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# Farsight Homes Residential Subdivision Township of Adjala-Tosorontio

## Traffic Impact Study for Far Sight Investments Limited

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## **Legal Notification**

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## Executive Summary

This report summarizes the traffic impact study prepared for the proposed development located between County Road 13 and Concession Road 6, North of Moore Ave and Columbus Lane, in the community of Everett, Township of Adjala-Tosorontio [Township], County of Simcoe [County]. The report assesses the impact of traffic related to the development on the adjacent roadways and provides recommendations to accommodate this traffic in a safe and efficient manner.

The subject site consists of a 54.4 hectare parcel of land. The proposed development will consist of 666 single detached residential units and a 1.67 hectare commercial block (specifics not known at this time).

A large parcel of land, north of the subject site [Barzo property], is expected to be developed within roughly the same time period as the subject site. For the purpose of this report, it is anticipated that this property will include 1,238 residential lots including 415 townhouse and 823 single detached units.

The subject site will have one full-movement access onto County Road 13 at the west end of the site via Street C and a second full-movement access onto the planned future extension of Concession Road 6 at the east end of the site via Street C. There is one proposed connection into the existing development to the south via a connection to Pine Park Boulevard from Street B. Proposed future connections to the Barzo property are planned via Street E, Street J and Street P.

Based on the proximity and size of the Barzo property, our analysis includes the impact of the traffic generated by the Barzo property on the local road network.

The scope of this analysis includes a review of the existing intersection of County Road 5 / County Road 13, County Road 5 / Concession Road 6 as well the future intersections of Concession Road 6 / Street C and County Road 13 / Street C.

## Conclusions

1. The proposed development is expected to generate a total of 514 AM and 687 PM peak hour trips.
2. Background traffic counts were commissioned by JD Engineering at the intersection of County Road 5 / Concession Road 6 and on County Road 13 at the proposed location of Street C on Thursday April 7, 2016. JD Engineering also obtained traffic counts completed by the County from Thursday July 9, 2015 at the intersection of County Road 5 / County Road 13.
3. The background traffic growth rate for the study area has been based on review of historic AADT data from the study area, provided by the County.
4. An intersection operation analysis was completed at the existing intersections in the study area, using the existing (2016) and background (2031 and 2036) traffic volumes without the proposed development. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. No improvements were warranted for the existing (2016) and background (2031 and 2036) scenarios.
5. It is anticipated that the planned extension of Concession Road 6, up to Street C will occur prior to 2031.

6. An estimate of the amount of traffic that would be generated by the proposed development was calculated and assigned to the study area streets and intersections. It is assumed that the proposed development will be completely built-out and occupied by 2031.
7. An estimate of the amount of traffic that would be generated by the Barzo property was also calculated and assigned to the study area streets and intersections. It is assumed that the Barzo property will be completely built-out and occupied by 2031.
8. An intersection operation analysis was completed for the study area using the total (2031 and 2036) traffic volumes with the traffic generated by the proposed development and Barzo property. The following improvements are recommended:

2031 Horizon Year

- County Road 5 / County Road 13 – add eastbound and westbound stop control to form an all-way stop control intersection<sup>1</sup>.
  - County Road 13 / Street C – add a 60 metre northbound right-turn taper. It is recommended that the right-turn taper is constructed in conjunction with the proposed intersection of County Road 13 / Street C.
  - County Road 13 / Street C – add a southbound left turn lane (15 metre storage length). The warrant for the construction of the southbound left turn lane will depend on the development schedule; however, the southbound left turn lane is not warranted as a result of the traffic generation from the full build-out of the subject site alone.
  - County Road 5 / Concession Road 6 – add a 60 metre westbound right-turn taper. It is recommended that the right-turn taper is constructed prior to occupancy of 35% of the development within the subject site and Barzo property (approximately 583 units).
9. The recommended configuration for the County Road 13 / Street C intersection is full-movement with one-way stop control for westbound egress movements from the subject site.
  10. The existing 90 degree corner where Columbus Lane intersects with Pine Park Boulevard will become a t-intersection as a result of the proposed Street B connection. It is recommended that the proposed t-intersection is unsignalized with one-way stop control for the eastbound (Columbus Lane) approach.
  11. In summary, with the above-noted infrastructure improvements, the proposed development will not add significant delay or congestion to the local roadway network.

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<sup>1</sup> The exact timing for the conversion of the intersection to all-way stop will depend on the development schedule for the proposed development and the Barzo property. It is recommended that that County monitor the northbound and southbound control delay during the PM peak hour to identify when the improvement is warranted.

# Table of Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Background.....	1
1.2	Study Area .....	1
1.3	Study Scope and Objectives .....	2
1.4	Horizon Year and Analysis Periods .....	3
<b>2</b>	<b>Information Gathering.....</b>	<b>3</b>
2.1	Street and Intersection Characteristics .....	3
2.2	Transit Access .....	4
2.3	Other Developments within the Study Area .....	4
2.4	Local Transportation Infrastructure Improvements.....	5
2.5	Traffic Counts .....	5
2.6	Horizon Year Traffic Volumes.....	6
2.7	Intersection Capacity Analysis Criteria.....	8
<b>3</b>	<b>Intersection Operation Without Proposed Development .....</b>	<b>9</b>
3.1	Introduction .....	9
3.2	Intersection Operation for Existing (2016) Traffic Volume .....	9
3.3	Intersection Operation for Background (2031) Traffic Volume.....	10
3.4	Intersection Operation for Background (2036) Traffic Volume.....	11
<b>4</b>	<b>Proposed Development Traffic Generation and Assignment.....</b>	<b>12</b>
4.1	Proposed Development Traffic Generation .....	12
4.2	Barzo Development Traffic Generation .....	13
4.3	Traffic Assignment.....	14
4.4	Total Horizon Year Traffic Volumes with the Proposed Development .....	16
<b>5</b>	<b>Intersection Operation With Proposed Development.....</b>	<b>18</b>
5.1	Intersection Operation for Total (2031) Traffic Volume .....	18
5.2	Intersection Operation for Total (2036) Traffic Volume .....	21
5.2.1	Sight Distance Analysis .....	19
5.2.2	Site Access .....	23
<b>6</b>	<b>Summary .....</b>	<b>23</b>

## List of Tables

Table 1 – Traffic Count Data .....	5
Table 2 – Level of Service Criteria for Intersections.....	9
Table 3 – Intersection Operation for Existing (2016) Traffic Volumes.....	10
Table 4 – Intersection Operation for Background (2031) Traffic Volumes.....	11
Table 5 – Intersection Operation for Background (2036) Traffic Volumes.....	12
Table 6 – Estimated Traffic Generation of Proposed Development.....	13
Table 7 – Estimated Traffic Generation of Proposed Development.....	13
Table 8 – Site Traffic Distribution .....	14
Table 9 – Intersection Operation for Total (2031) Traffic Volumes .....	19
Table 10 – Intersection Operation for Total (2031) Traffic Volumes (with improvements).....	21
Table 11 – Intersection Operation for Total (2036) Traffic Volumes .....	22

## List of Figures

Figure 1 – Proposed Site Location and Study Area .....	2
Figure 2 – Existing Lane Configuration within the Study Area .....	4
Figure 3 – Existing (2016) Peak Hour Traffic Volumes .....	6
Figure 4 – Background (2031) Peak Hour Traffic Volumes .....	7
Figure 5 – Background (2036) Peak Hour Traffic Volumes .....	8
Figure 6 – Traffic Assignment for Subject Site .....	15
Figure 7 – Traffic Assignment for Barzo Property .....	16
Figure 8 – Total (2031) Peak Hour Traffic Volumes.....	17
Figure 9 – Total (2036) Peak Hour Traffic Volumes.....	18

## List of Appendices

APPENDIX A – Plan of Subdivision (Farsight Homes) & Preliminary Draft Plan (Barzo Lands)
APPENDIX B – Traffic Counts
APPENDIX C – Synchro Analysis Output – Existing Conditions
APPENDIX D – Synchro Analysis Output – Background Traffic Volumes
APPENDIX E – Synchro Analysis Output – Total Traffic Volumes
APPENDIX F – Traffic Impact Study Excerpts
APPENDIX G – Traffic Signal Warrant Sheets
APPENDIX H – MTO Left Turn Warrant Nomographs

# 1 Introduction

## 1.1 Background

**Far Sight Investments Limited** [the Developer] is proposing to develop a 54.4 hectare site located between County Road 13 and Concession Road 6, north of Moore Avenue and Columbus Lane, in the community of Everett, Township of Adjala-Tosorontio [Township], County of Simcoe [County]. The proposed development will consist of 666 single detached residential units and a 1.67 ha commercial block (specifics not known at this time).

Future residential development is anticipated for the Barzo property, which is located directly north of the subject site. It is expected that the Barzo property will be developed within roughly the same time period as the subject site. The latest Preliminary Site Plan by Pearson Engineering Ltd. (provided in **Appendix A**) indicates a unit count of 415 townhouse and 823 single detached lots for a total of 1,238 lots.

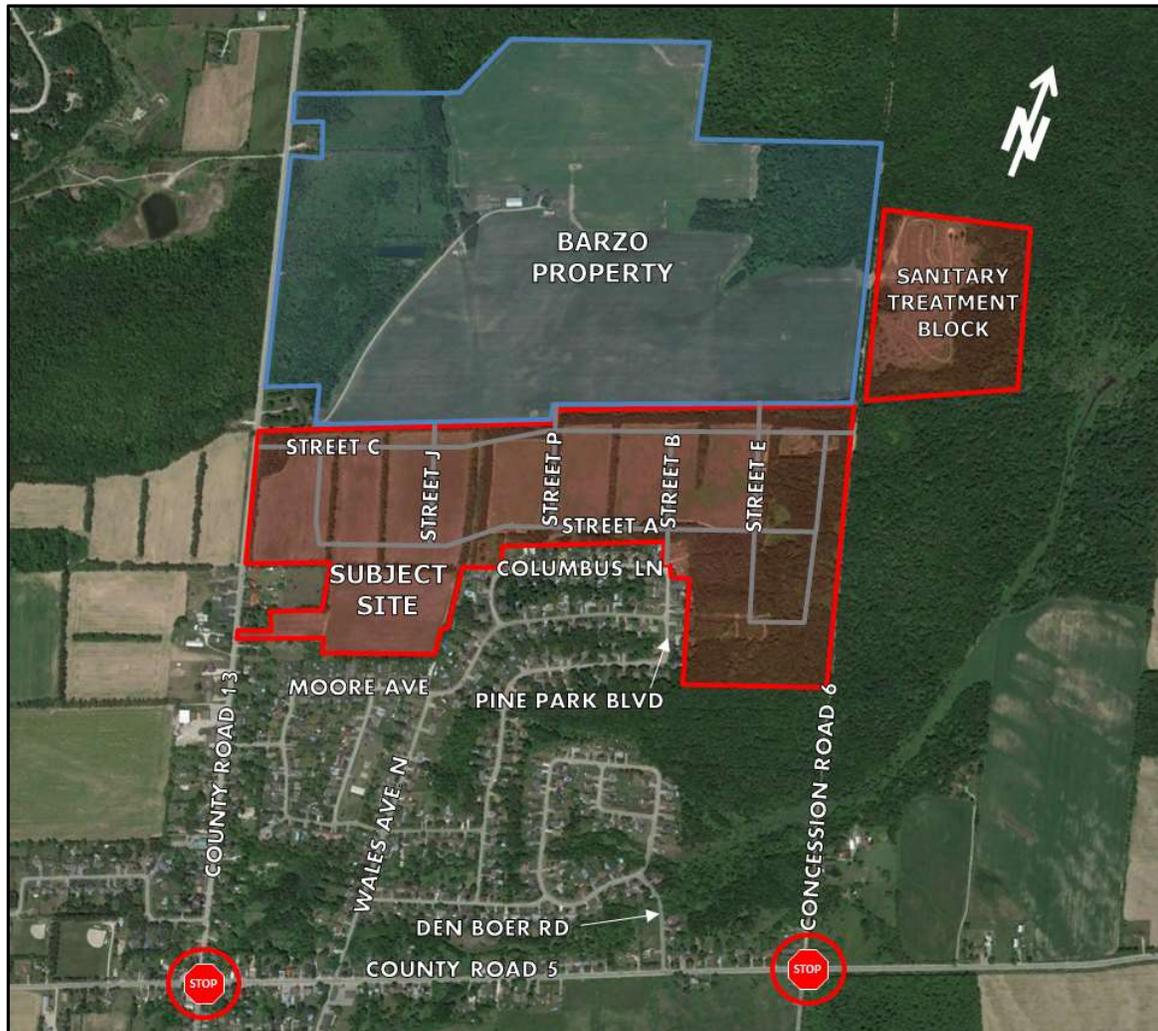
The subject site will have one full-movement access onto County Road 13 at the west end of the site via Street C and a second full-movement access onto Concession Road 6 (future) at the east end of the site via Street C. There is a proposed connection into the existing development to the south via a connection to Pine Park Boulevard from Street B. Proposed future connections to the Barzo property are planned via Street E, Street J and Street P.

The Developer has retained **JD Northcote Engineering Inc.** to prepare this traffic impact study in support of the Plan of Subdivision applications.

## 1.2 Study Area

**Figure 1** illustrates the location of the subject site and the surrounding area. The proposed development plan of subdivision is shown in **Appendix A**.

Figure 1 – Proposed Site Location and Study Area



Based on consultation with the Township and County, the following intersections have been included in this Study:

- County Road 5 (Main Street Everett) / Concession Road 6;
- County Road 5 (Main Street Everett) / County Road 13; and
- County Road 13 / Street C.

### 1.3 Study Scope and Objectives

The purpose of this study is to identify the potential impacts to traffic flow at the site access points and on the surrounding roadway network. The study analysis includes the following tasks:

- Consult with the Township and County to address any traffic-related issues or concerns they have with the proposed development;
- Determine existing traffic volumes and circulation patterns;

- Estimate future traffic volumes if the proposed development was not constructed, including the impact of additional proposed developments in the area;
- Complete intersection operation analysis of horizon year (without the proposed development) traffic conditions and identify operational deficiencies;
- Estimate the amount of traffic that would be generated by the proposed development and assign to the roadway network;
- Complete intersection operation analysis of horizon year (with the proposed development) traffic conditions and identify additional operational deficiencies;
- Review site access characteristics and identify deficiencies;
- Identify improvement options to address operational deficiencies; and
- Document findings and recommendations in a final report.

## 1.4 Horizon Year and Analysis Periods

It has been assumed that, should all approvals be granted, the proposed development will be achieved full build out by 2031. The existing (2016) and 10-year (2026) horizon have been included in this study. An additional horizon analysis of the build-out year plus 5 years (2036) has also been included. The weekday morning [AM] and afternoon [PM] peak hour have been selected as the analysis periods for this study.

# 2 Information Gathering

## 2.1 Street and Intersection Characteristics

**County Road 5 (Main Street Everett)** is currently a two-lane secondary arterial road. County Road 5 has an urban cross-section with a sidewalk on both sides of the road within the community of Everett. Within the community of Everett, County Road 5 has a posted speed limit of 50 km/h and there is a community safety zone (fines increased). There are no posted on-street parking restrictions along County Road 5 near County Road 13.

At Concession Road 6, County Road 5 has a rural road cross-section and a posted speed limit of 80km/h. The community safety zone ends immediately west of Concession Road 6.

County Road 5 is under the jurisdiction of the County.

**County Road 13** is currently a two-lane secondary arterial road. County Road 13 has an urban cross-section north of County Road 5, with a sidewalk on the west side of the road and a posted speed limit of 50km/h. South of County Road 5, County Road 13 has a rural cross-section, with a sidewalk on the east side of the road and a posted speed limit of 50km/h.

There is a community safety zone (fines increased) on County Road 13, within the limits of the existing community of Everett.

North of the community of Everett (across the frontage of the subject site), County Road 13 is a two-lane road with a rural cross-section and a posted speed limit of 80km/h.

County Road 13 is under the jurisdiction of the County.

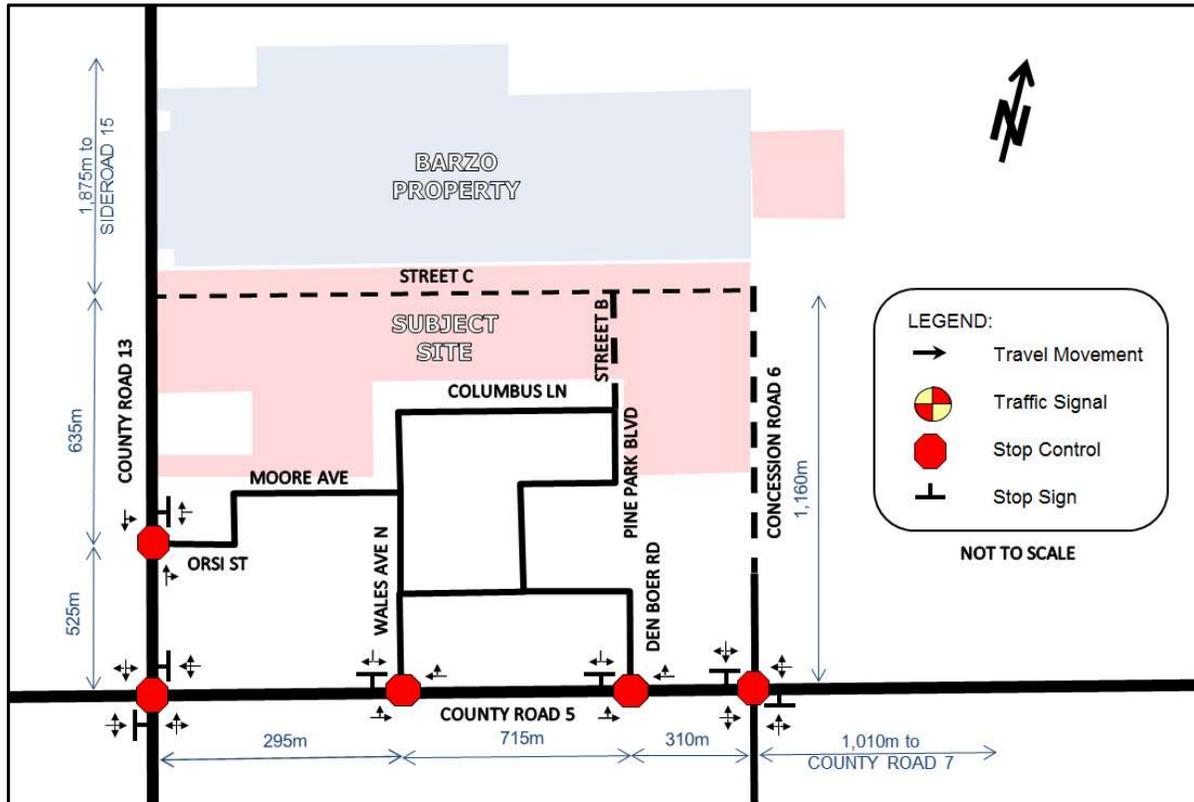
**Concession Road 6** south of County Road 5 is a two-lane local road with a posted speed limit of 60km/h. Concession Road 6 has a rural cross-section.

