1700	1700
Volume to Capacity	0.09	0.04	0.04	0.00	0.02	0.20	0.20
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	13.0	0.0	0.0	0.0	7.7	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	13.0	0.0			0.3		
Approach LOS	B						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2022 Future Background AM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	55	4	3	42	1	6	0	8	1	0	1
Future Volume (Veh/h)	0	55	4	3	42	1	6	0	8	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	58	4	3	44	1	6	0	8	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	45			62			112	111	60	118	112	44
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	45			62			112	111	60	118	112	44
tC, single (s)	4.1			4.1			7.3	6.5	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1576			1554			824	781	1011	667	780	1031
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	62	48	14	2								
Volume Left	0	3	6	1								
Volume Right	4	1	8	1								
cSH	1576	1554	921	810								
Volume to Capacity	0.00	0.00	0.02	0.00								
Queue Length 95th (m)	0.0	0.0	0.4	0.1								
Control Delay (s)	0.0	0.5	9.0	9.5								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	0.5	9.0	9.5								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			1.3									
Intersection Capacity Utilization			14.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2022 Future Background AM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	14	49	33	45	87	11
Future Volume (vph)	14	49	33	45	87	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	54	37	50	97	12

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	16	54	87	109
Volume Left (vph)	16	0	37	0
Volume Right (vph)	0	54	0	12
Hadj (s)	0.76	-0.55	0.34	0.00
Departure Headway (s)	5.7	4.4	4.5	4.2
Degree Utilization, x	0.03	0.07	0.11	0.13
Capacity (veh/h)	600	778	773	846
Control Delay (s)	7.6	6.5	8.1	7.8
Approach Delay (s)	6.8		8.1	7.8
Approach LOS	A		A	A

Intersection Summary			
Delay		7.6	
Level of Service		A	
Intersection Capacity Utilization	20.9%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St James Lane

2022 Future Background AM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	20	6	4	10	6
Future Volume (Veh/h)	2	20	6	4	10	6
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	22	7	4	11	7
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	43	14			16	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43	14			16	
tC, single (s)	6.4	6.6			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.7			2.2	
p0 queue free %	100	98			99	
cM capacity (veh/h)	962	961			1607	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	24	11	18			
Volume Left	2	0	11			
Volume Right	22	4	0			
cSH	961	1700	1607			
Volume to Capacity	0.02	0.01	0.01			
Queue Length 95th (m)	0.6	0.0	0.2			
Control Delay (s)	8.8	0.0	4.5			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	4.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.5			
Intersection Capacity Utilization			17.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2022 Future Background PM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	42	633	46	20	225
Future Volume (Veh/h)	18	42	633	46	20	225
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	19	44	666	48	21	237
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	828	334			715	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	828	334			715	
tC, single (s)	6.9	7.1			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	94	93			97	
cM capacity (veh/h)	294	635			823	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	63	333	333	48	21	118	118
Volume Left	19	0	0	0	21	0	0
Volume Right	44	0	0	48	0	0	0
cSH	910	1700	1700	1700	823	1700	1700
Volume to Capacity	0.07	0.20	0.20	0.03	0.03	0.07	0.07
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	13.2	0.0	0.0	0.0	9.5	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	13.2	0.0			0.8		
Approach LOS	B						

Intersection Summary			
Average Delay			1.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)			15



HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2022 Future Background PM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	39	21	18	66	1	18	0	24	0	0	0
Future Volume (Veh/h)	0	39	21	18	66	1	18	0	24	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	46	25	21	78	1	21	0	28	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	79			71			179	180	58	207	192	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	79			71			179	180	58	207	192	78
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			97	100	97	100	100	100
cM capacity (veh/h)	1532			1504			727	708	988	726	697	988
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	71	100	49	0								
Volume Left	0	21	21	0								
Volume Right	25	1	28	0								
cSH	1532	1504	856	1700								
Volume to Capacity	0.00	0.01	0.06	0.00								
Queue Length 95th (m)	0.0	0.3	1.4	0.0								
Control Delay (s)	0.0	1.6	9.5	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.6	9.5	0.0								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			2.9									
Intersection Capacity Utilization			21.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2022 Future Background PM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	15	46	73	114	72	15
Future Volume (vph)	15	46	73	114	72	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	51	81	127	80	17

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	17	51	208	97
Volume Left (vph)	17	0	81	0
Volume Right (vph)	0	51	0	17
Hadj (s)	0.74	-0.61	0.13	0.01
Departure Headway (s)	5.9	4.6	4.3	4.3
Degree Utilization, x	0.03	0.06	0.25	0.12
Capacity (veh/h)	570	736	816	817
Control Delay (s)	7.9	6.7	8.7	7.9
Approach Delay (s)	7.0		8.7	7.9
Approach LOS	A		A	A

Intersection Summary			
Delay		8.2	
Level of Service		A	
Intersection Capacity Utilization	27.3%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St. James Lane

2022 Future Background PM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	22	23	8	20	22
Future Volume (Veh/h)	10	22	23	8	20	22
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	23	24	9	21	23
Pedestrians	6					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	100	34			39	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	34			39	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	98			99	
cM capacity (veh/h)	887	1024			1537	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	34	33	44			
Volume Left	11	0	21			
Volume Right	23	9	0			
cSH	975	1700	1537			
Volume to Capacity	0.03	0.02	0.01			
Queue Length 95th (m)	0.8	0.0	0.3			
Control Delay (s)	8.8	0.0	3.6			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	3.6			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.1			
Intersection Capacity Utilization			18.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2025 Future Background AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	38	7	132	4	32	686
Future Volume (Veh/h)	38	7	132	4	32	686
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	41	8	142	4	34	738
Pedestrians	3					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	582	74			149	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	582	74			149	
tC, single (s)	6.9	7.2			4.4	
tC, 2 stage (s)						
tF (s)	3.6	3.5			2.4	
p0 queue free %	90	99			97	
cM capacity (veh/h)	422	923			1336	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	71	71	4	34	369	369
Volume Left	41	0	0	0	34	0	0
Volume Right	8	0	0	4	0	0	0
cSH	504	1700	1700	1700	1336	1700	1700
Volume to Capacity	0.10	0.04	0.04	0.00	0.03	0.22	0.22
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	13.5	0.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	13.5	0.0			0.3		
Approach LOS	B						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2025 Future Background AM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	58	4	3	45	1	6	0	8	1	0	1
Future Volume (Veh/h)	0	58	4	3	45	1	6	0	8	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	61	4	3	47	1	6	0	8	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	48			65			118	117	63	124	118	48
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			65			118	117	63	124	118	48
tC, single (s)	4.1			4.1			7.3	6.5	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1572			1550			816	775	1007	660	774	1027
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	65	51	14	2								
Volume Left	0	3	6	1								
Volume Right	4	1	8	1								
cSH	1572	1550	915	804								
Volume to Capacity	0.00	0.00	0.02	0.00								
Queue Length 95th (m)	0.0	0.0	0.4	0.1								
Control Delay (s)	0.0	0.4	9.0	9.5								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	0.4	9.0	9.5								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			1.3									
Intersection Capacity Utilization			14.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2025 Future Background AM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	15	52	35	48	92	12
Future Volume (vph)	15	52	35	48	92	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	58	39	53	102	13

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	17	58	92	115
Volume Left (vph)	17	0	39	0
Volume Right (vph)	0	58	0	13
Hadj (s)	0.76	-0.55	0.34	0.00
Departure Headway (s)	5.7	4.4	4.5	4.2
Degree Utilization, x	0.03	0.07	0.12	0.13
Capacity (veh/h)	597	772	769	842
Control Delay (s)	7.7	6.6	8.1	7.8
Approach Delay (s)	6.8		8.1	7.8
Approach LOS	A		A	A

**Intersection Summary**

Delay		7.7		
Level of Service		A		
Intersection Capacity Utilization		21.1%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St James Lane

2025 Future Background AM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	20	6	4	10	6
Future Volume (Veh/h)	2	20	6	4	10	6
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	22	7	4	11	7
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	43	14			16	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	43	14			16	
tC, single (s)	6.4	6.6			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.7			2.2	
p0 queue free %	100	98			99	
cM capacity (veh/h)	962	961			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	11	18
Volume Left	2	0	11
Volume Right	22	4	0
cSH	961	1700	1607
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (m)	0.6	0.0	0.2
Control Delay (s)	8.8	0.0	4.5
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	4.5
Approach LOS	A		

Intersection Summary			
Average Delay		5.5	
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2025 Future Background PM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	45	672	49	21	239
Future Volume (Veh/h)	19	45	672	49	21	239
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	47	707	52	22	252
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	878	354			760	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878	354			760	
tC, single (s)	6.9	7.1			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	93	92			97	
cM capacity (veh/h)	272	616			790	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	67	354	354	52	22	126	126
Volume Left	20	0	0	0	22	0	0
Volume Right	47	0	0	52	0	0	0
cSH	878	1700	1700	1700	790	1700	1700
Volume to Capacity	0.08	0.21	0.21	0.03	0.03	0.07	0.07
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.7	0.0	0.0
Control Delay (s)	13.7	0.0	0.0	0.0	9.7	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	13.7	0.0			0.8		
Approach LOS	B						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		



HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2025 Future Background PM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	41	22	19	70	1	19	0	25	0	0	0
Future Volume (Veh/h)	0	41	22	19	70	1	19	0	25	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	48	26	22	82	1	22	0	29	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	83			74			188	188	61	216	200	82
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			74			188	188	61	216	200	82
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			97	100	97	100	100	100
cM capacity (veh/h)	1527			1500			717	700	985	714	689	983
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	74	105	51	0								
Volume Left	0	22	22	0								
Volume Right	26	1	29	0								
cSH	1527	1500	848	1700								
Volume to Capacity	0.00	0.01	0.06	0.00								
Queue Length 95th (m)	0.0	0.3	1.5	0.0								
Control Delay (s)	0.0	1.6	9.5	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.6	9.5	0.0								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			2.9									
Intersection Capacity Utilization			21.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2025 Future Background PM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	16	49	77	121	76	16
Future Volume (vph)	16	49	77	121	76	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	54	86	134	84	18

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	18	54	220	102
Volume Left (vph)	18	0	86	0
Volume Right (vph)	0	54	0	18
Hadj (s)	2.20	-0.61	0.13	0.01
Departure Headway (s)	7.4	4.6	4.3	4.3
Degree Utilization, x	0.04	0.07	0.27	0.12
Capacity (veh/h)	458	728	810	798
Control Delay (s)	9.5	6.7	8.9	7.9
Approach Delay (s)	7.4		8.9	7.9
Approach LOS	A		A	A

Intersection Summary			
Delay		8.4	
Level of Service		A	
Intersection Capacity Utilization	27.9%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St. James Lane

2025 Future Background PM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	22	23	8	20	22
Future Volume (Veh/h)	10	22	23	8	20	22
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	23	24	9	21	23
Pedestrians	6					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	100	34			39	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	34			39	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	98			99	
cM capacity (veh/h)	887	1024			1537	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	34	33	44			
Volume Left	11	0	21			
Volume Right	23	9	0			
cSH	975	1700	1537			
Volume to Capacity	0.03	0.02	0.01			
Queue Length 95th (m)	0.8	0.0	0.3			
Control Delay (s)	8.8	0.0	3.6			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	3.6			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.1			
Intersection Capacity Utilization			18.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2030 Future Background AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	8	146	4	35	757
Future Volume (Veh/h)	42	8	146	4	35	757
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	45	9	157	4	38	814
Pedestrians	3					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	643	82			164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643	82			164	
tC, single (s)	6.9	7.2			4.4	
tC, 2 stage (s)						
tF (s)	3.6	3.5			2.4	
p0 queue free %	88	99			97	
cM capacity (veh/h)	384	913			1318	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	54	78	78	4	38	407	407
Volume Left	45	0	0	0	38	0	0
Volume Right	9	0	0	4	0	0	0
cSH	461	1700	1700	1700	1318	1700	1700
Volume to Capacity	0.12	0.05	0.05	0.00	0.03	0.24	0.24
Queue Length 95th (m)	3.0	0.0	0.0	0.0	0.7	0.0	0.0
Control Delay (s)	14.5	0.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	14.5	0.0			0.3		
Approach LOS	B						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2030 Future Background AM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	64	4	3	50	1	7	0	9	1	0	1
Future Volume (Veh/h)	0	64	4	3	50	1	7	0	9	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	67	4	3	53	1	7	0	9	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	54			71			130	129	69	138	130	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			71			130	129	69	138	130	54
tC, single (s)	4.1			4.1			7.3	6.5	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1564			1542			801	764	1000	646	762	1019
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	71	57	16	2								
Volume Left	0	3	7	1								
Volume Right	4	1	9	1								
cSH	1564	1542	902	790								
Volume to Capacity	0.00	0.00	0.02	0.00								
Queue Length 95th (m)	0.0	0.0	0.4	0.1								
Control Delay (s)	0.0	0.4	9.1	9.6								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	0.4	9.1	9.6								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			1.3									
Intersection Capacity Utilization			15.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2030 Future Background AM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	17	57	39	53	102	13
Future Volume (vph)	17	57	39	53	102	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	63	43	59	113	14

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	19	63	102	127
Volume Left (vph)	19	0	43	0
Volume Right (vph)	0	63	0	14
Hadj (s)	0.76	-0.55	0.34	0.00
Departure Headway (s)	5.8	4.5	4.6	4.2
Degree Utilization, x	0.03	0.08	0.13	0.15
Capacity (veh/h)	590	761	763	834
Control Delay (s)	7.8	6.7	8.3	7.9
Approach Delay (s)	6.9		8.3	7.9
Approach LOS	A		A	A

Intersection Summary			
Delay		7.8	
Level of Service		A	
Intersection Capacity Utilization	21.6%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St James Lane

2030 Future Background AM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	22	7	4	11	7
Future Volume (Veh/h)	2	22	7	4	11	7
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	24	8	4	12	8
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	47	15			17	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	47	15			17	
tC, single (s)	6.4	6.6			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.7			2.2	
p0 queue free %	100	97			99	
cM capacity (veh/h)	956	960			1606	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	26	12	20			
Volume Left	2	0	12			
Volume Right	24	4	0			
cSH	960	1700	1606			
Volume to Capacity	0.03	0.01	0.01			
Queue Length 95th (m)	0.6	0.0	0.2			
Control Delay (s)	8.9	0.0	4.4			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	4.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.5			
Intersection Capacity Utilization			17.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: County Road 50 & County Road 14

2030 Future Background PM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	50	742	54	23	264
Future Volume (Veh/h)	21	50	742	54	23	264
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	22	53	781	57	24	278
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	969	392			839	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	969	392			839	
tC, single (s)	6.9	7.1			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	91	91			97	
cM capacity (veh/h)	236	582			736	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	75	390	390	57	24	139	139
Volume Left	22	0	0	0	24	0	0
Volume Right	53	0	0	57	0	0	0
cSH	804	1700	1700	1700	736	1700	1700
Volume to Capacity	0.09	0.23	0.23	0.03	0.03	0.08	0.08
Queue Length 95th (m)	2.3	0.0	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	14.7	0.0	0.0	0.0	10.1	0.0	0.0
Lane LOS	B			B			
Approach Delay (s)	14.7	0.0			0.8		
Approach LOS	B						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		



HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2030 Future Background PM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	45	24	21	77	1	21	0	28	0	0	0
Future Volume (Veh/h)	0	45	24	21	77	1	21	0	28	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	53	28	25	91	1	25	0	33	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	92			81			208	209	67	242	222	92
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			81			208	209	67	242	222	92
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			96	100	97	100	100	100
cM capacity (veh/h)	1515			1492			693	680	977	684	668	971

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	81	117	58	0
Volume Left	0	25	25	0
Volume Right	28	1	33	0
cSH	1515	1492	830	1700
Volume to Capacity	0.00	0.02	0.07	0.00
Queue Length 95th (m)	0.0	0.4	1.7	0.0
Control Delay (s)	0.0	1.7	9.7	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	1.7	9.7	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2030 Future Background PM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	18	54	85	134	84	18
Future Volume (vph)	18	54	85	134	84	18
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	60	94	149	93	20

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	20	60	243	113
Volume Left (vph)	20	0	94	0
Volume Right (vph)	0	60	0	20
Hadj (s)	0.74	-0.61	0.13	0.01
Departure Headway (s)	6.0	4.7	4.4	4.4
Degree Utilization, x	0.03	0.08	0.29	0.14
Capacity (veh/h)	556	712	806	790
Control Delay (s)	8.1	6.9	9.2	8.1
Approach Delay (s)	7.2		9.2	8.1
Approach LOS	A		A	A

Intersection Summary			
Delay		8.5	
Level of Service		A	
Intersection Capacity Utilization	29.1%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St. James Lane

2030 Future Background PM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	24	25	9	22	24
Future Volume (Veh/h)	11	24	25	9	22	24
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	26	27	10	23	26
Pedestrians	6					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	110	38			43	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	110	38			43	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	97			98	
cM capacity (veh/h)	874	1020			1532	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	38	37	49			
Volume Left	12	0	23			
Volume Right	26	10	0			
cSH	969	1700	1532			
Volume to Capacity	0.04	0.02	0.02			
Queue Length 95th (m)	0.9	0.0	0.3			
Control Delay (s)	8.9	0.0	3.5			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	3.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.1			
Intersection Capacity Utilization			19.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2035 Future Background AM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	46	9	161	4	39	836
Future Volume (Veh/h)	46	9	161	4	39	836
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	49	10	173	4	42	899
Pedestrians	3					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	710	90			180	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	710	90			180	
tC, single (s)	6.9	7.2			4.4	
tC, 2 stage (s)						
tF (s)	3.6	3.5			2.4	
p0 queue free %	86	99			97	
cM capacity (veh/h)	347	902			1299	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	59	86	86	4	42	450	450
Volume Left	49	0	0	0	42	0	0
Volume Right	10	0	0	4	0	0	0
cSH	418	1700	1700	1700	1299	1700	1700
Volume to Capacity	0.14	0.05	0.05	0.00	0.03	0.26	0.26
Queue Length 95th (m)	3.7	0.0	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	15.7	0.0	0.0	0.0	7.9	0.0	0.0
Lane LOS	C			A			
Approach Delay (s)	15.7	0.0			0.4		
Approach LOS	C						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2035 Future Background AM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	71	4	3	55	1	8	0	10	1	0	1
Future Volume (Veh/h)	0	71	4	3	55	1	8	0	10	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	75	4	3	58	1	8	0	11	1	0	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	59			79			142	142	77	152	144	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			79			142	142	77	152	144	58
tC, single (s)	4.1			4.1			7.3	6.5	6.2	8.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	4.4	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1558			1532			785	751	990	628	750	1013
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	79	62	19	2								
Volume Left	0	3	8	1								
Volume Right	4	1	11	1								
cSH	1558	1532	892	776								
Volume to Capacity	0.00	0.00	0.02	0.00								
Queue Length 95th (m)	0.0	0.0	0.5	0.1								
Control Delay (s)	0.0	0.4	9.1	9.7								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	0.4	9.1	9.7								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			1.3									
Intersection Capacity Utilization			15.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2035 Future Background AM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	19	63	43	59	113	14
Future Volume (vph)	19	63	43	59	113	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	70	48	66	126	16

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	21	70	114	142
Volume Left (vph)	21	0	48	0
Volume Right (vph)	0	70	0	16
Hadj (s)	0.76	-0.55	0.34	0.00
Departure Headway (s)	5.8	4.5	4.6	4.3
Degree Utilization, x	0.03	0.09	0.15	0.17
Capacity (veh/h)	582	747	755	826
Control Delay (s)	7.9	6.8	8.4	8.1
Approach Delay (s)	7.0		8.4	8.1
Approach LOS	A		A	A

Intersection Summary			
Delay		7.9	
Level of Service		A	
Intersection Capacity Utilization	25.6%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St James Lane

2035 Future Background AM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	24	8	4	12	8
Future Volume (Veh/h)	2	24	8	4	12	8
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	26	9	4	13	9
Pedestrians	5					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	51	16			18	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	51	16			18	
tC, single (s)	6.4	6.6			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.7			2.2	
p0 queue free %	100	97			99	
cM capacity (veh/h)	951	959			1605	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	28	13	22			
Volume Left	2	0	13			
Volume Right	26	4	0			
cSH	958	1700	1605			
Volume to Capacity	0.03	0.01	0.01			
Queue Length 95th (m)	0.7	0.0	0.2			
Control Delay (s)	8.9	0.0	4.3			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	4.3			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.4			
Intersection Capacity Utilization			17.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2035 Future Background PM  
 10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	55	819	60	25	291
Future Volume (Veh/h)	23	55	819	60	25	291
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	24	58	862	63	26	306
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1068	432			926	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1068	432			926	
tC, single (s)	6.9	7.1			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	88	89			96	
cM capacity (veh/h)	202	547			680	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	82	431	431	63	26	153	153
Volume Left	24	0	0	0	26	0	0
Volume Right	58	0	0	63	0	0	0
cSH	690	1700	1700	1700	680	1700	1700
Volume to Capacity	0.12	0.25	0.25	0.04	0.04	0.09	0.09
Queue Length 95th (m)	3.1	0.0	0.0	0.0	0.9	0.0	0.0
Control Delay (s)	16.1	0.0	0.0	0.0	10.5	0.0	0.0
Lane LOS	C			B			
Approach Delay (s)	16.1	0.0			0.8		
Approach LOS	C						

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		



HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2035 Future Background PM  
10/30/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	50	26	23	85	1	23	0	31	0	0	0
Future Volume (Veh/h)	0	50	26	23	85	1	23	0	31	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	59	31	27	100	1	27	0	36	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	101			90			229	230	74	265	244	100
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			90			229	230	74	265	244	100
tC, single (s)	4.1			4.2			7.3	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			96	100	96	100	100	100
cM capacity (veh/h)	1504			1480			671	661	968	657	649	960
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	90	128	63	0								
Volume Left	0	27	27	0								
Volume Right	31	1	36	0								
cSH	1504	1480	813	1700								
Volume to Capacity	0.00	0.02	0.08	0.00								
Queue Length 95th (m)	0.0	0.4	1.9	0.0								
Control Delay (s)	0.0	1.7	9.8	0.0								
Lane LOS		A	A	A								
Approach Delay (s)	0.0	1.7	9.8	0.0								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			3.0									
Intersection Capacity Utilization			22.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2035 Future Background PM  
 10/30/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	20	60	94	148	93	20
Future Volume (vph)	20	60	94	148	93	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	67	104	164	103	22

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	22	67	268	125
Volume Left (vph)	22	0	104	0
Volume Right (vph)	0	67	0	22
Hadj (s)	0.74	-0.61	0.13	0.01
Departure Headway (s)	6.1	4.8	4.4	4.4
Degree Utilization, x	0.04	0.09	0.33	0.15
Capacity (veh/h)	546	697	798	779
Control Delay (s)	8.2	7.0	9.5	8.2
Approach Delay (s)	7.3		9.5	8.2
Approach LOS	A		A	A

Intersection Summary			
Delay		8.8	
Level of Service		A	
Intersection Capacity Utilization	30.3%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & St. James Lane

2035 Future Background PM  
10/30/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	26	28	10	24	26
Future Volume (Veh/h)	12	26	28	10	24	26
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	28	30	11	26	28
Pedestrians	6					
Lane Width (m)	3.5					
Walking Speed (m/s)	1.1					
Percent Blockage	1					
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	122	42			47	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	42			47	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	97			98	
cM capacity (veh/h)	859	1015			1527	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	41	41	54			
Volume Left	13	0	26			
Volume Right	28	11	0			
cSH	960	1700	1527			
Volume to Capacity	0.04	0.02	0.02			
Queue Length 95th (m)	1.0	0.0	0.4			
Control Delay (s)	8.9	0.0	3.6			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	3.6			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.1			
Intersection Capacity Utilization			19.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2022 Future Total AM  
 11/22/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	68	11	124	9	34	646	
Future Volume (Veh/h)	68	11	124	9	34	646	
Sign Control	Stop		Free		Free		
Grade	0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	73	12	133	10	37	695	
Pedestrians	3						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)	1						
Median type			None		None		
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	558	70			146		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	558	70			146		
tC, single (s)	6.8	7.0			4.3		
tC, 2 stage (s)							
tF (s)	3.5	3.4			2.3		
p0 queue free %	84	99			97		
cM capacity (veh/h)	446	963			1373		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	85	66	66	10	37	348	348
Volume Left	73	0	0	0	37	0	0
Volume Right	12	0	0	10	0	0	0
cSH	520	1700	1700	1700	1373	1700	1700
Volume to Capacity	0.16	0.04	0.04	0.01	0.03	0.20	0.20
Queue Length 95th (m)	4.4	0.0	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	13.8	0.0	0.0	0.0	7.7	0.0	0.0
Lane LOS	B				A		
Approach Delay (s)	13.8	0.0			0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			1.5				
Intersection Capacity Utilization			28.3%		ICU Level of Service		A
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2022 Future Total AM  
11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	140	4	14	73	17	6	0	55	36	0	5
Future Volume (Veh/h)	1	140	4	14	73	17	6	0	55	36	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	147	4	15	77	18	6	0	58	38	0	5
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	95			151			272	276	149	325	269	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			151			272	276	149	325	269	86
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	94	93	100	99
cM capacity (veh/h)	1512			1442			652	628	903	585	634	978
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	152	110	64	43								
Volume Left	1	15	6	38								
Volume Right	4	18	58	5								
cSH	1512	1442	871	613								
Volume to Capacity	0.00	0.01	0.07	0.07								
Queue Length 95th (m)	0.0	0.2	1.8	1.7								
Control Delay (s)	0.1	1.1	9.5	11.3								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.1	1.1	9.5	11.3								
Approach LOS			A	B								
<b>Intersection Summary</b>												
Average Delay			3.3									
Intersection Capacity Utilization			30.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2022 Future Total AM  
 11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	75	155	50	45	87	52
Future Volume (vph)	75	155	50	45	87	52
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	172	56	50	97	58

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	83	172	106	155
Volume Left (vph)	83	0	56	0
Volume Right (vph)	0	172	0	58
Hadj (s)	0.53	-0.67	0.12	-0.13
Departure Headway (s)	5.7	4.5	4.8	4.5
Degree Utilization, x	0.13	0.21	0.14	0.19
Capacity (veh/h)	605	769	708	754
Control Delay (s)	8.3	7.5	8.6	8.6
Approach Delay (s)	7.7		8.6	8.6
Approach LOS	A		A	A

Intersection Summary			
Delay		8.2	
Level of Service		A	
Intersection Capacity Utilization	27.0%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
4: Concession Road 8 & Street "H"

2022 Future Total AM  
11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	0	0	49	19	7
Future Volume (Veh/h)	24	0	0	49	19	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	0	0	53	21	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	78	25	29			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	25	29			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	925	1051	1584			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	26	53	29			
Volume Left	26	0	0			
Volume Right	0	0	8			
cSH	925	1584	1700			
Volume to Capacity	0.03	0.00	0.02			
Queue Length 95th (m)	0.7	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St James Lane

2022 Future Total AM  
11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	23	0	0	2	0	19	0	6	4	9	6	4
Future Volume (Veh/h)	23	0	0	2	0	19	0	6	4	9	6	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	0	0	2	0	21	0	7	4	10	7	4
Pedestrians					5							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	59	45	9	43	45	14	11			16		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59	45	9	43	45	14	11			16		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.6	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.7	2.2			2.2		
p0 queue free %	97	100	100	100	100	98	100			99		
cM capacity (veh/h)	909	837	1073	952	837	961	1608			1607		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	25	23	11	21								
Volume Left	25	2	0	10								
Volume Right	0	21	4	4								
cSH	909	960	1608	1607								
Volume to Capacity	0.03	0.02	0.00	0.01								
Queue Length 95th (m)	0.6	0.6	0.0	0.1								
Control Delay (s)	9.1	8.8	0.0	3.5								
Lane LOS	A	A		A								
Approach Delay (s)	9.1	8.8	0.0	3.5								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			6.3									
Intersection Capacity Utilization			22.3%		ICU Level of Service				A			
Analysis Period (min)			15									



HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2022 Future Total AM  
11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	39	17	1	2	0
Future Volume (Veh/h)	0	39	17	1	2	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	42	18	1	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	39	2	2			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	39	2	2			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	99			
cM capacity (veh/h)	962	1082	1620			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	42	19	2			
Volume Left	0	18	0			
Volume Right	42	0	0			
cSH	1082	1620	1700			
Volume to Capacity	0.04	0.01	0.00			
Queue Length 95th (m)	0.9	0.3	0.0			
Control Delay (s)	8.5	6.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.5	6.9	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.7			
Intersection Capacity Utilization		17.7%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2022 Future Total AM  
 11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	7	59	3	14	52	18	18	2	48	38	1	15
Future Volume (Veh/h)	7	59	3	14	52	18	18	2	48	38	1	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	64	3	15	57	20	20	2	52	41	1	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	77			67			185	188	66	232	180	67
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	77			67			185	188	66	232	180	67
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	100	95	94	100	98
cM capacity (veh/h)	1522			1535			754	696	998	676	703	997
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	75	15	77	74	58							
Volume Left	8	15	0	20	41							
Volume Right	3	0	20	52	16							
cSH	1522	1535	1700	908	743							
Volume to Capacity	0.01	0.01	0.05	0.08	0.08							
Queue Length 95th (m)	0.1	0.2	0.0	2.0	1.9							
Control Delay (s)	0.8	7.4	0.0	9.3	10.3							
Lane LOS	A	A		A	B							
Approach Delay (s)	0.8	1.2		9.3	10.3							
Approach LOS				A	B							
<b>Intersection Summary</b>												
Average Delay			4.9									
Intersection Capacity Utilization			22.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2022 Future Total PM  
 11/22/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	53	633	83	26	225
Future Volume (Veh/h)	27	53	633	83	26	225
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	28	56	666	87	27	237
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	840	334			754	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840	334			754	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	90	91			97	
cM capacity (veh/h)	292	652			825	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	84	333	333	87	27	118	118
Volume Left	28	0	0	0	27	0	0
Volume Right	56	0	0	87	0	0	0
cSH	876	1700	1700	1700	825	1700	1700
Volume to Capacity	0.10	0.20	0.20	0.05	0.03	0.07	0.07
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	13.6	0.0	0.0	0.0	9.5	0.0	0.0
Lane LOS	B			A			
Approach Delay (s)	13.6	0.0			1.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2022 Future Total PM  
11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	5	102	21	70	163	39	18	0	47	31	0	3
Future Volume (Veh/h)	5	102	21	70	163	39	18	0	47	31	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	6	120	25	82	192	46	21	0	55	36	0	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	238			145			528	546	132	578	536	215
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	238			145			528	546	132	578	536	215
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	4.0
p0 queue free %	100			94			95	100	94	91	100	99
cM capacity (veh/h)	1341			1443			416	420	914	385	426	674
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	151	320	76	40								
Volume Left	6	82	21	36								
Volume Right	25	46	55	4								
cSH	1341	1443	687	402								
Volume to Capacity	0.00	0.06	0.11	0.10								
Queue Length 95th (m)	0.1	1.4	2.8	2.5								
Control Delay (s)	0.3	2.3	10.9	14.9								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.3	2.3	10.9	14.9								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			3.8									
Intersection Capacity Utilization			36.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2022 Future Total PM  
 11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	97	81	193	114	72	83
Future Volume (vph)	97	81	193	114	72	83
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	108	90	214	127	80	92

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	108	90	341	172
Volume Left (vph)	108	0	214	0
Volume Right (vph)	0	90	0	92
Hadj (s)	0.52	-0.67	0.29	-0.27
Departure Headway (s)	6.3	5.1	5.0	4.6
Degree Utilization, x	0.19	0.13	0.47	0.22
Capacity (veh/h)	535	654	706	735
Control Delay (s)	9.5	7.6	12.2	8.9
Approach Delay (s)	8.7		12.2	8.9
Approach LOS	A		B	A

Intersection Summary			
Delay		10.4	
Level of Service		B	
Intersection Capacity Utilization	41.8%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
 4: Concession Road 8 & Street "H"

2022 Future Total PM  
 11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	0	0	29	65	27
Future Volume (Veh/h)	15	0	0	29	65	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	0	32	71	29
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	118	86	100			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	86	100			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	878	973	1493			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	32	100			
Volume Left	16	0	0			
Volume Right	0	0	29			
cSH	878	1493	1700			
Volume to Capacity	0.02	0.00	0.06			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			1.0			
Intersection Capacity Utilization			15.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St. James Lane

2022 Future Total PM  
11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	0	0	9	0	21	0	22	8	19	21	25
Future Volume (Veh/h)	8	0	0	9	0	21	0	22	8	19	21	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.94	0.92	0.94	0.94	0.94	0.94	0.92
Hourly flow rate (vph)	9	0	0	10	0	22	0	23	9	20	22	27
Pedestrians					6							
Lane Width (m)					3.5							
Walking Speed (m/s)					1.1							
Percent Blockage					1							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	125	114	36	109	122	34	49			38		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125	114	36	109	122	34	49			38		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	99	100	100	99	100	98	100			99		
cM capacity (veh/h)	819	762	1037	857	754	1026	1558			1538		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	9	32	32	69								
Volume Left	9	10	0	20								
Volume Right	0	22	9	27								
cSH	819	966	1558	1538								
Volume to Capacity	0.01	0.03	0.00	0.01								
Queue Length 95th (m)	0.3	0.8	0.0	0.3								
Control Delay (s)	9.4	8.9	0.0	2.2								
Lane LOS	A	A		A								
Approach Delay (s)	9.4	8.9	0.0	2.2								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			3.7									
Intersection Capacity Utilization			20.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2022 Future Total PM  
11/22/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	34	44	1	0	0
Future Volume (Veh/h)	0	34	44	1	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	37	48	1	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	97	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	97			
cM capacity (veh/h)	876	1085	1623			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	37	49	0			
Volume Left	0	48	0			
Volume Right	37	0	0			
cSH	1085	1623	1700			
Volume to Capacity	0.03	0.03	0.00			
Queue Length 95th (m)	0.8	0.7	0.0			
Control Delay (s)	8.4	7.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	7.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.7			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2022 Future Total PM  
 11/22/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	21	62	20	54	80	50	7	7	29	38	8	17
Future Volume (Veh/h)	21	62	20	54	80	50	7	7	29	38	8	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	67	22	59	87	54	8	8	32	41	9	18
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	141			89			352	383	78	392	367	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	141			89			352	383	78	392	367	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			96			99	98	97	92	98	98
cM capacity (veh/h)	1442			1506			560	520	983	520	531	939
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	112	59	141	48	68							
Volume Left	23	59	0	8	41							
Volume Right	22	0	54	32	18							
cSH	1442	1506	1700	771	591							
Volume to Capacity	0.02	0.04	0.08	0.06	0.11							
Queue Length 95th (m)	0.4	0.9	0.0	1.5	2.9							
Control Delay (s)	1.6	7.5	0.0	10.0	11.9							
Lane LOS	A	A		A	B							
Approach Delay (s)	1.6	2.2		10.0	11.9							
Approach LOS				A	B							
<b>Intersection Summary</b>												
Average Delay			4.5									
Intersection Capacity Utilization			33.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2025 Future Total AM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	95	14	132	13	41	686	
Future Volume (Veh/h)	95	14	132	13	41	686	
Sign Control	Stop		Free		Free		
Grade	0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	102	15	142	14	44	738	
Pedestrians	3						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)	1						
Median type	None			None			
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	602	74			159		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	602	74			159		
tC, single (s)	6.8	7.0			4.3		
tC, 2 stage (s)							
tF (s)	3.5	3.4			2.3		
p0 queue free %	75	98			97		
cM capacity (veh/h)	416	957			1357		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	117	71	71	14	44	369	369
Volume Left	102	0	0	0	44	0	0
Volume Right	15	0	0	14	0	0	0
cSH	477	1700	1700	1700	1357	1700	1700
Volume to Capacity	0.25	0.04	0.04	0.01	0.03	0.22	0.22
Queue Length 95th (m)	7.3	0.0	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	15.5	0.0	0.0	0.0	7.7	0.0	0.0
Lane LOS	C				A		
Approach Delay (s)	15.5	0.0			0.4		
Approach LOS	C						
Intersection Summary							
Average Delay			2.0				
Intersection Capacity Utilization			30.9%		ICU Level of Service		A
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2025 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	197	4	16	100	40	6	0	43	75	0	8
Future Volume (Veh/h)	3	197	4	16	100	40	6	0	43	75	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	207	4	17	105	42	6	0	45	79	0	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	147			211			383	396	209	420	377	126
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			211			383	396	209	420	377	126
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	95	85	100	99
cM capacity (veh/h)	1447			1372			546	536	836	510	550	930
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	214	164	51	87								
Volume Left	3	17	6	79								
Volume Right	4	42	45	8								
cSH	1447	1372	787	532								
Volume to Capacity	0.00	0.01	0.06	0.16								
Queue Length 95th (m)	0.0	0.3	1.6	4.4								
Control Delay (s)	0.1	0.9	9.9	13.1								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.1	0.9	9.9	13.1								
Approach LOS			A	B								
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			35.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2025 Future Total AM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	121	195	61	48	92	94
Future Volume (vph)	121	195	61	48	92	94
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	134	217	68	53	102	104

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	134	217	121	206
Volume Left (vph)	134	0	68	0
Volume Right (vph)	0	217	0	104
Hadj (s)	0.53	-0.67	0.13	-0.19
Departure Headway (s)	5.9	4.6	5.1	4.7
Degree Utilization, x	0.22	0.28	0.17	0.27
Capacity (veh/h)	586	738	660	720
Control Delay (s)	9.3	8.2	9.2	9.4
Approach Delay (s)	8.6		9.2	9.4
Approach LOS	A		A	A

Intersection Summary			
Delay		9.0	
Level of Service		A	
Intersection Capacity Utilization	33.2%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
4: Concession Road 8 & Street "H"

2025 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	54	21	8
Future Volume (Veh/h)	7	0	0	54	21	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	59	23	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	86	28	32			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	28	32			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	915	1048	1580			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	8	59	32			
Volume Left	8	0	0			
Volume Right	0	0	9			
cSH	915	1580	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St James Lane

2025 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	21	0	0	2	0	20	0	13	4	10	7	4
Future Volume (Veh/h)	21	0	0	2	0	20	0	13	4	10	7	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	0	0	2	0	22	0	14	4	11	8	4
Pedestrians					5							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	70	55	10	53	55	21	12			23		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	70	55	10	53	55	21	12			23		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.6	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.7	2.2			2.2		
p0 queue free %	97	100	100	100	100	98	100			99		
cM capacity (veh/h)	892	826	1071	937	826	952	1607			1597		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	23	24	18	23								
Volume Left	23	2	0	11								
Volume Right	0	22	4	4								
cSH	892	951	1607	1597								
Volume to Capacity	0.03	0.03	0.00	0.01								
Queue Length 95th (m)	0.6	0.6	0.0	0.2								
Control Delay (s)	9.1	8.9	0.0	3.5								
Lane LOS	A	A		A								
Approach Delay (s)	9.1	8.9	0.0	3.5								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			5.7									
Intersection Capacity Utilization			21.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2025 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	43	8	10	8	1
Future Volume (Veh/h)	7	43	8	10	8	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	47	9	11	9	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	38	10	10			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38	10	10			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	968	1072	1610			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	20	10			
Volume Left	8	9	0			
Volume Right	47	0	1			
cSH	1056	1610	1700			
Volume to Capacity	0.05	0.01	0.01			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s)	8.6	3.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	3.3	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			6.3			
Intersection Capacity Utilization		17.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2025 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	53	27	16	30	0
Future Volume (Veh/h)	0	53	27	16	30	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	58	29	17	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	108	33	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108	33	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	98			
cM capacity (veh/h)	873	1041	1579			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	58	46	33			
Volume Left	0	29	0			
Volume Right	58	0	0			
cSH	1041	1579	1700			
Volume to Capacity	0.06	0.02	0.02			
Queue Length 95th (m)	1.3	0.4	0.0			
Control Delay (s)	8.7	4.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.7	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2025 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	15	1	2	0
Future Volume (Veh/h)	0	28	15	1	2	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	16	1	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	35	2	2			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	35	2	2			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	968	1082	1620			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	17	2			
Volume Left	0	16	0			
Volume Right	30	0	0			
cSH	1082	1620	1700			
Volume to Capacity	0.03	0.01	0.00			
Queue Length 95th (m)	0.6	0.2	0.0			
Control Delay (s)	8.4	6.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	6.8	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.5			
Intersection Capacity Utilization		17.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2025 Future Total AM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	11	65	7	30	58	27	32	2	89	52	1	26
Future Volume (Veh/h)	11	65	7	30	58	27	32	2	89	52	1	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	71	8	33	63	29	35	2	97	57	1	28
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	92			79			256	257	75	340	246	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			79			256	257	75	340	246	78
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	100	90	89	100	97
cM capacity (veh/h)	1503			1519			661	628	986	539	636	983
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	91	33	92	134	86							
Volume Left	12	33	0	35	57							
Volume Right	8	0	29	97	28							
cSH	1503	1519	1700	867	634							
Volume to Capacity	0.01	0.02	0.05	0.15	0.14							
Queue Length 95th (m)	0.2	0.5	0.0	4.1	3.6							
Control Delay (s)	1.0	7.4	0.0	9.9	11.6							
Lane LOS	A	A		A	B							
Approach Delay (s)	1.0	2.0		9.9	11.6							
Approach LOS				A	B							
<b>Intersection Summary</b>												
Average Delay			6.1									
Intersection Capacity Utilization			27.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2025 Future Total PM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕	↷	↶	↕
Traffic Volume (veh/h)	35	64	672	114	30	239
Future Volume (Veh/h)	35	64	672	114	30	239
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	37	67	707	120	32	252
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)		1				
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	898	354			828	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	354			828	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	86	89			96	
cM capacity (veh/h)	265	633			773	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	354	354	120	32	126	126
Volume Left	37	0	0	0	32	0	0
Volume Right	67	0	0	120	0	0	0
cSH	746	1700	1700	1700	773	1700	1700
Volume to Capacity	0.14	0.21	0.21	0.07	0.04	0.07	0.07
Queue Length 95th (m)	3.7	0.0	0.0	0.0	1.0	0.0	0.0
Control Delay (s)	14.7	0.0	0.0	0.0	9.9	0.0	0.0
Lane LOS	B				A		
Approach Delay (s)	14.7	0.0			1.1		
Approach LOS	B						

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization	34.9%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2025 Future Total PM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	147	22	59	226	86	19	0	50	74	0	5
Future Volume (Veh/h)	8	147	22	59	226	86	19	0	50	74	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	9	173	26	69	266	101	22	0	59	87	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	367			199			664	709	186	718	672	316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367			199			664	709	186	718	672	316
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	4.0
p0 queue free %	99			95			93	100	93	72	100	99
cM capacity (veh/h)	1203			1379			335	341	854	309	358	584
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	208	436	81	93								
Volume Left	9	69	22	87								
Volume Right	26	101	59	6								
cSH	1203	1379	601	319								
Volume to Capacity	0.01	0.05	0.13	0.29								
Queue Length 95th (m)	0.2	1.2	3.5	9.0								
Control Delay (s)	0.4	1.6	11.9	20.9								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.4	1.6	11.9	20.9								
Approach LOS			B	C								
<b>Intersection Summary</b>												
Average Delay			4.5									
Intersection Capacity Utilization			51.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2025 Future Total PM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	173	99	240	121	76	136
Future Volume (vph)	173	99	240	121	76	136
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	192	110	267	134	84	151

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	192	110	401	235
Volume Left (vph)	192	0	267	0
Volume Right (vph)	0	110	0	151
Hadj (s)	0.52	-0.67	0.28	-0.34
Departure Headway (s)	6.7	5.5	5.4	5.1
Degree Utilization, x	0.36	0.17	0.60	0.33
Capacity (veh/h)	506	612	640	672
Control Delay (s)	12.2	8.4	16.3	10.6
Approach Delay (s)	10.8		16.3	10.6
Approach LOS	B		C	B

Intersection Summary			
Delay		13.1	
Level of Service		B	
Intersection Capacity Utilization		52.0%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis  
 4: Concession Road 8 & Street "H"

2025 Future Total PM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	0	0	55	74	8
Future Volume (Veh/h)	15	0	0	55	74	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	0	60	80	9
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	144	84	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	84	89			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	848	975	1506			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	60	89			
Volume Left	16	0	0			
Volume Right	0	0	9			
cSH	848	1506	1700			
Volume to Capacity	0.02	0.00	0.05			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	9.3	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.3	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.9					
Intersection Capacity Utilization	14.4%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 5: Concession Road 8 & Street "F"/St. James Lane

2025 Future Total PM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	0	0	10	0	22	0	25	8	20	30	24
Future Volume (Veh/h)	8	0	0	10	0	22	0	25	8	20	30	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.94	0.92	0.94	0.94	0.94	0.94	0.92
Hourly flow rate (vph)	9	0	0	11	0	23	0	27	9	21	32	26
Pedestrians					6							
Lane Width (m)					3.5							
Walking Speed (m/s)					1.1							
Percent Blockage					1							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	142	129	45	124	138	38	58			42		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142	129	45	124	138	38	58			42		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	99	100	100	99	100	98	100			99		
cM capacity (veh/h)	798	747	1025	837	739	1020	1546			1533		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	9	34	36	79								
Volume Left	9	11	0	21								
Volume Right	0	23	9	26								
cSH	798	953	1546	1533								
Volume to Capacity	0.01	0.04	0.00	0.01								
Queue Length 95th (m)	0.3	0.8	0.0	0.3								
Control Delay (s)	9.6	8.9	0.0	2.0								
Lane LOS	A	A		A								
Approach Delay (s)	9.6	8.9	0.0	2.0								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			20.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2025 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	15	48	31	32	8
Future Volume (Veh/h)	2	15	48	31	32	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	16	52	34	35	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	178	40	44			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	40	44			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	97			
cM capacity (veh/h)	785	1032	1564			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	18	86	44			
Volume Left	2	52	0			
Volume Right	16	0	9			
cSH	997	1564	1700			
Volume to Capacity	0.02	0.03	0.03			
Queue Length 95th (m)	0.4	0.8	0.0			
Control Delay (s)	8.7	4.6	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.6	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			3.7			
Intersection Capacity Utilization		21.0%		ICU Level of Service		A
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2025 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	61	33	28	0
Future Volume (Veh/h)	0	51	61	33	28	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	66	36	30	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	198	30	30			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	30	30			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	96			
cM capacity (veh/h)	758	1044	1583			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	102	30			
Volume Left	0	66	0			
Volume Right	55	0	0			
cSH	1044	1583	1700			
Volume to Capacity	0.05	0.04	0.02			
Queue Length 95th (m)	1.3	1.0	0.0			
Control Delay (s)	8.6	4.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	4.9	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		21.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2025 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	32	1	0	0
Future Volume (Veh/h)	0	28	32	1	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	35	1	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	71	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	913	1085	1623			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	36	0			
Volume Left	0	35	0			
Volume Right	30	0	0			
cSH	1085	1623	1700			
Volume to Capacity	0.03	0.02	0.00			
Queue Length 95th (m)	0.6	0.5	0.0			
Control Delay (s)	8.4	7.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	7.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2025 Future Total PM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	33	69	36	101	87	65	13	7	58	54	8	24
Future Volume (Veh/h)	33	69	36	101	87	65	13	7	58	54	8	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	75	39	110	95	71	14	8	63	59	9	26
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	166			114			512	552	94	584	536	130
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166			114			512	552	94	584	536	130
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			93			97	98	93	84	98	97
cM capacity (veh/h)	1412			1475			418	398	962	360	406	919
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	150	110	166	85	94							
Volume Left	36	110	0	14	59							
Volume Right	39	0	71	63	26							
cSH	1412	1475	1700	714	439							
Volume to Capacity	0.03	0.07	0.10	0.12	0.21							
Queue Length 95th (m)	0.6	1.8	0.0	3.1	6.1							
Control Delay (s)	2.0	7.6	0.0	10.7	15.4							
Lane LOS	A	A		B	C							
Approach Delay (s)	2.0	3.0		10.7	15.4							
Approach LOS				B	C							
<b>Intersection Summary</b>												
Average Delay			5.8									
Intersection Capacity Utilization			37.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2030 Future Total AM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	99	15	146	13	44	757	
Future Volume (Veh/h)	99	15	146	13	44	757	
Sign Control	Stop		Free		Free		
Grade	0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	106	16	157	14	47	814	
Pedestrians	3						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)	1						
Median type	None			None			
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	661	82			174		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	661	82			174		
tC, single (s)	6.8	7.0			4.3		
tC, 2 stage (s)							
tF (s)	3.5	3.4			2.3		
p0 queue free %	72	98			96		
cM capacity (veh/h)	380	946			1339		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	122	78	78	14	47	407	407
Volume Left	106	0	0	0	47	0	0
Volume Right	16	0	0	14	0	0	0
cSH	425	1700	1700	1700	1339	1700	1700
Volume to Capacity	0.29	0.05	0.05	0.01	0.04	0.24	0.24
Queue Length 95th (m)	8.9	0.0	0.0	0.0	0.8	0.0	0.0
Control Delay (s)	16.8	0.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	C				A		
Approach Delay (s)	16.8	0.0			0.4		
Approach LOS	C						
Intersection Summary							
Average Delay			2.1				
Intersection Capacity Utilization			33.1%		ICU Level of Service		A
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2030 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	203	4	16	105	40	7	0	44	75	0	8
Future Volume (Veh/h)	3	203	4	16	105	40	7	0	44	75	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	214	4	17	111	42	7	0	46	79	0	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	153			218			396	409	216	434	390	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153			218			396	409	216	434	390	132
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	94	84	100	99
cM capacity (veh/h)	1440			1364			536	527	829	499	540	923
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	221	170	53	87								
Volume Left	3	17	7	79								
Volume Right	4	42	46	8								
cSH	1440	1364	773	521								
Volume to Capacity	0.00	0.01	0.07	0.17								
Queue Length 95th (m)	0.0	0.3	1.7	4.5								
Control Delay (s)	0.1	0.9	10.0	13.3								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.1	0.9	10.0	13.3								
Approach LOS			A	B								
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			35.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2030 Future Total AM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	123	200	65	53	102	95
Future Volume (vph)	123	200	65	53	102	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	137	222	72	59	113	106

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	137	222	131	219
Volume Left (vph)	137	0	72	0
Volume Right (vph)	0	222	0	106
Hadj (s)	0.53	-0.67	0.13	-0.18
Departure Headway (s)	5.9	4.7	5.2	4.8
Degree Utilization, x	0.23	0.29	0.19	0.29
Capacity (veh/h)	579	727	654	713
Control Delay (s)	9.4	8.4	9.4	9.7
Approach Delay (s)	8.8		9.4	9.7
Approach LOS	A		A	A

Intersection Summary			
Delay		9.2	
Level of Service		A	
Intersection Capacity Utilization	34.4%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis  
4: Concession Road 8 & Street "H"

2030 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	57	23	8
Future Volume (Veh/h)	7	0	0	57	23	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	62	25	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	92	30	34			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	30	34			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	909	1045	1578			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	8	62	34			
Volume Left	8	0	0			
Volume Right	0	0	9			
cSH	909	1578	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St James Lane

2030 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	21	0	0	2	0	22	0	14	4	11	8	4
Future Volume (Veh/h)	21	0	0	2	0	22	0	14	4	11	8	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	0	0	2	0	24	0	15	4	12	9	4
Pedestrians					5							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	76	59	11	57	59	22	13			24		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76	59	11	57	59	22	13			24		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.6	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.7	2.2			2.2		
p0 queue free %	97	100	100	100	100	97	100			99		
cM capacity (veh/h)	882	822	1070	931	822	951	1606			1596		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	23	26	19	25								
Volume Left	23	2	0	12								
Volume Right	0	24	4	4								
cSH	882	949	1606	1596								
Volume to Capacity	0.03	0.03	0.00	0.01								
Queue Length 95th (m)	0.6	0.6	0.0	0.2								
Control Delay (s)	9.2	8.9	0.0	3.5								
Lane LOS	A	A		A								
Approach Delay (s)	9.2	8.9	0.0	3.5								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			5.7									
Intersection Capacity Utilization			22.4%		ICU Level of Service				A			
Analysis Period (min)			15									



HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2030 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	43	8	11	9	1
Future Volume (Veh/h)	7	43	8	11	9	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	47	9	12	10	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	40	10	11			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	40	10	11			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	966	1071	1608			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	21	11			
Volume Left	8	9	0			
Volume Right	47	0	1			
cSH	1054	1608	1700			
Volume to Capacity	0.05	0.01	0.01			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s)	8.6	3.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	3.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			6.2			
Intersection Capacity Utilization		17.7%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2030 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	53	27	16	30	0
Future Volume (Veh/h)	0	53	27	16	30	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	58	29	17	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	108	33	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108	33	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	98			
cM capacity (veh/h)	873	1041	1579			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	58	46	33			
Volume Left	0	29	0			
Volume Right	58	0	0			
cSH	1041	1579	1700			
Volume to Capacity	0.06	0.02	0.02			
Queue Length 95th (m)	1.3	0.4	0.0			
Control Delay (s)	8.7	4.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.7	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2030 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	15	1	2	0
Future Volume (Veh/h)	0	28	15	1	2	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	16	1	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	35	2	2			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	35	2	2			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	968	1082	1620			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	17	2			
Volume Left	0	16	0			
Volume Right	30	0	0			
cSH	1082	1620	1700			
Volume to Capacity	0.03	0.01	0.00			
Queue Length 95th (m)	0.6	0.2	0.0			
Control Delay (s)	8.4	6.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	6.8	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.5			
Intersection Capacity Utilization		17.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2030 Future Total AM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	11	72	7	30	63	27	32	2	89	52	1	26
Future Volume (Veh/h)	11	72	7	30	63	27	32	2	89	52	1	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	78	8	33	68	29	35	2	97	57	1	28
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	97			86			268	269	82	352	258	82
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	97			86			268	269	82	352	258	82
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	100	90	89	100	97
cM capacity (veh/h)	1496			1510			649	618	978	529	627	977
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	98	33	97	134	86							
Volume Left	12	33	0	35	57							
Volume Right	8	0	29	97	28							
cSH	1496	1510	1700	857	623							
Volume to Capacity	0.01	0.02	0.06	0.16	0.14							
Queue Length 95th (m)	0.2	0.5	0.0	4.2	3.6							
Control Delay (s)	1.0	7.4	0.0	10.0	11.7							
Lane LOS	A	A		A	B							
Approach Delay (s)	1.0	1.9		10.0	11.7							
Approach LOS				A	B							
<b>Intersection Summary</b>												
Average Delay			6.0									
Intersection Capacity Utilization			28.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2030 Future Total PM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	37	69	742	119	32	264
Future Volume (Veh/h)	37	69	742	119	32	264
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	39	73	781	125	34	278
Pedestrians	1					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	989	392			907	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	392			907	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	83	88			95	
cM capacity (veh/h)	230	598			721	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	112	390	390	125	34	139	139
Volume Left	39	0	0	0	34	0	0
Volume Right	73	0	0	125	0	0	0
cSH	661	1700	1700	1700	721	1700	1700
Volume to Capacity	0.17	0.23	0.23	0.07	0.05	0.08	0.08
Queue Length 95th (m)	4.6	0.0	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	16.0	0.0	0.0	0.0	10.2	0.0	0.0
Lane LOS	C			B			
Approach Delay (s)	16.0	0.0			1.1		
Approach LOS	C						

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2030 Future Total PM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	151	24	61	233	86	21	0	53	74	0	5
Future Volume (Veh/h)	8	151	24	61	233	86	21	0	53	74	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	9	178	28	72	274	101	25	0	62	87	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	375			206			684	729	192	740	692	324
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	375			206			684	729	192	740	692	324
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	4.0
p0 queue free %	99			95			92	100	93	71	100	99
cM capacity (veh/h)	1195			1371			324	331	847	296	347	578
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	215	447	87	93								
Volume Left	9	72	25	87								
Volume Right	28	101	62	6								
cSH	1195	1371	579	306								
Volume to Capacity	0.01	0.05	0.15	0.30								
Queue Length 95th (m)	0.2	1.3	4.0	9.5								
Control Delay (s)	0.4	1.7	12.3	21.8								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.4	1.7	12.3	21.8								
Approach LOS			B	C								
<b>Intersection Summary</b>												
Average Delay			4.7									
Intersection Capacity Utilization			51.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2030 Future Total PM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	175	104	248	134	84	138
Future Volume (vph)	175	104	248	134	84	138
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	194	116	276	149	93	153

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	194	116	425	246
Volume Left (vph)	194	0	276	0
Volume Right (vph)	0	116	0	153
Hadj (s)	0.52	-0.67	0.28	-0.33
Departure Headway (s)	6.8	5.6	5.5	5.2
Degree Utilization, x	0.37	0.18	0.65	0.35
Capacity (veh/h)	498	600	635	661
Control Delay (s)	12.5	8.6	17.9	10.9
Approach Delay (s)	11.0		17.9	10.9
Approach LOS	B		C	B

Intersection Summary			
Delay		14.0	
Level of Service		B	
Intersection Capacity Utilization		53.8%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis  
4: Concession Road 8 & Street "H"

2030 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	0	0	59	78	8
Future Volume (Veh/h)	15	0	0	59	78	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	0	64	85	9
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154	90	94			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154	90	94			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	838	968	1500			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	64	94			
Volume Left	16	0	0			
Volume Right	0	0	9			
cSH	838	1500	1700			
Volume to Capacity	0.02	0.00	0.06			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	9.4	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.4	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.9			
Intersection Capacity Utilization			14.6%	ICU Level of Service	A	
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St. James Lane

2030 Future Total PM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	0	0	11	0	24	0	27	9	22	32	24
Future Volume (Veh/h)	8	0	0	11	0	24	0	27	9	22	32	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.94	0.92	0.94	0.94	0.94	0.94	0.92
Hourly flow rate (vph)	9	0	0	12	0	26	0	29	10	23	34	26
Pedestrians					6							
Lane Width (m)					3.5							
Walking Speed (m/s)					1.1							
Percent Blockage					1							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	153	138	47	133	146	40	60			45		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153	138	47	133	146	40	60			45		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	99	100	100	99	100	97	100			98		
cM capacity (veh/h)	781	738	1022	826	730	1017	1544			1529		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	9	38	39	83								
Volume Left	9	12	0	23								
Volume Right	0	26	10	26								
cSH	781	948	1544	1529								
Volume to Capacity	0.01	0.04	0.00	0.02								
Queue Length 95th (m)	0.3	1.0	0.0	0.3								
Control Delay (s)	9.7	9.0	0.0	2.1								
Lane LOS	A	A		A								
Approach Delay (s)	9.7	9.0	0.0	2.1								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			3.6									
Intersection Capacity Utilization			21.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2030 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	15	48	34	35	8
Future Volume (Veh/h)	2	15	48	34	35	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	16	52	37	38	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	184	42	47			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	184	42	47			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	97			
cM capacity (veh/h)	779	1028	1560			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	18	89	47			
Volume Left	2	52	0			
Volume Right	16	0	9			
cSH	993	1560	1700			
Volume to Capacity	0.02	0.03	0.03			
Queue Length 95th (m)	0.4	0.8	0.0			
Control Delay (s)	8.7	4.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.4	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			3.6			
Intersection Capacity Utilization			21.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2030 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	61	33	28	0
Future Volume (Veh/h)	0	51	61	33	28	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	66	36	30	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	198	30	30			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	30	30			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	96			
cM capacity (veh/h)	758	1044	1583			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	102	30			
Volume Left	0	66	0			
Volume Right	55	0	0			
cSH	1044	1583	1700			
Volume to Capacity	0.05	0.04	0.02			
Queue Length 95th (m)	1.3	1.0	0.0			
Control Delay (s)	8.6	4.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	4.9	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		21.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2030 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	32	1	0	0
Future Volume (Veh/h)	0	28	32	1	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	35	1	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	71	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	913	1085	1623			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	36	0			
Volume Left	0	35	0			
Volume Right	30	0	0			
cSH	1085	1623	1700			
Volume to Capacity	0.03	0.02	0.00			
Queue Length 95th (m)	0.6	0.5	0.0			
Control Delay (s)	8.4	7.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	7.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2030 Future Total PM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	33	76	36	101	96	65	13	7	58	54	8	24
Future Volume (Veh/h)	33	76	36	101	96	65	13	7	58	54	8	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	83	39	110	104	71	14	8	63	59	9	26
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	175			122			529	570	102	601	554	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	175			122			529	570	102	601	554	140
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			97	98	93	83	98	97
cM capacity (veh/h)	1401			1465			406	389	953	350	397	909
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	158	110	175	85	94							
Volume Left	36	110	0	14	59							
Volume Right	39	0	71	63	26							
cSH	1401	1465	1700	702	428							
Volume to Capacity	0.03	0.08	0.10	0.12	0.22							
Queue Length 95th (m)	0.6	1.8	0.0	3.1	6.3							
Control Delay (s)	1.9	7.7	0.0	10.8	15.8							
Lane LOS	A	A		B	C							
Approach Delay (s)	1.9	3.0		10.8	15.8							
Approach LOS				B	C							
<b>Intersection Summary</b>												
Average Delay			5.7									
Intersection Capacity Utilization			38.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2035 Future Total AM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	103	16	161	13	48	836
Future Volume (Veh/h)	103	16	161	13	48	836
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	111	17	173	14	52	899
Pedestrians	3					
Lane Width (m)	4.0					
Walking Speed (m/s)	1.1					
Percent Blockage	0					
Right turn flare (veh)	1					
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	730	90			190	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730	90			190	
tC, single (s)	6.8	7.0			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	68	98			96	
cM capacity (veh/h)	343	935			1320	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	128	86	86	14	52	450	450
Volume Left	111	0	0	0	52	0	0
Volume Right	17	0	0	14	0	0	0
cSH	384	1700	1700	1700	1320	1700	1700
Volume to Capacity	0.33	0.05	0.05	0.01	0.04	0.26	0.26
Queue Length 95th (m)	10.9	0.0	0.0	0.0	0.9	0.0	0.0
Control Delay (s)	19.0	0.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	C				A		
Approach Delay (s)	19.0	0.0			0.4		
Approach LOS	C						