North of County Road 5, Concession Road 6 is a two-lane local road with a gravel surface and an unsigned (assumed) speed limit of 50km/h.

Concession Road 6 is under the jurisdiction of the Township.

The existing lane configuration for key study area intersections can be seen in **Figure 2**.

**Figure 2 – Existing Lane Configuration within the Study Area**



## 2.2 Transit Access

There is currently no municipal transit service within the study area.

## 2.3 Other Developments within the Study Area

The Barzo property is a 96.6 hectare parcel of land, located north of the subject site. As per the latest Draft Plan of Subdivision by KRCMAR Surveyors Limited. (provided in **Appendix A**), the proposed development is expected to include 1,238 residential lots including 415 townhouse and 823 single detached units. Access to the site will be provide via the proposed Street E, Street J and Street P connections to the Farsight property. There will be no direct connection from the Barzo property onto County Road 13.

Other minor developments are proposed in the area; however, nothing that will have a notable impact on the study area traffic volumes. It is assumed that the background traffic growth rate noted in Section 2.5 will account for increases in the background traffic volumes as a result of these smaller

infill developments. No specific traffic volume adjustments have been made within the study area for the other minor developments in the study area.

The traffic generation and distribution for the Barzo property is calculated in Section 4.2 and 4.3 respectively.

## 2.4 Local Transportation Infrastructure Improvements

Based on our discussions with the Township and County no lane- or road-capacity improvements are currently planned within the study area.

## 2.5 Traffic Counts

Detailed turning movement traffic and pedestrian counts were commissioned by JD Engineering at the existing intersection of County Road 5 / Concession Road 6. Automatic traffic recorder [ATR] counts were also commissioned by JD Engineering on County Road 13 near the proposed intersection with Street C. Traffic counts collected by the County at the intersection of County Road 5 / County Road 13 were also obtained by JD Engineering for use in this report.

The traffic count data has been included in **Appendix B. Table 1** illustrates the count date and peak hour of traffic generation.

**Table 1 – Traffic Count Data**

Intersection (N-S Street / E-W Street)	Count Date	AM Peak Hour	PM Peak Hour	Source
County Road 13 / County Road 5	Thursday April 7, 2015	07:30 – 08:30	16:15 – 17:15	County
County Road 5 / Concession Road 6	Thursday April 7, 2016	07:30 – 08:30	16:45 – 17:45	JD Eng.*
County Road 13	Thursday April 7, 2016	08:00 – 09:00	17:00 – 18:00	JD Eng.*

\* Traffic counts were completed by Ontario Traffic Inc. on behalf of JD Engineering

The anticipated peak hour of traffic generated by the subject site generally aligns with the peak hour of traffic on the adjacent roads.

The peak hour factor has been calculated for the study area intersections, based on the 15-minute traffic count data included in the detailed turning movement counts. These values have been incorporated in the Synchro analysis.

Heavy vehicle percentages and pedestrian crossings from the traffic count data have also been included in the Synchro analysis.

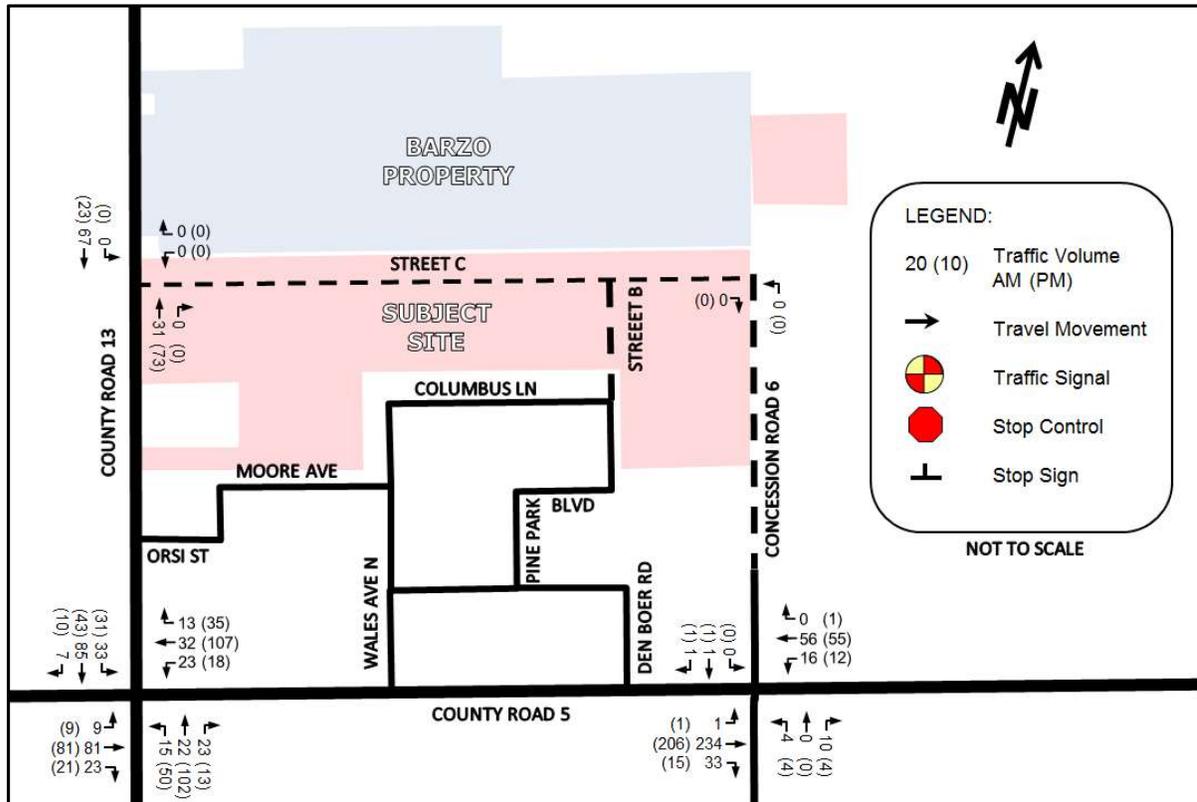
In order to convert the 2015 traffic count data from the County to an equivalent 2016 traffic volume, a background traffic growth rate of 1.0% / year was applied. Additional information on the calculation of the background traffic growth rate is provided in Section 2.6.

**Figure 3** illustrates the existing (2016) AM and PM peak hour traffic volumes in the study area.





Figure 5 – Background (2036) Peak Hour Traffic Volumes



## 2.7 Intersection Capacity Analysis Criteria

The following criteria have been used in this study to assess the impact of the traffic volumes for the various scenarios.

Turning movements with a volume-to-capacity [V/C] ratio of 0.85 or greater are considered to be critical movements and therefore have been highlighted in the LOS tables below.

The intersection operations were also evaluated in terms of the LOS. LOS is a common measure of the quality of performance at an intersection and is defined in terms of vehicular delay. This delay includes deceleration delay, queue move-up time, stopped delay, and acceleration delay. LOS is expressed on a scale of A through F, where LOS A represents very little delay (i.e. less than 10 seconds per vehicle) and LOS F represents very high delay (i.e. greater than 50 seconds per vehicle for a stop sign controlled intersection and greater than 80 seconds per vehicle for a signalized intersection).

The LOS criteria for signalized and stop sign controlled intersections are shown in **Table 2**. A description of traffic performance characteristics is included for each LOS.

The 95<sup>th</sup> percentile queuing length at the study area intersections were reviewed for each scenario to ensure that the vehicle queuing at adjacent intersections did not create operational issues.

**Table 2 – Level of Service Criteria for Intersections**

LOS	LOS Description	Control Delay (seconds per vehicle)	
		Signalized Intersections	Stop Controlled Intersections
A	Very low delay; most vehicles do not stop ( <b>Excellent</b> )	less than 10.0	less than 10.0
B	Higher delay; more vehicles stop ( <b>Very Good</b> )	between 10.0 and 20.0	between 10.0 and 15.0
C	Higher level of congestion; number of vehicles stopping is significant, although many still pass through intersection without stopping ( <b>Good</b> )	between 20.0 and 35.0	between 15.0 and 25.0
D	Congestion becomes noticeable; vehicles must sometimes wait through more than one red light; many vehicles stop ( <b>Satisfactory</b> )	between 35.0 and 55.0	between 25.0 and 35.0
E	Vehicles must often wait through more than one red light; considered by many agencies to be the limit of <b>acceptable</b> delay	between 55.0 and 80.0	between 35.0 and 50.0
F	This level is considered to be unacceptable to most drivers; occurs when arrival flow rates exceed the capacity of the intersection ( <b>Unacceptable</b> )	greater than 80.0	greater than 50.0

## 3 Intersection Operation Without Proposed Development

### 3.1 Introduction

Existing year operational conditions were established to determine how the street network within the study area is currently functioning and would function in the future without the proposed development. This provides a base case scenario to compare with future development scenarios. Traffic operations within the study area were evaluated using the existing (2015) traffic volumes with the existing road configuration and traffic control. The intersection performance was measured using the traffic analysis software, Synchro 9, a deterministic model that employs Highway Capacity Manual and Intersection Capacity Utilization methodologies for analyzing intersection operations. These procedures are accepted by provincial and municipal agencies throughout North America.

Synchro 9 enables the study area to be graphically defined in terms of streets and intersections, along with their geometric and traffic control characteristics. The user is able to evaluate both signalized and unsignalized intersections in relation to each other, thus not only providing level-of-service [LOS] for the individual intersections, but also enabling an assessment of the impact the various intersections in a network have on each other in terms of spacing, traffic congestion, delay, and queuing.

### 3.2 Intersection Operation for Existing (2016) Traffic Volume

The results of the LOS analysis under existing (2016) traffic volumes during the AM and PM peak hour can be found below in **Table 3**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix C**.

**Table 3 – Intersection Operation for Existing (2016) Traffic Volumes**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	Overall	A	6.1	-	A	6.3	-
	NB	A	10.0	0.07	B	12.6	0.26
	SB	B	11.0	0.16	B	11.8	0.13
County Road 5 / Concession Road 6 (unsignalized)	Overall	A	0.8	-	A	0.6	-
	NB	A	9.8	0.02	A	9.8	0.01
	SB	A	9.8	0.00	B	10.1	0.00

The results of the intersection operation analysis indicate that all individual turning movements in the study area are operating at a very good level of service or better during the AM and PM peak hour.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the existing unsignalized intersection of County Road 5 / County Road 13 or County Road 5 / Concession Road 6 (results are provided in **Appendix G**).

An analysis was completed for left turn movement on County Road 5 at County Road 13 and on County Road 5 at Concessions 6. Based on the criteria outlined in Section E.9.1 of the of the Ontario Ministry of Transportation Geometric Design Standards for Ontario Highways [MTO GDSOH], left turn lanes are not warranted on County Road 5<sup>2</sup> (nomograph excerpts from the MTO GDSOH are provided in **Appendix H**).

For right turn movements, the criteria outlined in Section E.7 of the Ontario Ministry of Transportation MTO GDSOH were applied. Based on the above-noted criteria, no additional right turn lanes are warranted at any of the study area intersections.

No improvements are recommended for the existing (2016) scenario.

### 3.3 Intersection Operation for Background (2031) Traffic Volume

The results of the intersection operation analysis under background (2031) traffic volumes without the proposed development during the AM and PM peak hour can be found below in **Table 4**. Detailed output of the Synchro analysis can be found in **Appendix D**.

<sup>2</sup> For this analysis, a design speed of 60km/h was assumed for County Road 5 at County Road 13 and a design speed of 100km/h was assumed for County Road 5 at Concession Road 6.

**Table 4 – Intersection Operation for Background (2031) Traffic Volumes**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	Overall	A	6.3	-	A	6.9	-
	NB	A	10.3	0.08	B	13.9	0.32
	SB	B	11.5	0.19	B	12.7	0.17
County Road 5 / Concession Road 6 (unsignalized)	Overall	A	0.8	-	A	0.6	-
	NB	A	10.0	0.02	B	10.1	0.01
	SB	A	10.0	0.00	B	10.3	0.00

The results of the intersection operation analysis indicate that all individual turning movements in the study area are operating at a very good level of service or better during the AM and PM peak hour.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the existing unsignalized intersection of County Road 5 / County Road 13 or County Road 5 / Concession Road 6 (results are provided in **Appendix G**).

An analysis was completed for left turn movement on County Road 5 at County Road 13 and on County Road 5 at Concessions 6. Based on the criteria outlined in Section E.9.1 of the MTO GDSOH, left turn lanes are not warranted on County Road 5 (nomograph excerpts from the MTO GDSOH are provided in **Appendix H**).

For right turn movements, the criteria outlined in Section E.7 of the Ontario Ministry of Transportation MTO GDSOH were applied. Based on the above-noted criteria, no additional right turn lanes are warranted at any of the study area intersections.

No improvements are recommended for the background (2031) scenario.

### 3.4 Intersection Operation for Background (2036) Traffic Volume

The results of the intersection operation analysis under background (2036) traffic volumes without the proposed development during the AM and PM peak hour can be found below in **Table 5**. Detailed output of the Synchro analysis can be found in **Appendix D**.

**Table 5 – Intersection Operation for Background (2036) Traffic Volumes**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	Overall	A	6.4	-	A	7.1	-
	NB	A	10.4	0.09	B	14.4	0.34
	SB	B	11.7	0.20	B	13.0	0.18
County Road 5 / Concession Road 6 (unsignalized)	Overall	A	0.8	-	A	0.6	-
	NB	B	10.2	0.02	B	10.2	0.01
	SB	B	10.1	0.00	B	10.4	0.00

The results of the intersection operation analysis indicate that all individual turning movements in the study area are operating at a very good level of service or better during the AM and PM peak hour.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the existing unsignalized intersection of County Road 5 / County Road 13 or County Road 5 / Concession Road 6 (results are provided in **Appendix G**).

An analysis was completed for left turn movement on County Road 5 at County Road 13 and on County Road 5 at Concessions 6. Based on the criteria outlined in Section E.9.1 of the MTO GDSOH, left turn lanes are not warranted on County Road 5 (nomograph excerpts from the MTO GDSOH are provided in **Appendix H**).

For right turn movements, the criteria outlined in Section E.7 of the Ontario Ministry of Transportation MTO GDSOH were applied. Based on the above-noted criteria, no additional right turn lanes are warranted at any of the study area intersections.

No improvements are recommended for the background (2036) scenario.

## 4 Proposed Development Traffic Generation and Assignment

### 4.1 Proposed Development Traffic Generation

The proposed development will include 666 single-detached residential units and a 1.67 hectare commercial block. The specifics for the commercial block are not known at this time; however, based on our discussions with the Developer, the GFA for the proposed commercial space will be approximately 3,753 sq.m. (40,400 sq.ft.). It is anticipated that the entire development will be occupied by 2031.

The Institute of Transportation Engineers [ITE] produces a document entitled *Trip Generation* (9<sup>th</sup> Edition), which is used to predict the number of trips associated with new developments. The ITE is a well-recognized agency throughout North America, and has completed numerous studies to identify trip rates associated with various types of developments including retail, residential, recreational, institutional, industrial, and office.

The traffic generation for the subject site has been based on the ITE *Trip Generation* data. The following ITE land uses have been applied to estimate the traffic from the proposed development:

- ITE land use 210 (Single-Family Detached Housing); and
- ITE land use 820 (Shopping Centre).

The estimated trip generation of the proposed development is illustrated below in **Table 6**. The peak hour traffic rates have been applied for the residential and commercial traffic generation calculation.

**Table 6 – Estimated Traffic Generation of Proposed Development**

Land Use	Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached Housing ITE Land Use: 210	666 units	125	354	479	363	204	567
Shopping Centre ITE Land Use: 820	3,757 sq.m. 40,400 sq.ft.	24	15	39	72	78	150
<b>TOTAL Trip Generation</b>		<b>149</b>	<b>369</b>	<b>518</b>	<b>435</b>	<b>282</b>	<b>717</b>
Internal Trips (Residential & Commercial)		-2	-2	-4	-15	-15	-30
<b>TOTAL External Trips</b>		<b>147</b>	<b>367</b>	<b>514</b>	<b>420</b>	<b>267</b>	<b>687</b>
Commercial Pass-by Trips (34%)		-8	-5	-13	-22	-23	-45
<b>TOTAL Primary Trips</b>		<b>139</b>	<b>362</b>	<b>501</b>	<b>398</b>	<b>244</b>	<b>642</b>

In order to be conservative, no transportation modal split has been applied to the above-noted traffic generation calculation.