Intersection Summary							
Average Delay			2.2				
Intersection Capacity Utilization			35.5%		ICU Level of Service		A
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2035 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	210	4	16	110	40	8	0	45	75	0	8
Future Volume (Veh/h)	3	210	4	16	110	40	8	0	45	75	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	221	4	17	116	42	8	0	47	79	0	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	158			225			408	421	223	447	402	137
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			225			408	421	223	447	402	137
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	100	94	84	100	99
cM capacity (veh/h)	1434			1356			526	519	822	488	532	917
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	228	175	55	87								
Volume Left	3	17	8	79								
Volume Right	4	42	47	8								
cSH	1434	1356	759	510								
Volume to Capacity	0.00	0.01	0.07	0.17								
Queue Length 95th (m)	0.0	0.3	1.8	4.6								
Control Delay (s)	0.1	0.8	10.1	13.5								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.8	10.1	13.5								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			36.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2035 Future Total AM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	125	206	69	59	113	96
Future Volume (vph)	125	206	69	59	113	96
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	229	77	66	126	107

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	139	229	143	233
Volume Left (vph)	139	0	77	0
Volume Right (vph)	0	229	0	107
Hadj (s)	0.53	-0.67	0.12	-0.17
Departure Headway (s)	6.0	4.8	5.2	4.8
Degree Utilization, x	0.23	0.30	0.21	0.31
Capacity (veh/h)	572	716	648	704
Control Delay (s)	9.6	8.7	9.6	10.0
Approach Delay (s)	9.0		9.6	10.0
Approach LOS	A		A	A

Intersection Summary			
Delay		9.4	
Level of Service		A	
Intersection Capacity Utilization		35.7%	ICU Level of Service
Analysis Period (min)		15	A



HCM Unsignalized Intersection Capacity Analysis  
4: Concession Road 8 & Street "H"

2035 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	60	25	8
Future Volume (Veh/h)	7	0	0	60	25	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	65	27	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	96	32	36			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	32	36			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	903	1043	1575			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	8	65	36			
Volume Left	8	0	0			
Volume Right	0	0	9			
cSH	903	1575	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.7					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St James Lane

2035 Future Total AM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	21	0	0	2	0	24	0	15	4	12	9	4
Future Volume (Veh/h)	21	0	0	2	0	24	0	15	4	12	9	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	0	0	2	0	26	0	16	4	13	10	4
Pedestrians					5							
Lane Width (m)					3.7							
Walking Speed (m/s)					1.1							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	82	63	12	61	63	23	14			25		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	82	63	12	61	63	23	14			25		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.6	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.7	2.2			2.2		
p0 queue free %	97	100	100	100	100	97	100			99		
cM capacity (veh/h)	872	817	1069	925	817	949	1604			1595		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	23	28	20	27								
Volume Left	23	2	0	13								
Volume Right	0	26	4	4								
cSH	872	948	1604	1595								
Volume to Capacity	0.03	0.03	0.00	0.01								
Queue Length 95th (m)	0.6	0.7	0.0	0.2								
Control Delay (s)	9.2	8.9	0.0	3.5								
Lane LOS	A	A		A								
Approach Delay (s)	9.2	8.9	0.0	3.5								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			5.7									
Intersection Capacity Utilization			22.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2035 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	43	8	12	10	1
Future Volume (Veh/h)	7	43	8	12	10	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	47	9	13	11	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	42	12	12			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42	12	12			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	963	1069	1607			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	22	12			
Volume Left	8	9	0			
Volume Right	47	0	1			
cSH	1052	1607	1700			
Volume to Capacity	0.05	0.01	0.01			
Queue Length 95th (m)	1.3	0.1	0.0			
Control Delay (s)	8.6	3.0	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	3.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			6.1			
Intersection Capacity Utilization		17.7%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2035 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	53	27	16	30	0
Future Volume (Veh/h)	0	53	27	16	30	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	58	29	17	33	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	108	33	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108	33	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	98			
cM capacity (veh/h)	873	1041	1579			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	58	46	33			
Volume Left	0	29	0			
Volume Right	58	0	0			
cSH	1041	1579	1700			
Volume to Capacity	0.06	0.02	0.02			
Queue Length 95th (m)	1.3	0.4	0.0			
Control Delay (s)	8.7	4.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.7	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2035 Future Total AM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	15	1	2	0
Future Volume (Veh/h)	0	28	15	1	2	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	16	1	2	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	35	2	2			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	35	2	2			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	968	1082	1620			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	17	2			
Volume Left	0	16	0			
Volume Right	30	0	0			
cSH	1082	1620	1700			
Volume to Capacity	0.03	0.01	0.00			
Queue Length 95th (m)	0.6	0.2	0.0			
Control Delay (s)	8.4	6.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	6.8	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.5			
Intersection Capacity Utilization		17.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2035 Future Total AM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	11	79	7	30	69	27	32	2	89	52	1	26
Future Volume (Veh/h)	11	79	7	30	69	27	32	2	89	52	1	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	86	8	33	75	29	35	2	97	57	1	28
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	104			94			284	284	90	368	274	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104			94			284	284	90	368	274	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			94	100	90	89	100	97
cM capacity (veh/h)	1488			1500			634	606	968	516	615	968
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	106	33	104	134	86							
Volume Left	12	33	0	35	57							
Volume Right	8	0	29	97	28							
cSH	1488	1500	1700	844	610							
Volume to Capacity	0.01	0.02	0.06	0.16	0.14							
Queue Length 95th (m)	0.2	0.5	0.0	4.3	3.7							
Control Delay (s)	0.9	7.5	0.0	10.1	11.9							
Lane LOS	A	A		B	B							
Approach Delay (s)	0.9	1.8		10.1	11.9							
Approach LOS				B	B							
<b>Intersection Summary</b>												
Average Delay			5.9									
Intersection Capacity Utilization			28.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 50 & County Road 14

2035 Future Total PM  
 12/05/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	39	74	819	125	34	291	
Future Volume (Veh/h)	39	74	819	125	34	291	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly flow rate (vph)	41	78	862	132	36	306	
Pedestrians	1						
Lane Width (m)	4.0						
Walking Speed (m/s)	1.1						
Percent Blockage	0						
Right turn flare (veh)		1					
Median type			None			None	
Median storage (veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1088	432			995		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1088	432			995		
tC, single (s)	6.9	7.0			4.2		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.3		
p0 queue free %	79	86			95		
cM capacity (veh/h)	197	563			666		
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	119	431	431	132	36	153	153
Volume Left	41	0	0	0	36	0	0
Volume Right	78	0	0	132	0	0	0
cSH	572	1700	1700	1700	666	1700	1700
Volume to Capacity	0.21	0.25	0.25	0.08	0.05	0.09	0.09
Queue Length 95th (m)	5.9	0.0	0.0	0.0	1.3	0.0	0.0
Control Delay (s)	17.8	0.0	0.0	0.0	10.7	0.0	0.0
Lane LOS	C				B		
Approach Delay (s)	17.8	0.0			1.1		
Approach LOS	C						
Intersection Summary							
Average Delay			1.7				
Intersection Capacity Utilization			38.3%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis  
2: Concession Road 8 & County Road 14

2035 Future Total PM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	156	26	63	241	86	23	0	56	74	0	5
Future Volume (Veh/h)	8	156	26	63	241	86	23	0	56	74	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	9	184	31	74	284	101	27	0	66	87	0	6
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	385			215			706	750	200	766	716	334
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	385			215			706	750	200	766	716	334
tC, single (s)	4.1			4.1			7.3	6.5	6.2	7.1	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	4.0
p0 queue free %	99			95			91	100	92	69	100	99
cM capacity (veh/h)	1185			1361			313	321	839	283	336	569
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	224	459	93	93								
Volume Left	9	74	27	87								
Volume Right	31	101	66	6								
cSH	1185	1361	564	292								
Volume to Capacity	0.01	0.05	0.16	0.32								
Queue Length 95th (m)	0.2	1.3	4.5	10.1								
Control Delay (s)	0.4	1.7	12.6	23.0								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.4	1.7	12.6	23.0								
Approach LOS			B	C								
<b>Intersection Summary</b>												
Average Delay			4.8									
Intersection Capacity Utilization			52.7%		ICU Level of Service				A			
Analysis Period (min)			15									



HCM Unsignalized Intersection Capacity Analysis  
 3: Adjala Tecumseth Townline & County Road 14

2035 Future Total PM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	177	110	257	148	93	140
Future Volume (vph)	177	110	257	148	93	140
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	197	122	286	164	103	156

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	197	122	450	259
Volume Left (vph)	197	0	286	0
Volume Right (vph)	0	122	0	156
Hadj (s)	0.52	-0.67	0.29	-0.32
Departure Headway (s)	6.9	5.7	5.5	5.3
Degree Utilization, x	0.38	0.19	0.69	0.38
Capacity (veh/h)	490	588	631	650
Control Delay (s)	12.9	8.9	20.0	11.4
Approach Delay (s)	11.3		20.0	11.4
Approach LOS	B		C	B

Intersection Summary

Delay	15.2
Level of Service	C
Intersection Capacity Utilization	55.7%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 4: Concession Road 8 & Street "H"

2035 Future Total PM  
 12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	0	0	64	82	8
Future Volume (Veh/h)	15	0	0	64	82	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	0	70	89	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	164	94	98			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164	94	98			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	827	963	1495			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	16	70	98			
Volume Left	16	0	0			
Volume Right	0	0	9			
cSH	827	1495	1700			
Volume to Capacity	0.02	0.00	0.06			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	9.4	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.4	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		14.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
5: Concession Road 8 & Street "F"/St. James Lane

2035 Future Total PM  
12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	0	0	12	0	26	0	30	10	24	34	24
Future Volume (Veh/h)	8	0	0	12	0	26	0	30	10	24	34	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.94	0.92	0.94	0.94	0.94	0.94	0.92
Hourly flow rate (vph)	9	0	0	13	0	28	0	32	11	26	36	26
Pedestrians					6							
Lane Width (m)					3.5							
Walking Speed (m/s)					1.1							
Percent Blockage					1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	166	150	49	144	158	44	62			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166	150	49	144	158	44	62			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	99	100	100	98	100	97	100			98		
cM capacity (veh/h)	762	725	1020	810	718	1013	1541			1524		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	9	41	43	88								
Volume Left	9	13	0	26								
Volume Right	0	28	11	26								
cSH	762	938	1541	1524								
Volume to Capacity	0.01	0.04	0.00	0.02								
Queue Length 95th (m)	0.3	1.0	0.0	0.4								
Control Delay (s)	9.8	9.0	0.0	2.3								
Lane LOS	A	A		A								
Approach Delay (s)	9.8	9.0	0.0	2.3								
Approach LOS	A	A										
<b>Intersection Summary</b>												
Average Delay			3.6									
Intersection Capacity Utilization			21.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
6: Concession Road 8 & Street "C"

2035 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	15	48	38	38	8
Future Volume (Veh/h)	2	15	48	38	38	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	16	52	41	41	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	190	46	50			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	46	50			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	97			
cM capacity (veh/h)	772	1024	1557			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	18	93	50			
Volume Left	2	52	0			
Volume Right	16	0	9			
cSH	988	1557	1700			
Volume to Capacity	0.02	0.03	0.03			
Queue Length 95th (m)	0.4	0.8	0.0			
Control Delay (s)	8.7	4.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.7	4.2	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			3.4			
Intersection Capacity Utilization			21.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
7: Concession Road 8 & Street B

2035 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	61	33	28	0
Future Volume (Veh/h)	0	51	61	33	28	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	66	36	30	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	198	30	30			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	30	30			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	96			
cM capacity (veh/h)	758	1044	1583			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	55	102	30			
Volume Left	0	66	0			
Volume Right	55	0	0			
cSH	1044	1583	1700			
Volume to Capacity	0.05	0.04	0.02			
Queue Length 95th (m)	1.3	1.0	0.0			
Control Delay (s)	8.6	4.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.6	4.9	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			5.2			
Intersection Capacity Utilization		21.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
8: Concession Road 8 & Street "I"

2035 Future Total PM  
12/05/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	28	32	1	0	0
Future Volume (Veh/h)	0	28	32	1	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	30	35	1	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	71	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	913	1085	1623			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	36	0			
Volume Left	0	35	0			
Volume Right	30	0	0			
cSH	1085	1623	1700			
Volume to Capacity	0.03	0.02	0.00			
Queue Length 95th (m)	0.6	0.5	0.0			
Control Delay (s)	8.4	7.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.4	7.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			7.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 9: Street "A" & County Road 14

2035 Future Total PM  
 12/05/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (veh/h)	33	83	36	101	106	65	13	7	58	54	8	24
Future Volume (Veh/h)	33	83	36	101	106	65	13	7	58	54	8	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	90	39	110	115	71	14	8	63	59	9	26
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	186			129			547	588	110	619	572	150
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	186			129			547	588	110	619	572	150
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			96	98	93	83	98	97
cM capacity (veh/h)	1388			1457			395	380	944	340	388	896

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	165	110	186	85	94
Volume Left	36	110	0	14	59
Volume Right	39	0	71	63	26
cSH	1388	1457	1700	689	417
Volume to Capacity	0.03	0.08	0.11	0.12	0.23
Queue Length 95th (m)	0.6	1.9	0.0	3.2	6.5
Control Delay (s)	1.8	7.7	0.0	11.0	16.1
Lane LOS	A	A		B	C
Approach Delay (s)	1.8	2.9		11.0	16.1
Approach LOS				B	C

Intersection Summary

Average Delay		5.6			
Intersection Capacity Utilization		39.5%		ICU Level of Service	A
Analysis Period (min)		15			

Lanes, Volumes, Timings  
9: Street "A" & County Road 14

2035 Future Total AM - Signalized  
12/05/2017

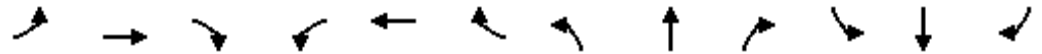


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	11	79	7	30	69	27	32	2	89	52	1	26
Future Volume (vph)	11	79	7	30	69	27	32	2	89	52	1	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.990			0.958			0.902			0.956	
Fl <sub>t</sub> Protected		0.994		0.950				0.987			0.968	
Satd. Flow (prot)	0	1915	0	1848	1864	0	0	1640	0	0	1705	0
Fl <sub>t</sub> Permitted		0.948		0.885				0.935			0.817	
Satd. Flow (perm)	0	1826	0	1722	1864	0	0	1554	0	0	1439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			29			97			28	
Link Speed (k/h)		80			80			50			50	
Link Distance (m)		2478.2			283.9			119.4			114.4	
Travel Time (s)		111.5			12.8			8.6			8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	86	8	33	75	29	35	2	97	57	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	33	104	0	0	134	0	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	0.94	0.94	0.94	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	



Lanes, Volumes, Timings  
9: Street "A" & County Road 14

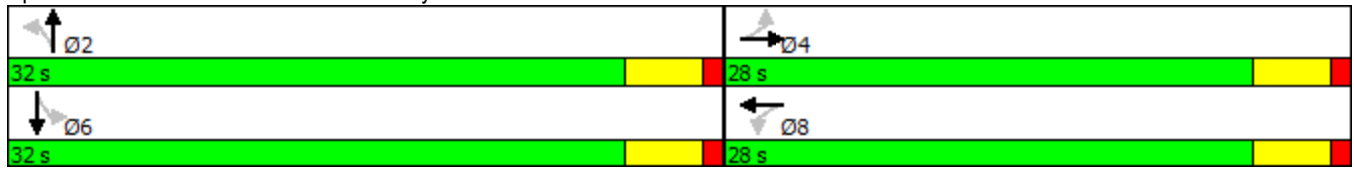
2035 Future Total AM - Signalized  
12/05/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	23.5	23.5		23.5	23.5		27.5	27.5		27.5	27.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		4.5		4.5	4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		7.7		7.7	7.7			32.4			32.4	
Actuated g/C Ratio		0.17		0.17	0.17			0.70			0.70	
v/c Ratio		0.34		0.11	0.31			0.12			0.08	
Control Delay		18.3		16.1	14.9			2.0			3.1	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		18.3		16.1	14.9			2.0			3.1	
LOS		B		B	B			A			A	
Approach Delay		18.3			15.2			2.0			3.1	
Approach LOS		B			B			A			A	
Queue Length 50th (m)		6.7		2.2	5.0			0.9			1.4	
Queue Length 95th (m)		16.3		7.1	14.2			5.4			5.4	
Internal Link Dist (m)		2454.2			259.9			95.4			90.4	
Turn Bay Length (m)				15.0								
Base Capacity (vph)		932		875	961			1116			1015	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.11		0.04	0.11			0.12			0.08	

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	46.3
Natural Cycle:	45
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.34
Intersection Signal Delay:	9.8
Intersection Capacity Utilization:	29.4%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 9: Street "A" & County Road 14



Lanes, Volumes, Timings  
9: Street "A" & County Road 14

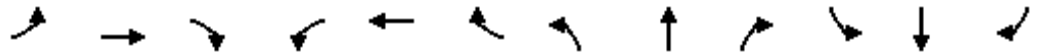
2035 Future Total PM - Signalized  
12/05/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗			↕			↕	
Traffic Volume (vph)	33	83	36	101	106	65	13	7	58	54	8	24
Future Volume (vph)	33	83	36	101	106	65	13	7	58	54	8	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	0.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.968			0.943			0.900			0.963	
Fl <sub>t</sub> Protected		0.989		0.950				0.992			0.970	
Satd. Flow (prot)	0	1863	0	1848	1835	0	0	1645	0	0	1721	0
Fl <sub>t</sub> Permitted		0.873		0.704				0.968			0.839	
Satd. Flow (perm)	0	1644	0	1370	1835	0	0	1605	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			64			63			26	
Link Speed (k/h)		80			80			50			50	
Link Distance (m)		2479.3			282.8			201.2			148.0	
Travel Time (s)		111.6			12.7			14.5			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	90	39	110	115	71	14	8	63	59	9	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	165	0	110	186	0	0	85	0	0	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.94	0.94	0.94	0.94	0.94	0.94	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lanes, Volumes, Timings  
9: Street "A" & County Road 14

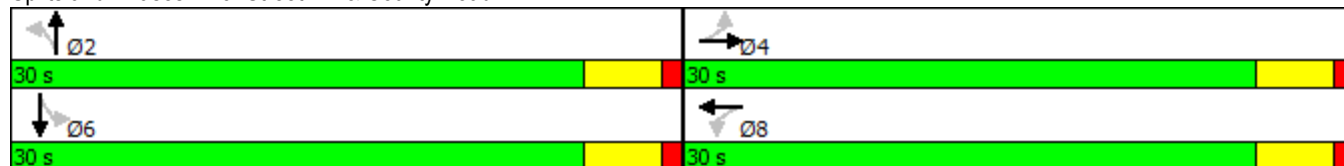
2035 Future Total PM - Signalized  
12/05/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	25.5	25.5		25.5	25.5		25.5	25.5		25.5	25.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		4.5		4.5	4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		8.8		8.8	8.8			29.4			29.4	
Actuated g/C Ratio		0.20		0.20	0.20			0.66			0.66	
v/c Ratio		0.47		0.40	0.45			0.08			0.09	
Control Delay		16.9		19.5	13.7			2.5			3.9	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		16.9		19.5	13.7			2.5			3.9	
LOS		B		B	B			A			A	
Approach Delay		16.9			15.9			2.5			3.9	
Approach LOS		B			B			A			A	
Queue Length 50th (m)		8.7		7.2	7.9			0.6			1.8	
Queue Length 95th (m)		20.6		17.1	20.0			4.7			6.9	
Internal Link Dist (m)		2455.3			258.8			177.2			124.0	
Turn Bay Length (m)				15.0								
Base Capacity (vph)		960		788	1083			1084			994	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.17		0.14	0.17			0.08			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	44.3
Natural Cycle:	45
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	12.6
Intersection Capacity Utilization:	40.7%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	A

Splits and Phases: 9: Street "A" & County Road 14



# APPENDIX E

## TTS Data

Tue Sep 19 2017 17:18:07 GMT-0400 (Eastern Daylight Time) - Run Time: 2369ms

Cross Tabulation Query Form - Trip - 2011

Row: Planning district of origin - pd\_orig  
 Column: Planning district of destination - pd\_dest

Filters:  
 (Start time of trip - start\_time In 600-1000  
 and  
 2006 GTA zone of destination - gta06\_dest In 8663  
 and  
 Primary travel mode of trip - mode\_prime In D  
 and  
 Planning district of destination - pd\_dest In 84

Trip 2011

Table:

	# Trips to Site	From Direction
Newmarket		58 East-South
Richmond Hill		18 East-South
King		50 East-South
Mississauga		20 East-South
Milton		20 West-South
Niagara Falls		9 East-South
Cambridge		9 West-South
Barrie		25 East-South
Innisfil		24 West-South
Bradford-West Gwillimbur		102 East-North
New Tecumseth		17 East-North
Adjala-Tosorontio		16 East-North
	861	704 East-North
		158 East-South
	129	26 West-South
		26 East-South
		77 West-North
Essa		30 East-North
Clearview		15 West-North
Ramara		15 East-North
Mulmur		15 West-North
<b>Row Labels</b>	<b>Sum of # Trips to Site</b>	<b>% of Trips from Direction</b>
East-North	883.5	61.65%
East-South	363.3	25.35%
West-North	107.4	7.49%
West-South	78.8	5.50%
<b>Grand Total</b>	<b>1433</b>	<b>100.00%</b>

Tue Sep 19 2017 17:18:07 GMT-0400 (Eastern Daylight Time) - Run Time: 2369ms

Cross Tabulation Query Form - Trip - 2011

Row: Planning district of origin - pd\_orig  
 Column: Planning district of destination - pd\_dest

Filters:  
 (Start time of trip - start\_time In 1500-1900  
 and  
 2006 GTA zone of destination - gta06\_dest In 8663  
 and  
 Primary travel mode  
 and  
 Planning district of d )

Trip 2011

Table:

	# Trips to Site	From Direction
PD 1 of Toronto		32 East-South
PD 3 of Toronto		18 East-South
PD 8 of Toronto		18 East-South
PD 9 of Toronto		54 East-South
PD 10 of Toronto		89 East-South
PD 12 of Toronto		18 East-South
PD 13 of Toronto		18 East-South
Barrie		128 East-North
Mono Township		18 West-North
Oshawa		18 East-South
Newmarket		71 East-South
Aurora		53 East-South
Richmond Hill		34 East-South
King		212 East-South
Vaughan		214 East-South
Caledon		158 West-South
Brampton		80 East-South
Mississauga		80 West-South
City of Guelph		44 East-South
Orangeville		44 West-South
Bradford-West Gwilli		18 West-South
New Tecumseth		37 West-South
Adjala-Tosorontio		54 East-North
60		482 East-North
		160 East-South
		12 West-South
	60	12 East-South
		36 West-North
<b>Row Labels</b>	<b>Sum of # Trips to Site</b>	<b>% of Trips from Direction</b>
East-North	663.5	30.01%
East-South	1144.5	51.76%
West-North	54	2.44%
West-South	349	15.78%
<b>Grand Total</b>	<b>2211</b>	<b>100.00%</b>

Tue Sep 19 2017 17:35:20 GMT-0400 (Eastern Daylight Time) - Run Time: 2575ms

Cross Tabulation Query Form - Trip - 2011

Row: Planning district of destination - pd\_dest  
 Column: Planning district of origin - pd\_orig

Filters:  
 (Start time of trip - start\_time In 600-1000  
 and  
 2006 GTA zone of origin - gta06\_orig In 8663  
 and  
 Primary travel mode of trip - mode\_prime In D  
 and  
 Planning district of origin - pd\_orig In 84

Trip 2011

Table:

	# Trips from Site	To Direction
PD 1 of Toronto	32	East-South
PD 3 of Toronto	18	East-South
PD 8 of Toronto	18	East-South
PD 9 of Toronto	54	East-South
PD 10 of Toronto	89	East-South
PD 12 of Toronto	18	East-South
PD 13 of Toronto	18	East-South
Barrie	128	East-North
Mono Township	18	West-North
Oshawa	18	East-South
Newmarket	71	East-South
Aurora	53	East-South
Richmond Hill	34	East-South
King	212	East-South
Vaughan	214	East-South
Caledon	158	West-South
Brampton	80	East-South
	80	West-South
Mississauga	44	East-South
	44	West-South
City of Guelph	18	West-South
Orangeville	37	West-South
Bradford-West Gwillimbury	54	East-North
New Tecumseth	482	East-North
	160	East-South
Adjala-Tosorontio	12	West-South
	12	East-South
	36	West-North
	60	

Row Labels	Sum of # Trips from Site	% of Trips to Direction
East-North	663.5	30.01%
East-South	1144.5	51.76%
West-North	54	2.44%
West-South	349	15.78%
<b>Grand Total</b>	<b>2211</b>	<b>100.00%</b>

Tue Sep 19 2017 17:35:20 GMT-0400 (Eastern Daylight Time) - Run Time: 2575ms

Cross Tabulation Query Form - Trip - 2011

Row: Planning district of destination - pd\_dest  
 Column: Planning district of origin - pd\_orig

Filters:  
 (Start time of trip - start\_time In 1500-1900  
 and  
 2006 GTA zone of origin - gta06\_orig In 8663  
 and  
 Primary travel mode of trip - mode  
 and  
 Planning district of origin - pd\_orig )

Trip 2011

Table:

	# Trips from Site	To Direction
Newmarket	58	East-South
Richmond Hill	18	East-South
King	50	East-South
	20	East-South
Mississauga	20	West-South
	9	East-South
Milton	9	West-South
Niagara Falls	25	East-South
Cambridge	24	West-South
Barrie	102	East-North
Innisfil	17	East-North
Bradford-West Gwillimbury	16	East-North
New Tecumseth	704	East-North
	158	East-South
Adjala-Tosorontio	26	West-South
	26	East-South
	77	West-North
Essa	30	East-North
Clearview	15	West-North
Ramara	15	East-North
Mulmur	15	West-North

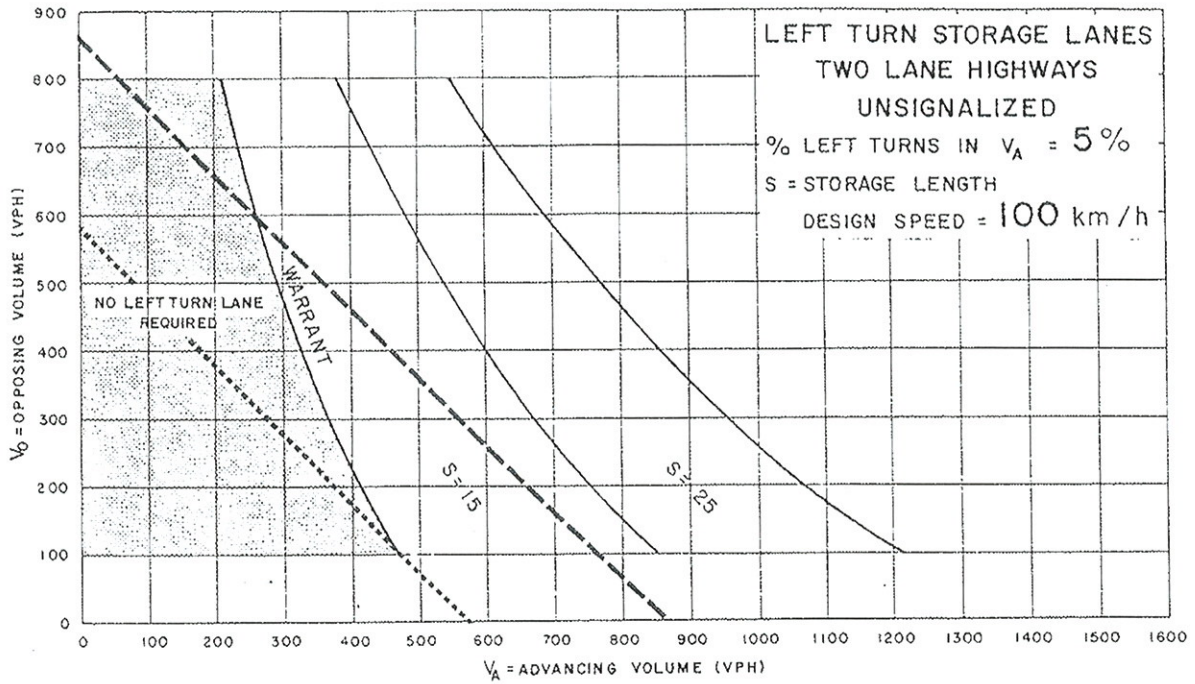
Row Labels	Sum of # Trips from Site	% of Trips to Direction
East-North	883.5	61.65%
East-South	363.3	25.35%
West-North	107.4	7.49%
West-South	78.8	5.50%
<b>Grand Total</b>	<b>1433</b>	<b>100.00%</b>