## 4.2 Barzo Development Traffic Generation

The traffic generation from the Barzo property will have a notable impact on the traffic volumes in the local area; consequently we have included this traffic in our future horizon year analysis. As noted, the Barzo development is expected to include 1,238 residential lots including 415 townhouse and 823 single detached units. We have assumed that the entire development will be occupied by 2031.

The traffic generation for the Barzo property has been based on the ITE *Trip Generation* data. The following ITE land uses have been applied to estimate the traffic from the proposed development:

- ITE land use 210 (Single-Family Detached Housing); and
- ITE land use 220 (Multifamily Housing (Low-Rise)).

The estimated trip generation from the Barzo property is illustrated below in **Table 7**. The peak hour traffic rates have been applied for the traffic generation calculation.

**Table 7 – Estimated Traffic Generation of Proposed Development**

Land Use	Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached Housing ITE Land Use: 210	823 units	153	436	589	438	246	684
Multifamily Housing (Low-Rise) ITE Land Use: 220	415 units	42	142	184	132	78	210
<b>Total Trip Generation</b>		<b>195</b>	<b>578</b>	<b>773</b>	<b>570</b>	<b>324</b>	<b>894</b>

In order to be conservative, no transportation modal split has been applied to the above-noted traffic generation calculation.

### 4.3 Traffic Assignment

For the purpose of this study, it has been assumed that all traffic generated by the proposed development will be new traffic and would not be in the study area if the development was not constructed. The ITE data provides the anticipated percentage of new traffic entering and exiting during the peak hour. The distribution of traffic beyond the local area has been based on the distribution calculations completed for previous studies completed in the area<sup>3</sup> (excerpts provided in **Appendix F**). **Table 8** summarizes the anticipated distribution of egress traffic from the subject site.

**Table 8 – Site Traffic Distribution**

Direction	Road	From		To	
		AM Peak	PM Peak	AM Peak	PM Peak
East	County Road 5	20%	40%	40%	25%
West	County Road 5	35%	15%	15%	30%
North	County Road 13	20%	15%	15%	20%
South	County Road 13	20%	25%	20%	20%
	Concession Road 6	5%	5%	10%	5%
<b>TOTAL</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

For each of the individual areas identified in Table 6, we have selected the probable route of travel, assuming that people will select their route primarily based on travel time. Based on the proposed road configuration within the subject site, it is anticipated that there would be some trips to the south, east and west that would travel via Pine Park Boulevard; however, these trips would be low compared with the overall traffic generation for the subject site. In order to be conservative, for the purpose of the distribution of the site generated traffic, we have assumed all traffic will travel via the County Road 13 / Street C and County Road 5 / Concession Road 6 intersections.

Using this traffic distribution pattern, the subject site traffic assignment for the AM and PM peak hours were calculated and have been illustrated in **Figure 6**.

The Barzo property traffic assignment for the AM and PM peak hours were also calculated using this methodology and has been illustrated in **Figure 7**.

<sup>3</sup> R & M Homes Residential Development by Mark Engineering (2007) and Barzo Property Traffic Impact Study by C.C. Tatham & Associates Ltd. (2007).

Figure 6 – Traffic Assignment for Subject Site

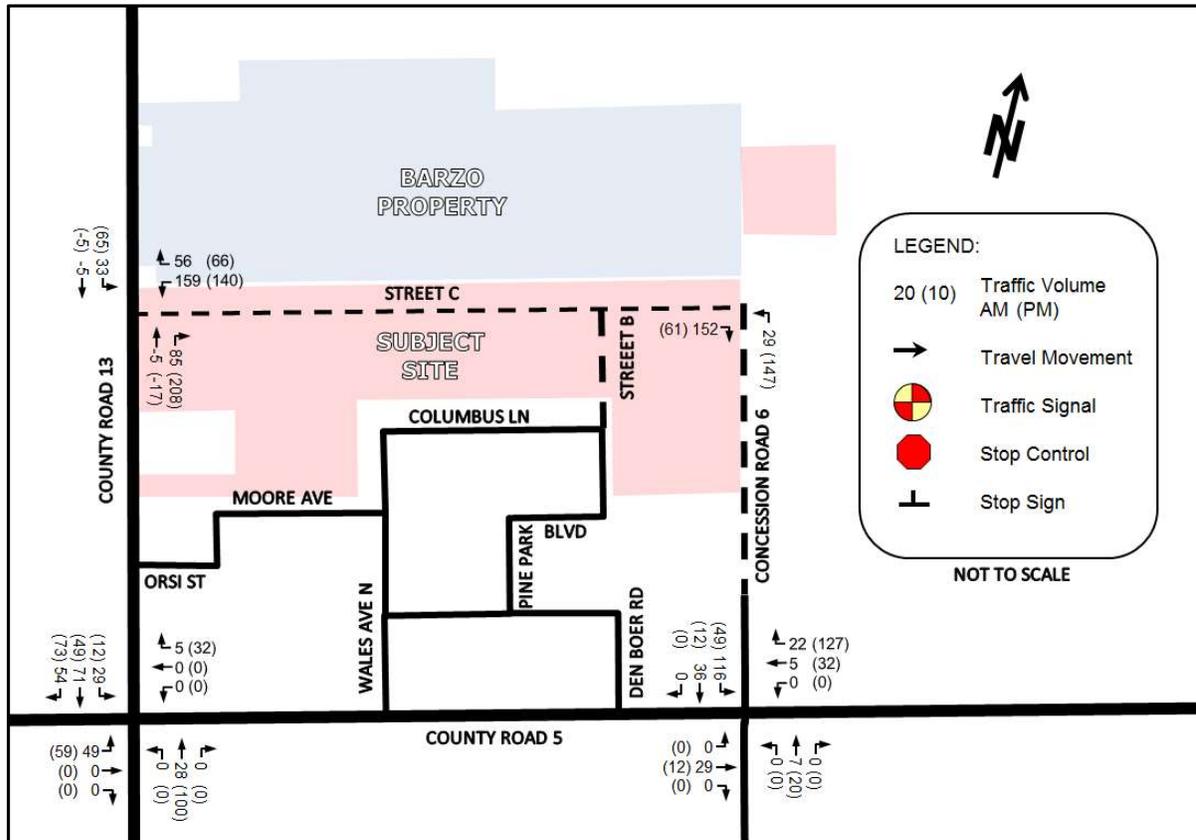
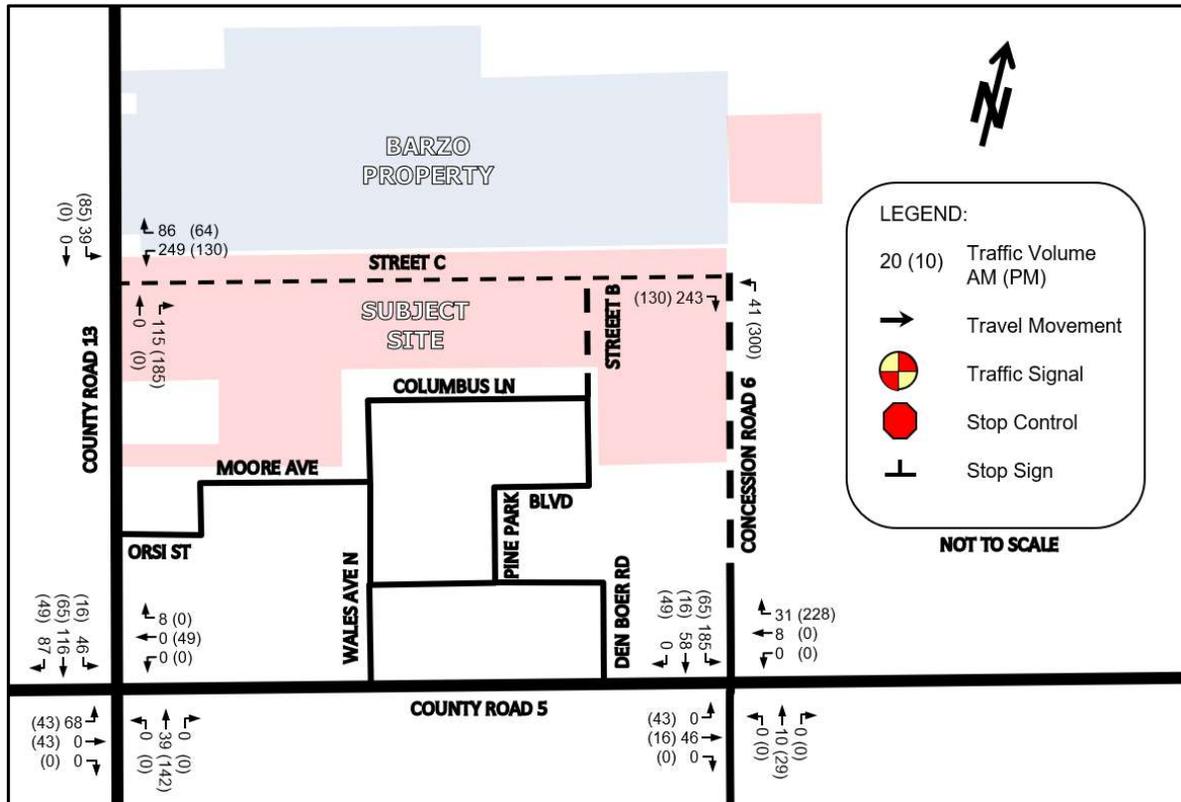


Figure 7 – Traffic Assignment for Barzo Property

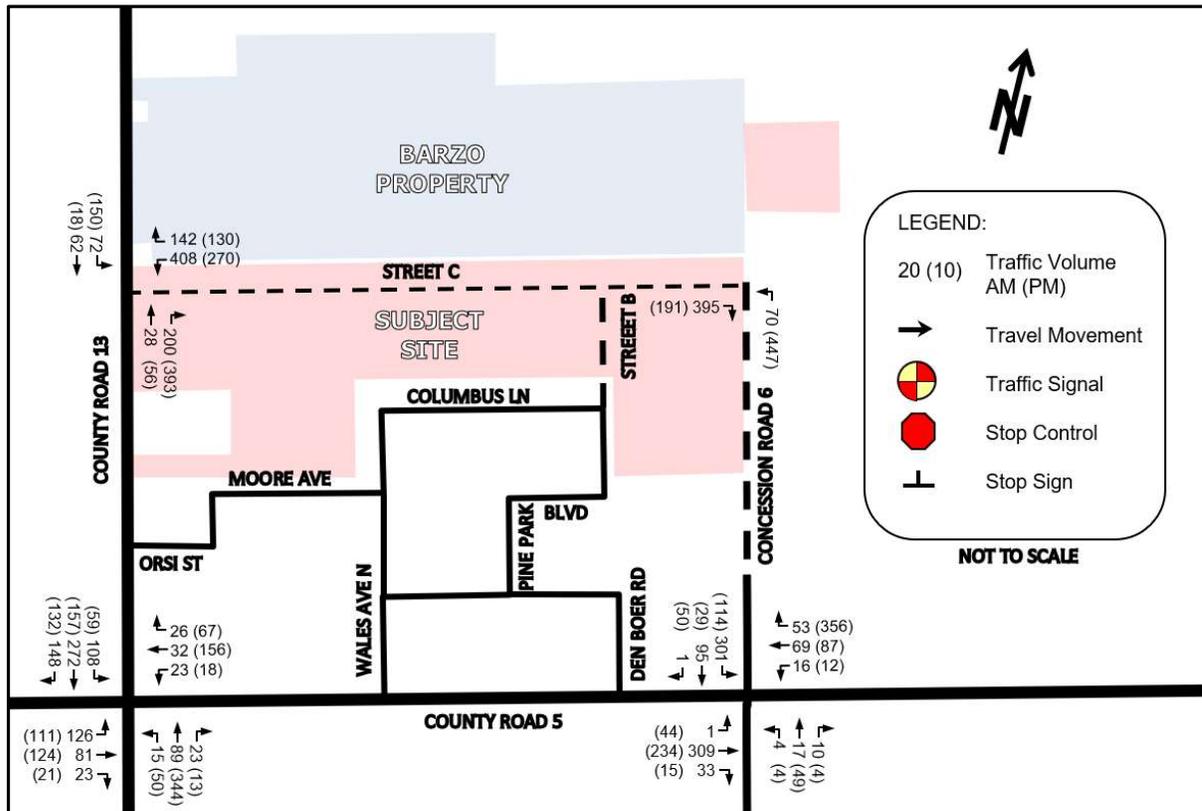


#### 4.4 Total Horizon Year Traffic Volumes with the Proposed Development

For the total (2031 and 2036) horizon year with development traffic volumes, the proposed development traffic and Barzo property traffic was added to the background (2031 and 2036) traffic volumes. The resulting total (2031 and 2036) horizon year with proposed traffic volume for the AM and PM peak hour can be found in **Figures 8 and 9** respectively.



Figure 9 – Total (2036) Peak Hour Traffic Volumes



## 5 Intersection Operation With Proposed Development

### 5.1 Intersection Operation for Total (2031) Traffic Volume

The results of the intersection operation analysis under total (2031) traffic volumes with the proposed development (including the Barzo property) during the AM and PM peak hour can be found below in **Table 9**. Detailed output from the Synchro analysis can be found in **Appendix E**.

**Table 9 – Intersection Operation for Total (2031) Traffic Volumes**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	Overall	B	73.3	-	C	ERR	-
	NB	C	21.1	0.38	F	427.2	1.84
	SB	F	125.7	1.18	F	ERR	ERR
County Road 5 / Concession Road 6 (unsignalized)	Overall	A	25.3	-	B	7.9	-
	NB	B	12.5	0.06	C	21.3	0.22
	SB	F	55.5	0.93	D	30.7	0.62
Street C / County Road 13 (unsignalized)	Overall	B	24.5	-	C	23.9	-
	WB	E	39.3	0.90	F	57.3	0.94
	SB	A	4.5	0.06	A	8.1	0.15

The results of the intersection operation analysis indicate that side street approaches at the intersection of County Road 5 / County Road 13 are experiencing very long control delays.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the existing unsignalized intersection of County Road 5 / County Road 13 or County Road 5 / Concession Road 6 (results are provided in **Appendix G**).

Based on the additional traffic at the north and south leg of the intersection of County Road 5 / County Road 13, as a result of the proposed development of the subject site and the Barzo property, it is recommended that this intersection is converted to an unsignalized all-way stop, by adding stop control on the east and west leg of the intersection<sup>4</sup>.

An analysis was completed for left turn movement on County Road 5 at Concessions 6 and on County Road 13 at Street C. Based on the criteria outlined in Section E.9.1 of the MTO GDSOH, left turn lanes are warranted for the existing 80km/h posted speed limit at these intersections. However, if the posted 50km/h speed limit was extended slightly, to include the above-noted intersections, left turn lanes would not be warranted at either intersection (nomograph excerpts from the MTO GDSOH are provided in **Appendix H**). With the full development of the subject site and the Barzo property and the associated volume of southbound left turn movements on County Road 13 at Street C, a southbound left turn lane (with a 15 metre storage length) is recommended at this intersection.

The traffic generation from the full build-out of the subject site alone, is well below the warrant for southbound left turn lane on County Road 13 at Street C. This is based on the existing posted 80km/h speed limit.

<sup>4</sup> The exact timing for the conversion of the intersection to all-way stop will depend on the development schedule for the proposed development and the Barzo property. It is recommended that that County monitor the northbound and southbound control delay during the PM peak hour to identify when the improvement is warranted.

A southbound left turn storage lane (35 metre parallel length and 30 metre taper length) is recommended on Concession 6 at County Road 5 to facilitate the volume of southbound left turn movements at this intersection for the full build-out of the subject site and the Barzo property.

For right turn movements, the criteria outlined in Section E.7 of the Ontario Ministry of Transportation MTO GDSOH were applied. Based on the above-noted criteria, a 60 metre right turn taper is recommended on County Road 13 at Street C. A full right turn lane is not warranted at this location due to the low volume of through traffic on County Road 13 at Street C. It is recommended that the right-turn taper is constructed in conjunction with the construction of the County Road 13 / Street C intersection.

A right turn taper is also recommended for westbound traffic on County Road 5 at Concession Road 6. A full right turn lane is not warranted at this location due to the low volume of through traffic on County Road 5 at Concession Road 6. It is recommended that the right-turn taper is constructed following occupancy of approximately 35% of the development within the subject site and the Barzo property (approximately 665 units).

As noted in Section 4.3, it is anticipated that a small portion of the overall traffic generated by the subject site will travel via the existing local roads, south of the subject site to access County Road 13 and County Road 5. Based on our review, no operational or capacity issues are anticipated within the existing local road network south of the subject site as a result of the minor additional traffic generated by the subject site.

The existing 90 degree corner where Columbus Lane intersects with Pine Park Boulevard will become a t-intersection as a result of the proposed Street B connection. It is recommended that the proposed t-intersection is unsignalized with one-way stop control for the eastbound (Columbus Lane) approach. Based on our site visit and review of the engineering drawings, the proposed intersection will meet the Transportation Association of Canada minimum sight distance requirements.

The results of the Synchro analysis with the above-noted improvements can be found below in **Table 10**. Detailed output of the Synchro analysis can be found in **Appendix E**.