# APPENDIX F

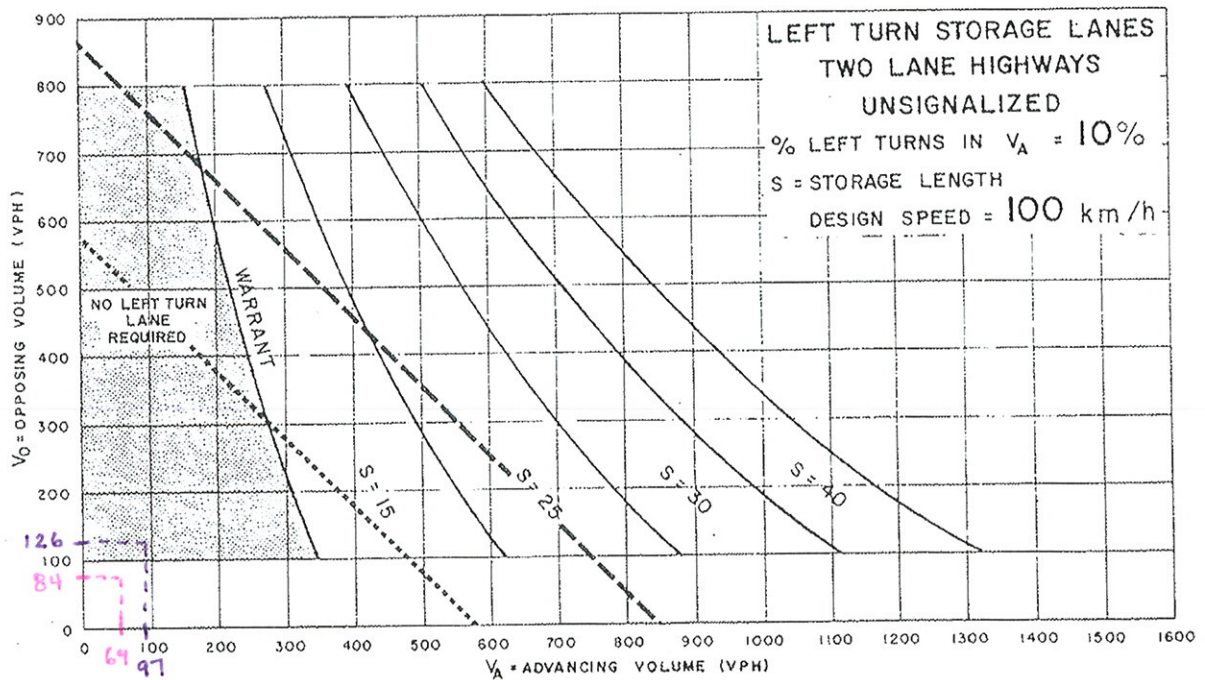
## MTO GDSOH Excerpts

## **Left Turn Lane Warrant Charts County Road 14 and Street "A"**



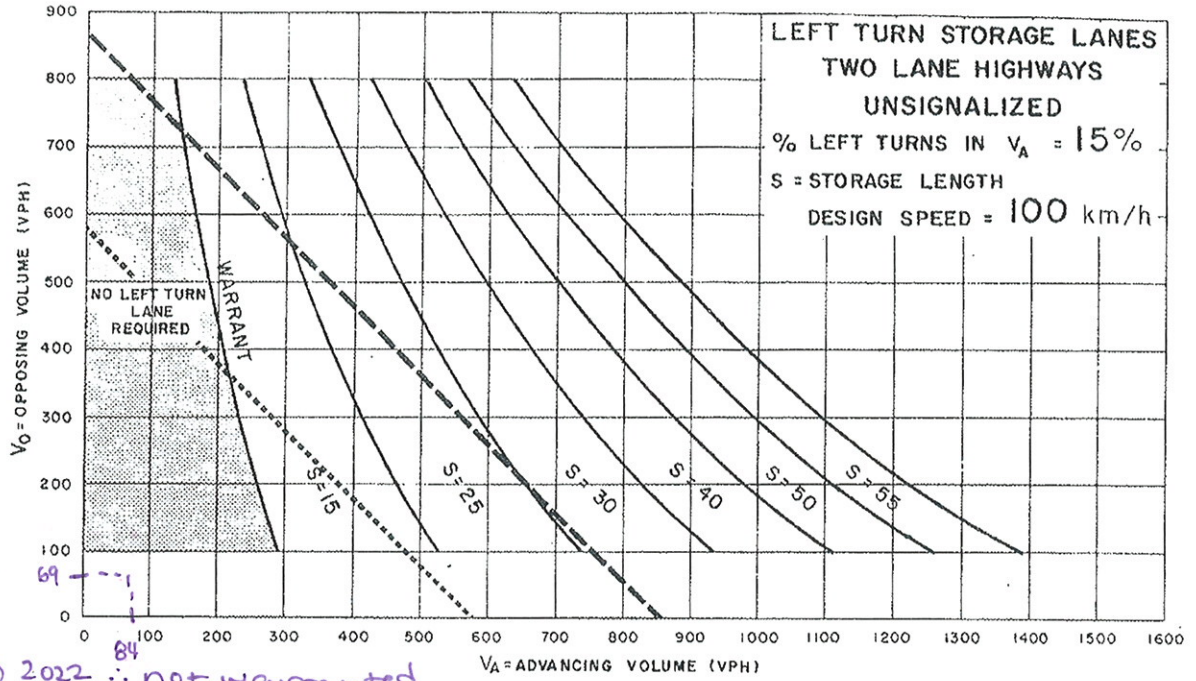
----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



- A.M (EB LT) 2022 :: not warranted  
- AM (EB LT) 2035 :: not warranted

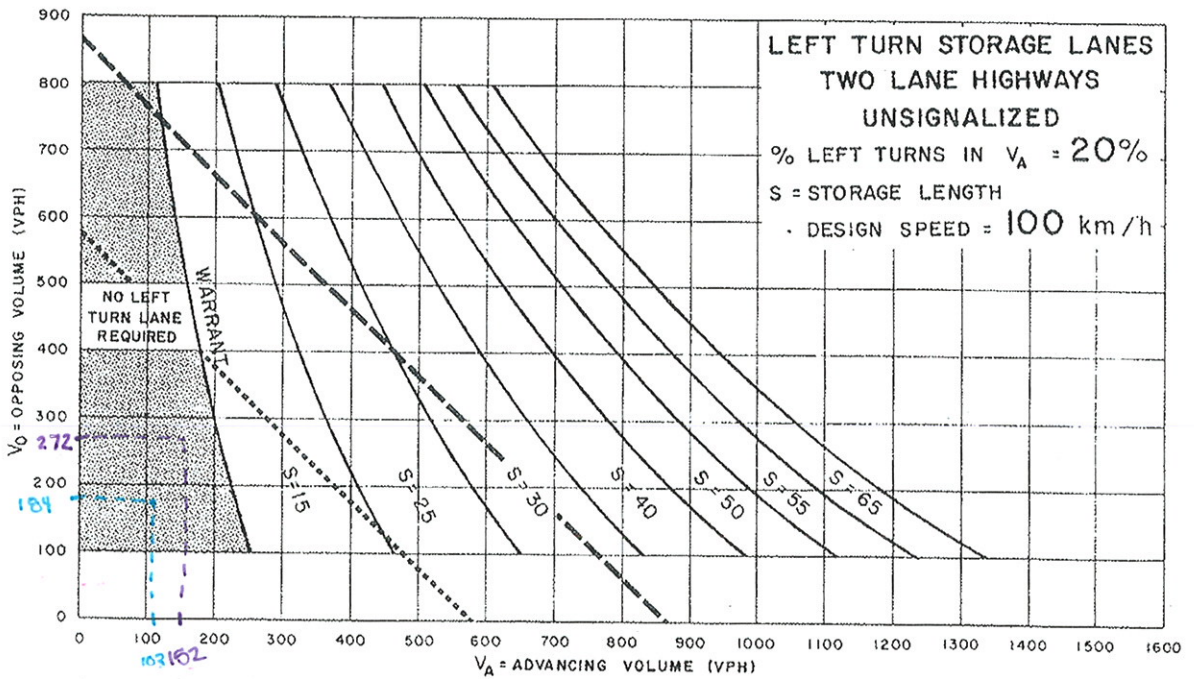
Figure EA-22



- AM (WBLT) 2022 ∴ not warranted

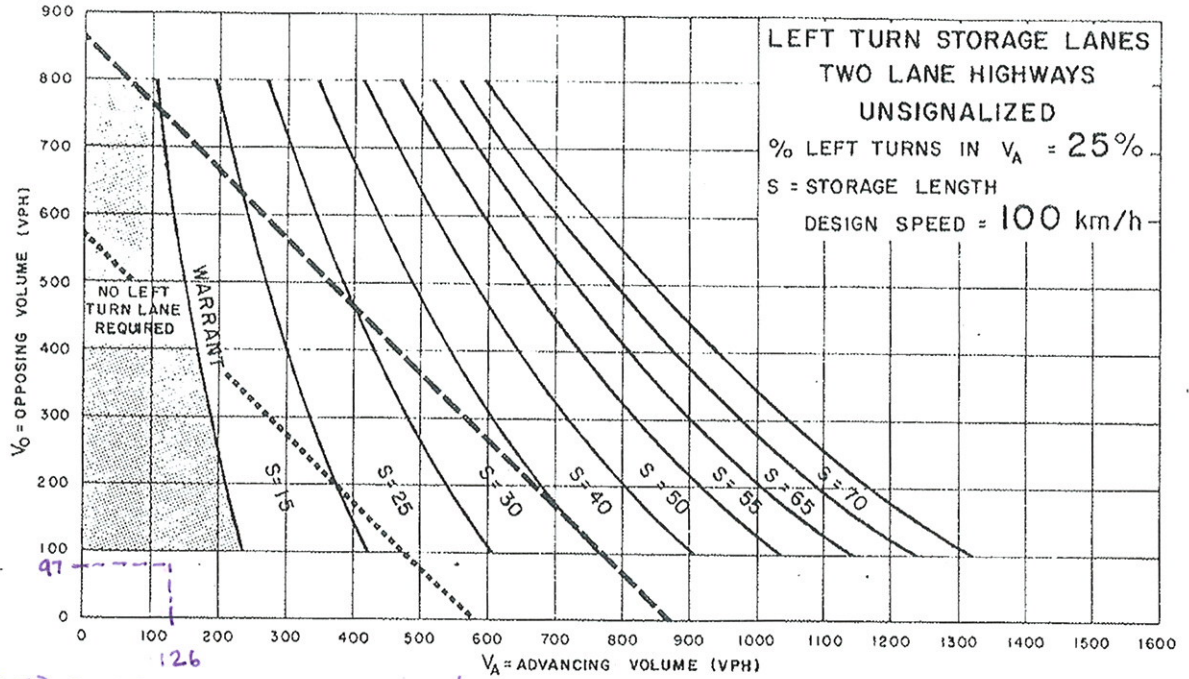
--- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



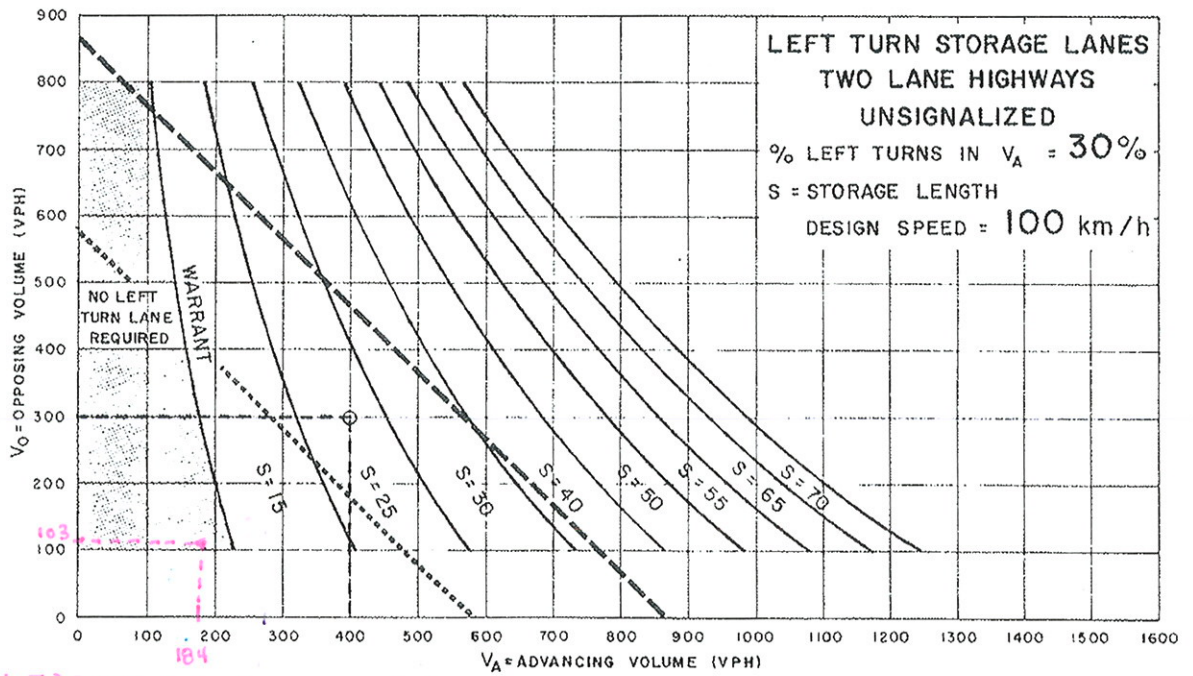
- PM (EBLT) 2022 ∴ not warranted  
- PM (EBLT) 2035 ∴ not warranted

Figure EA-23



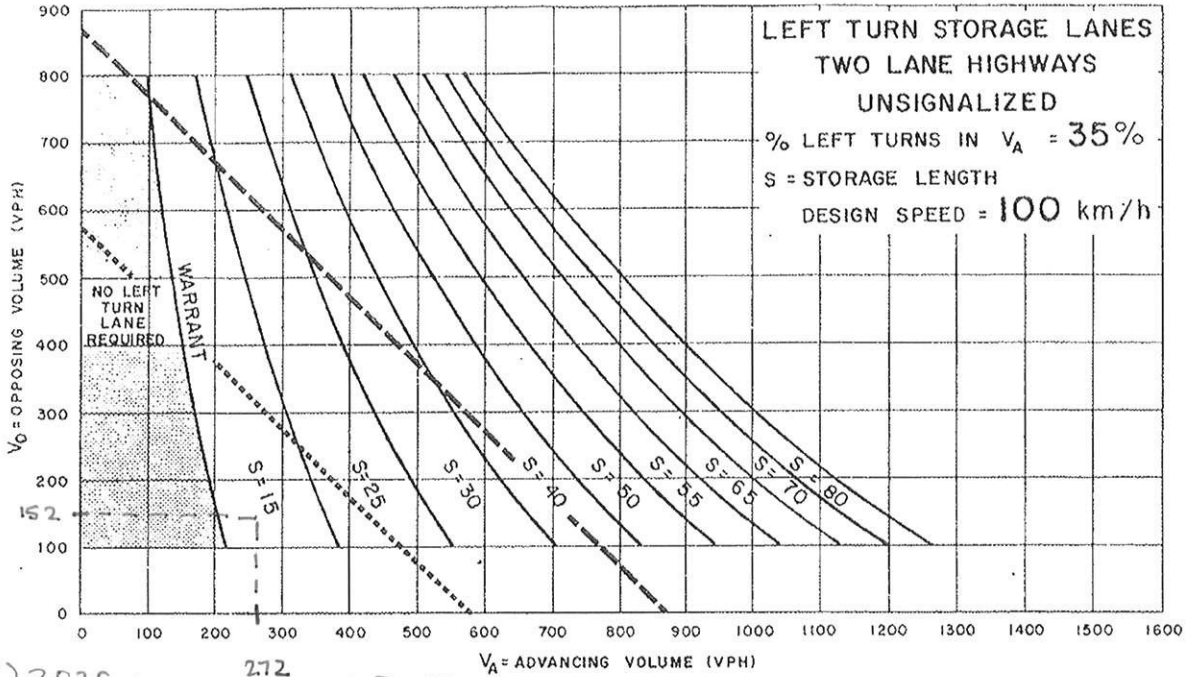
- AM (WBLT) 2039 ∴ not warranted

- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



- PM (WBLT) 2022 ∴ not warranted

Figure EA-24



- PM (WBLT) 2035  $\therefore$  warranted w 15m storage

----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW  
 ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

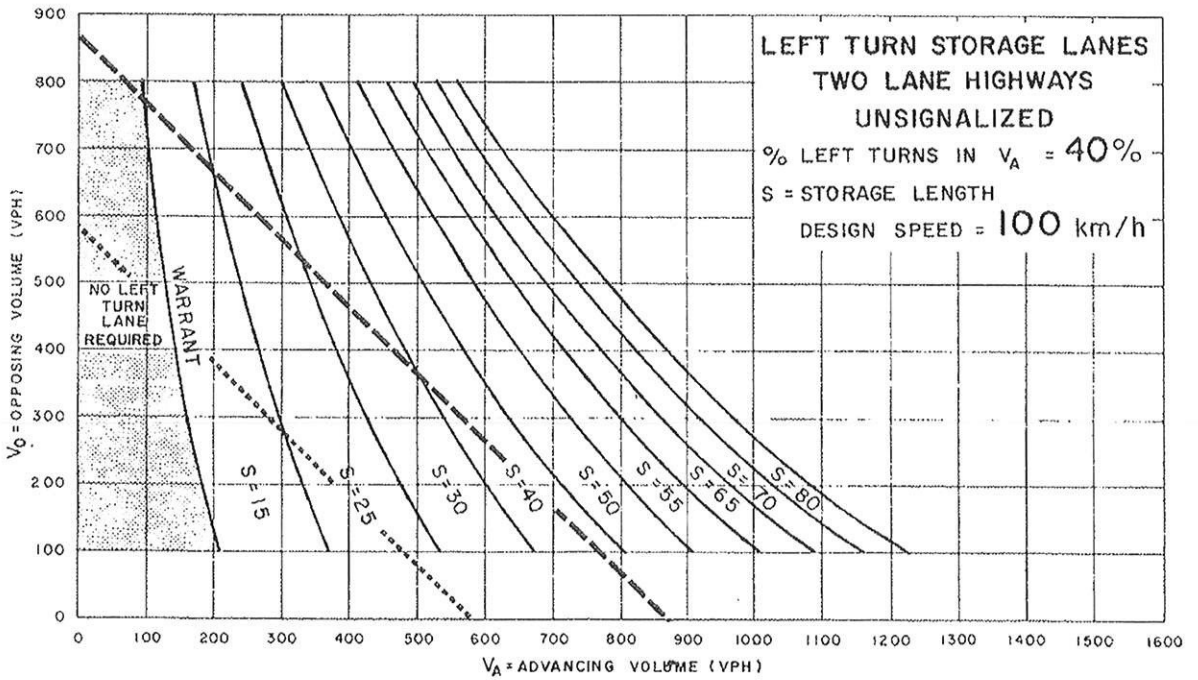
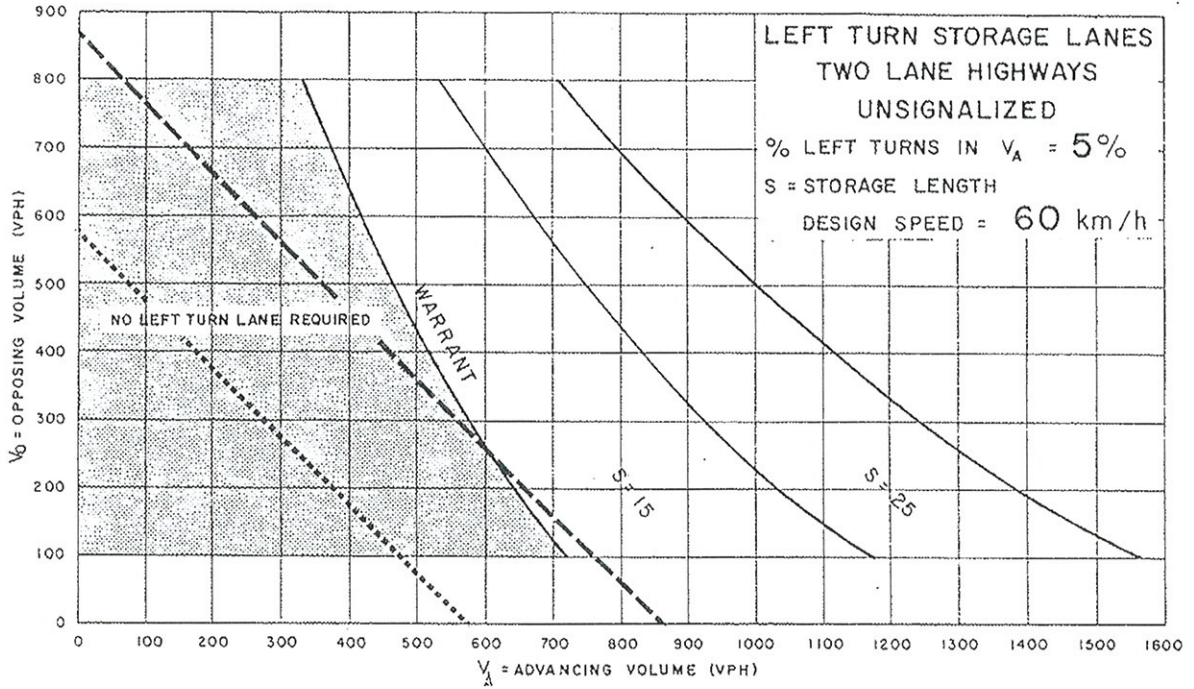
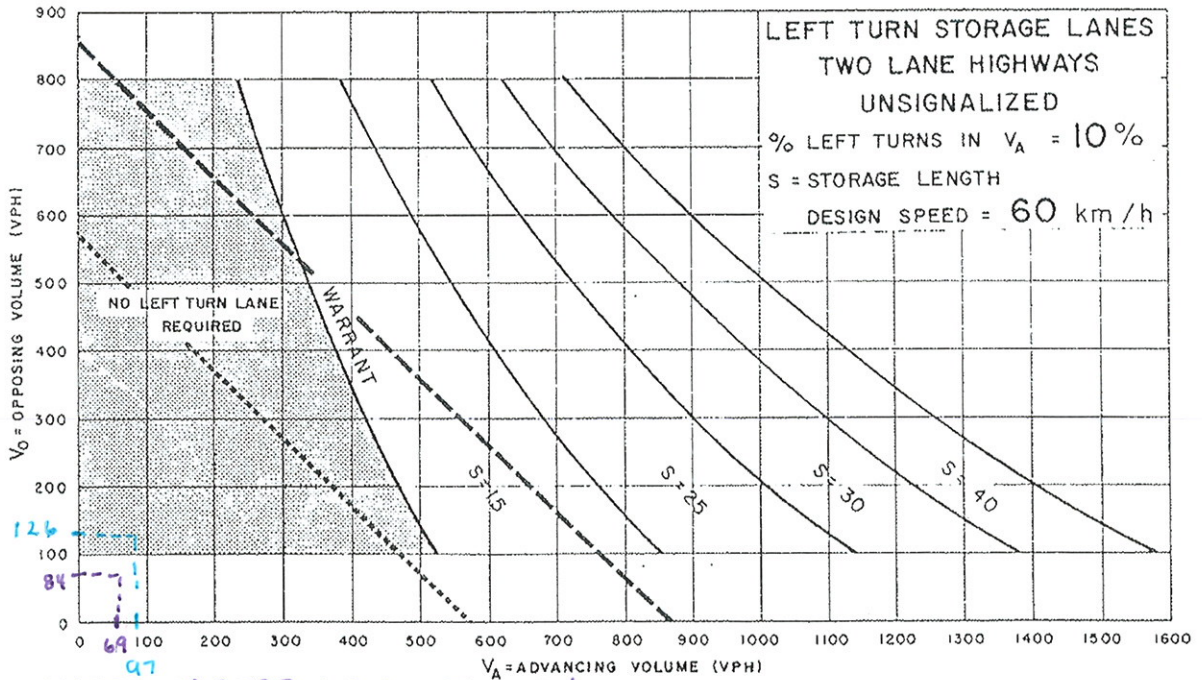


Figure EA-25



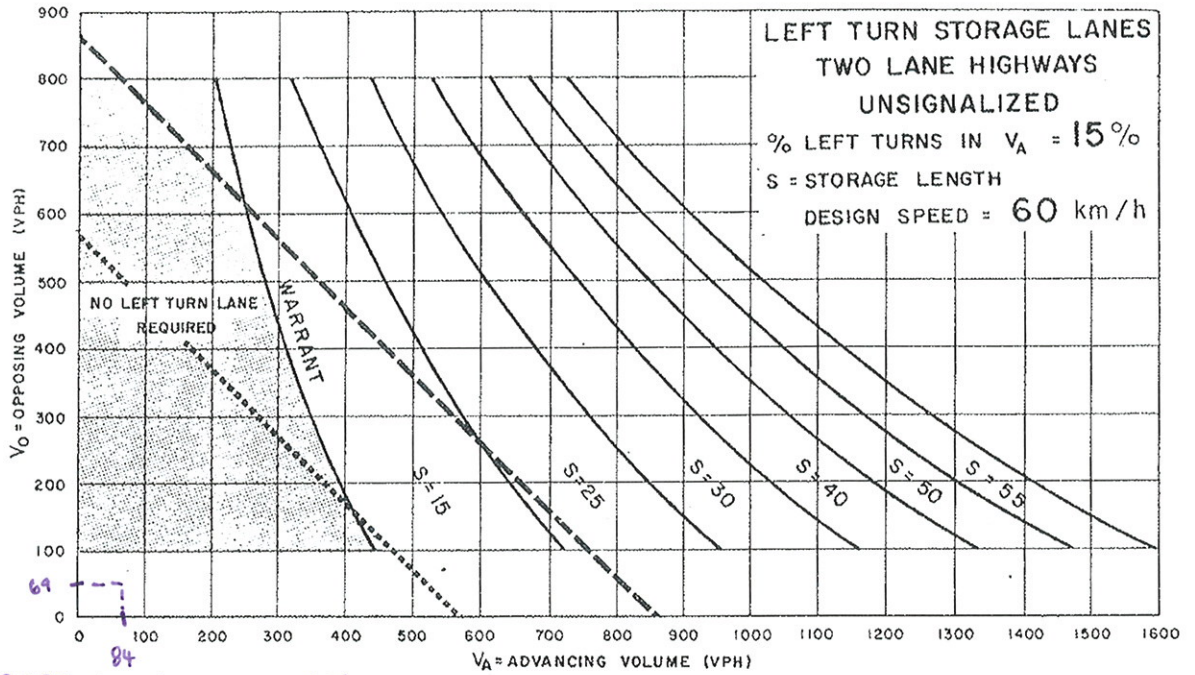
--- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



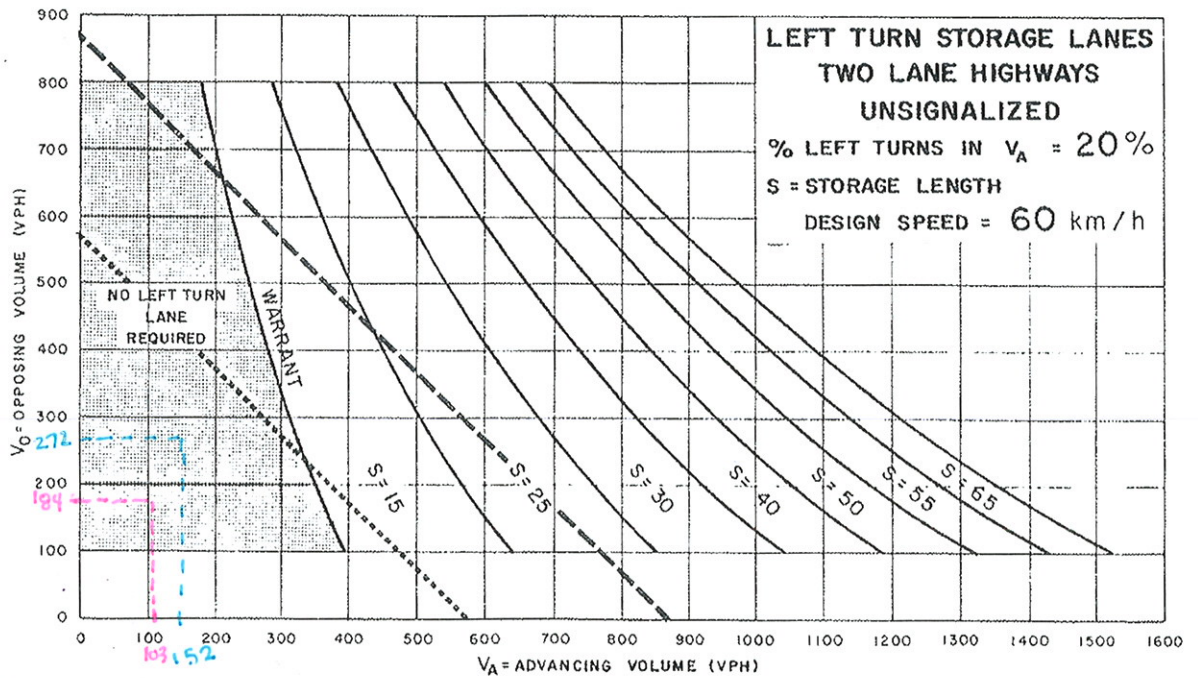
- AM (EB LT) 2022 ∴ not warranted  
- AM (EB LT) 2035 ∴ not warranted

Figure EA-6



- AM (w BLT) 2022 ∴ not warranted

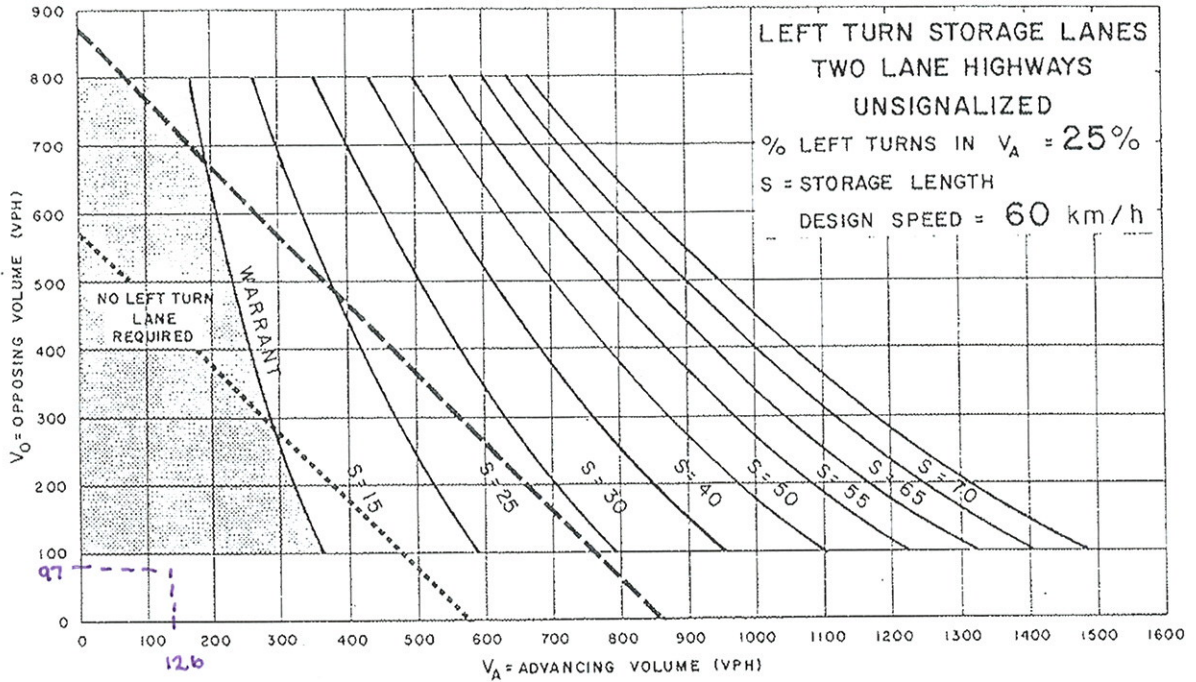
- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



- PM (EBLT) 2022 ∴ not warranted  
- P.M. (LEBLT) 2035 ∴ not warranted

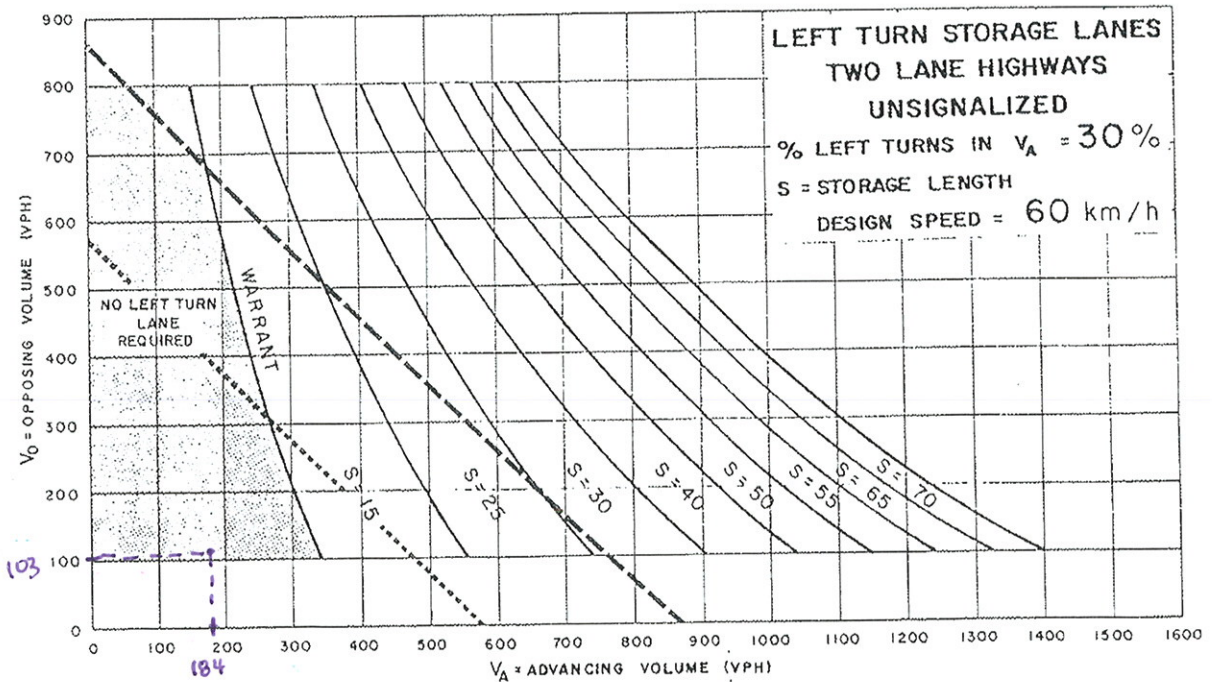
Figure EA-7





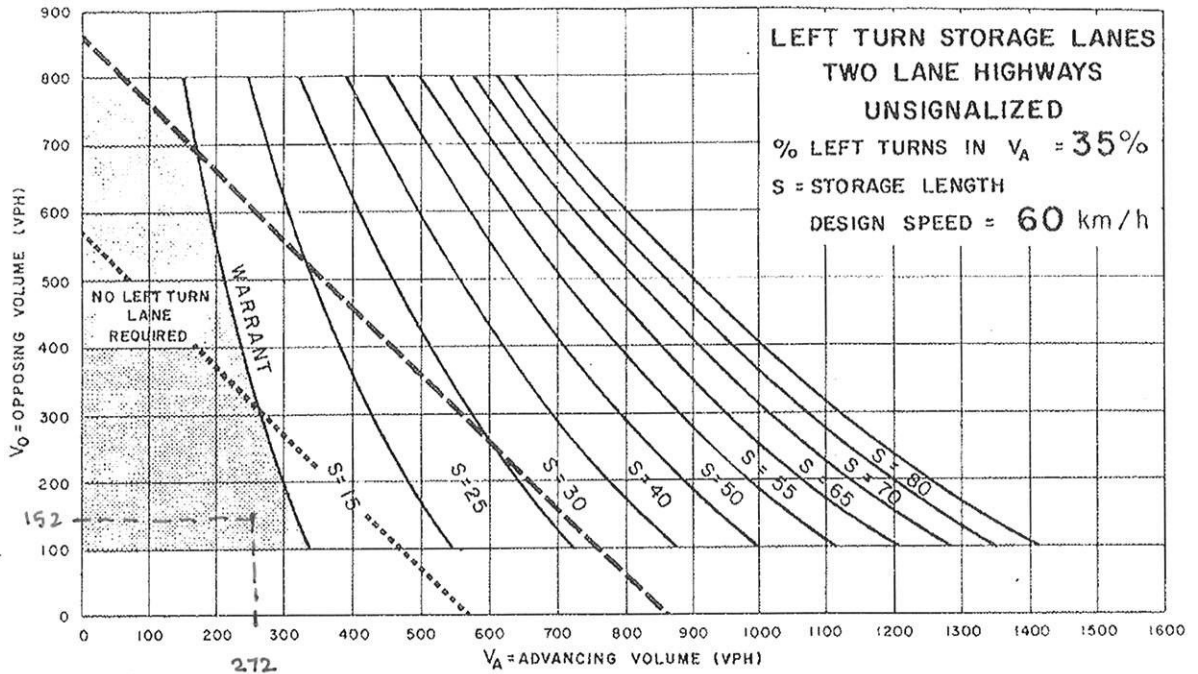
→ M (WB LT) 2035 ∴ not warranted

- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



→ PM (WB LT) 2022 ∴ not warranted

Figure EA-8



-PM (WBLT) 2035 ∴ not warranted

- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

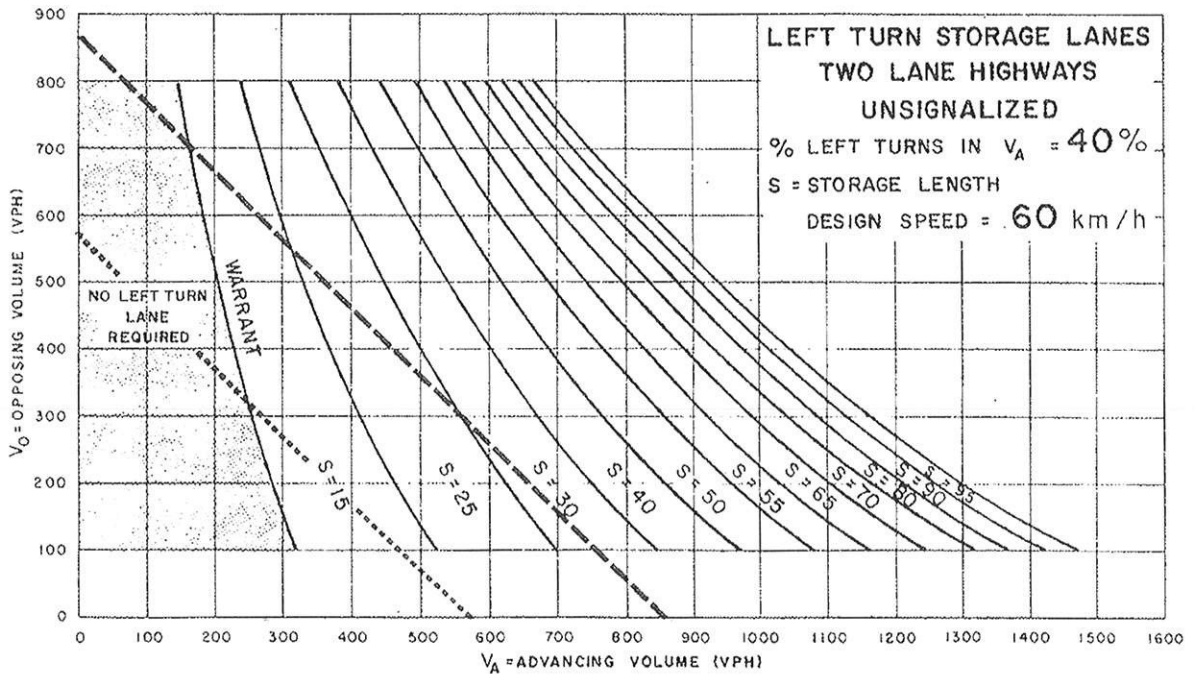
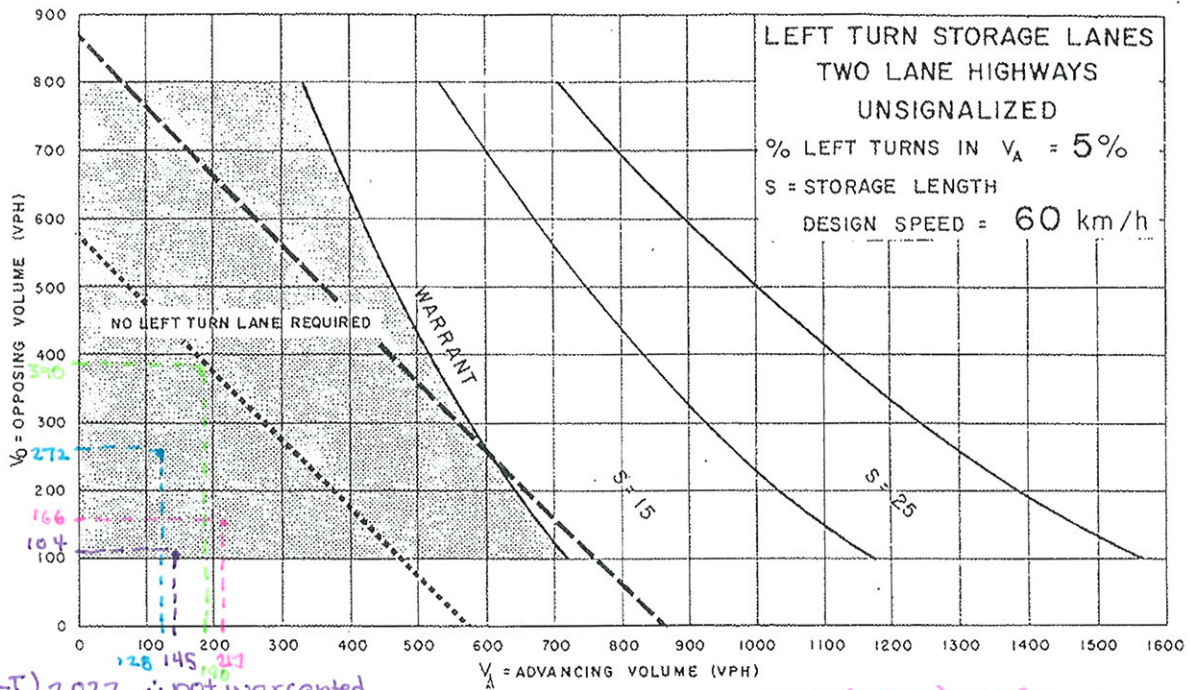


Figure EA-9

# Left Turn Lane Warrant Charts County Road 14 and Concession Road 8



----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

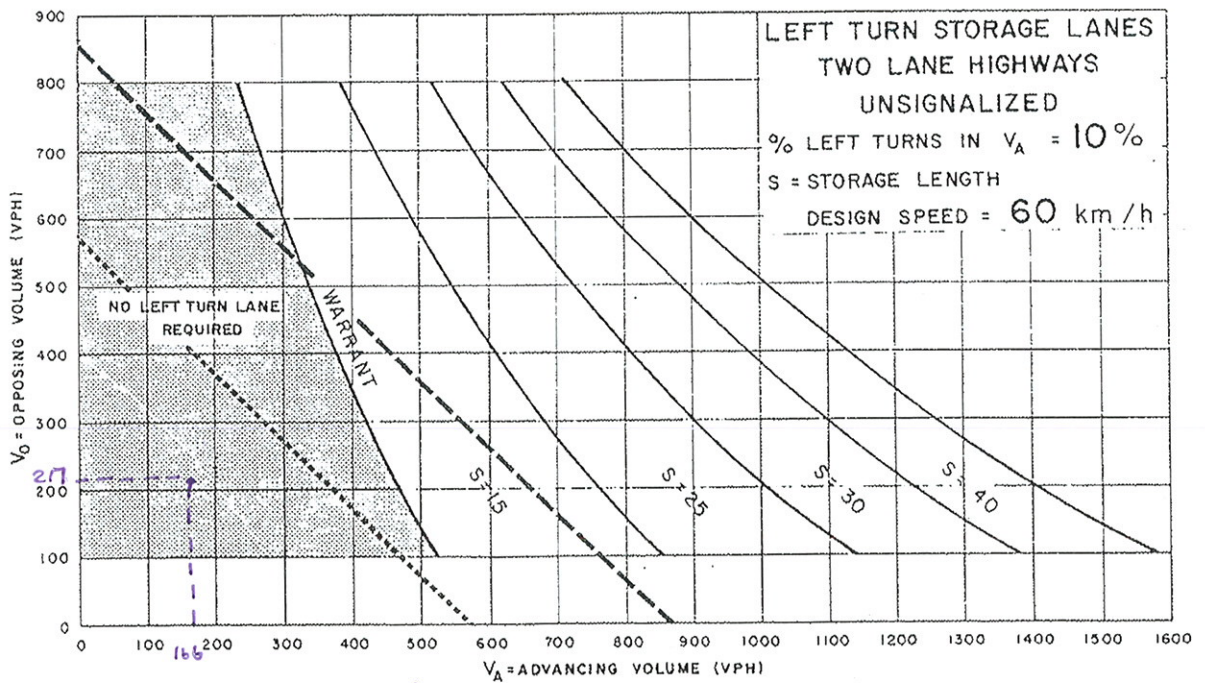
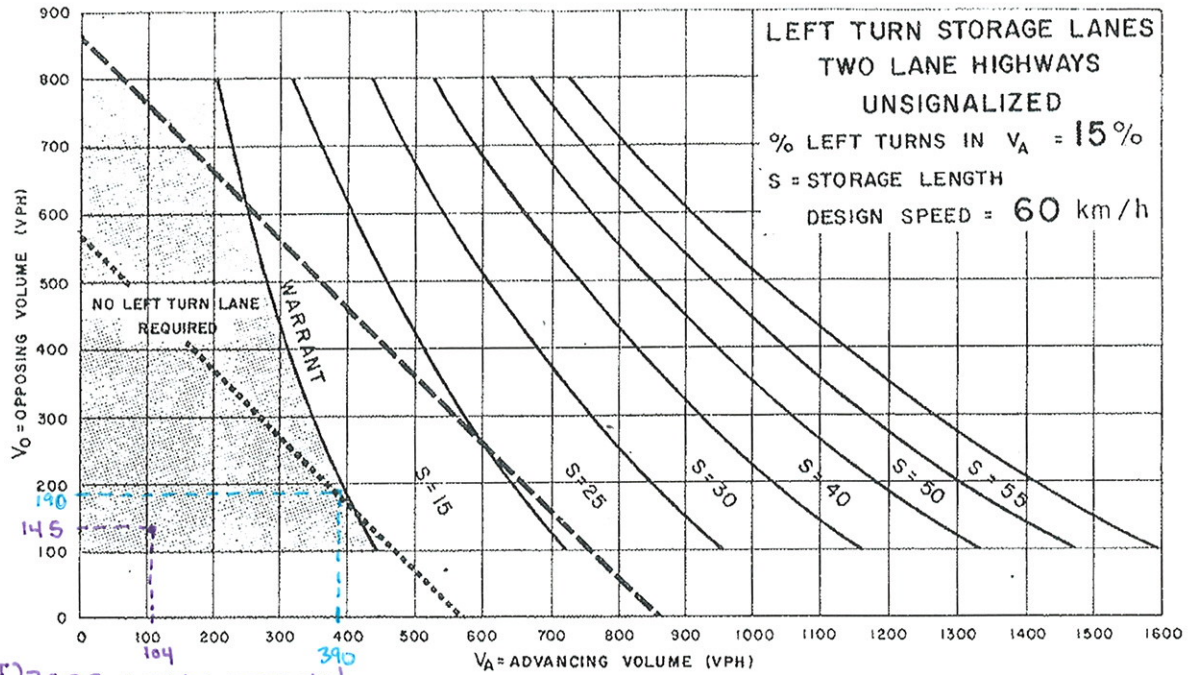


Figure EA-6



- AM (WB LT) 2022 :. not warranted  
 - PM (WB LT) 2035 :. not warranted

----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

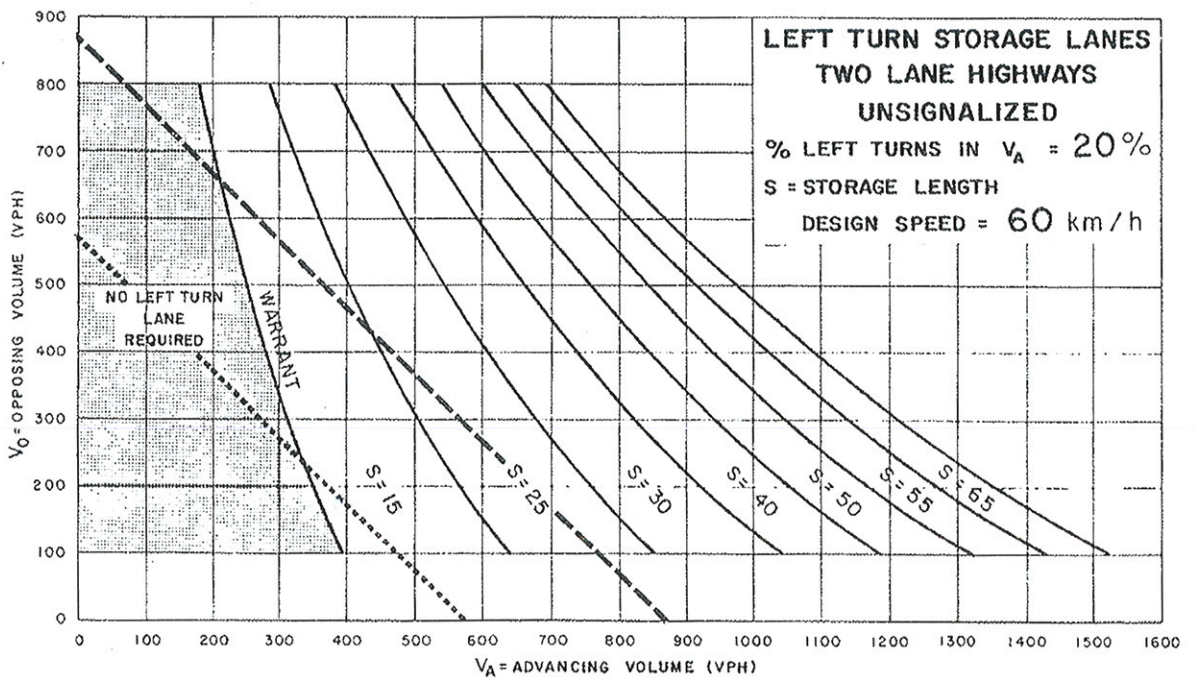
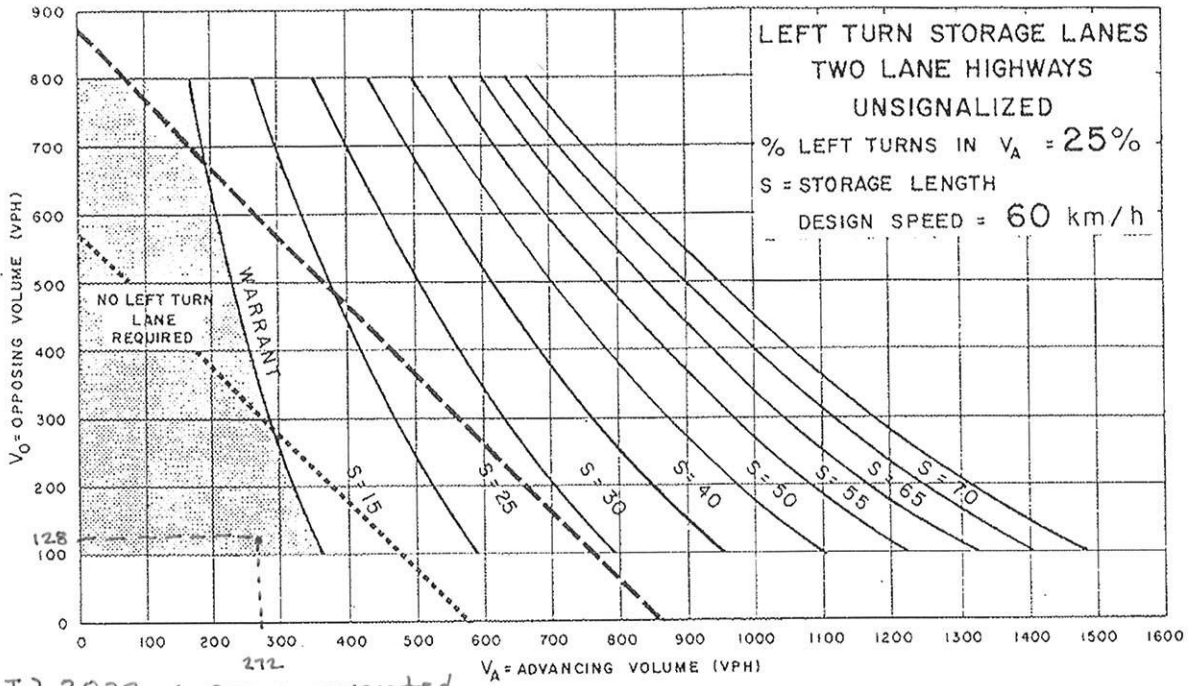


Figure EA-7



----- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

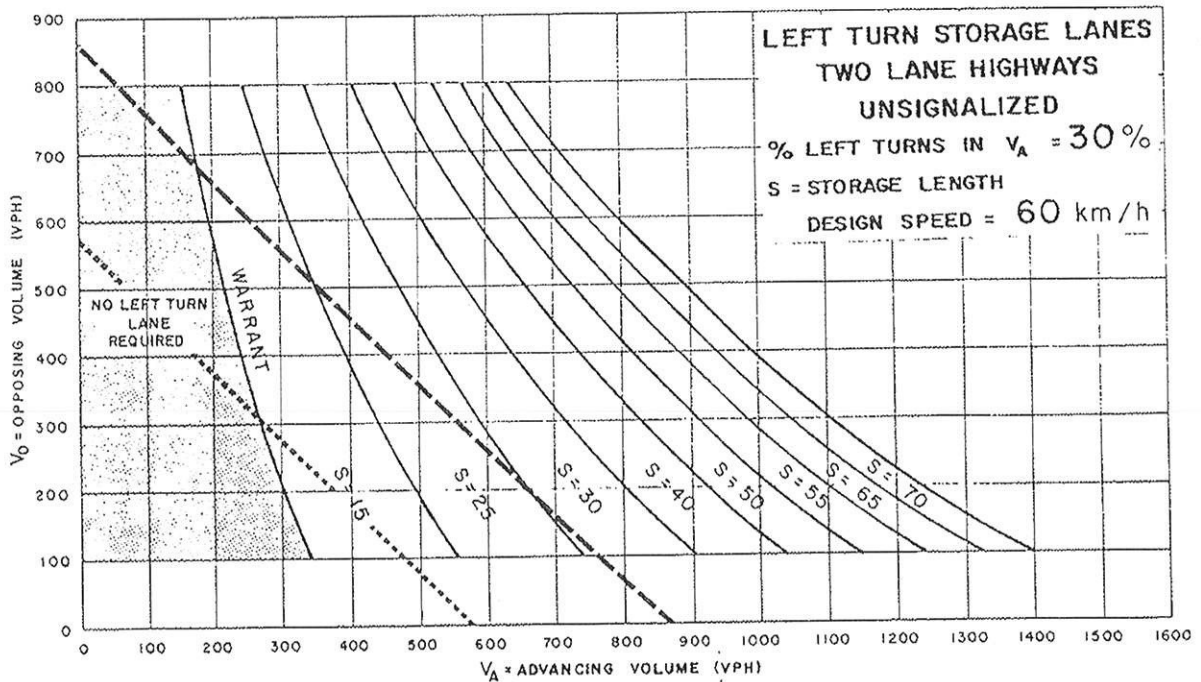


Figure EA-8

# APPENDIX G

## Signal Warrant Sheets

# Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

CR14 & Street A

What is the direction of the Main Road street?

East-West

When was the data collected?

Future Total 2035 - Weekday

## Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population < 10,000

AND

Speed >= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	11	41	11	12	3	37	33	44	23	27	3	13	0
8:00	11	41	11	12	3	37	33	44	23	27	3	13	0
9:00	11	41	11	12	3	37	33	44	23	27	3	13	0
10:00	11	41	11	12	3	37	33	44	23	27	3	13	0
16:00	11	41	11	12	3	37	33	44	23	27	3	13	0
17:00	11	41	11	12	3	37	33	44	23	27	3	13	0
18:00	11	41	11	12	3	37	33	44	23	27	3	13	0
19:00	11	41	11	12	3	37	33	44	23	27	3	13	0
<b>Total</b>	<b>88</b>	<b>328</b>	<b>88</b>	<b>96</b>	<b>24</b>	<b>296</b>	<b>264</b>	<b>352</b>	<b>184</b>	<b>216</b>	<b>24</b>	<b>104</b>	<b>0</b>

## Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

\* Include only collisions that are susceptible to correction through the installation of traffic signal control

## Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
<b>Total 8 hour pedestrian volume</b>	10,000	5	10	5	0	0	0	0	
<b>Factored 8 hour pedestrian volume</b>	20,005		25		0		0		
<b>% Assigned to crossing rate</b>	23%		34%		30%		100%		
<b>Net 8 Hour Pedestrian Volume at Crossing</b>									4,610
<b>Net 8 Hour Vehicular Volume on Street Being Crossed</b>									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
<b>Total 8 hour pedestrian volume</b>	10,000	5	10	5	0	0	0	0	
<b>Total 8 hour pedestrians delayed greater than 10 seconds</b>	10	10	1	6	2	4	0	0	
<b>Factored volume of total pedestrians</b>	20,005		25		0		0		
<b>Factored volume of delayed pedestrians</b>	30		8		8		0		
<b>% Assigned to Crossing Rate</b>	23%		34%		30%		100%		
<b>Net 8 Hour Volume of Total Pedestrians</b>									4,610
<b>Net 8 Hour Volume of Delayed Pedestrians</b>									12



**Justification 1: Minimum Vehicle Volumes**

**Free Flow Rural Conditions**

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
1A	480	720	600	900	258	258	258	258	258	258	258	258	430	54
	COMPLIANCE %				54	54	54	54	54	54	54	54		
1B	120	170	120	170	95	95	95	95	95	95	95	95	633	79
	COMPLIANCE %				79	79	79	79	79	79	79	79		
<b>Free Flow</b> Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
													Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

**Justification 2: Delay to Cross Traffic**

**Free Flow Rural Conditions**

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
2A	480	720	600	900	163	163	163	163	163	163	163	163	272	34
	COMPLIANCE %				34	34	34	34	34	34	34	34		
2B	50	75	50	75	42	42	42	42	42	42	42	42	672	84
	COMPLIANCE %				84	84	84	84	84	84	84	84		
<b>Free Flow</b> Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
													Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

**Justification 3: Combination**

**Combination Justification 1 and 2**

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>		

**Justification 4: Four Hour Volume**

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	163	52	471	11 %	11 %
	8:00	163	52	471	11 %	
	9:00	163	52	471	11 %	
	10:00	163	52	471	11 %	

# Results Sheet

[Input Sheet](#)

[Analysis Sheet](#)

[Proposed Collision](#)

Intersection: CR14 & Street A

Count Date: Future Total 2035 - Weekday

## Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	54 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	79 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	34 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	84 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	54 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	34 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		11 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		0 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-------------------------	--	-----	--------------------------	-------------------------------------

6. Pedestrians	A Volume	Justification met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Major Road: CR 14  
 Minor Road: Street A  
 Horizon Year: 2035  
 Weekday

Condition: Free Flow  
 Major Rd. Lanes: 1  
 Intersection Type: Proposed

Date: 6-Dec-17  
 Project No.: 1000-3958/4243  
 Analyst: Madeleine Ferguson

OTM Book 12 - Table 19 - Justification 7 - Projected Volumes (Traffic Signal Justification for Future Development - Traffic Impact Studies)

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT 1 LANE HIGHWAYS		MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS		COMPLIANCE		Entire Percentage
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Sectional		
						Numerical	Percentage	
1. Minimum Vehicular Volume	A. Vehicle Volume, All Approaches (Avg. Hour)	480	720	600	900	254	53%	53%
	B. Vehicle Volume, Along Minor Streets (Avg. Hour)	120	170	120	170	92	77%	
2. Delay to Cross Traffic	A. Vehicle Volume, Major Street (Avg. Hour)	480	720	600	900	162	34%	34%
	B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour)	50	75	120	170	85	170%	

Existing Intersection Requires 120 % Justification  
 Proposed Intersection Requires 150 % Justification

Signal Justification 7 Met:  Yes  No

## APPENDIX H

### Township of Adjala-Tosorontio/County of Simcoe By-law Excerpts

Schedule "A"  
To  
By-law No. 12-31

STANDARDS AND SPECIFICATIONS

**I. ENTRANCE STANDARDS AND SPECIFICATIONS**

In general, all entrances must be located to provide suitable spacing and visibility requirements as follows unless specified otherwise within the permit at the discretion of the Superintendent:

1. With a posted speed of 80 km/h, at least 30.0 metres from an intersection.
2. No entrances to be permitted within a sight triangle.
3. Minimum distance between driveway and lot line is 1.5 metres (4.9 feet) from side lot line.
4. With a posted speed of 80 km/h, minimum allowable distance of 65 metres from the entrance to the end of the bridge deck.
5. With a posted speed of less than 80 km/h, minimum distance from the end of a bridge deck to be determined by the Superintendent.
6. Minimum vertical and horizontal sight distances required are as follows for residential and commercial entrances:

<u>Speed Limit</u>	<u>Minimum Sight Distance in Meters</u>
50 km/h	65
60 km/h	85
70 km/h	110
80 km/h	135

7. Designs not outlined above are to be as per the Ministry of Transportation Geometric Design Standard Manual.
8. All commercial entrances must meet the above criteria plus the criteria established in the Ministry of Transportation's Commercial Site Access Policy and Standard Designs Manual.
9. Minimum vertical and horizontal sight distances required are as follows for an entrance for the deposition of fill:

### 3.2 SIGHT DISTANCES

3.2.1 Where the posted speed limit is 80 km/h, new Entrances must meet all of the following minimum requirements:

- 3.2.1.1 Minimum Sight Distance as per Table 1 and Table 2, as applicable;
- 3.2.1.2 horizontal curve is 400 metre radius or greater; and
- 3.2.1.3 maximum grade on the County Road is 3% or less.

3.2.2 Where the posted speed limit is less than 80km/h, new Entrances must meet all of the following minimum requirements:

- 3.2.2.1 Minimum Sight Distance as per Table 1 and Table 2, as applicable;
- 3.2.2.2 horizontal curve is 300m radius or greater; and
- 3.2.2.3 maximum grade on the County Road is 6% or less.

**TABLE 1**

Speed Limit - km/h	Minimum Sight Distance (Metres)*
50	135
60	170
70	200
80	230

**TABLE 2**

Posted Speed Limit - km/h	Decrease for Upgrade		Increase for Downgrade	
	3%	6%	3%	6%
50	- 5m.	- 5m.	nil	+5m.
60	- 5m.	- 5m.	+5m.	+10m.
70	- 5m.	- 10m.	+5m.	+10m.
80	-10m.	- 15m.	+10m.	+15m.