**Table 10 – Intersection Operation for Total (2031) Traffic Volumes (with improvements)**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	<b>Overall</b>	<b>B</b>	<b>19.6</b>	-	<b>C</b>	<b>51.5</b>	-
	EB	B	13.3	0.41	D	29.5	0.71
	SB	D	25.8	0.81	<b>E</b>	<b>46.4</b>	<b>0.89</b>
	NB	B	10.4	0.22	<b>F</b>	<b>84.5</b>	<b>1.05</b>
County Road 5 / Concession Road 6 (unsignalized)	<b>Overall</b>	<b>A</b>	<b>11.1</b>	-	<b>A</b>	<b>4.8</b>	-
	NB	B	12.5	0.06	C	21.0	0.21
	SB	C	23.7	0.68	C	15.7	0.33
Street C / County Road 13 (unsignalized)	<b>Overall</b>	<b>A</b>	<b>15.3</b>	-	<b>A</b>	<b>10.7</b>	-
	WB	C	24.1	0.78	C	23.7	0.71
	SB	A	4.5	0.06	A	8.1	0.15

The results of the intersection operation analysis indicate that most of the individual turning movements in the study area are operating at a good level of service or better during the AM and PM peak hour. The only exception is the intersection of County Road 5 / County Road 13, which is operating slightly over capacity for northbound and southbound movements. Based on our review, traffic signals are not warranted at this intersection; however, it is recommended that the County continue to monitor the traffic volumes at this intersection as the Barzo property approaches build-out to determine if traffic signals are warranted.

No additional improvements, beyond those noted above, are recommended for the total (2031) scenario.

## 5.2 Intersection Operation for Total (2036) Traffic Volume

The results of the intersection operation analysis under total (2036) traffic volumes with the proposed development (including the Barzo property) during the AM and PM peak hour can be found below in **Table 11**.

**Table 11 – Intersection Operation for Total (2036) Traffic Volumes**

Intersection (E-W Street / N-S Street)	Critical Movement	Weekday AM Peak			Weekend PM Peak		
		LOS	Control Delay (s)	v/c Ratio	LOS	Control Delay (s)	v/c Ratio
County Road 5 / County Road 13 (unsignalized)	<b>Overall</b>	<b>B</b>	<b>20.6</b>	-	<b>C</b>	<b>56.9</b>	-
	EB	B	13.6	0.43	D	31.4	0.73
	SB	D	27.6	0.83	<b>F</b>	<b>50.5</b>	<b>0.91</b>
	NB	B	10.5	0.23	<b>F</b>	<b>95.6</b>	<b>1.08</b>
County Road 5 / Concession Road 6 (unsignalized)	<b>Overall</b>	<b>A</b>	<b>11.6</b>	-	<b>A</b>	<b>4.9</b>	-
	NB	B	12.7	0.07	C	21.2	0.22
	SB	D	28.7	0.70	C	16.1	0.34
Street C / County Road 13 (unsignalized)	<b>Overall</b>	<b>A</b>	<b>15.4</b>	-	<b>A</b>	<b>10.8</b>	-
	WB	C	24.5	0.78	C	24.0	0.71
	SB	A	4.5	0.06	A	8.1	0.15

The results of the intersection operation analysis indicate that most of the individual turning movements in the study area are operating at a good level of service or better during the AM and PM peak hour. The only exception is the intersection of County Road 5 / County Road 13, which is operating slightly above capacity for northbound and southbound movements.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the existing unsignalized intersection of County Road 5 / County Road 13 or County Road 5 / Concession Road 6 (results are provided in **Appendix G**).

Based on the results of the Synchro analysis, it is recommended that the County continue to monitor the traffic volumes at the intersection of County Road 5 / County Road 13 as the Barzo property approaches build-out, to determine if traffic signals are warranted.

An analysis was completed for left turn movement on County Road 5 at Concessions 6 and on County Road 13 at Street C. Based on the criteria outlined in Section E.9.1 of the MTO GDSOH, left turn lanes are warranted for the existing 80km/h posted speed limit at these intersections. However, if the posted 50km/h speed limit was extended slightly, to include the above-noted intersections, left turn lanes would not be warranted at either intersection (nomograph excerpts from the MTO GDSOH are provided in **Appendix H**). With the full development of the subject site and the Barzo property and the associated volume of southbound left turn movements on County Road 13 at Street C, a southbound left turn lane (with a 15 metre storage length) is recommended at this intersection.

The traffic generation from the full build-out of the subject site alone, is well below the warrant for southbound left turn lane on County Road 13 at Street C. This is based on the existing posted 80km/h speed limit.

For right turn movements, the criteria outlined in Section E.7 of the Ontario Ministry of Transportation MTO GDSOH were applied. Based on the above-noted criteria, no additional right turn lanes are warranted at any of the study area intersections.

No additional improvements are recommended for the total (2036) scenario.

### 5.2.1 Sight Distance Analysis

JD Engineering completed an analysis of the sight distances for the proposed Street C intersection with County Road 13. Our analysis is based on our observation of the available sight distance from the centerline of the Street C entrance at a height of 1.05 metres above grade (driver's eye level) at an offset of 3.0 metres from the edge of pavement, to a point on the centre of the upstream and downstream lane of County Road 13 at a height of 1.05m (object height).

Based on our review, the egress sight distance from Street C at County Road 13 are in excess of 230 metres (County's minimum sight distance requirement for a posted speed limit of 80km/h) and consequently are acceptable for the existing posted speed limit on County Road 13.

Our sight distance review was completed during a site visit with the County Staff. The County Staff are in agreement that the minimum (230 metre) sight distance is met for Street C.

### 5.2.2 Site Access

The Street C / County Road 13 intersection will operate efficiently as an unsignalized two-lane full-movement access onto County Road 13, with one-way stop control for the eastbound egress movement. A northbound right turn taper (60 metres) is recommended on County Road 13 at Street C and should be constructed in conjunction with the proposed intersection of County Road 13 / Street C. A southbound left turn lane is also recommended on County Road 13 at Street C (with a 15 metre storage length). The warrant for the construction of the southbound left turn lane will depend on the development schedule; however, the southbound left turn lane is not warranted as a result of the traffic generation from the full build-out of the subject site alone.

The Street C / Concession Road 6 intersection will essentially form a 90 degree bend in the road and will operate efficiently with unsignalized control. No lane improvements are recommended on Concession Road 6 at Street C.

The existing 90 degree corner where Columbus Lane intersects with Pine Park Boulevard will become a t-intersection as a result of the proposed Street B connection. It is recommended that the proposed t-intersection is unsignalized with one-way stop control for the eastbound (Columbus Lane) approach. Based on our site visit and review of the engineering drawings, the proposed intersection will meet the Transportation Association of Canada minimum sight distance requirements.

## 6 Summary

The Developer retained **JD Engineering** to complete a traffic impact study in support of the proposed development located between County Road 13 and Concession Road 6, North of Moore Ave and Columbus Lane, in the community of Everett, Township of Adjala-Tosorontio [Township], County of Simcoe [County]. The proposed plan of subdivision is shown in **Appendix A**. This chapter summarizes the conclusions and recommendations from the study.

1. The Developer is proposing to construct 666 single detached residential units and a 1.67 hectare commercial block (specifics not known at this time).
2. A large parcel of land north of the subject site [Barzo property] is expected to be developed within roughly the same time period as the subject site. For the purpose of this report, we

- have assumed that this property will include 1,238 residential lots including 415 townhouse and 823 single detached units.
3. The proposed development includes one full-movement access onto County Road 13 at the west end of the site via Street C and a second full-movement access onto the planned future extension of Concession Road 6 at the west end of the site via Street C. There is one proposed connection into the existing development to the south via a connection to Pine Park Boulevard from Street B. Proposed future connections to the Barzo property are planned via Street E, Street J and Street P.
  4. The proposed development is expected to generate a total of 514 AM and 687 PM peak hour trips.
  5. Background traffic counts were commissioned by JD Engineering at the intersection of County Road 5 / Concession Road 6 and on County Road 13 at the proposed location of Street C on Thursday April 7, 2016. JD Engineering also obtained traffic counts completed by the County from Thursday July 9, 2015 at the intersection of County Road 5 / County Road 13.
  6. The background traffic growth rate for the study area has been based on review of historic AADT data from the study area, provided by the County.
  7. An intersection operation analysis was completed at the existing intersections in the study area, using the existing (2016) and background (2031 and 2036) traffic volumes without the proposed development. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. No improvements were warranted for the existing (2016) and background (2031 and 2036) scenarios.
  8. It is anticipated that the planned extension of Concession Road 6, up to Street C will occur prior to 2031.
  9. An estimate of the amount of traffic that would be generated by the proposed development was calculated and assigned to the study area streets and intersections. It is assumed that the proposed development will be completely built-out and occupied by 2031.
  10. An estimate of the amount of traffic that would be generated by the Barzo property was also calculated and assigned to the study area streets and intersections. It is assumed that the Barzo property will be completely built-out and occupied by 2031.
  11. An intersection operation analysis was completed for the study area using the total (2031 and 2036) traffic volumes with the traffic generated by the proposed development and Barzo property. The following improvements are recommended:

2031 Horizon Year

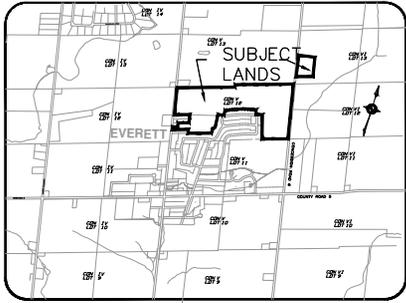
- County Road 5 / County Road 13 – add eastbound and westbound stop control to form an all-way stop control intersection<sup>5</sup>.
- County Road 13 / Street C – add a 60 metre northbound right-turn taper. It is recommended that the right-turn taper is constructed in conjunction with the proposed intersection of County Road 13 / Street C.

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<sup>5</sup> The exact timing for the conversion of the intersection to all-way stop will depend on the development schedule for the proposed development and the Barzo property. It is recommended that that County monitor the northbound and southbound control delay during the PM peak hour to identify when the improvement is warranted.

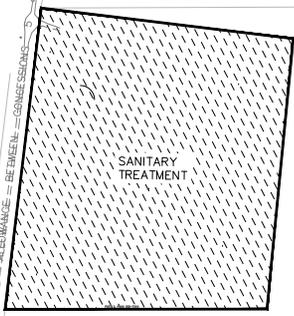
- County Road 13 / Street C – add a southbound left turn lane (15 metre storage length). The warrant for the construction of the southbound left turn lane will depend on the development schedule; however, the southbound left turn lane is not warranted as a result of the traffic generation from the full build-out of the subject site alone.
  - County Road 5 / Concession Road 6 – add a 60 metre westbound right-turn taper. It is recommended that the right-turn taper is constructed prior to occupancy of 35% of the development within the subject site and Barzo property (approximately 583 units).
12. The recommended configuration for the County Road 13 / Street C intersection is full-movement with one-way stop control for westbound egress movements from the subject site.
  13. The existing 90 degree corner where Columbus Lane intersects with Pine Park Boulevard will become a t-intersection as a result of the proposed Street B connection. It is recommended that the proposed t-intersection is unsignalized with one-way stop control for the eastbound (Columbus Lane) approach.
  14. In summary, with the above-noted infrastructure improvements, the proposed development will not add significant delay or congestion to the local roadway network.

## **Appendix A – Plan of Subdivision (Farsight Homes) & Preliminary Draft Plan (Barzo Lands)**



**LEGEND**

RESIDENTIAL 10m - 51 LOTS	[Orange]
RESIDENTIAL 11m - 361 LOTS	[Light Orange]
RESIDENTIAL 11m (PARTIAL) - 21 LOTS	[Yellow-Orange]
RESIDENTIAL 12m - 174 LOTS	[Yellow]
RESIDENTIAL 15m - 51 LOTS	[Light Green]
RESIDENTIAL 15m (PARTIAL) - 1 LOT	[Light Green]
RESIDENTIAL 18m - 17 LOTS	[Light Green]
TOTAL - 686 LOTS	
PATHWAY 6m	[Brown]
PATHWAY 3m	[Brown]
COMMERCIAL	[Teal]
OPEN SPACE	[Green]
PUMP STATION	[Blue]
STORMWATER MANAGEMENT	[Blue]
ENVIRONMENTAL PROTECTION	[Green]
SANITARY TREATMENT	[Pink]
ROADS	[Grey]

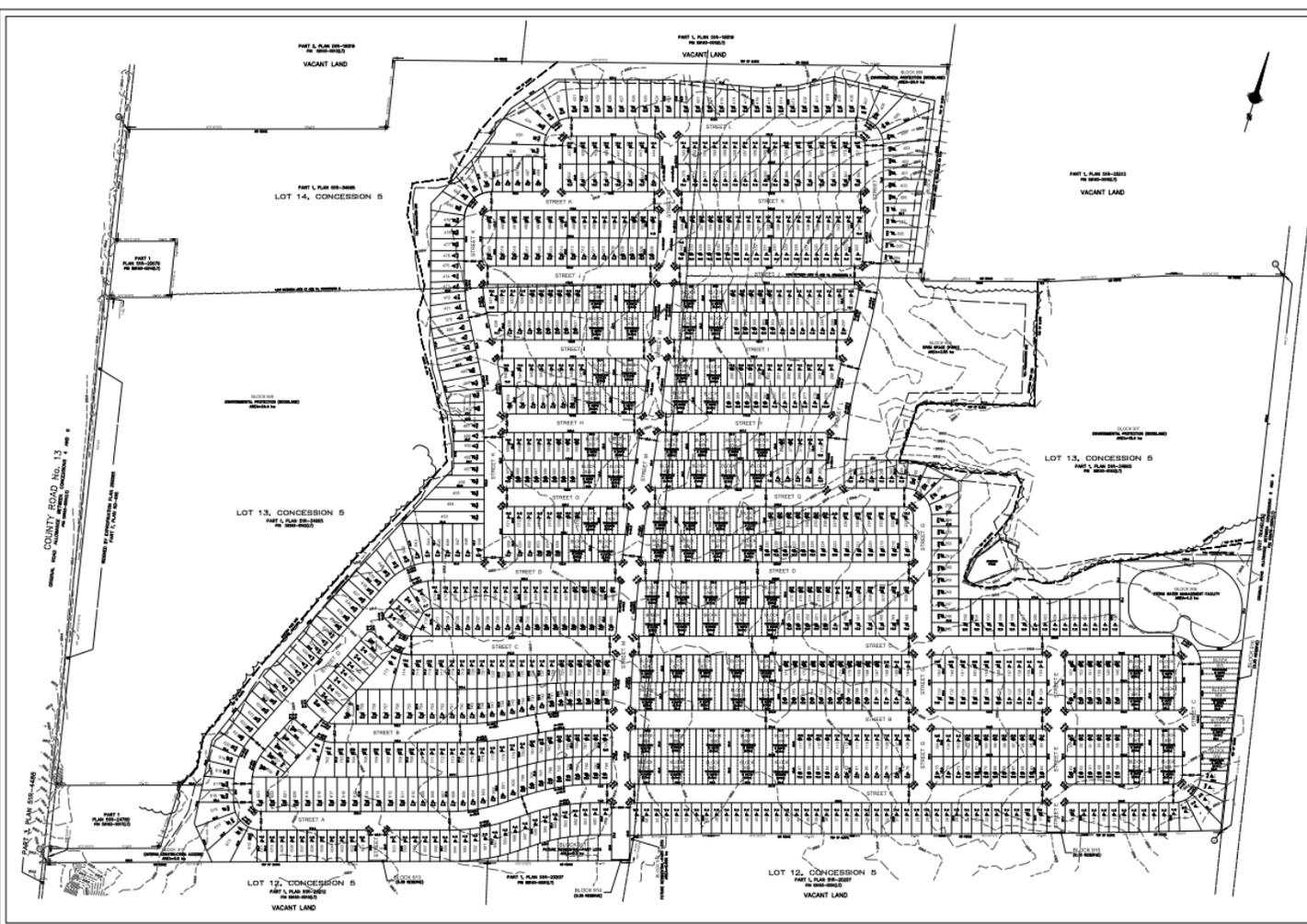


**Plan of Subdivision Concept**  
 Part of Lot 12, Concession 5  
 Part of Lot 13, Concession 6  
 Geographic Township of Tosorontio,  
 now in the  
**Township of Adjala-Tosorontio**  
 County of Simcoe  
 2015

**FARSIGHT HOMES**  
 Everett  
**PLAN OF SUBDIVISION**  
**CONCEPT**

Date Issued:	OCT. 21, 2015
Checked By:	BG
Project No.:	10
Prepared By:	GPG
Drawing Name:	FARSIGHT HOMES-EVERETT





**KEY PLAN**  
 DRAFT PLAN OF SUBDIVISION  
 PART OF LOTS 13 AND 14  
 CONCESSION 5  
 INCLUDING: TOWNSHIP OF ROMBEUR  
 TOWNSHIP OF ADJALA-TORONTO  
 COUNTY OF SIMCOE  
 DATE: 2008  
 DRAWN BY: [Signature]

**SEARCH**  
 SEARCHED: [ ]  
 INDEXED: [ ]  
 SERIALIZED: [ ]  
 FILED: [ ]

**REGISTRATION DATA**  
 PLAN NO.: [ ]  
 PLAN DATE: [ ]  
 PLAN AREA: [ ]  
 PLAN TYPE: [ ]  
 PLAN STATUS: [ ]

**ADDITIONAL INFORMATION REQUIRED UNDER SECTION 10(1) OF THE PLANNING ACT**

CONVEYANCE: [ ]  
 CONVEYANCE DATE: [ ]  
 CONVEYANCE TYPE: [ ]  
 CONVEYANCE VALUE: [ ]  
 CONVEYANCE PARTIES: [ ]  
 CONVEYANCE INSTRUMENT NO.: [ ]  
 CONVEYANCE INSTRUMENT DATE: [ ]

**DEVELOPMENT STATISTICS TABLE**

CONCRETE LOTS	AREA (SQ. FT.)
1	100,000
2	200,000
3	300,000
4	400,000
5	500,000
6	600,000
7	700,000
8	800,000
9	900,000
10	1,000,000
11	1,100,000
12	1,200,000
13	1,300,000
14	1,400,000
15	1,500,000
16	1,600,000
17	1,700,000
18	1,800,000
19	1,900,000
20	2,000,000
21	2,100,000
22	2,200,000
23	2,300,000
24	2,400,000
25	2,500,000
26	2,600,000
27	2,700,000
28	2,800,000
29	2,900,000
30	3,000,000
31	3,100,000
32	3,200,000
33	3,300,000
34	3,400,000
35	3,500,000
36	3,600,000
37	3,700,000
38	3,800,000
39	3,900,000
40	4,000,000
41	4,100,000
42	4,200,000
43	4,300,000
44	4,400,000
45	4,500,000
46	4,600,000
47	4,700,000
48	4,800,000
49	4,900,000
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59	5,900,000
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61	6,100,000
62	6,200,000
63	6,300,000
64	6,400,000
65	6,500,000
66	6,600,000
67	6,700,000
68	6,800,000
69	6,900,000
70	7,000,000
71	7,100,000
72	7,200,000
73	7,300,000
74	7,400,000
75	7,500,000
76	7,600,000
77	7,700,000
78	7,800,000
79	7,900,000
80	8,000,000
81	8,100,000
82	8,200,000
83	8,300,000
84	8,400,000
85	8,500,000
86	8,600,000
87	8,700,000
88	8,800,000
89	8,900,000
90	9,000,000
91	9,100,000
92	9,200,000
93	9,300,000
94	9,400,000
95	9,500,000
96	9,600,000
97	9,700,000
98	9,800,000
99	9,900,000
100	10,000,000

**SURVEYOR'S CERTIFICATE**  
 I, the undersigned, being a duly qualified and licensed Surveyor, do hereby certify that the above is a true and correct copy of the original plan as filed in my office on the [ ] day of [ ] 2008.

DATE: [ ]  
 SIGNATURE: [ ]  
 TITLE: [ ]

**OWNER'S CERTIFICATE**  
 I, the undersigned, being the owner of the above land, do hereby certify that the above is a true and correct copy of the original plan as filed in my office on the [ ] day of [ ] 2008.

DATE: [ ]  
 SIGNATURE: [ ]  
 TITLE: [ ]

**FOR DEED INVESTMENTS LIMITED**

DATE: [ ]  
 SIGNATURE: [ ]  
 TITLE: [ ]



## **Appendix B – Traffic Counts**

# Ontario Traffic Inc

## Morning Peak Diagram

### Specified Period

**From:** 7:00:00

**To:** 9:00:00

### One Hour Peak

**From:** 7:30:00

**To:** 8:30:00

**Municipality:** Everett  
**Site #:** 1610500001  
**Intersection:** Simcoe County Rd 5 & Concession  
**TFR File #:** 4  
**Count date:** 7-Apr-16

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

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

**Major Road:** Simcoe County Rd 5 runs W/E

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

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	1	1	0	2
Totals	1	1	0	



Heavys	0
Trucks	0
Cars	1
Totals	1

East Leg Total: 259  
 East Entering: 59  
 East Peds: 0  
 Peds Cross:  $\times$

Heavys	0
Trucks	0
Cars	50
Totals	50

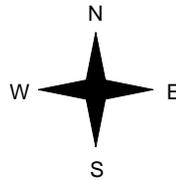


Concession 6

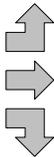
Cars	0	0	0	0
Trucks	46	0	0	46
Heavys	11	2	0	13
Totals	57	2	0	



Simcoe County Rd 5



Heavys	0
Trucks	0
Cars	1
Totals	1
Heavys	0
Trucks	7
Cars	185
Totals	192
Heavys	0
Trucks	0
Cars	27
Totals	27
Heavys	0
Trucks	7
Cars	213
Totals	



Simcoe County Rd 5



Cars	193	7	0	200
Trucks				
Heavys				
Totals				

Peds Cross:  $\times$   
 West Peds: 2  
 West Entering: 220  
 West Leg Total: 270

Cars	39
Trucks	2
Heavys	0
Totals	41



Cars	3	0	8	11
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	3	0	8	

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 11  
 South Leg Total: 52

## Comments

# Ontario Traffic Inc

## Afternoon Peak Diagram

### Specified Period

**From:** 16:00:00

**To:** 19:00:00

### One Hour Peak

**From:** 16:45:00

**To:** 17:45:00

**Municipality:** Everett  
**Site #:** 1610500001  
**Intersection:** Simcoe County Rd 5 & Concession  
**TFR File #:** 4  
**Count date:** 7-Apr-16

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

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

**Major Road:** Simcoe County Rd 5 runs W/E

North Leg Total: 4  
 North Entering: 2  
 North Peds: 0  
 Peds Cross:  $\times$

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



Heavys 0  
 Trucks 0  
 Cars 2  
 Totals 2

East Leg Total: 228  
 East Entering: 56  
 East Peds: 0  
 Peds Cross:  $\times$

Heavys	0	Trucks	2	Cars	47	Totals	49
--------	---	--------	---	------	----	--------	----

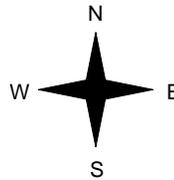


Concession 6

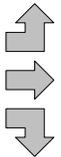
Cars	1	Trucks	0	Heavys	0	Totals	1
Cars	44	Trucks	1	Heavys	0	Totals	45
Cars	10	Trucks	0	Heavys	0	Totals	10
<b>Totals</b>	<b>55</b>	<b>1</b>	<b>0</b>				



Simcoe County Rd 5



Heavys	0	Trucks	0	Cars	1	Totals	1
Heavys	0	Trucks	5	Cars	164	Totals	169
Heavys	0	Trucks	1	Cars	11	Totals	12
<b>Totals</b>	<b>0</b>	<b>6</b>	<b>176</b>				



Simcoe County Rd 5



Cars	167	Trucks	5	Heavys	0	Totals	172
------	-----	--------	---	--------	---	--------	-----

Peds Cross:  $\times$   
 West Peds: 0  
 West Entering: 182  
 West Leg Total: 231

Cars	22
Trucks	1
Heavys	0
<b>Totals</b>	<b>23</b>



Cars	3	0	3	6
Trucks	0	0	0	0
Heavys	0	0	0	0
<b>Totals</b>	<b>3</b>	<b>0</b>	<b>3</b>	

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 6  
 South Leg Total: 29

## Comments

# Ontario Traffic Inc

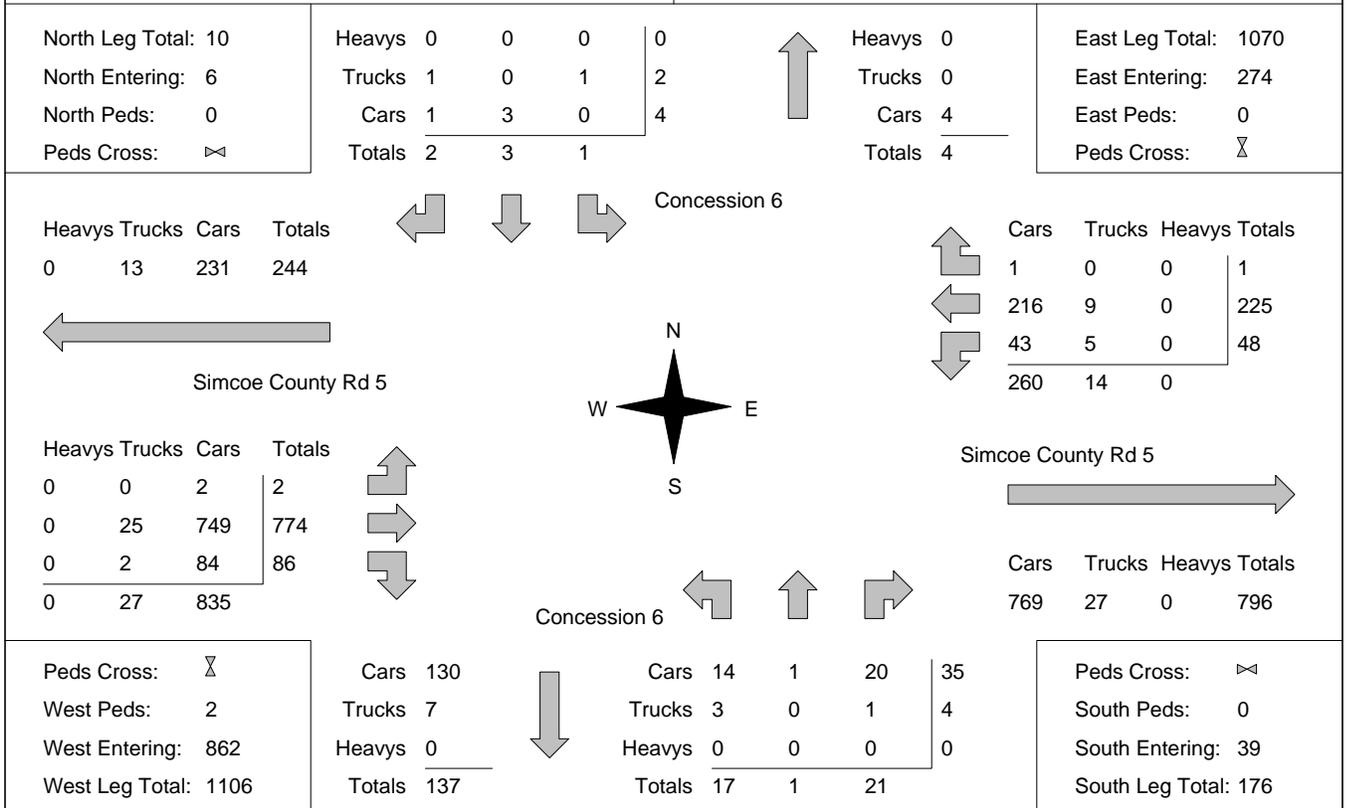
## Total Count Diagram

**Municipality:** Everett  
**Site #:** 1610500001  
**Intersection:** Simcoe County Rd 5 & Concession  
**TFR File #:** 4  
**Count date:** 7-Apr-16

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

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

**Major Road:** Simcoe County Rd 5 runs W/E



### Comments

**Ontario Traffic Inc**  
**17705 Leslie Street, Unit 6**  
**Newmarket, ON L3Y 3E3**

**Tel: 905-898-7711 / Fax: 905-898-3664 / Email: [oti@ontario-traffic.com](mailto:oti@ontario-traffic.com)**

Site Code: 1  
 Station ID: C33

County Rd 13 north of the  
 residential development  
 Latitude: 0' 0.000 Undefined

Start Time	07-Apr-16 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		*	9			*	3				
12:15		*	8			*	3				
12:30		*	8			*	4				
12:45		*	4	0	29	*	8	0	18	0	47
01:00		*	6			*	8				
01:15		*	6			*	8				
01:30		*	9			*	7				
01:45		*	13	0	34	*	9	0	32	0	66
02:00		*	5			*	9				
02:15		*	9			*	11				
02:30		*	9			*	3				
02:45		*	9	0	32	*	2	0	25	0	57
03:00		*	8			*	5				
03:15		*	9			*	5				
03:30		*	4			*	7				
03:45		*	4	0	25	*	7	0	24	0	49
04:00		*	5			*	6				
04:15		*	5			*	8				
04:30		*	6			*	9				
04:45		*	9	0	25	*	1	0	24	0	49
05:00		*	21			*	3				
05:15		*	12			*	3				
05:30		*	12			*	5				
05:45		*	15	0	60	*	8	0	19	0	79
06:00		*	11			*	8				
06:15		*	7			*	9				
06:30		*	7			*	6				
06:45		*	8	0	33	*	9	0	32	0	65
07:00		2	*			6	*				
07:15		4	*			6	*				
07:30		4	*			5	*				
07:45		7	*	17	0	9	*	26	0	43	0
08:00		6	*			12	*				
08:15		9	*			11	*				
08:30		9	*			11	*				
08:45		1	*	25	0	21	*	55	0	80	0
09:00		1	*			12	*				
09:15		2	*			14	*				
09:30		1	*			5	*				
09:45		4	*	8	0	5	*	36	0	44	0
10:00		4	*			7	*				
10:15		5	*			12	*				
10:30		12	*			8	*				
10:45		11	*	32	0	8	*	35	0	67	0
11:00		12	*			8	*				
11:15		15	*			9	*				
11:30		9	*			9	*				
11:45		9	*	45	0	3	*	29	0	74	0
Total		127	238			181	174			308	412
Percent		34.8%	65.2%			51.0%	49.0%			42.8%	57.2%
Grand Total		127	238			181	174			308	412
Percent		34.8%	65.2%			51.0%	49.0%			42.8%	57.2%

ADT Not Calculated

# COUNTY OF SIMCOE

TRANSPORTATION AND ENGINEERING

1110 Highway 26, Midhurst, ON

*705-726-9300*

Intersection Count  
County Road 5 at  
County Road 13  
Everett

File Name : Everett Count  
Site Code : 00000000  
Start Date : 7/9/2015  
Page No : 1

**Groups Printed- Unshifted - Bank 1**

Start Time	CR 13 From North					CR 5 From East					CR 13 From South					CR 5 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:00 AM	0	21	4	0	25	1	2	4	0	7	1	0	0	0	1	4	13	1	0	18	51
06:15 AM	1	17	5	0	23	2	1	5	0	8	2	2	1	0	5	3	13	1	0	17	53
06:30 AM	1	28	12	0	41	4	3	10	0	17	4	1	4	0	9	12	18	1	0	31	98
06:45 AM	0	16	4	0	20	2	2	2	0	6	2	1	0	0	3	14	12	3	0	29	58
<b>Total</b>	<b>2</b>	<b>82</b>	<b>25</b>	<b>0</b>	<b>109</b>	<b>9</b>	<b>8</b>	<b>21</b>	<b>0</b>	<b>38</b>	<b>9</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>18</b>	<b>33</b>	<b>56</b>	<b>6</b>	<b>0</b>	<b>95</b>	<b>260</b>
07:00 AM	1	21	4	0	26	5	7	5	0	17	6	2	2	0	10	6	15	1	0	22	75
07:15 AM	1	14	6	0	21	1	5	6	0	12	3	4	5	0	12	5	12	2	0	19	64
07:30 AM	1	15	12	0	28	2	8	7	0	17	4	4	4	0	12	3	22	0	0	25	82
07:45 AM	3	19	5	0	27	3	6	1	0	10	6	8	1	0	15	5	16	4	0	25	77
<b>Total</b>	<b>6</b>	<b>69</b>	<b>27</b>	<b>0</b>	<b>102</b>	<b>11</b>	<b>26</b>	<b>19</b>	<b>0</b>	<b>56</b>	<b>19</b>	<b>18</b>	<b>12</b>	<b>0</b>	<b>49</b>	<b>19</b>	<b>65</b>	<b>7</b>	<b>0</b>	<b>91</b>	<b>298</b>
08:00 AM	3	11	1	0	15	2	6	4	0	12	3	6	2	0	11	8	15	2	0	25	63
08:15 AM	0	12	2	0	14	2	2	2	0	6	3	6	2	0	11	6	25	4	0	35	66
08:30 AM	0	9	6	0	15	1	11	1	0	13	1	7	2	0	10	11	9	1	0	21	59
08:45 AM	0	14	4	0	18	4	11	5	0	20	5	4	3	0	12	6	16	2	0	24	74
<b>Total</b>	<b>3</b>	<b>46</b>	<b>13</b>	<b>0</b>	<b>62</b>	<b>9</b>	<b>30</b>	<b>12</b>	<b>0</b>	<b>51</b>	<b>12</b>	<b>23</b>	<b>9</b>	<b>0</b>	<b>44</b>	<b>31</b>	<b>65</b>	<b>9</b>	<b>0</b>	<b>105</b>	<b>262</b>
*** BREAK ***																					
11:00 AM	0	7	5	0	12	5	7	2	0	14	4	10	2	0	16	3	15	0	0	18	60
11:15 AM	2	8	4	0	14	4	12	2	0	18	5	9	5	0	19	4	18	1	0	23	74
11:30 AM	2	7	2	0	11	4	8	1	0	13	3	5	6	0	14	2	11	1	0	14	52
11:45 AM	1	5	1	0	7	5	11	6	0	22	5	6	3	0	14	1	16	3	0	20	63
<b>Total</b>	<b>5</b>	<b>27</b>	<b>12</b>	<b>0</b>	<b>44</b>	<b>18</b>	<b>38</b>	<b>11</b>	<b>0</b>	<b>67</b>	<b>17</b>	<b>30</b>	<b>16</b>	<b>0</b>	<b>63</b>	<b>10</b>	<b>60</b>	<b>5</b>	<b>0</b>	<b>75</b>	<b>249</b>
12:00 PM	0	8	3	0	11	5	16	4	0	25	6	3	1	0	10	7	11	1	0	19	65
12:15 PM	1	13	9	0	23	5	14	3	0	22	10	8	7	0	25	3	9	3	0	15	85
12:30 PM	2	5	6	0	13	6	9	3	0	18	4	6	3	0	13	3	11	1	0	15	59
12:45 PM	3	5	4	0	12	3	14	2	0	19	0	11	3	0	14	5	12	1	0	18	63
<b>Total</b>	<b>6</b>	<b>31</b>	<b>22</b>	<b>0</b>	<b>59</b>	<b>19</b>	<b>53</b>	<b>12</b>	<b>0</b>	<b>84</b>	<b>20</b>	<b>28</b>	<b>14</b>	<b>0</b>	<b>62</b>	<b>18</b>	<b>43</b>	<b>6</b>	<b>0</b>	<b>67</b>	<b>272</b>
*** BREAK ***																					
03:00 PM	1	9	5	0	15	7	14	4	0	25	3	12	10	0	25	6	15	1	0	22	87
03:15 PM	5	10	10	0	25	13	18	1	0	32	3	23	16	0	42	3	24	0	0	27	126
03:30 PM	0	11	5	0	16	6	21	4	0	31	0	25	7	0	32	2	12	2	0	16	95
03:45 PM	0	9	2	0	11	7	21	5	0	33	4	20	11	0	35	6	17	1	0	24	103
<b>Total</b>	<b>6</b>	<b>39</b>	<b>22</b>	<b>0</b>	<b>67</b>	<b>33</b>	<b>74</b>	<b>14</b>	<b>0</b>	<b>121</b>	<b>10</b>	<b>80</b>	<b>44</b>	<b>0</b>	<b>134</b>	<b>17</b>	<b>68</b>	<b>4</b>	<b>0</b>	<b>89</b>	<b>411</b>