\* Table 2 provides factors (in metres) where the Entrance is located on a grade on the County Road.

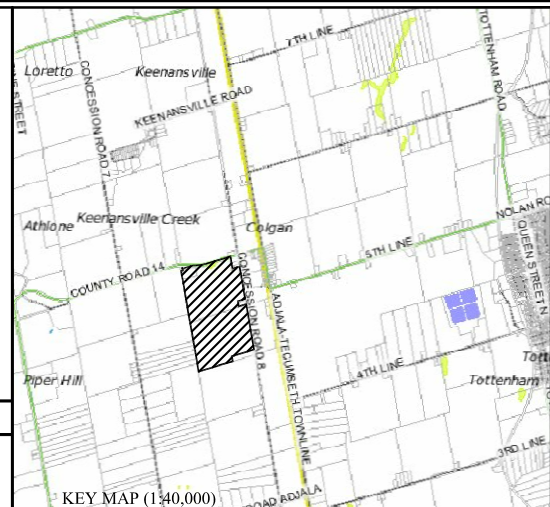
## **SECTION 4 - INSPECTION AND MAINTANENCE**

### 4.1 INSPECTION

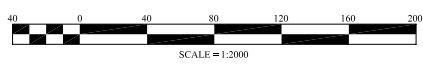
4.1.1 A field inspection may be carried out by County staff upon completion of the Entrance.

# FIGURES

<b>Figure 1a:</b>	Tribute Colgan 1 Draft Plan
<b>Figure 1b:</b>	Tribute Colgan 2 Redline Revision Draft Plan
<b>Figure 2:</b>	Site Location Plan
<b>Figure 3:</b>	Boundary Road Network
<b>Figure 4:</b>	2017 Existing Traffic Volumes
<b>Figure 5:</b>	2022 Future Background Traffic Volumes
<b>Figure 6:</b>	2025 Future Background Traffic Volumes
<b>Figure 7:</b>	2030 Future Background Traffic Volumes
<b>Figure 8:</b>	2035 Future Background Traffic Volumes
<b>Figure 9:</b>	Primary Distribution – Residential (Phase 1)
<b>Figure 10:</b>	Primary Assignment – Residential (Phase 1)
<b>Figure 11:</b>	Primary Distribution – Residential (Full Build-out)
<b>Figure 12:</b>	Primary Assignment – Residential (Full Build-out)
<b>Figure 13:</b>	Primary Distribution – Commercial
<b>Figure 14:</b>	Primary Assignment – Commercial
<b>Figure 15:</b>	Pass-By Distribution – Commercial
<b>Figure 16:</b>	Pass-By Assignment – Commercial
<b>Figure 17:</b>	2022 Future Total Traffic Volumes
<b>Figure 18:</b>	2025 Future Total Traffic Volumes
<b>Figure 19:</b>	2030 Future Total Traffic Volumes
<b>Figure 20:</b>	2035 Future Total Traffic Volumes



**DRAFT PLAN**  
**PART OF THE EAST HALF OF**  
**LOTS 9 & 10, CONCESSION 7**  
 FORMERLY IN THE  
**TOWNSHIP OF ADJALA**  
 NOW IN THE  
**TOWNSHIP OF ADJALA-TOSORONTIO**  
**COUNTY OF SIMCOE**  
 2007



**OWNER'S CERTIFICATE**  
 I, THE UNDERSIGNED, BEING THE REGISTERED OWNER OF THE SUBJECT LANDS, HEREBY AUTHORIZE INNOVATIVE PLANNING SOLUTIONS, TO PREPARE THIS DRAFT PLAN OF SUBDIVISION AND TO SUBMIT SAME TO COUNTY OF SIMCOE FOR APPROVAL.

DATE: \_\_\_\_\_  
 WAYLAND FARMS INC.,  
 872424 ONTARIO INC.,  
 WAYNE SUTHERLAND

**SURVEYOR'S CERTIFICATE**  
 I CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE: \_\_\_\_\_  
 RICHARD A. PREISS, OLS  
 RICHARD A. PREISS SURVEYING LTD.

**ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT**

- |                  |  |
|------------------|--|
| a) SHOWN ON PLAN | h) COMMUNAL WATER                        |
| b) SEE KEY PLAN  | i) SAND                                  |
| c) SHOWN ON PLAN | j) SHOWN ON PLAN                         |
| d) RESIDENTIAL   | k) ALL MUNICIPAL SERVICES TO BE PROVIDED |
| e) SHOWN ON PLAN | l) NONE                                  |
| f) SHOWN ON PLAN |  |
| g) SHOWN ON PLAN |  |

**LAND USE STATISTICS**

Land Use	Lot / Block No.	Area	Units
RESIDENTIAL	10-12,14-16,23,28-31,34-37,39,47,49,64,66,74,76-84, 99-146,148-157,176-181,184-189,197-201,204-210, 215-220, 241-242,259-266,268-273	10.10	131
RESIDENTIAL	1-9,24-27,32-33,38,40-46,48,50-63,65,67-73,75, 85-98,147,155-167,182-183,194-197,202-203, 211-214,221-240,243-258,267,274-315	15.50	165
RESIDENTIAL	13,17-22,168-175,189-192	3.52	19
ACCESS	316	0.08	
RURAL	317	11.92	
EFFLUENT DISPOSAL AREA	318	6.72	
INSTITUTIONAL	319	0.36	
ENVIRONMENTAL PROTECTION	320, 323	12.07	
OPEN SPACE	321	5.25	
PARKLAND	322	1.51	
SWM POND	324	3.11	
WASTE TREATMENT PLANT	325	0.82	
COUNTY INTERSECTION LANDS	327	0.06	
0.3m RESERVES	326, 328	0.04	
ROADS (Local)		9.64	
<b>TOTAL</b>		<b>80.70</b>	<b>315</b>

DATE	REVISION	BY
JAN 25, 2010	REVISIONS TO DRAFT PLAN	B.H.
NOV 12, 2010	REVISIONS TO DRAFT PLAN	B.H.

**ConSALtech**  
 Engineering Solutions  
 Box 316 • 66 Bailey Crescent, Wyvale, Ontario, L0E 2T0  
 Office: 705-322-9528 Cell: 705-722-1878 Fax: 705-322-9529



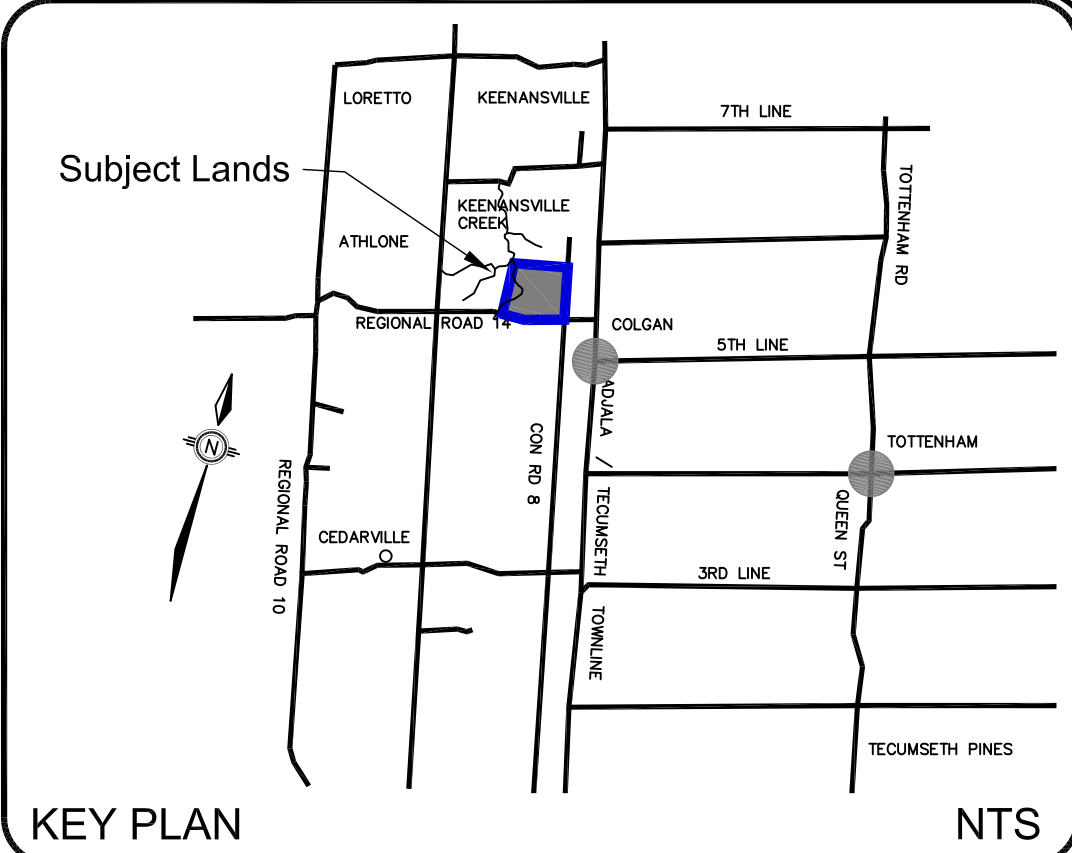
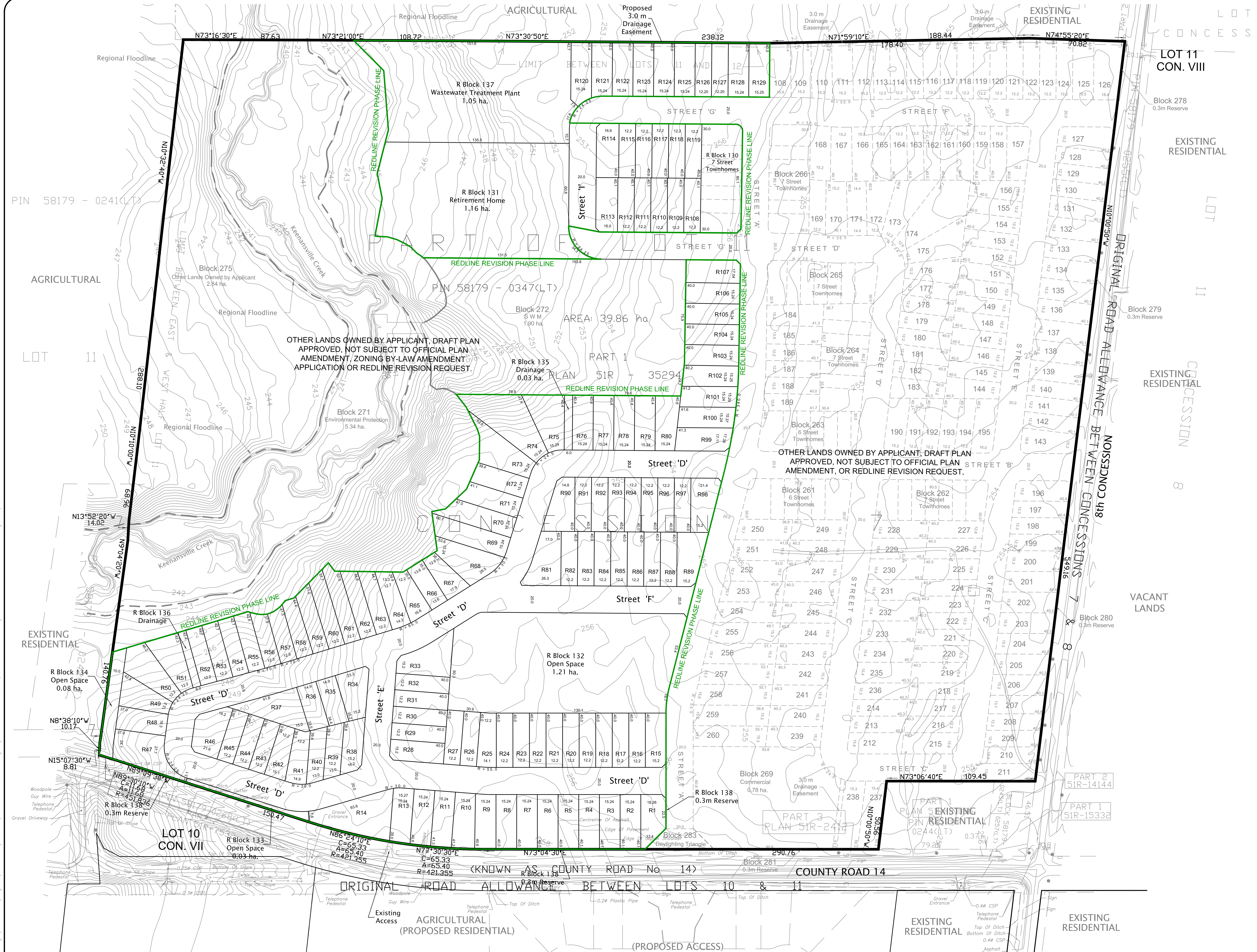
FILE NAME: Draft\_plan\_101201.dwg DESIGNER: B H  
 DATE: December 3, 2010 PROJECT: IPS



**SUTHERLAND PROPERTY**  
**TOWNSHIP OF ADJALA-TOSORONTIO**

**FIG. 1a**





**Draft Plan of Subdivision**  
 Part of Lot 11, Concession 7  
 Geographic Township of Adjala,  
 Now in the  
**Township of Adjala-Tosorontio**  
 County of Simcoe

**OWNER'S CERTIFICATE**  
 I, THE UNDERSIGNED, BEING THE REGISTERED OWNER OF THE SUBJECT LANDS, HEREBY AUTHORIZE THE JONES CONSULTING GROUP LTD., TO PREPARE THIS DRAFT PLAN OF SUBDIVISION AND TO SUBMIT SAME TO THE TOWNSHIP OF ADJALA-TOSORONTIO FOR APPROVAL.  
 FOR APPROVAL  
 DATE: December 8, 2017  
 Signature: [Signature]  
 Title: (Colgan 2) Limited  
 Steven Libfeld

**SURVEYOR'S CERTIFICATE**  
 I CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.  
 DATE: Dec. 7, 2017  
 Signature: [Signature]  
 Dan Dzaldov, OLS  
 Schaeffer Dzaldiv Bennett Ltd.  
 (416)987-0101

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT  
 a) SHOWN ON DRAFT PLAN g) SHOWN ON DRAFT PLAN  
 b) SHOWN ON DRAFT PLAN h) MUNICIPAL WELL WATER TO BE PROVIDED  
 c) SHOWN ON KEY PLAN i) SILT LOAM, SANDY LOAM, & SILTY CLAY LOAM  
 d) RESIDENTIAL, COMMERCIAL, j) SHOWN ON DRAFT PLAN  
 RETIREMENT HOME, SWM, EP, k) FULL MUNICIPAL SERVICES TO BE PROVIDED  
 e) SHOWN ON DRAFT PLAN l) AS NOTED ON PLAN  
 f) SHOWN ON DRAFT PLAN

Redline Revised Portion of Draft Approved Plan	Area (ha.)	Units
SINGLE RESIDENTIAL - 15.24m (50')	3.48	49 units
LOTS R1 - R14, R17, R44, R45, R68, R69, R99, R107, R120 - R125, R128 & R129	4.30	80 units
SINGLE RESIDENTIAL - 12.2m (40')		
LOTS R15 - 36, R38 - R45, R49 - R67, R68, R108 - R119, R120 & R127	0.24	7 units
BUNGALOW TOWNHOMES (R BLOCK 130)	1.32	1.32 ha
RETIREMENT HOME (R BLOCK 131)	1.16	170 beds
OPEN SPACE (R BLOCKS 132 - R BLOCKS 134)	0.05	
STORM WATER MANAGEMENT DRAINAGE (R BLOCK 135 & R BLOCK 136)	1.05	
WASTEWATER TREATMENT PLANT (R BLOCK 137)	0.01	
RESERVE (R BLOCK 138)	2.36	
ROADS (STREETS 'D', 'E', 'F' & 'I')	13.97	306 units

Other Lands Owned by Applicant, Draft Plan Approved, Not Subject to Official Plan Amendment Application or Redline Revision Request	Area (ha.)	Units
SINGLE RESIDENTIAL - 15.24m (50')	4.03	62 units
LOTS 108 - 112, 125 & 126, 131, 138, 169 - 198, 170 & 171, 184, 200 - 206, 219, 225 & 228, 229 - 235, & 237 - 260	4.90	91 units
SINGLE RESIDENTIAL - 12.2m (40')		
LOTS 113 - 124, 127 - 130, 139 - 165, 166, 192 - 183, 185 - 199, 207 - 218, 220 - 224, 227 & 228, & 236	1.45	40 units
BUNGALOW TOWNHOMES (BLOCKS 261 - 266)	5.34	
ENVIRONMENTAL PROTECTION (BLOCK 271)	1.90	
STORM WATER MANAGEMENT (BLOCK 272)	0.78	
COMMERCIAL (BLOCK 269)	2.85	
OTHER LANDS (R BLOCK 280)	0.07	
RESERVES / COUNTY INTERSECTION LANDS (BLOCKS 278 - 281 & BLOCK 283)	4.55	
ROADS (STREETS 'A' - 'I')	25.88	192 units

TOTAL LAND HOLDINGS	Area (ha.)	Units
TOTAL	39.86	499 units

DATE ISSUED: DEC. 7/2017  
 CHECKED BY: BC  
 PROJECT NO.: TRI-16092  
 DRAWN BY: m.c.r.  
 DRAWING NAME: TRI-16092-C2-DP5.dwg

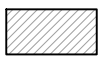

**COLGAN 2**  
**TOWNSHIP OF ADJALA-TOSORONTIO**

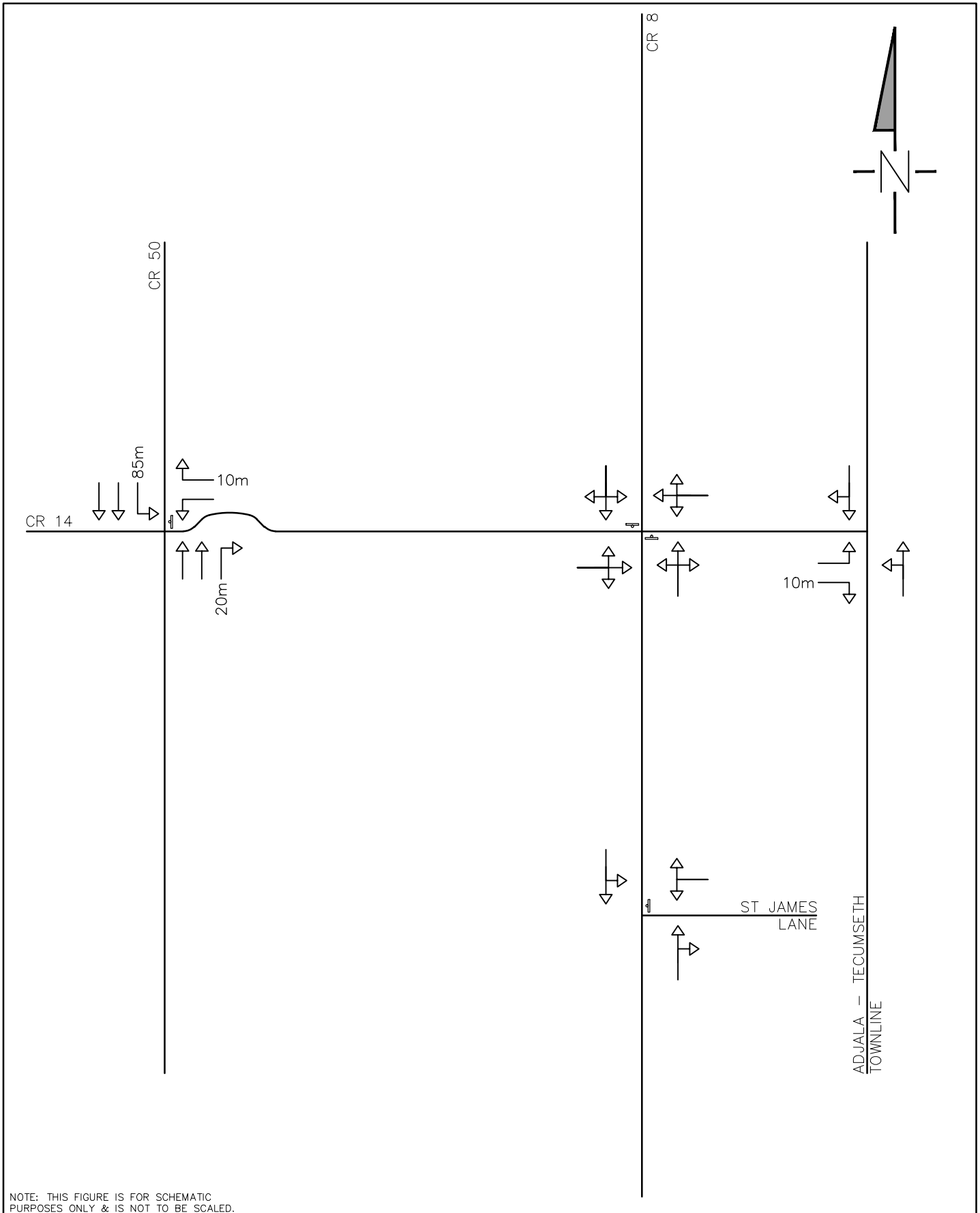
DEVELOPMENT LIMIT NOTE:  
 GREATER OF REGIONAL FLOODLINE, MEANDER BELT LINE, SLOPE STABILITY LINE,  
 30M CREEK SETBACK, AND TOP OF BANK + 6m (JAN. 6th, 2010).

**FIG. 1b**




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 PLANNERS & ENGINEERS  
 229 Highway 104 East, Unit 1, Barrie, Ontario, L4N 9Y5  
 Phone: 705-734-2538 Fax: 705-734-1056  
 www.jonescng.com

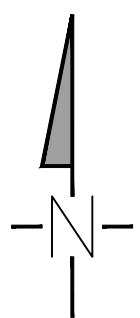
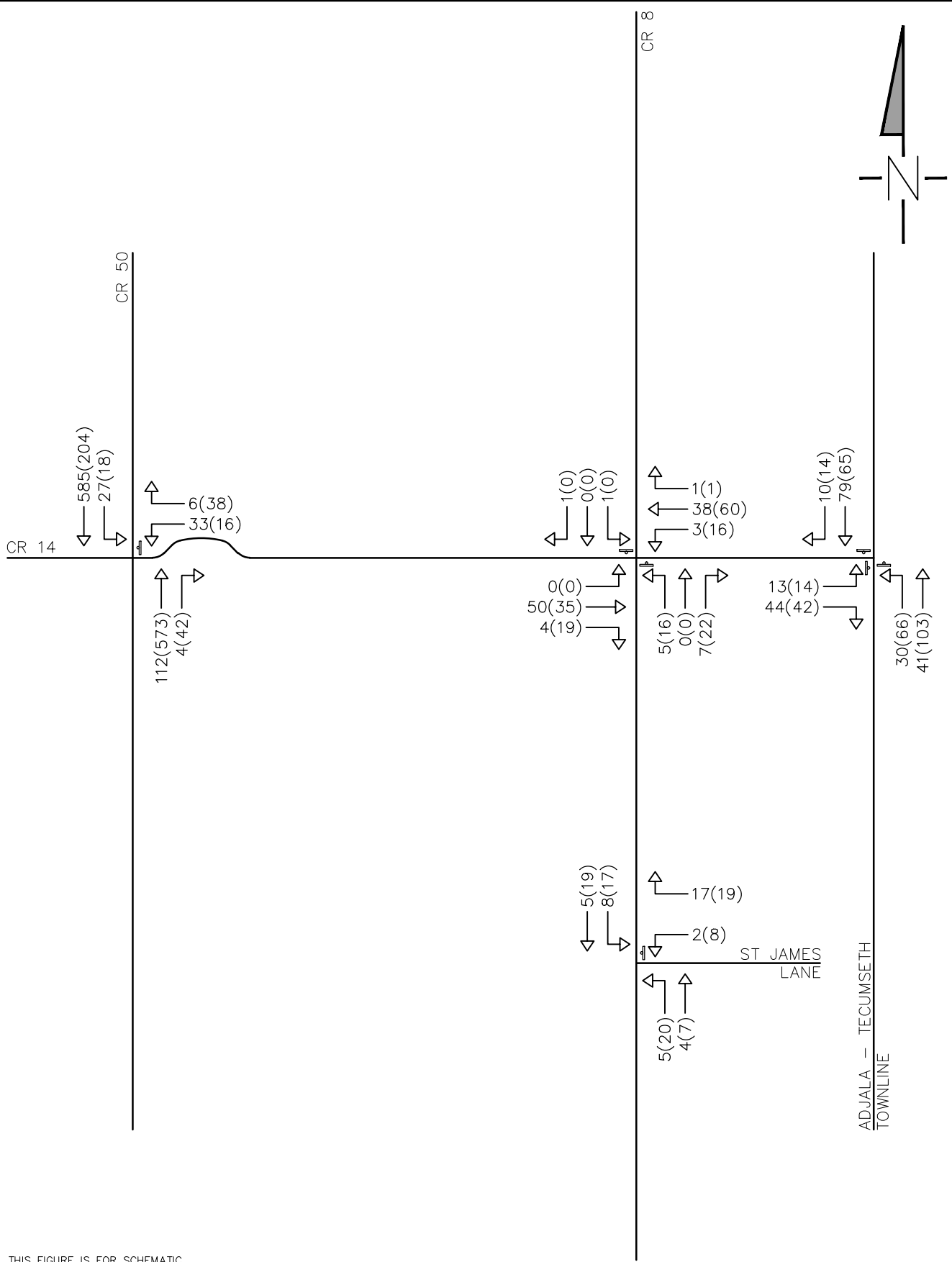


<b>Legend</b>  = SUBJECT LANDS	<b>Project</b> TRIBUTE HOMES COLGAN	 <b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3</small>	<small>705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA</small>
	<b>Drawing</b> SITE LOCATION PLAN		<small>Drawn By</small> K.J.L. <small>Design By</small> M.N.F. <small>Project</small> 1000-3958/4243 <small>Scale</small> N.T.S. <small>Date</small> DEC. 6, 2017 <small>Check By</small> M.L. <small>Drawing</small> FIG. 2



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

<b>Legend</b>  SIGNAL CONTROL  STOP CONTROL  XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	 <b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3</small> <small>705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA</small>											
	<b>Drawing</b> EXISTING TRAFFIC CONTROL AND LANE CONFIGURATION		<table border="1"> <tr> <td>Drawn By</td> <td>K.J.L.</td> <td>Design By</td> <td>M.N.F.</td> <td>Project</td> <td>1000-3958/4243</td> </tr> <tr> <td>Scale</td> <td>N.T.S.</td> <td>Date</td> <td>DEC. 6, 2017</td> <td>Check By</td> <td>M.L.</td> </tr> </table>	Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243	Scale	N.T.S.	Date	DEC. 6, 2017
Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243								
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.								



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

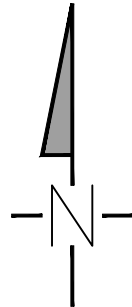
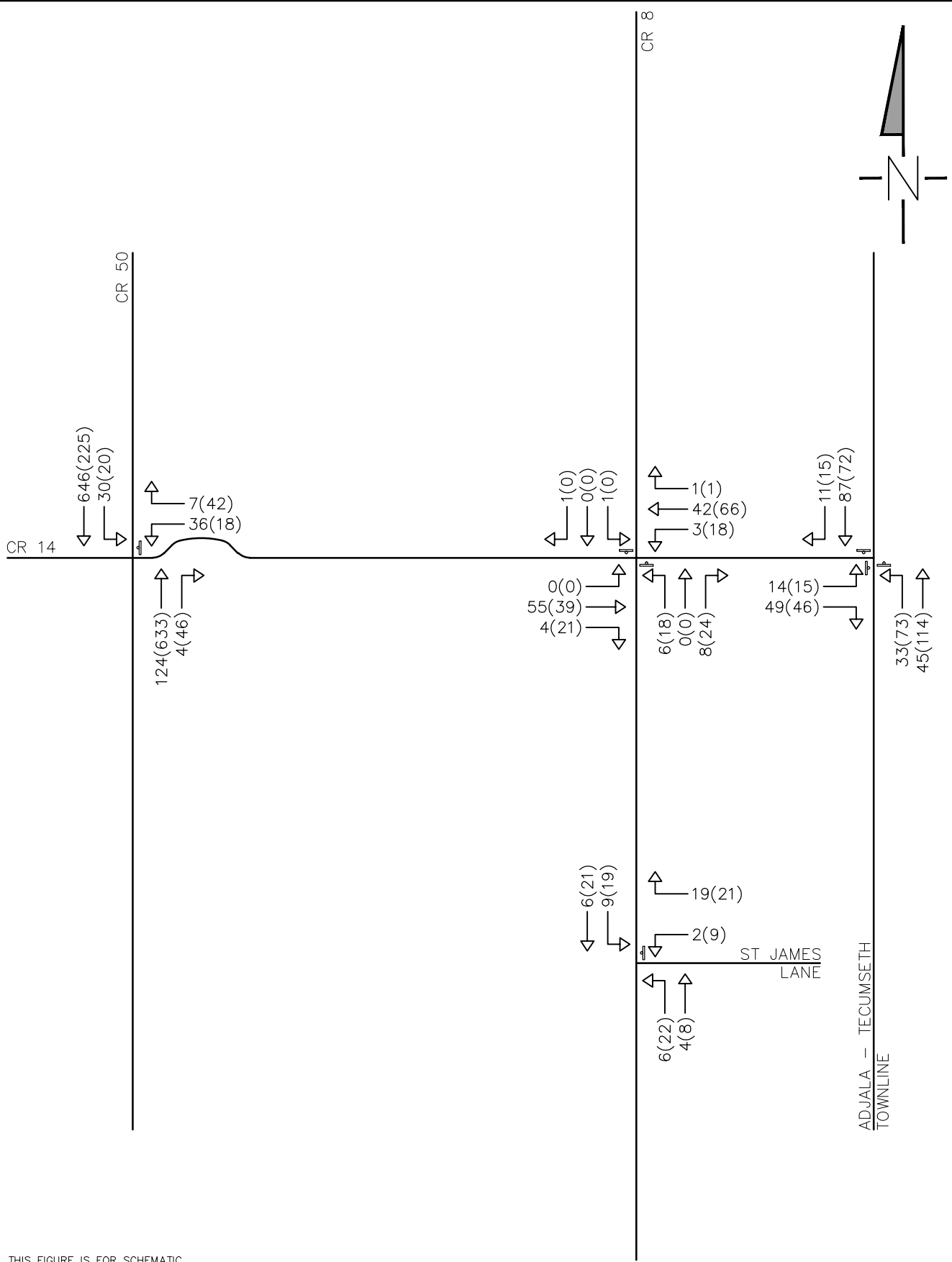
Project	TRIBUTE HOMES COLGAN	
Drawing	2017 EXISTING TRAFFIC VOLUMES	

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THE HARBOUREDGE BUILDING,  
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L9Y 4R3

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Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243	
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 4



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

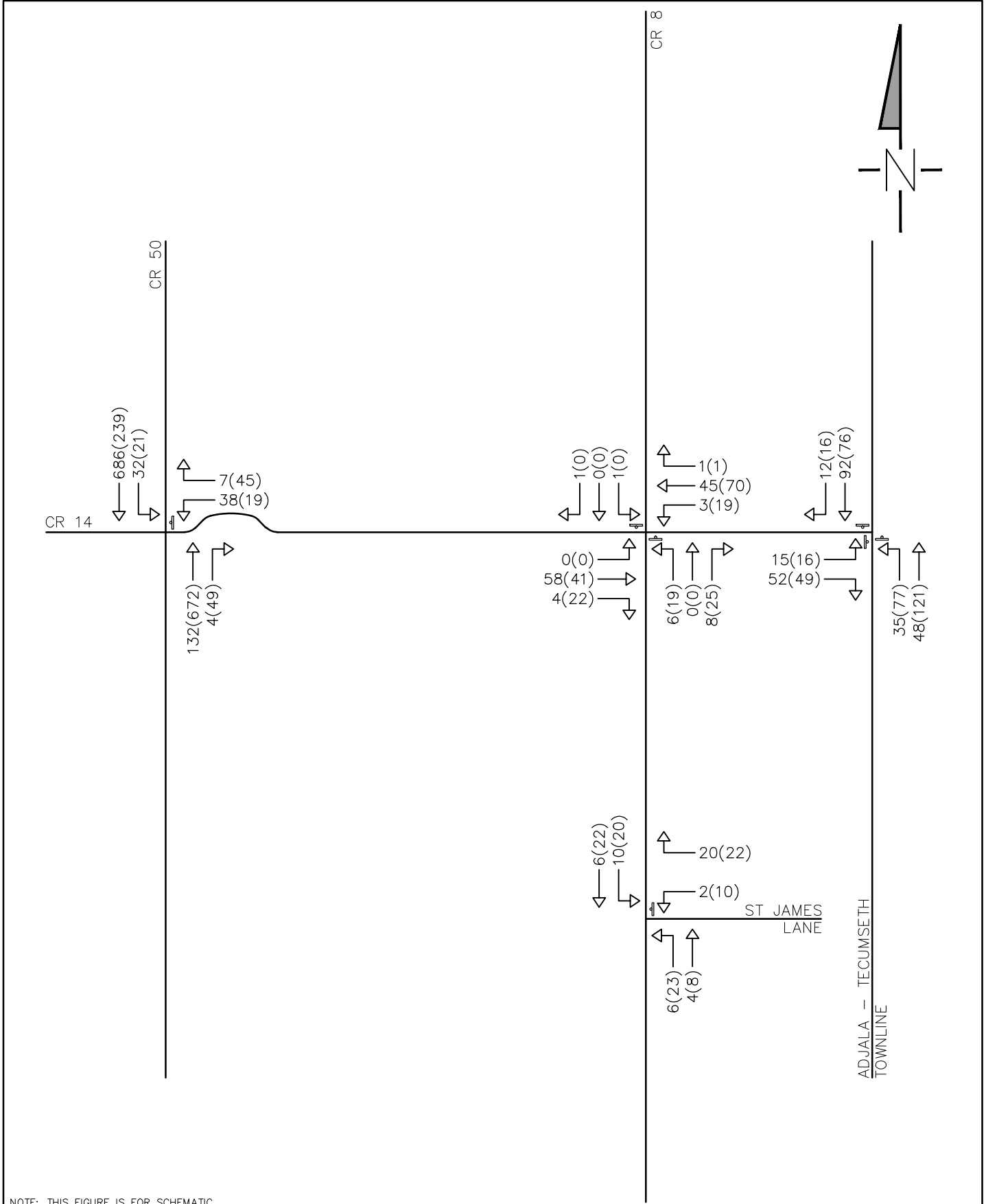
Project	TRIBUTE HOMES COLGAN	
Drawing	2022 FUTURE BACKGROUND TRAFFIC VOLUMES	

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Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.
					Drawing
					FIG. 5



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

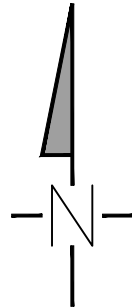
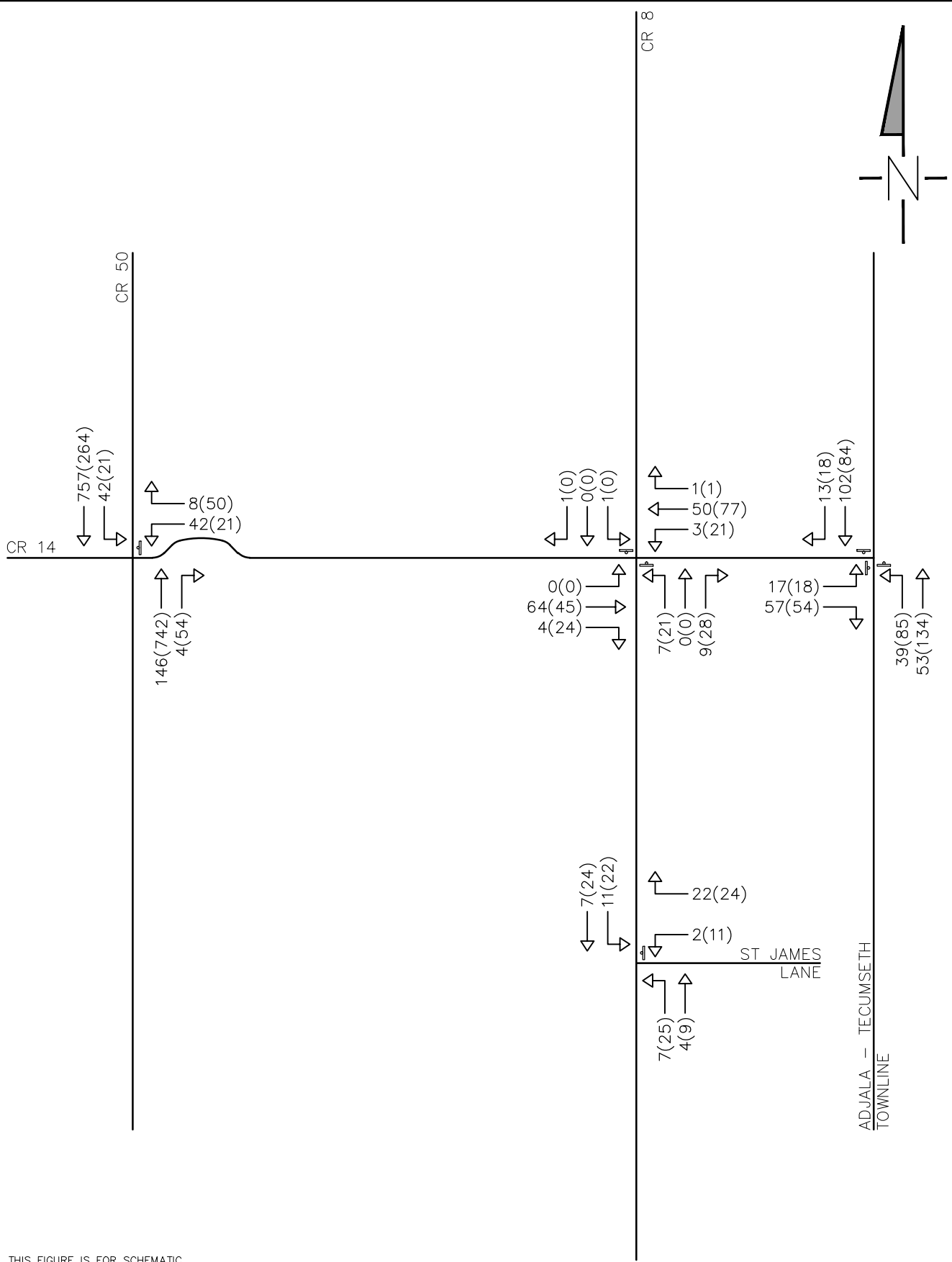
Project	TRIBUTE HOMES COLGAN	
Drawing	2025 FUTURE BACKGROUND TRAFFIC VOLUMES	

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Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243	
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 6

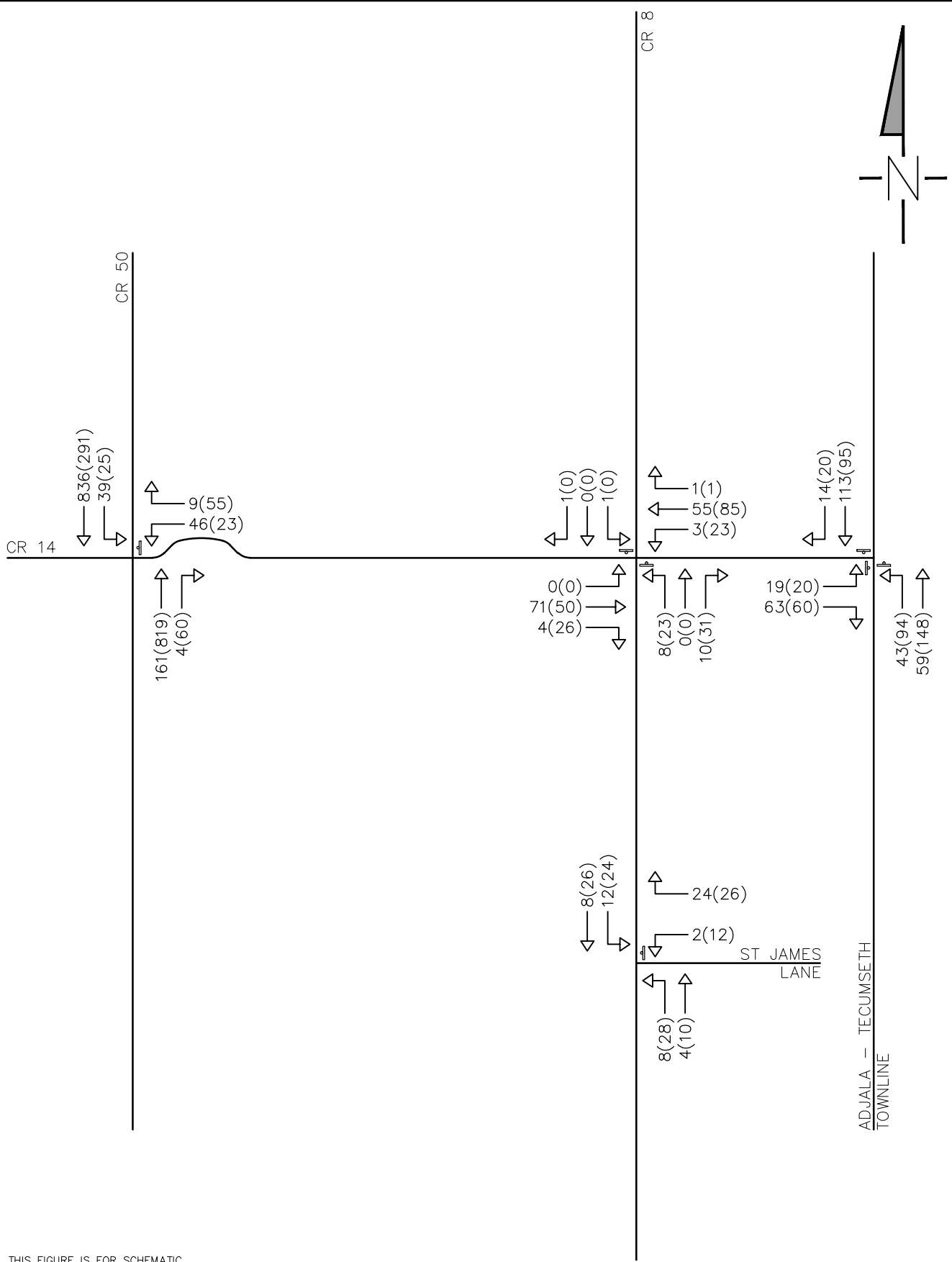


NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

Project	TRIBUTE HOMES COLGAN	
Drawing	2030 FUTURE BACKGROUND TRAFFIC VOLUMES	

		THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3		705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA		
Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243	
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 7

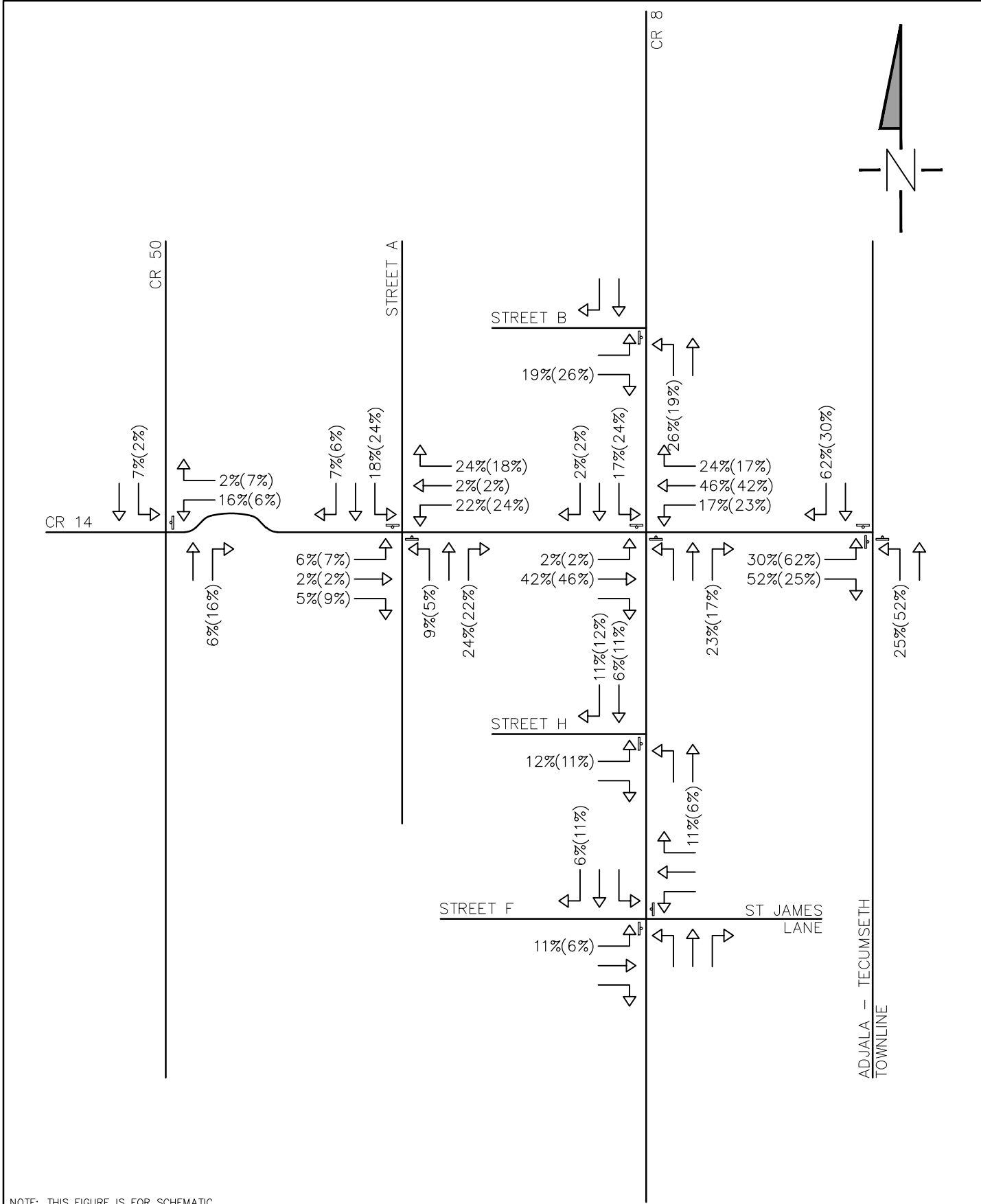


	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

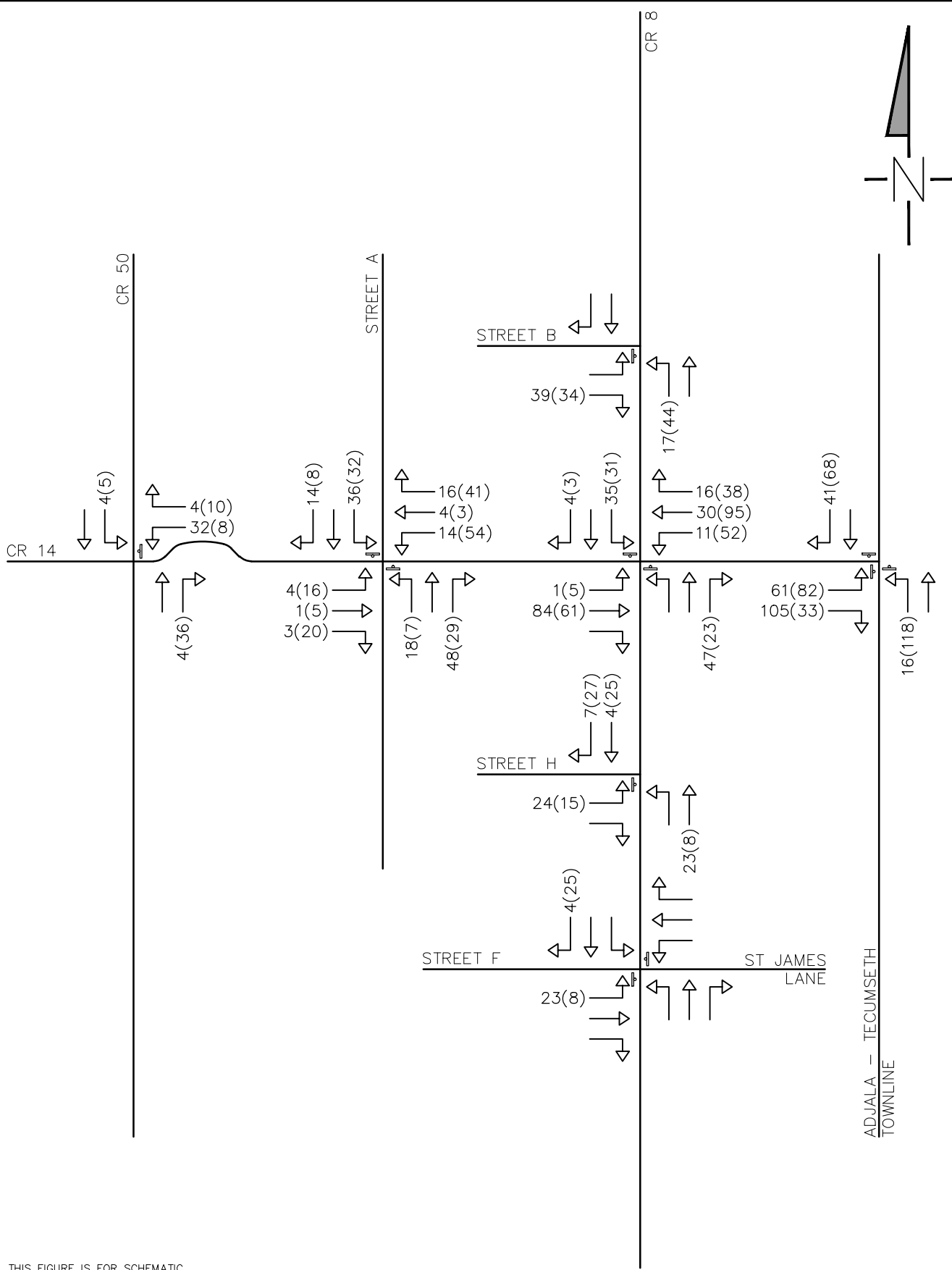
Project	TRIBUTE HOMES COLGAN	
Drawing	2035 FUTURE BACKGROUND TRAFFIC VOLUMES	

		<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers		THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3		705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA	
Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243		
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	Drawing	FIG. 8








<p><b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers</p> <p>THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3</p> <p>705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA</p>	<p>Drawn By K.J.L. Design By M.N.F. Project <b>1000-3958/4243</b></p>
	<p>Scale N.T.S. Date DEC. 6, 2017 Check By M.L. Drawing <b>FIG. 9</b></p>



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

Project	TRIBUTE HOMES COLGAN	
Drawing	TRIP ASSIGNMENT - RESIDENTIAL (PHASE 1)	

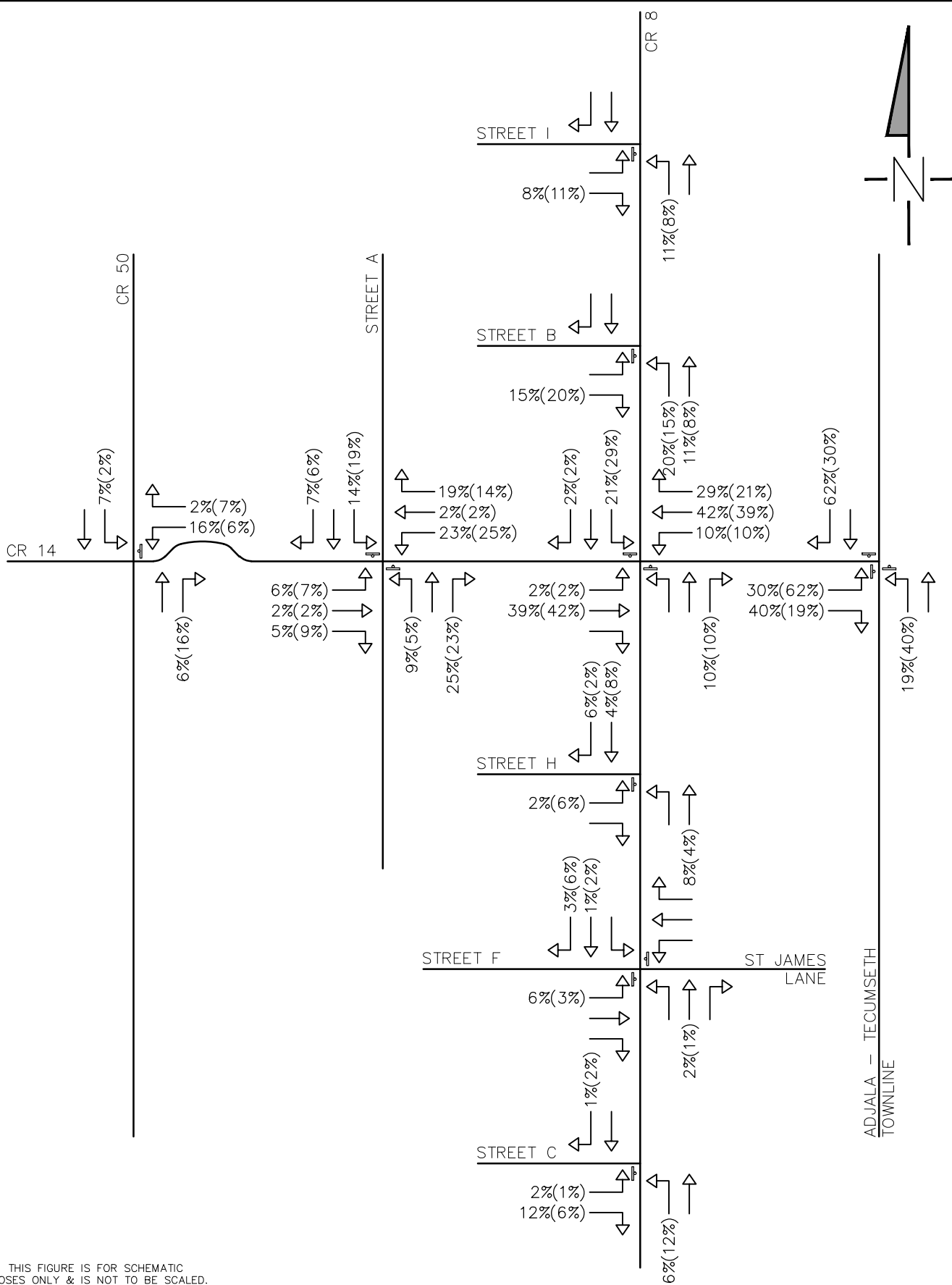


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301, COLLINGWOOD, ON  
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705-446-3520 F  
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Drawn By	K.J.L.	Design By	M.N.F.	Project	1000-3958/4243	
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 10



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

Project	TRIBUTE HOMES COLGAN	
Drawing	TRIP DISTRIBUTION - RESIDENTIAL (FULL BUILD-OUT)	

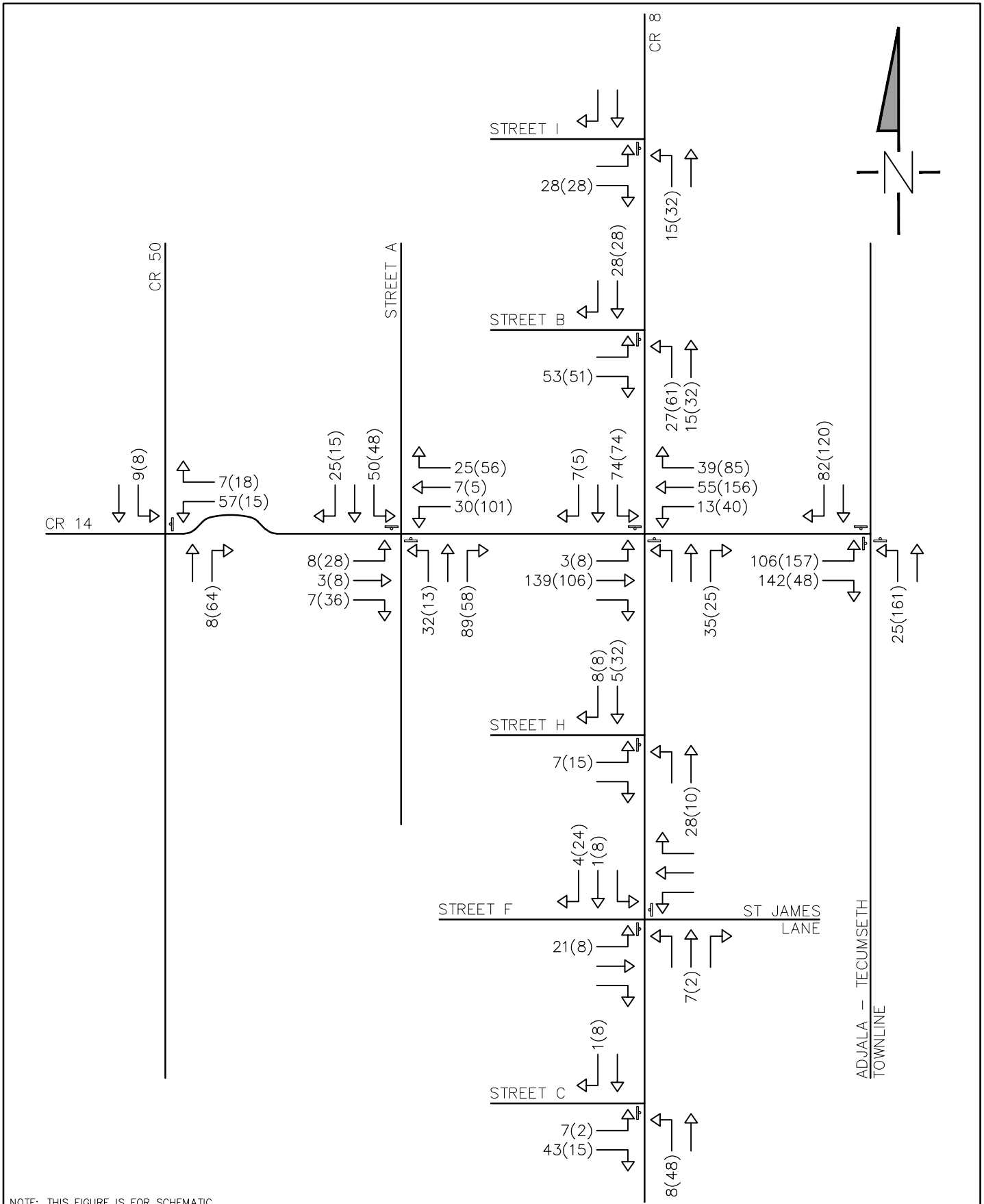


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40 HURON STREET, SUITE  
301, COLLINGWOOD, ON  
L9Y 4R3

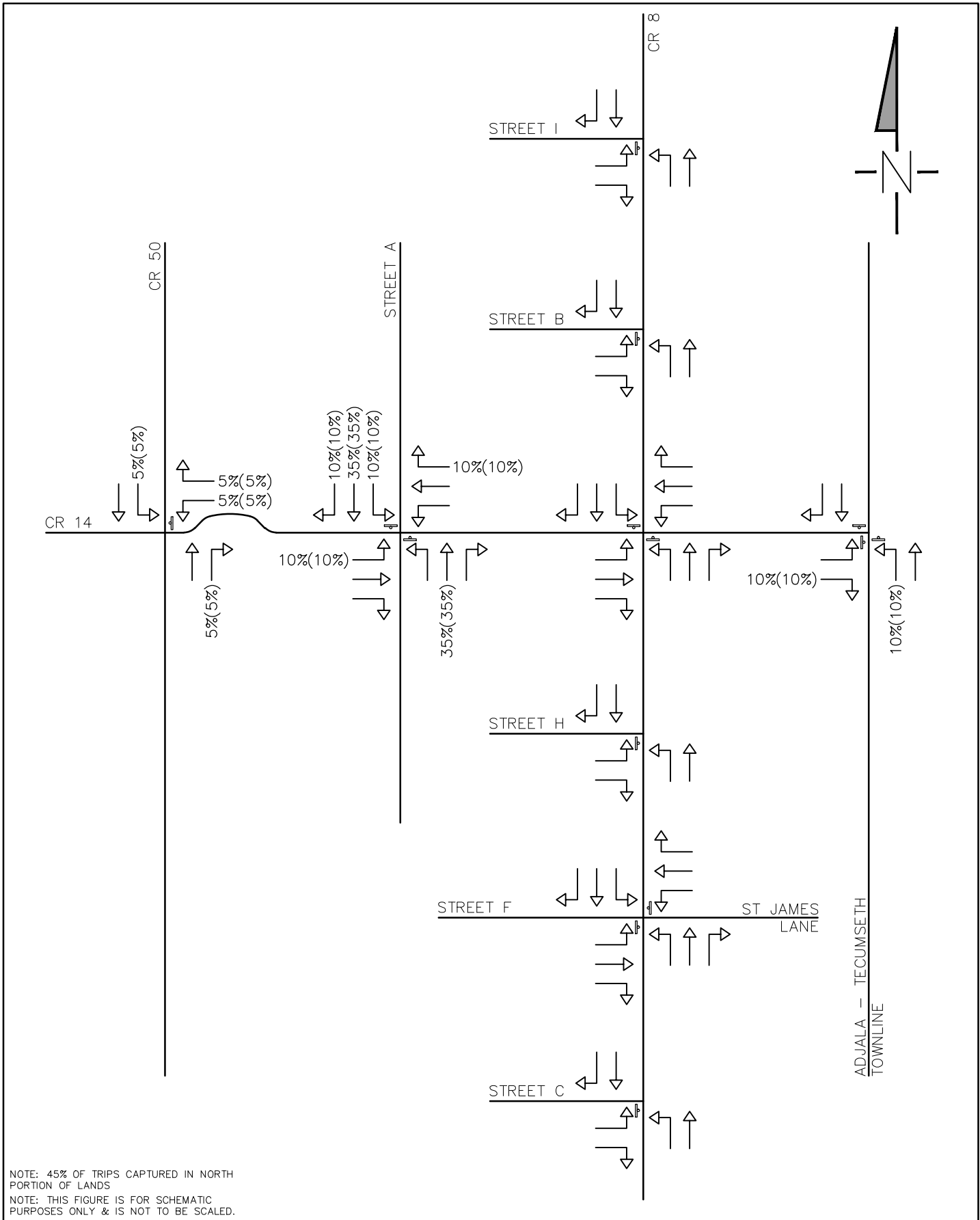
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Drawn By	K.J.LL	Design By	M.N.F.	Project	1000-3958/4243	
Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 11



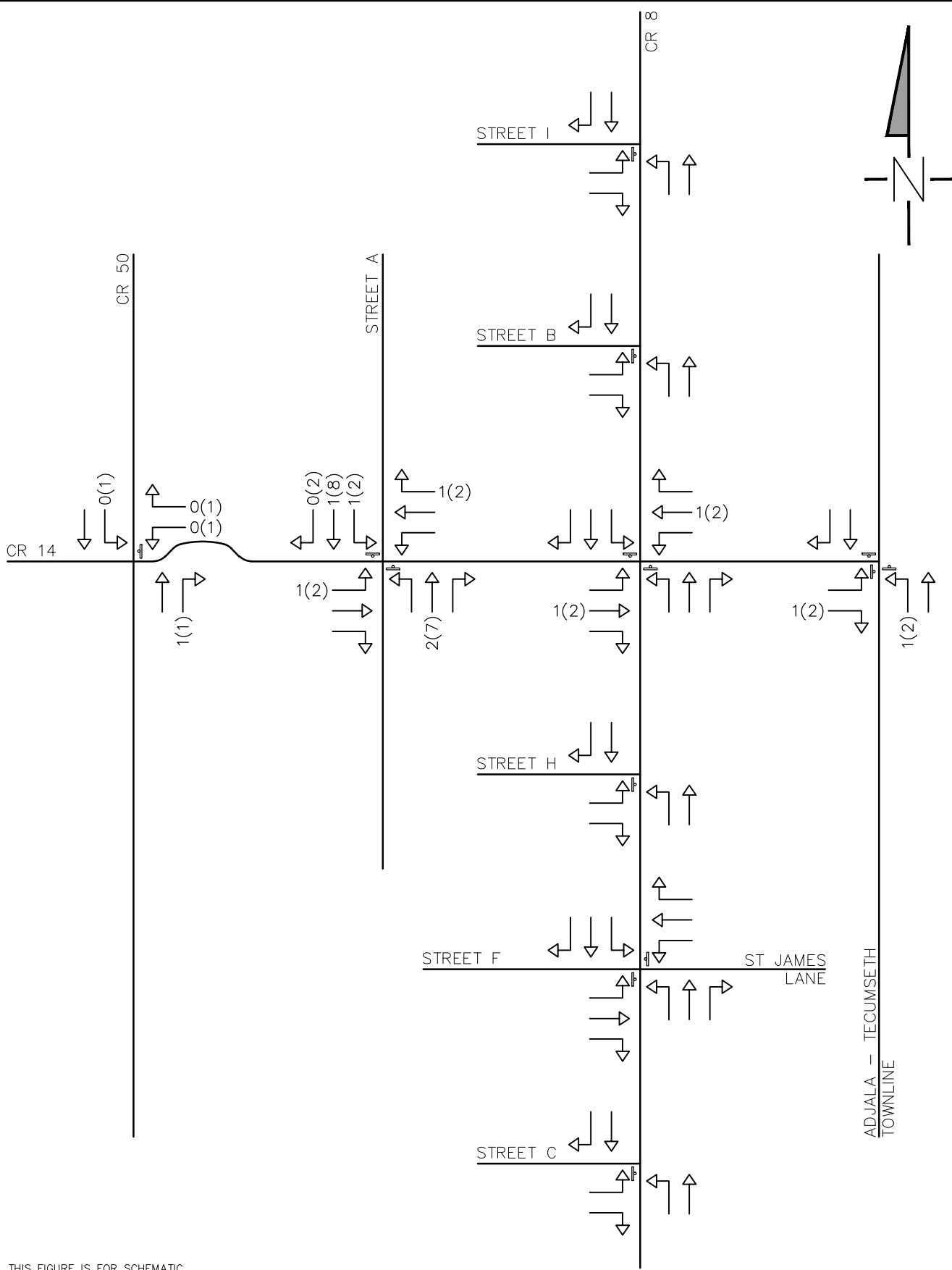
NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> <small>705-446-3510 T          705-446-3520 F          WWW.CFCROZIER.CA          INFO@CFCROZIER.CA</small>
	<b>Drawing</b> TRIP ASSIGNMENT – RESIDENTIAL (FULL BUILD-OUT)	



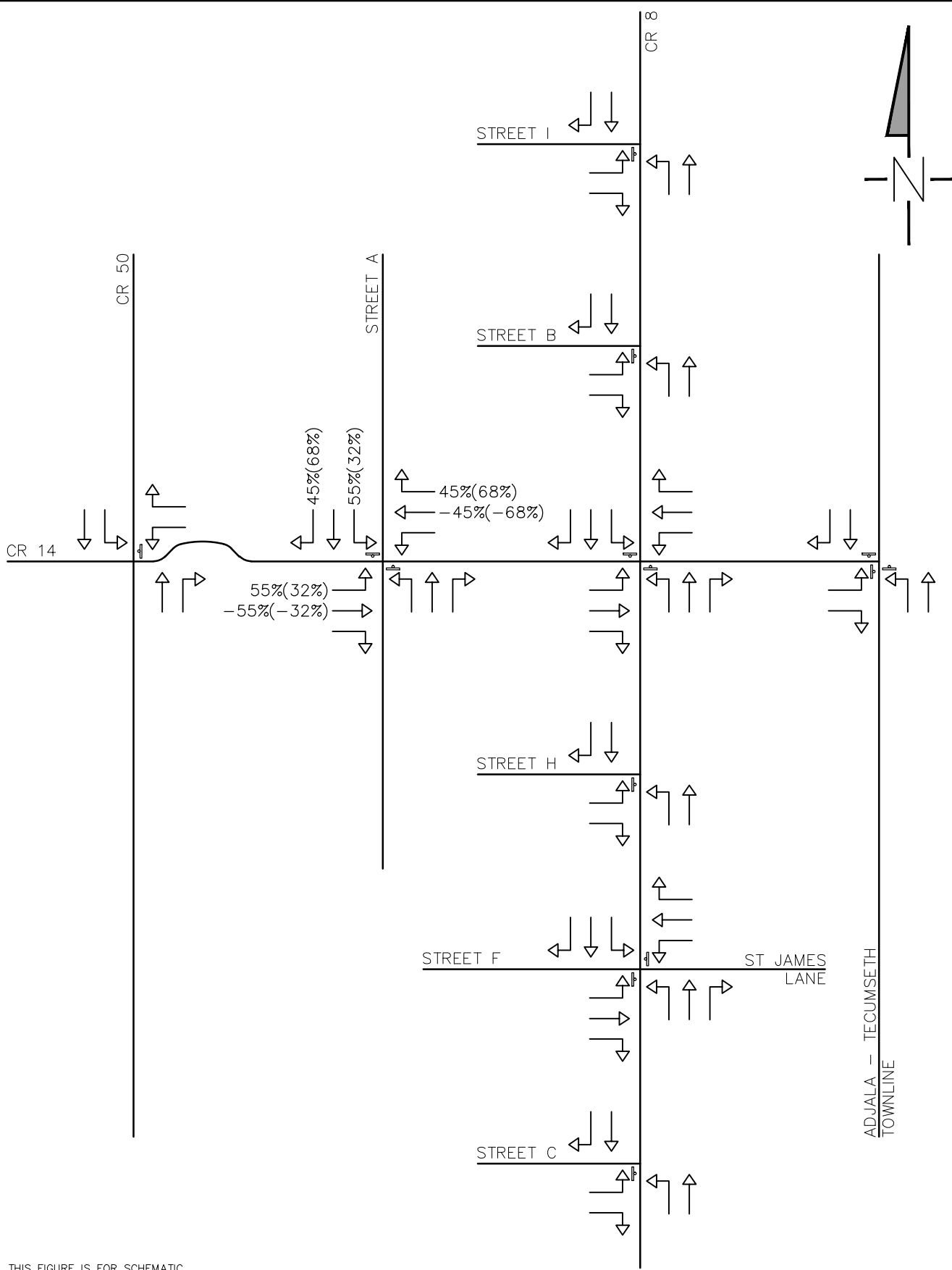
NOTE: 45% OF TRIPS CAPTURED IN NORTH PORTION OF LANDS  
 NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L9Y 4R3 705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA
	<b>Drawing</b> PRIMARY COMMERCIAL TRIP DISTRIBUTION	



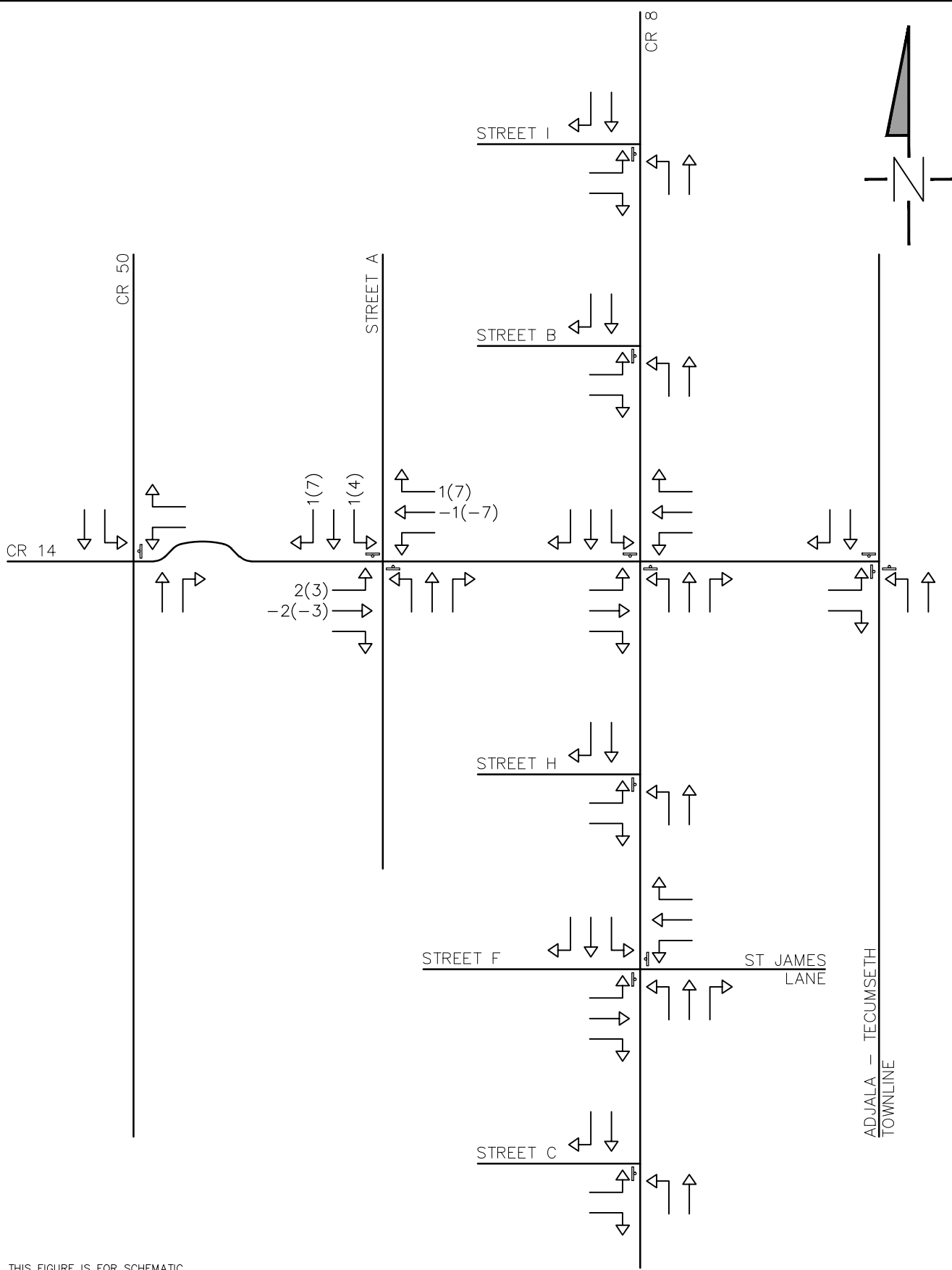
NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> <small>705-446-3510 T          705-446-3520 F          WWW.CFCROZIER.CA          INFO@CFCROZIER.CA</small>
	<b>Drawing</b> PRIMARY COMMERCIAL TRIP ASSIGNMENT	



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

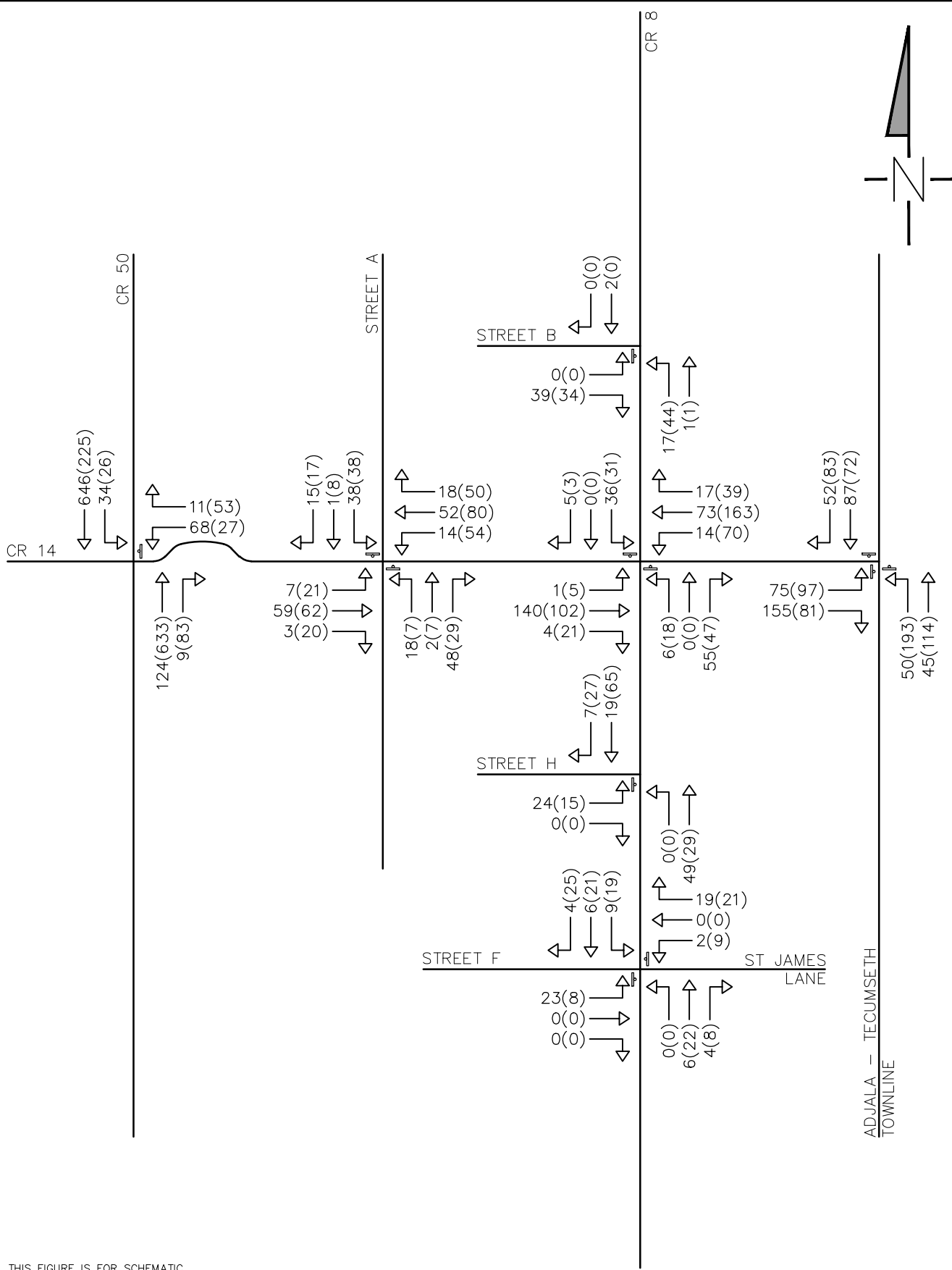
<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> <small>705-446-3510 T          705-446-3520 F          WWW.CFCROZIER.CA          INFO@CFCROZIER.CA</small>
	<b>Drawing</b> PASS-BY COMMERCIAL TRIP DISTRIBUTION	
<b>Scale</b> N.T.S. <b>Date</b> DEC. 6, 2017 <b>Check By</b> M.L. <b>Drawing</b> FIG. 15		<b>Drawn By</b> K.J.L. <b>Design By</b> M.N.F.



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> <small>705-446-3510 T          705-446-3520 F          WWW.CFCROZIER.CA          INFO@CFCROZIER.CA</small>
	<b>Drawing</b> PASS-BY COMMERCIAL TRIP ASSIGNMENT	
	<b>Scale</b> N.T.S. <b>Date</b> DEC. 6, 2017 <b>Check By</b> M.L. <b>Drawing</b> FIG. 16	





NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

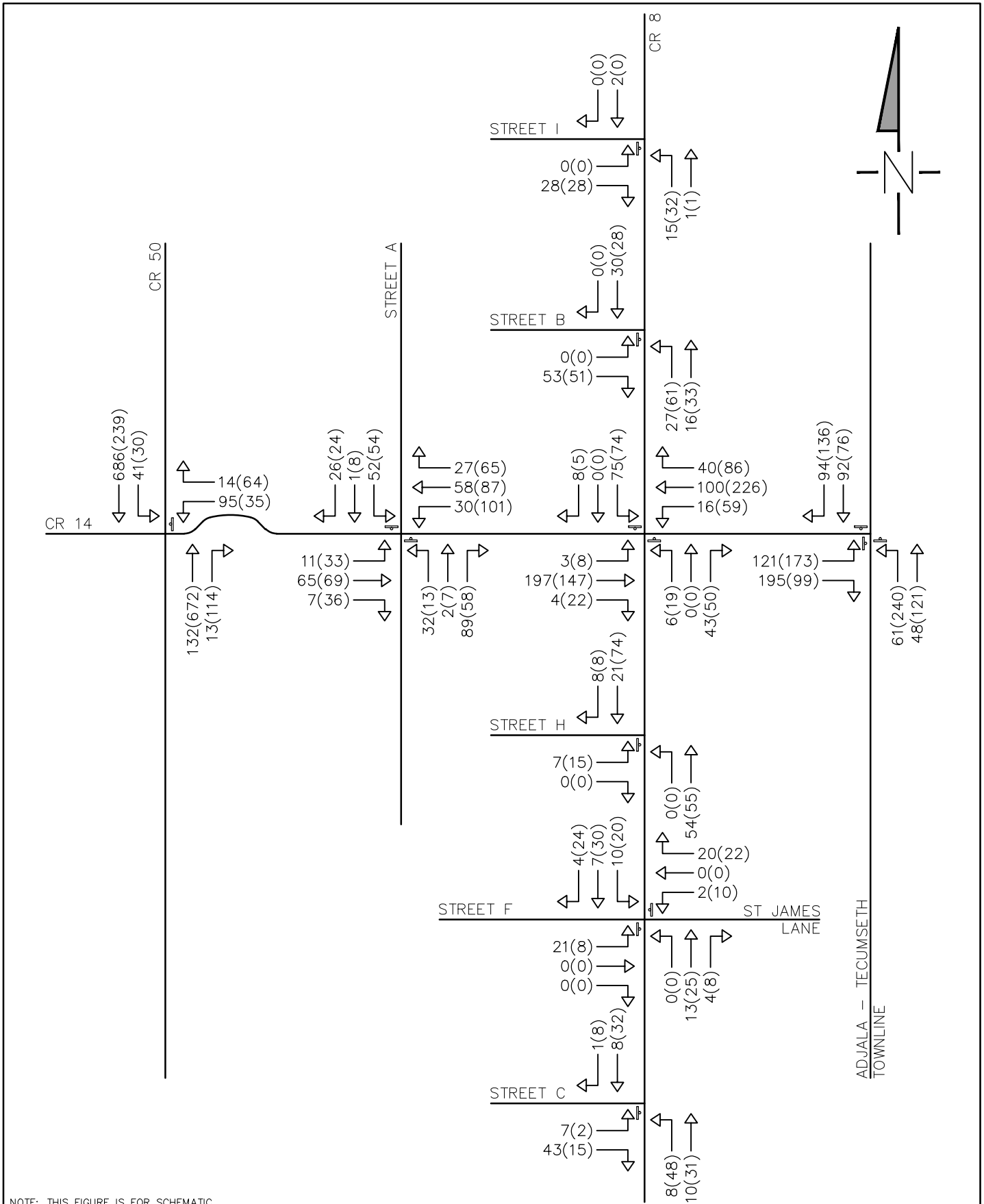
Project	TRIBUTE HOMES COLGAN	
Drawing	2022 FUTURE TOTAL TRAFFIC VOLUMES	

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THE HARBOUREDGE BUILDING,  
40 HURON STREET, SUITE  
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L9Y 4R3

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705-446-3520 F  
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Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 17



	SIGNAL CONTROL
	STOP CONTROL
XX%(YY%)	WEEKDAY AM (WEEKDAY PM)

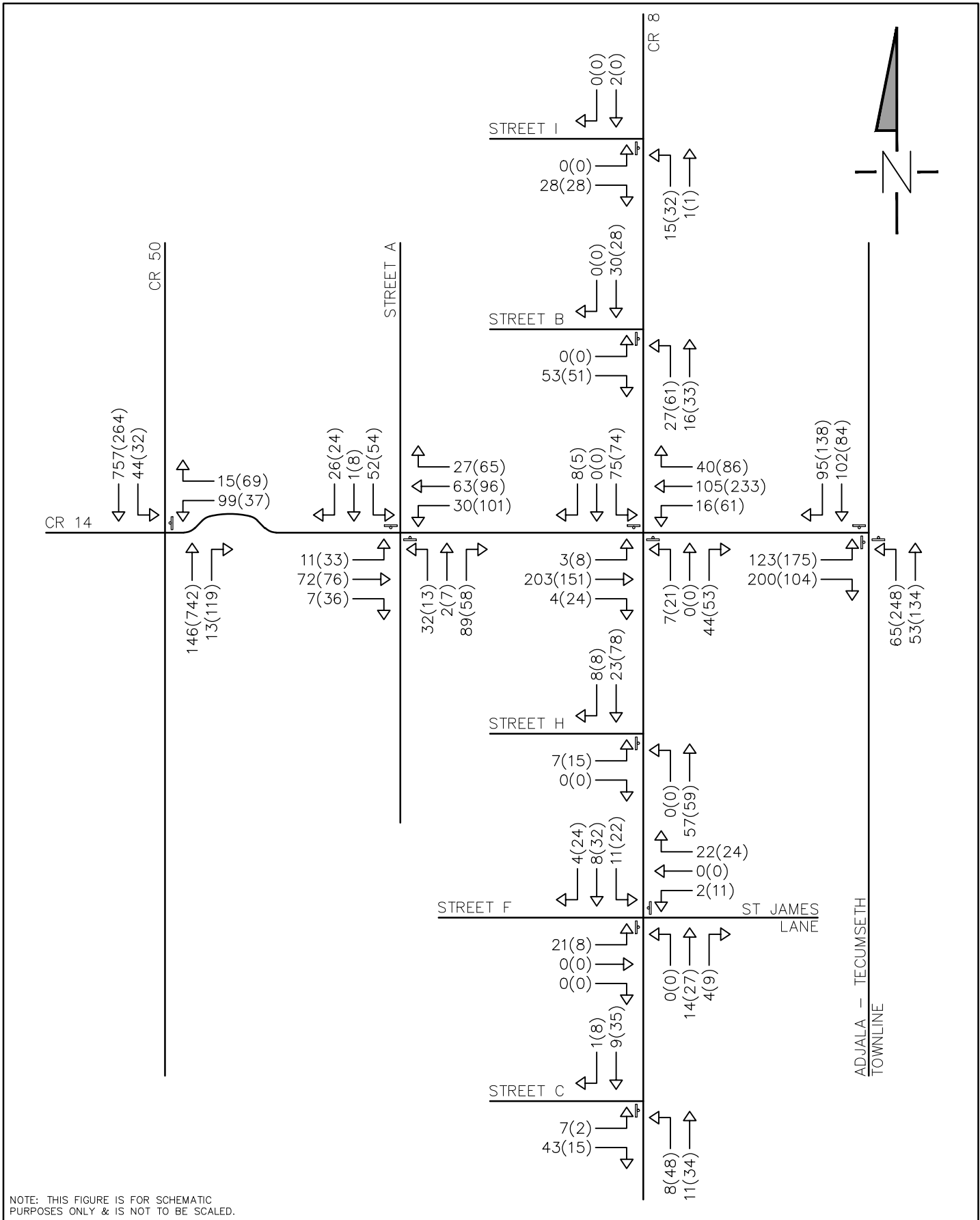
Project	TRIBUTE HOMES COLGAN		
Drawing	2025 FUTURE TOTAL TRAFFIC VOLUMES		

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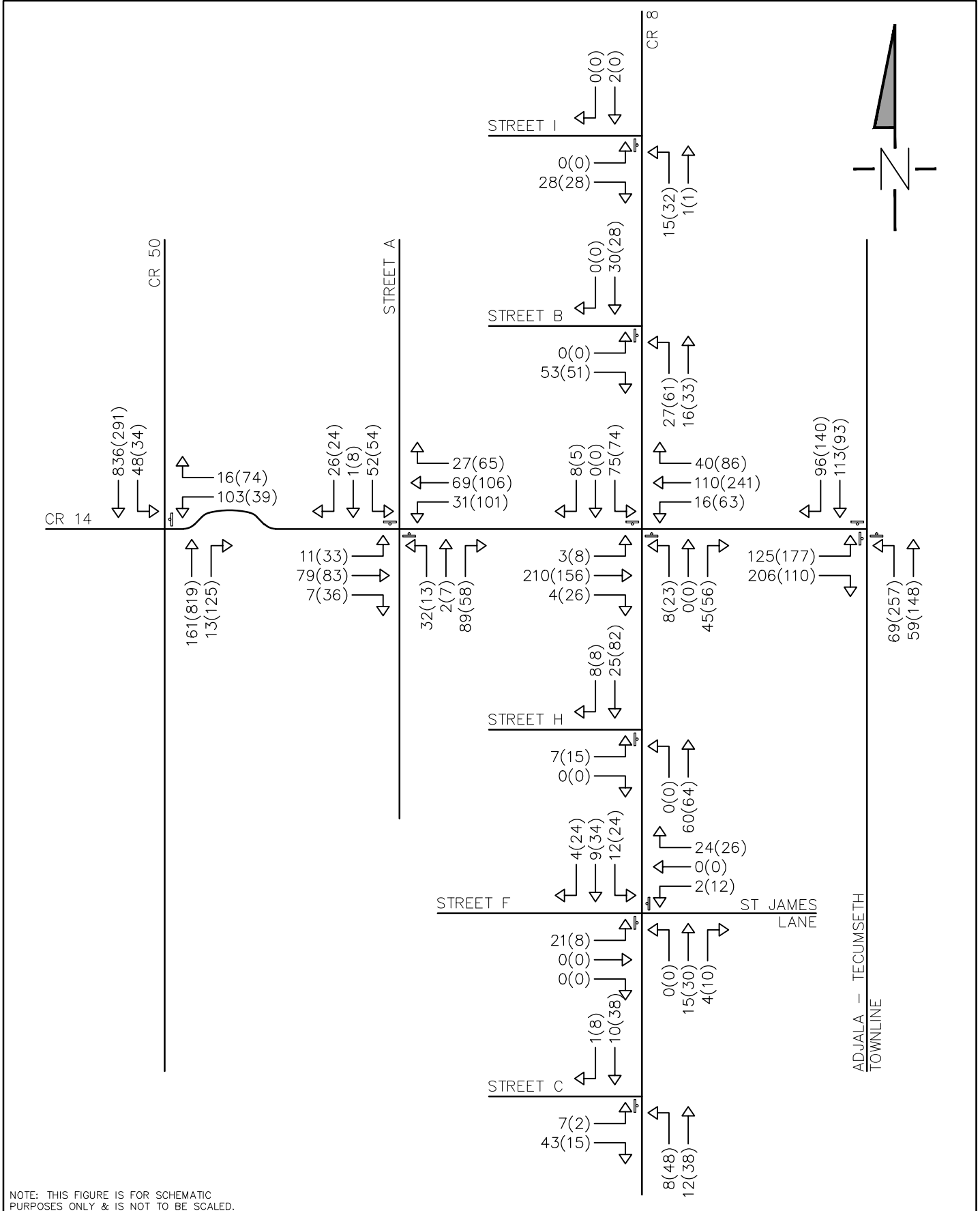
THE HARBOUREDGE BUILDING,  
40 HURON STREET, SUITE  
301, COLLINGWOOD, ON  
L9Y 4R3

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Scale	N.T.S.	Date	DEC. 6, 2017	Check By	M.L.	
					Drawing	FIG. 18



<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> 705-446-3510 T 705-446-3520 F WWW.CFCROZIER.CA INFO@CFCROZIER.CA
	<b>Drawing</b> 2030 FUTURE TOTAL TRAFFIC VOLUMES	



<b>Legend</b> SIGNAL CONTROL STOP CONTROL XX%(YY%) WEEKDAY AM (WEEKDAY PM)	<b>Project</b> TRIBUTE HOMES COLGAN	<b>CROZIER &amp; ASSOCIATES</b> Consulting Engineers <small>THE HARBOUREDGE BUILDING,          40 HURON STREET, SUITE          301, COLLINGWOOD, ON          L9Y 4R3</small> <small>705-446-3510 T          705-446-3520 F          WWW.CFCROZIER.CA          INFO@CFCROZIER.CA</small>
	<b>Drawing</b> 2035 FUTURE TOTAL TRAFFIC VOLUMES	