# COUNTY OF SIMCOE

TRANSPORTATION AND ENGINEERING

1110 Highway 26, Midhurst, ON

*705-726-9300*

Intersection Count  
County Road 5 at  
County Road 13  
Everett

File Name : Everett Count  
Site Code : 00000000  
Start Date : 7/9/2015  
Page No : 2

### Groups Printed- Unshifted - Bank 1

Start Time	CR 13 From North					CR 5 From East					CR 13 From South					CR 5 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	3	5	8	0	16	3	27	5	0	35	4	15	7	0	26	6	12	4	0	22	99
04:15 PM	5	5	6	0	16	5	25	6	0	36	4	18	7	0	29	8	11	2	0	21	102
04:30 PM	0	11	10	0	21	9	20	4	0	33	3	19	5	0	27	1	17	4	0	22	103
04:45 PM	2	11	4	0	17	11	21	1	0	33	7	22	11	0	40	6	14	2	0	22	112
<b>Total</b>	<b>10</b>	<b>32</b>	<b>28</b>	<b>0</b>	<b>70</b>	<b>28</b>	<b>93</b>	<b>16</b>	<b>0</b>	<b>137</b>	<b>18</b>	<b>74</b>	<b>30</b>	<b>0</b>	<b>122</b>	<b>21</b>	<b>54</b>	<b>12</b>	<b>0</b>	<b>87</b>	<b>416</b>
05:00 PM	3	10	4	0	17	4	28	5	0	37	7	26	16	0	49	2	11	1	0	14	117
05:15 PM	0	5	3	0	8	16	22	1	0	39	6	18	6	0	30	4	13	3	0	20	97
05:30 PM	2	6	2	0	10	6	12	3	0	21	5	22	11	0	38	2	17	2	0	21	90
05:45 PM	4	3	6	0	13	12	22	1	0	35	6	12	13	0	31	4	18	4	0	26	105
<b>Total</b>	<b>9</b>	<b>24</b>	<b>15</b>	<b>0</b>	<b>48</b>	<b>38</b>	<b>84</b>	<b>10</b>	<b>0</b>	<b>132</b>	<b>24</b>	<b>78</b>	<b>46</b>	<b>0</b>	<b>148</b>	<b>12</b>	<b>59</b>	<b>10</b>	<b>0</b>	<b>81</b>	<b>409</b>
<b>Grand Total</b>	<b>47</b>	<b>350</b>	<b>164</b>	<b>0</b>	<b>561</b>	<b>165</b>	<b>406</b>	<b>115</b>	<b>0</b>	<b>686</b>	<b>129</b>	<b>335</b>	<b>176</b>	<b>0</b>	<b>640</b>	<b>161</b>	<b>470</b>	<b>59</b>	<b>0</b>	<b>690</b>	<b>2577</b>
Apprch %	8.4	62.4	29.2	0		24.1	59.2	16.8	0		20.2	52.3	27.5	0		23.3	68.1	8.6	0		
Total %	1.8	13.6	6.4	0	21.8	6.4	15.8	4.5	0	26.6	5	13	6.8	0	24.8	6.2	18.2	2.3	0	26.8	
Unshifted	47	350	164	0	561	165	406	115	0	686	129	335	176	0	640	161	470	59	0	690	2577
% Unshifted	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

# COUNTY OF SIMCOE

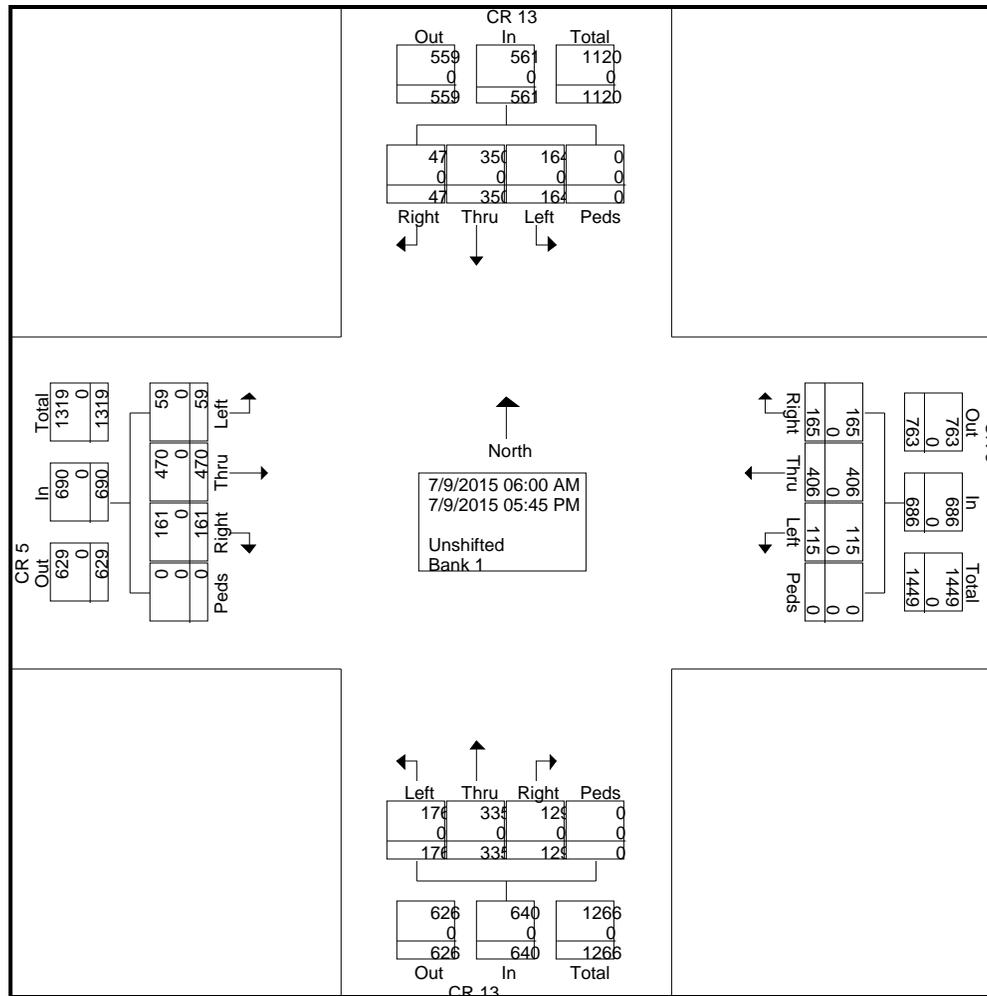
TRANSPORTATION AND ENGINEERING

1110 Highway 26, Midhurst, ON

705-726-9300

Intersection Count  
County Road 5 at  
County Road 13  
Everett

File Name : Everett Count  
Site Code : 00000000  
Start Date : 7/9/2015  
Page No : 3





**TRANSPORTATION AND  
ENGINEERING**

**County of Simcoe**

**Transportation & Engineering**

**Annual Average Daily Traffic Summary (A.A.D.T.)**

Updated Nov 2015

<u>Road# - Section #</u>	<u>Distance</u>	<u>Link Description</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
		CR 27										
001-01	6.1			4,300			4,100			3,900		
		15th SR New Tecumseth										
001-02	2.0			4,900			4,700			4,400		
		East Limits / Beeton										
001-03	1.9			4,900			4,500			4,400		
		CR 10										
001-04	3.1			3,000			3,200			2,400		
		Adj/Tos Townline										
001-04A	2.9			N/A			N/A			2,800		
		CR 50										
001-05	7.2			1,800			1,900			1,900		
		Simcoe Boundary										
		CR 39										
003-01	3.1			4,400			4,700			4,100		
		CR 4										
		Bradford Limits										
004-01	9.8			12,700			12,500			14,800		
		CR 89 / CR 3										
004-02	4.4			9,600			9,200			11,500		
		Line 4 / Churchill										
004-03	5.5			10,100			9,000			10,800		
		CR 21										
004-04	2.8			11,200			11,200			11,900		
		Victoria St. / Stroud										
004-05	2.9			11,700			13,000			13,600		
		Lockhart Dr. / Barrie Limit										
		CR 15										
005-01	4.1			3,800			4,100			4,000		
		CR 13										
005-02	5.6			1,700			2,400			1,800		
		County Boundary										
		CR 27 N										
006-01	5.5				4,400			4,600			4,600	
		Conc 4 / Tiny										
006-02	8.2				3,700			4,200			4,400	
		CR 25 / Perkinsfield										
006-03	1.4				4,400			4,700			5,000	
		Conc 11/ Tiny										
006-04	2.8				3,400			3,900			4,300	
		Conc 13 / Tiny										
006-05	4.1				3,100			3,200			3,600	
		CR 26										

<u>Road# - Section #</u>	<u>Distance</u>	<u>Link Description</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
		CR 13										
012-01	3.9	County Boundary		1,400			1,300			1,400		
		Hwy 89										
013-01	5.7	CR 5		2,800			2,600			2,500		
013-02	9.5	CR 12		1,900			1,900			2,900		
		CR 50										
014-01	3.8	Adjala-New Tech Townline		1,000			950			1,200		
014-02	2.9	CR 10		2,000			1,700			1,700		
		Victoria St. / Alliston										
015-01A	1.1	Essa Rd		8,000			8,800			9,100		
015-01	4.7	CR 5		5,800			5,600			5,200		
015-02	3.5	CR 21		4,900			5,000			4,800		
015-03	1.2	Base Borden South Limit		3,000			2,400			2,100		
		CR 23										
016-01	6.2	Hwy 400			4,500			5,100			4,200	
		Coldwater / North Limits										
017-01	6.8	Quarry Road			2,100			1,500			1,600	
017-02	4.3	4th Conc. Silklane			1,200			1,200			750	
017-03	11.9	Big Chute			400			400			300	
		Hwy 12										
019-01	2.5	Hwy 400			900			1,200			1,200	
019-02	2.0	8th Conc / Moonstone			1,500			1,600			1,700	
019-03	10.8	Hwy 93			950			1,000			1,100	
019-04	8.1	CR 27			1,500			1,900			1,700	
		Barrie Limits										
020-01	7.4	Line 3 Oro-Medonte			2,800			3,100			2,600	
020-02	6.0	Line 7 Oro-Medonte			1,800			1,500			1,500	
020-03	6.2	Line 11 Oro-Medonte			1,000			1,000			1,000	
020-04	1.1	Line 11 / Hwy 11			1,800			1,800			1,700	

## **Appendix C – Synchro Analysis Output – Existing Conditions**

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Existing (2016) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	66	19	19	26	11	12	18	19	27	70	6
Future Volume (Veh/h)	7	66	19	19	26	11	12	18	19	27	70	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	73	21	21	29	12	13	20	21	30	77	7
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			94			222	182	84	208	187	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			94			222	182	84	208	187	35
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			98	97	98	96	89	99
cM capacity (veh/h)	1575			1506			660	700	979	710	696	1041
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	102	62	54	114								
Volume Left	8	21	13	30								
Volume Right	21	12	21	7								
cSH	1575	1506	774	714								
Volume to Capacity	0.01	0.01	0.07	0.16								
Queue Length 95th (m)	0.1	0.3	1.7	4.3								
Control Delay (s)	0.6	2.6	10.0	11.0								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.6	2.6	10.0	11.0								
Approach LOS			A	B								
<b>Intersection Summary</b>												
Average Delay			6.1									
Intersection Capacity Utilization			22.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Existing (2016) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	192	27	13	46	0	3	0	8	0	1	1
Future Volume (Veh/h)	1	192	27	13	46	0	3	0	8	0	1	1
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)	1	209	29	14	50	0	3	0	9	0	1	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	50			238			305	304	224	312	318	50
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			238			305	304	224	312	318	50
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1570			1256			644	606	821	631	595	1024
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	239	64	12	2								
Volume Left	1	14	3	0								
Volume Right	29	0	9	1								
cSH	1570	1256	768	752								
Volume to Capacity	0.00	0.01	0.02	0.00								
Queue Length 95th (m)	0.0	0.3	0.4	0.1								
Control Delay (s)	0.0	1.8	9.8	9.8								
Lane LOS	A	A	A	A								
Approach Delay (s)	0.0	1.8	9.8	9.8								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			22.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Existing (2016) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	66	17	15	88	29	41	84	11	25	35	8
Future Volume (Veh/h)	7	66	17	15	88	29	41	84	11	25	35	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	8	79	20	18	105	35	49	100	13	30	42	10
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	140			99			294	281	89	326	274	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			99			294	281	89	326	274	122
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			92	84	99	94	93	99
cM capacity (veh/h)	1449			1500			611	618	972	536	624	931
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	107	158	162	82								
Volume Left	8	18	49	30								
Volume Right	20	35	13	10								
cSH	1449	1500	634	612								
Volume to Capacity	0.01	0.01	0.26	0.13								
Queue Length 95th (m)	0.1	0.3	7.7	3.5								
Control Delay (s)	0.6	0.9	12.6	11.8								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.6	0.9	12.6	11.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			26.3%	ICU Level of Service	A							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Existing (2016) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	169	12	10	45	1	3	0	3	0	1	1
Future Volume (Veh/h)	1	169	12	10	45	1	3	0	3	0	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	190	13	11	51	1	3	0	3	0	1	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	52			203			274	272	196	275	278	52
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	52			203			274	272	196	275	278	52
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			99			100	100	100	100	100	100
cM capacity (veh/h)	1567			1381			677	632	850	675	627	797
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	204	63	6	2								
Volume Left	1	11	3	0								
Volume Right	13	1	3	1								
cSH	1567	1381	754	702								
Volume to Capacity	0.00	0.01	0.01	0.00								
Queue Length 95th (m)	0.0	0.2	0.2	0.1								
Control Delay (s)	0.0	1.4	9.8	10.1								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.0	1.4	9.8	10.1								
Approach LOS			A	B								
<b>Intersection Summary</b>												
Average Delay			0.6									
Intersection Capacity Utilization			20.0%		ICU Level of Service				A			
Analysis Period (min)			15									

## **Appendix D – Synchro Analysis Output – Background Traffic Volumes**

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	77	22	22	30	13	14	21	22	31	81	7
Future Volume (Veh/h)	8	77	22	22	30	13	14	21	22	31	81	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	9	85	24	24	33	14	15	23	24	34	89	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	47			109			256	210	97	238	215	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	47			109			256	210	97	238	215	40
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			98	97	98	95	87	99
cM capacity (veh/h)	1567			1488			613	674	962	670	670	1034
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	118	71	62	131								
Volume Left	9	24	15	34								
Volume Right	24	14	24	8								
cSH	1567	1488	742	685								
Volume to Capacity	0.01	0.02	0.08	0.19								
Queue Length 95th (m)	0.1	0.4	2.1	5.3								
Control Delay (s)	0.6	2.6	10.3	11.5								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.6	2.6	10.3	11.5								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			6.3									
Intersection Capacity Utilization			25.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	223	31	15	53	0	3	0	9	0	1	1
Future Volume (Veh/h)	1	223	31	15	53	0	3	0	9	0	1	1
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)	1	242	34	16	58	0	3	0	10	0	1	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	58			276			352	351	259	361	368	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	58			276			352	351	259	361	368	58
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	100	100	100
cM capacity (veh/h)	1559			1216			598	569	785	585	556	1014
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	277	74	13	2								
Volume Left	1	16	3	0								
Volume Right	34	0	10	1								
cSH	1559	1216	732	718								
Volume to Capacity	0.00	0.01	0.02	0.00								
Queue Length 95th (m)	0.0	0.3	0.4	0.1								
Control Delay (s)	0.0	1.8	10.0	10.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.0	1.8	10.0	10.0								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			0.8									
Intersection Capacity Utilization			24.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	77	20	17	102	34	48	98	13	29	41	9
Future Volume (Veh/h)	8	77	20	17	102	34	48	98	13	29	41	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	10	92	24	20	121	40	57	117	15	35	49	11
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	161			116			340	325	104	378	317	141
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			116			340	325	104	378	317	141
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			90	80	98	93	92	99
cM capacity (veh/h)	1424			1479			560	582	953	476	588	910
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	126	181	189	95								
Volume Left	10	20	57	35								
Volume Right	24	40	15	11								
cSH	1424	1479	594	563								
Volume to Capacity	0.01	0.01	0.32	0.17								
Queue Length 95th (m)	0.2	0.3	10.4	4.6								
Control Delay (s)	0.7	0.9	13.9	12.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.7	0.9	13.9	12.7								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			6.9									
Intersection Capacity Utilization			29.4%	ICU Level of Service	A							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	196	14	12	52	1	3	0	3	0	1	1
Future Volume (Veh/h)	1	196	14	12	52	1	3	0	3	0	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	220	16	13	58	1	3	0	3	0	1	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			236			316	315	228	318	322	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			236			316	315	228	318	322	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			99			100	100	100	100	100	100
cM capacity (veh/h)	1558			1343			634	598	816	632	592	789
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	237	72	6	2								
Volume Left	1	13	3	0								
Volume Right	16	1	3	1								
cSH	1558	1343	714	676								
Volume to Capacity	0.00	0.01	0.01	0.00								
Queue Length 95th (m)	0.0	0.2	0.2	0.1								
Control Delay (s)	0.0	1.5	10.1	10.3								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.0	1.5	10.1	10.3								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			0.6									
Intersection Capacity Utilization			22.0%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	81	23	23	32	13	15	22	23	33	85	7
Future Volume (Veh/h)	9	81	23	23	32	13	15	22	23	33	85	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	10	89	25	25	35	14	16	24	25	36	93	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	49			114			268	220	102	250	226	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			114			268	220	102	250	226	42
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			97	96	97	95	86	99
cM capacity (veh/h)	1564			1481			597	664	956	656	659	1032
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	124	74	65	137								
Volume Left	10	25	16	36								
Volume Right	25	14	25	8								
cSH	1564	1481	730	673								
Volume to Capacity	0.01	0.02	0.09	0.20								
Queue Length 95th (m)	0.1	0.4	2.2	5.8								
Control Delay (s)	0.6	2.6	10.4	11.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.6	2.6	10.4	11.7								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			6.4									
Intersection Capacity Utilization			25.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	234	33	16	56	0	4	0	10	0	1	1
Future Volume (Veh/h)	1	234	33	16	56	0	4	0	10	0	1	1
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)	1	254	36	17	61	0	4	0	11	0	1	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	61			290			370	369	272	380	387	61
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			290			370	369	272	380	387	61
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	100	100	100
cM capacity (veh/h)	1555			1201			582	555	772	567	542	1010
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	291	78	15	2								
Volume Left	1	17	4	0								
Volume Right	36	0	11	1								
cSH	1555	1201	710	706								
Volume to Capacity	0.00	0.01	0.02	0.00								
Queue Length 95th (m)	0.0	0.3	0.5	0.1								
Control Delay (s)	0.0	1.8	10.2	10.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.0	1.8	10.2	10.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			26.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis

Background (2036) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	81	21	18	107	35	50	102	13	31	43	10
Future Volume (Veh/h)	9	81	21	18	107	35	50	102	13	31	43	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	11	96	25	21	127	42	60	121	15	37	51	12
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	169			121			358	342	108	396	333	148
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	169			121			358	342	108	396	333	148
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			89	79	98	92	91	99
cM capacity (veh/h)	1415			1473			542	569	948	458	576	901
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	132	190	196	100								
Volume Left	11	21	60	37								
Volume Right	25	42	15	12								
cSH	1415	1473	578	547								
Volume to Capacity	0.01	0.01	0.34	0.18								
Queue Length 95th (m)	0.2	0.3	11.3	5.0								
Control Delay (s)	0.7	0.9	14.4	13.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.7	0.9	14.4	13.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			30.2%		ICU Level of Service					A		
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Background (2036) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	206	15	12	55	1	4	0	4	0	1	1
Future Volume (Veh/h)	1	206	15	12	55	1	4	0	4	0	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	231	17	13	62	1	4	0	4	0	1	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	63			248			332	330	240	334	338	62
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			248			332	330	240	334	338	62
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	4.2
p0 queue free %	100			99			99	100	100	100	100	100
cM capacity (veh/h)	1553			1330			619	586	804	615	580	784
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	249	76	8	2								
Volume Left	1	13	4	0								
Volume Right	17	1	4	1								
cSH	1553	1330	700	667								
Volume to Capacity	0.00	0.01	0.01	0.00								
Queue Length 95th (m)	0.0	0.2	0.3	0.1								
Control Delay (s)	0.0	1.4	10.2	10.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.0	1.4	10.2	10.4								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			0.6									
Intersection Capacity Utilization			23.0%		ICU Level of Service				A			
Analysis Period (min)			15									

## **Appendix E – Synchro Analysis Output – Total Traffic Volumes**

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	77	22	22	30	26	14	88	22	106	268	148
Future Volume (Veh/h)	125	77	22	22	30	26	14	88	22	106	268	148
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	137	85	24	24	33	29	15	97	24	116	295	163
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	62			109			777	481	97	539	478	48
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62			109			777	481	97	539	478	48
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 %	91			98			87	78	98	66	33	84
cM capacity (veh/h)	1547			1488			113	436	962	340	437	1024
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	246	86	136	574								
Volume Left	137	24	15	116								
Volume Right	24	29	24	163								
cSH	1547	1488	357	488								
Volume to Capacity	0.09	0.02	0.38	1.18								
Queue Length 95th (m)	2.2	0.4	13.2	159.4								
Control Delay (s)	4.5	2.2	21.1	125.7								
Lane LOS	A	A	C	F								
Approach Delay (s)	4.5	2.2	21.1	125.7								
Approach LOS			C	F								
Intersection Summary												
Average Delay			73.3									
Intersection Capacity Utilization			61.3%		ICU Level of Service				B			
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	298	31	15	66	53	3	17	9	301	95	1
Future Volume (Veh/h)	1	298	31	15	66	53	3	17	9	301	95	1
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)	1	324	34	16	72	58	3	18	10	327	103	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	130			358			528	505	341	495	493	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	130			358			528	505	341	495	493	101
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	96	99	29	78	100
cM capacity (veh/h)	1468			1132			381	466	706	462	473	960
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	359	146	31	431								
Volume Left	1	16	3	327								
Volume Right	34	58	10	1								
cSH	1468	1132	511	465								
Volume to Capacity	0.00	0.01	0.06	0.93								
Queue Length 95th (m)	0.0	0.3	1.5	81.8								
Control Delay (s)	0.0	1.0	12.5	55.5								
Lane LOS	A	A	B	F								
Approach Delay (s)	0.0	1.0	12.5	55.5								
Approach LOS			B	F								
Intersection Summary												
Average Delay			25.3									
Intersection Capacity Utilization			54.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	408	142	26	200	72	59
Future Volume (Veh/h)	408	142	26	200	72	59
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)	443	154	28	217	78	64
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	356	136			245	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	136			245	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	27	83			94	
cM capacity (veh/h)	608	917			1333	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	597	245	142			
Volume Left	443	0	78			
Volume Right	154	217	0			
cSH	666	1700	1333			
Volume to Capacity	0.90	0.14	0.06			
Queue Length 95th (m)	85.6	0.0	1.4			
Control Delay (s)	39.3	0.0	4.5			
Lane LOS	E		A			
Approach Delay (s)	39.3	0.0	4.5			
Approach LOS	E					
Intersection Summary						
Average Delay			24.5			
Intersection Capacity Utilization			62.1%		ICU Level of Service	B
Analysis Period (min)			15			

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	120	20	17	151	66	48	340	13	57	155	131
Future Volume (Veh/h)	110	120	20	17	151	66	48	340	13	57	155	131
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	131	143	24	20	180	79	57	405	15	68	185	156
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	259			167			925	716	155	894	688	220
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			167			925	716	155	894	688	220
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 %	90			99			45	0	98	0	44	81
cM capacity (veh/h)	1311			1417			104	317	893	0	329	823
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	298	279	477	409								
Volume Left	131	20	57	68								
Volume Right	24	79	15	156								
cSH	1311	1417	259	0								
Volume to Capacity	0.10	0.01	1.84	Err								
Queue Length 95th (m)	2.5	0.3	249.0	Err								
Control Delay (s)	4.0	0.7	427.2	Err								
Lane LOS	A	A	F	F								
Approach Delay (s)	4.0	0.7	427.2	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			65.3%		ICU Level of Service				C			
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	224	14	12	84	356	3	49	3	114	29	50
Future Volume (Veh/h)	44	224	14	12	84	356	3	49	3	114	29	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	49	252	16	13	94	400	3	55	3	128	33	56
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	494			268			750	878	260	708	686	294
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			268			750	878	260	708	686	294
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	95			99			99	80	100	55	91	92
cM capacity (veh/h)	1080			1307			271	273	784	284	352	736
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	317	507	61	217								
Volume Left	49	13	3	128								
Volume Right	16	400	3	56								
cSH	1080	1307	282	350								
Volume to Capacity	0.05	0.01	0.22	0.62								
Queue Length 95th (m)	1.1	0.2	6.1	30.1								
Control Delay (s)	1.7	0.3	21.3	30.7								
Lane LOS	A	A	C	D								
Approach Delay (s)	1.7	0.3	21.3	30.7								
Approach LOS			C	D								
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Utilization			59.3%		ICU Level of Service				B			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis

Total (2031) PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	270	130	53	393	150	17
Future Volume (Veh/h)	270	130	53	393	150	17
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)	293	141	58	427	163	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	616	272			485	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	616	272			485	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	25	82			85	
cM capacity (veh/h)	389	772			1088	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	434	485	181			
Volume Left	293	0	163			
Volume Right	141	427	0			
cSH	464	1700	1088			
Volume to Capacity	0.94	0.29	0.15			
Queue Length 95th (m)	83.8	0.0	4.0			
Control Delay (s)	57.3	0.0	8.1			
Lane LOS	F		A			
Approach Delay (s)	57.3	0.0	8.1			
Approach LOS	F					
Intersection Summary						
Average Delay			23.9			
Intersection Capacity Utilization			69.2%	ICU Level of Service		C
Analysis Period (min)			15			

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour (with improvements)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	125	77	22	22	30	26	14	88	22	106	268	148
Future Volume (vph)	125	77	22	22	30	26	14	88	22	106	268	148
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	137	85	24	24	33	29	15	97	24	116	295	163
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	246	86	136	574								
Volume Left (vph)	137	24	15	116								
Volume Right (vph)	24	29	24	163								
Hadj (s)	0.09	-0.13	-0.07	-0.11								
Departure Headway (s)	6.1	6.2	5.8	5.1								
Degree Utilization, x	0.41	0.15	0.22	0.81								
Capacity (veh/h)	549	516	567	574								
Control Delay (s)	13.3	10.3	10.4	25.8								
Approach Delay (s)	13.3	10.3	10.4	25.8								
Approach LOS	B	B	B	D								
Intersection Summary												
Delay			19.6									
Level of Service			C									
Intersection Capacity Utilization			61.3%	ICU Level of Service	B							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour (with improvements)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	298	31	15	66	53	3	17	9	301	95	1
Future Volume (Veh/h)	1	298	31	15	66	53	3	17	9	301	95	1
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)	1	324	34	16	72	58	3	18	10	327	103	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	130			358			500	505	341	466	464	72
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	130			358			500	505	341	466	464	72
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	96	99	32	79	100
cM capacity (veh/h)	1468			1132			402	466	706	483	491	996
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	359	88	58	31	327	104						
Volume Left	1	16	0	3	327	0						
Volume Right	34	0	58	10	0	1						
cSH	1468	1132	1700	514	483	493						
Volume to Capacity	0.00	0.01	0.03	0.06	0.68	0.21						
Queue Length 95th (m)	0.0	0.3	0.0	1.5	38.1	6.0						
Control Delay (s)	0.0	1.6	0.0	12.5	26.7	14.2						
Lane LOS	A	A		B	D	B						
Approach Delay (s)	0.0	1.0		12.5	23.7							
Approach LOS				B	C							
Intersection Summary												
Average Delay			11.1									
Intersection Capacity Utilization			48.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour (with improvements)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	408	142	26	200	72	59
Future Volume (Veh/h)	408	142	26	200	72	59
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)	443	154	28	217	78	64
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	248	28			245	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248	28			245	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	37	85			94	
cM capacity (veh/h)	701	1053			1333	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1		
Volume Total	597	28	217	142		
Volume Left	443	0	0	78		
Volume Right	154	0	217	0		
cSH	767	1700	1700	1333		
Volume to Capacity	0.78	0.02	0.13	0.06		
Queue Length 95th (m)	58.6	0.0	0.0	1.4		
Control Delay (s)	24.1	0.0	0.0	4.5		
Lane LOS	C			A		
Approach Delay (s)	24.1	0.0		4.5		
Approach LOS	C					
Intersection Summary						
Average Delay			15.3			
Intersection Capacity Utilization			51.7%		ICU Level of Service	A
Analysis Period (min)			15			

Farsight Development  
4: Concession 6 & Street C

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) AM Peak Hour (with improvements)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	395	70	0	0	0
Future Volume (Veh/h)	0	395	70	0	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	429	76	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	152	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152	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	61	95			
cM capacity (veh/h)	805	1091	1636			
<b>Direction, Lane #</b>						
	EB 1	NB 1	SB 1			
Volume Total	429	76	0			
Volume Left	0	76	0			
Volume Right	429	0	0			
cSH	1091	1636	1700			
Volume to Capacity	0.39	0.05	0.00			
Queue Length 95th (m)	14.4	1.1	0.0			
Control Delay (s)	10.4	7.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.4	7.3	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			10.0			
Intersection Capacity Utilization			35.0%	ICU Level of Service		A
Analysis Period (min)			15			

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) PM Peak Hour (with improvements)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	120	20	17	151	66	48	340	13	57	155	131
Future Volume (vph)	110	120	20	17	151	66	48	340	13	57	155	131
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	131	143	24	20	180	79	57	405	15	68	185	156
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	298	279	477	409								
Volume Left (vph)	131	20	57	68								
Volume Right (vph)	24	79	15	156								
Hadj (s)	0.07	-0.13	0.02	-0.18								
Departure Headway (s)	8.5	8.4	7.9	7.8								
Degree Utilization, x	0.71	0.65	1.05	0.89								
Capacity (veh/h)	402	399	460	448								
Control Delay (s)	29.5	26.0	84.5	46.4								
Approach Delay (s)	29.5	26.0	84.5	46.4								
Approach LOS	D	D	F	E								
Intersection Summary												
Delay			51.5									
Level of Service			F									
Intersection Capacity Utilization			65.3%	ICU Level of Service	C							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis

Total (2031) PM Peak Hour (with improvements)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	224	14	12	84	356	3	49	3	114	29	50
Future Volume (Veh/h)	44	224	14	12	84	356	3	49	3	114	29	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	49	252	16	13	94	400	3	55	3	128	33	56
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	494			268			550	878	260	508	486	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			268			550	878	260	508	486	94
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	95			99			99	80	100	67	93	94
cM capacity (veh/h)	1080			1307			382	273	784	386	458	952
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	317	107	400	61	128	89						
Volume Left	49	13	0	3	128	0						
Volume Right	16	0	400	3	0	56						
cSH	1080	1307	1700	286	386	680						
Volume to Capacity	0.05	0.01	0.24	0.21	0.33	0.13						
Queue Length 95th (m)	1.1	0.2	0.0	6.0	10.8	3.4						
Control Delay (s)	1.7	1.0	0.0	21.0	18.9	11.1						
Lane LOS	A	A		C	C	B						
Approach Delay (s)	1.7	0.2		21.0	15.7							
Approach LOS				C	C							
<b>Intersection Summary</b>												
Average Delay			4.8									
Intersection Capacity Utilization			50.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis  
Total (2031) PM Peak Hour (with improvements)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	270	130	53	393	150	17
Future Volume (Veh/h)	270	130	53	393	150	17
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)	293	141	58	427	163	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	402	58			485	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	402	58			485	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	43	86			85	
cM capacity (veh/h)	517	1014			1088	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1		
Volume Total	434	58	427	181		
Volume Left	293	0	0	163		
Volume Right	141	0	427	0		
cSH	615	1700	1700	1088		
Volume to Capacity	0.71	0.03	0.25	0.15		
Queue Length 95th (m)	43.6	0.0	0.0	4.0		
Control Delay (s)	23.7	0.0	0.0	8.1		
Lane LOS	C			A		
Approach Delay (s)	23.7	0.0		8.1		
Approach LOS	C					
Intersection Summary						
Average Delay			10.7			
Intersection Capacity Utilization			45.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Farsight Development  
4: Concession 6 & Street C

HCM Unsignalized Intersection Capacity Analysis

Total (2031) PM Peak Hour (with improvements)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	191	447	0	0	0
Future Volume (Veh/h)	0	191	447	0	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	208	486	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	972	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	972	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	81	70			
cM capacity (veh/h)	199	1091	1636			
<b>Direction, Lane #</b>						
	EB 1	NB 1	SB 1			
Volume Total	208	486	0			
Volume Left	0	486	0			
Volume Right	208	0	0			
cSH	1091	1636	1700			
Volume to Capacity	0.19	0.30	0.00			
Queue Length 95th (m)	5.3	9.5	0.0			
Control Delay (s)	9.1	8.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	8.1	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			8.4			
Intersection Capacity Utilization			43.3%	ICU Level of Service		A
Analysis Period (min)			15			

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2036) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	126	81	23	23	32	26	15	89	23	108	272	148
Future Volume (vph)	126	81	23	23	32	26	15	89	23	108	272	148
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	138	89	25	25	35	29	16	98	25	119	299	163
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	252	89	139	581								
Volume Left (vph)	138	25	16	119								
Volume Right (vph)	25	29	25	163								
Hadj (s)	0.09	-0.12	-0.07	-0.11								
Departure Headway (s)	6.1	6.3	5.8	5.1								
Degree Utilization, x	0.43	0.16	0.23	0.83								
Capacity (veh/h)	548	512	561	687								
Control Delay (s)	13.6	10.5	10.5	27.6								
Approach Delay (s)	13.6	10.5	10.5	27.6								
Approach LOS	B	B	B	D								
Intersection Summary												
Delay			20.6									
Level of Service			C									
Intersection Capacity Utilization			61.9%	ICU Level of Service	B							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2036) AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	309	33	16	69	53	4	17	10	301	95	1
Future Volume (Veh/h)	1	309	33	16	69	53	4	17	10	301	95	1
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)	1	336	36	17	75	58	4	18	11	327	103	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	133			372			518	523	354	485	483	75
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			372			518	523	354	485	483	75
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	96	98	30	78	100
cM capacity (veh/h)	1464			1118			389	454	694	467	479	992
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	373	92	58	33	327	104						
Volume Left	1	17	0	4	327	0						
Volume Right	36	0	58	11	0	1						
cSH	1464	1118	1700	502	467	481						
Volume to Capacity	0.00	0.02	0.03	0.07	0.70	0.22						
Queue Length 95th (m)	0.0	0.4	0.0	1.6	40.7	6.2						
Control Delay (s)	0.0	1.6	0.0	12.7	28.7	14.5						
Lane LOS	A	A		B	D	B						
Approach Delay (s)	0.0	1.0		12.7	25.3							
Approach LOS				B	D							
<b>Intersection Summary</b>												
Average Delay			11.6									
Intersection Capacity Utilization			49.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis

Total (2036) AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	408	142	28	200	72	62
Future Volume (Veh/h)	408	142	28	200	72	62
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)	443	154	30	217	78	67
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	253	30			247	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	253	30			247	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	36	85			94	
cM capacity (veh/h)	697	1050			1331	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1		
Volume Total	597	30	217	145		
Volume Left	443	0	0	78		
Volume Right	154	0	217	0		
cSH	763	1700	1700	1331		
Volume to Capacity	0.78	0.02	0.13	0.06		
Queue Length 95th (m)	59.6	0.0	0.0	1.4		
Control Delay (s)	24.5	0.0	0.0	4.5		
Lane LOS	C			A		
Approach Delay (s)	24.5	0.0		4.5		
Approach LOS	C					
Intersection Summary						
Average Delay			15.4			
Intersection Capacity Utilization			51.9%		ICU Level of Service	A
Analysis Period (min)			15			

Farsight Development  
4: Concession 6 & Street C

HCM Unsignalized Intersection Capacity Analysis

Total (2036) AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	395	70	0	0	0
Future Volume (Veh/h)	0	395	70	0	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	429	76	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	152	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152	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	61	95			
cM capacity (veh/h)	805	1091	1636			
<b>Direction, Lane #</b>						
	EB 1	NB 1	SB 1			
Volume Total	429	76	0			
Volume Left	0	76	0			
Volume Right	429	0	0			
cSH	1091	1636	1700			
Volume to Capacity	0.39	0.05	0.00			
Queue Length 95th (m)	14.4	1.1	0.0			
Control Delay (s)	10.4	7.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.4	7.3	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			10.0			
Intersection Capacity Utilization			35.0%	ICU Level of Service		A
Analysis Period (min)			15			

Farsight Development  
1: County Road 13 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2036) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	111	124	21	18	156	67	50	344	13	59	157	132
Future Volume (vph)	111	124	21	18	156	67	50	344	13	59	157	132
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	132	148	25	21	186	80	60	410	15	70	187	157
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	305	287	485	414								
Volume Left (vph)	132	21	60	70								
Volume Right (vph)	25	80	15	157								
Hadj (s)	0.07	-0.12	0.02	-0.18								
Departure Headway (s)	8.6	8.5	8.1	7.9								
Degree Utilization, x	0.73	0.68	1.08	0.91								
Capacity (veh/h)	398	395	445	443								
Control Delay (s)	31.4	27.7	95.6	50.5								
Approach Delay (s)	31.4	27.7	95.6	50.5								
Approach LOS	D	D	F	F								
Intersection Summary												
Delay			56.9									
Level of Service			F									
Intersection Capacity Utilization			66.4%	ICU Level of Service	C							
Analysis Period (min)			15									

Farsight Development  
2: Concession 6 & County Road 5

HCM Unsignalized Intersection Capacity Analysis  
Total (2036) PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	234	15	12	87	356	4	49	4	114	29	50
Future Volume (Veh/h)	44	234	15	12	87	356	4	49	4	114	29	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	49	263	17	13	98	400	4	55	4	128	33	56
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	498			280			566	894	272	525	502	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	498			280			566	894	272	525	502	98
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	95			99			99	79	99	66	93	94
cM capacity (veh/h)	1076			1294			373	267	772	375	448	947
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1	SB 2						
Volume Total	329	111	400	63	128	89						
Volume Left	49	13	0	4	128	0						
Volume Right	17	0	400	4	0	56						
cSH	1076	1294	1700	284	375	670						
Volume to Capacity	0.05	0.01	0.24	0.22	0.34	0.13						
Queue Length 95th (m)	1.1	0.2	0.0	6.3	11.3	3.5						
Control Delay (s)	1.7	1.0	0.0	21.2	19.5	11.2						
Lane LOS	A	A		C	C	B						
Approach Delay (s)	1.7	0.2		21.2	16.1							
Approach LOS				C	C							
<b>Intersection Summary</b>												
Average Delay			4.9									
Intersection Capacity Utilization			51.0%		ICU Level of Service				A			
Analysis Period (min)			15									

Farsight Development  
3: County Road 13 & Street C

HCM Unsignalized Intersection Capacity Analysis

Total (2036) PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	270	130	56	393	150	18
Future Volume (Veh/h)	270	130	56	393	150	18
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)	293	141	61	427	163	20
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	407	61			488	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	407	61			488	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	43	86			85	
cM capacity (veh/h)	513	1010			1086	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1		
Volume Total	434	61	427	183		
Volume Left	293	0	0	163		
Volume Right	141	0	427	0		
cSH	611	1700	1700	1086		
Volume to Capacity	0.71	0.04	0.25	0.15		
Queue Length 95th (m)	44.3	0.0	0.0	4.0		
Control Delay (s)	24.0	0.0	0.0	8.1		
Lane LOS	C			A		
Approach Delay (s)	24.0	0.0		8.1		
Approach LOS	C					
Intersection Summary						
Average Delay			10.8			
Intersection Capacity Utilization			45.5%		ICU Level of Service	A
Analysis Period (min)			15			

## **Appendix F – Traffic Impact Study Excerpts**

### Trip Distribution

Existing Counts		Morning Peak Hour		Afternoon Peak Hour	
From	On	Volume	%	Volume	%
North	CR13	80	24%	78	13%
West	CR 5	122	36%	90	15%
South	CR 13	63	19%	170	28%
	Conc 6	9	3%	39	6%
East	CR 5	65	19%	239	39%
Totals		339	100%	616	100%
To	On	Volume	%	Volume	%
North	CR13	58	15%	115	22%
West	CR 5	54	14%	153	30%
South	CR 13	84	22%	98	19%
	Conc 6	33	8%	16	3%
East	CR 5	161	41%	135	26%
Totals		390	100%	517	100%

Proposed Distribution		Morning PH	Afternoon PH
From	On		
North	CR13	20%	15%
West	CR 5	35%	15%
South	CR 13	20%	25%
	Conc 6	5%	5%
East	CR 5	20%	40%
Totals		100%	100%
To	On		
North	CR13	15%	20%
West	CR 5	15%	30%
South	CR 13	20%	20%
	Conc 6	10%	5%
East	CR 5	40%	25%
Totals		100%	100%

A nominal five percent reduction was applied to the overall trip generation estimates to account for the interaction between the various land uses.

The proposed parklands / open space and trail network are ancillary by nature and are expected to generate mainly walk and cycle trips internal to the development.

The overall trip generation was segregated into trips for each parcel, as presented in Table 3.

Table 3 – Site Trip Generation, by Future Development Land Area Parcel

Land Use			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<i>Parcel 1</i>								
142,083	sq.ft. GLA	Retail	96	62	158	252	263	515
1	bldg.	School	107	87	194	0	0	0
1	bldg.	Comm. Centre	121	78	199	66	112	178
681	units	Residential	105	329	434	319	183	502
<i>Parcel 2</i>								
346	units	Residential	54	167	221	162	93	255
1	bldg.	School	107	87	194	0	0	0
<i>Parcel 3</i>								
35,198	sq.ft. GLA	Retail	24	15	39	62	66	128
77	units	Residential	12	37	49	36	20	56
<i>Parcel 4</i>								
19,375	sq.ft. GLA	Retail	13	9	22	34	36	70
338	units	Residential	52	163	215	158	91	249
<b>Total Trips</b>			<b>691</b>	<b>1,034</b>	<b>1,725</b>	<b>1,089</b>	<b>864</b>	<b>1,953</b>

#### 4. TRIP DISTRIBUTION AND ASSIGNMENT

Site trips were distributed and assigned to/from the parcels and the boundary roadways within the study area based on the following methodology:

Retail / Commercial Uses – are based on the existing traffic patterns within the study area, determined from a review of existing traffic counts, and also by the expected interaction between residential uses and retail / commercial uses.

Institutional Uses – are based on the anticipated catchment area for auto passenger drop-offs to/from the schools, originating from the residential areas within Everett.

Community Centre Uses – similar to the school trips, distribution and assignment is based on the anticipated catchment area within Everett where trips would be attracted to/from.

Residential Uses – are based on a review of 2006 Transportation Tomorrow Survey (TTS) data for trips to/from the Adjala-Tosorontio northern zone (TTS Zone 8553) and based on a review of existing travel

Township of Adjala-Tosorontio  
Barzo Property  
Proposed Residential Development  
Traffic Impact Study

**Table 2 - Trip Distribution**

Direction	On	From		To	
		AM Peak	PM Peak	AM Peak	PM Peak
East	County Road 5	20%	40%	40%	25%
West	County Road 5	35%	15%	15%	30%
North	County Road 13	20%	15%	15%	20%
South	County Road 13	20%	25%	20%	20%
	Concession Road 6	5%	5%	10%	5%
Total		100%	100%	100%	100%

Site generated trips were assigned to the site access points based on the two scenarios discussed previously. For Scenario 'A', it was assumed that Concession Road 6 remains unopened after the full build-out of the development. In this case, site traffic traveling to/from the south and to/from the east via County Road 5 would use Wales Avenue and Den Boer Road instead of Concession Road 6. The following trip assignment was assumed:

- 100% of the site traffic travelling to/from the west via County Road 5, to/from the north and south via County Road 13 would utilize the main site access on County Road 13;
- 60% of the site traffic travelling to/from the east via County Road 5 and to/from the south via Concession Road 6 would access the site via Wales Avenue; and
- the rest of the 40% of the site traffic travelling to/from the east via County Road 5 and to/from the south via Concession Road 6 would access the site via Den Boer Road.

For Scenario 'B', it is assumed that Concession Road 6 is extended to the north to provide access to the site. In this case, site traffic traveling to/from the south and to/from the east via County Road 5 would use Concession Road 6. The following trip assignment was assumed:

- 100% of the site traffic travelling to/from the west via County Road 5, to/from the north and south via County Road 13 would utilize the main site access on County Road 13; and
- 100% of the site traffic travelling to/from the east via County Road 5 and to/from the south via Concession Road 6 would access the site via Concession Road 6.

While it is anticipated that some motorists may continue to access the development via Wales Avenue or Den Boer Road, these routes will not be as direct as the alternatives and thus not otherwise favoured. As such, the associated volumes should be minimal.

The resulting site generated traffic volumes assigned to the road network based on the above are illustrated in Figures 7 and 8 for Scenarios 'A' and 'B' respectively.

## 6 FUTURE TOTAL TRAFFIC VOLUMES – WITH DEVELOPMENT

The site traffic volumes were combined with the future background volumes to yield the future total volumes, as illustrated in Figures 9 and 10 for Scenario 'A' and Figures 11 and 12 for Scenario 'B' respectively. These volumes consider expected growth in the area plus the additional traffic from the development site.

## **Appendix G – Traffic Signal Warrant Sheets**

**Justification No. 7 - Total Traffic Volumes (Existing Intersection)**

(2036) County Road 5 / County Road 13

Justification	Description	Rest. Flow	Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Numerical	%			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	554	77%	64%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	170	353	207%		YES	YES
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	720	167	23%	19%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	75	165	220%		YES	YES

**Justification No. 7 - Total Traffic Volumes (Existing Intersection)**

(2036) County Road 5 / Concession 6

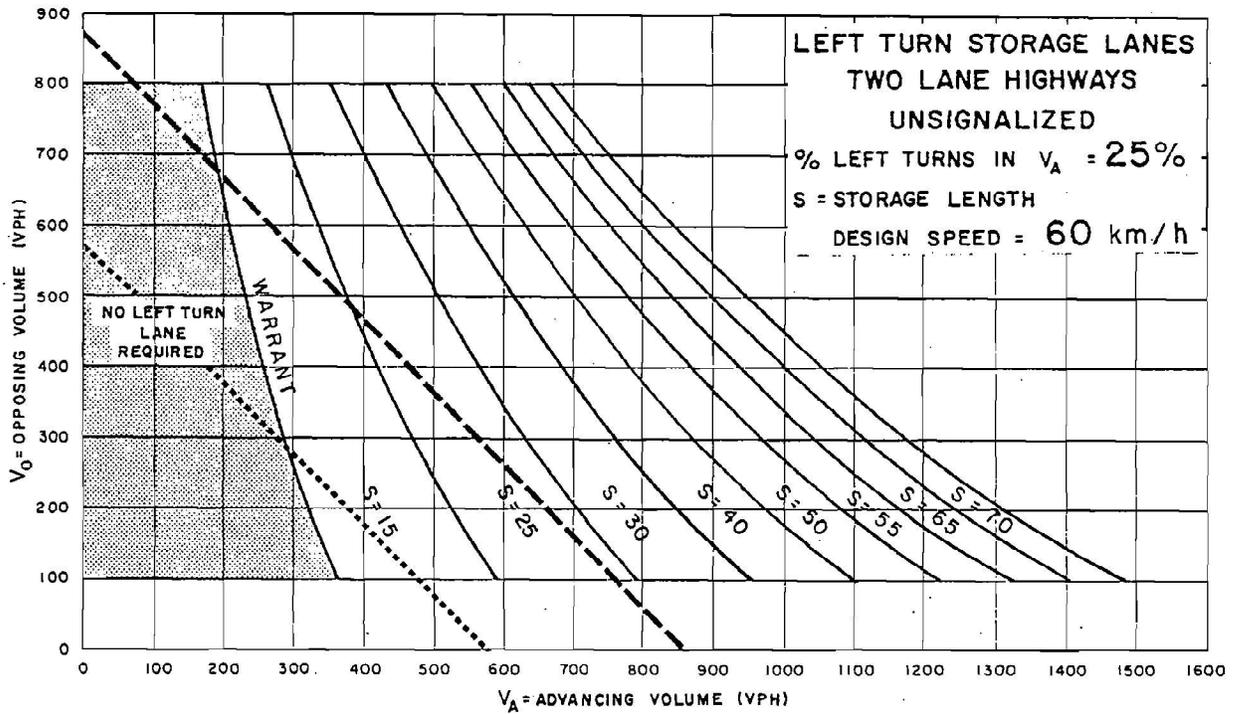
Justification	Description	Free Flow	Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Numerical	%			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	477	99%	83%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	120	169	141%		YES	YES
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	193	40%	34%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	137	273%		YES	YES

**Justification No. 7 - Total Traffic Volumes (Proposed Intersection)**

(2036) County Road 13 / Street C

Justification	Description	Free Flow	Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Numerical	%			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	538	112%	75%	NO	YES
	B. Vehicle volume, along minor streets (average hour)	180	245	136%		NO	YES
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	170	35%	24%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	76	151%		YES	YES

## **Appendix H – MTO Left Turn Lane Warrant Nomographs**



**County Road 5 / County Road 13**

Total 2036 - Westbound  
AM Peak Hour

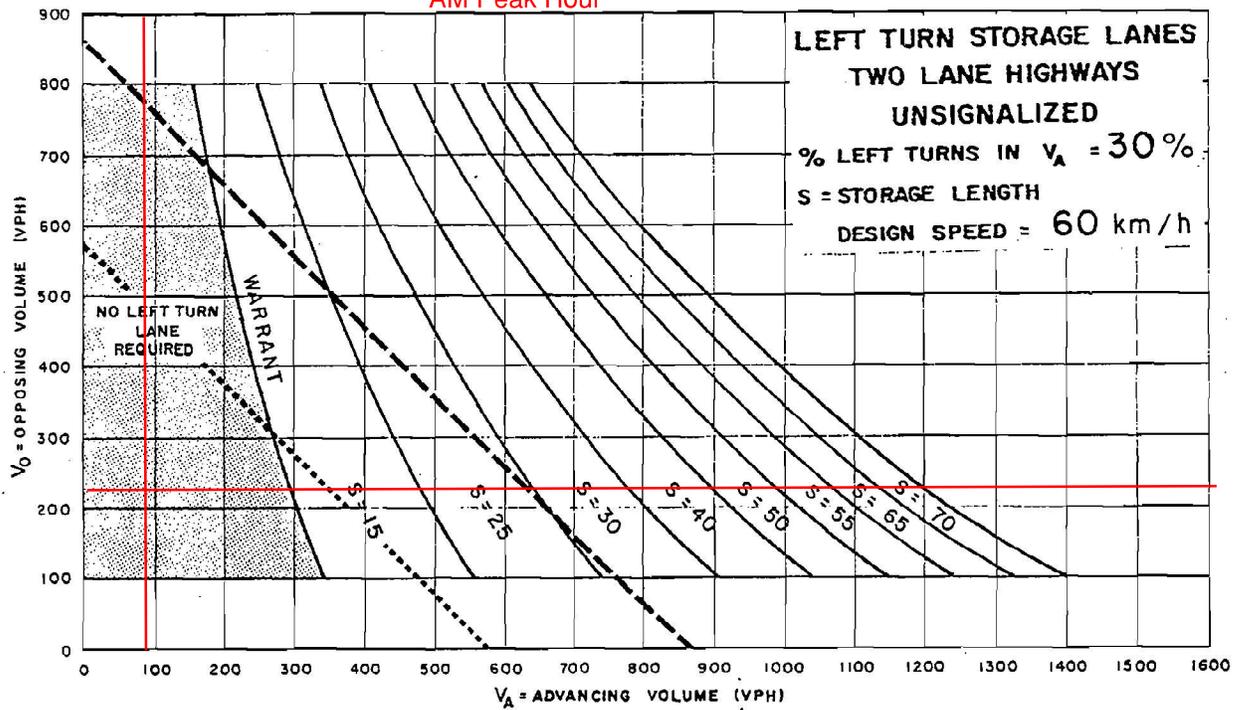
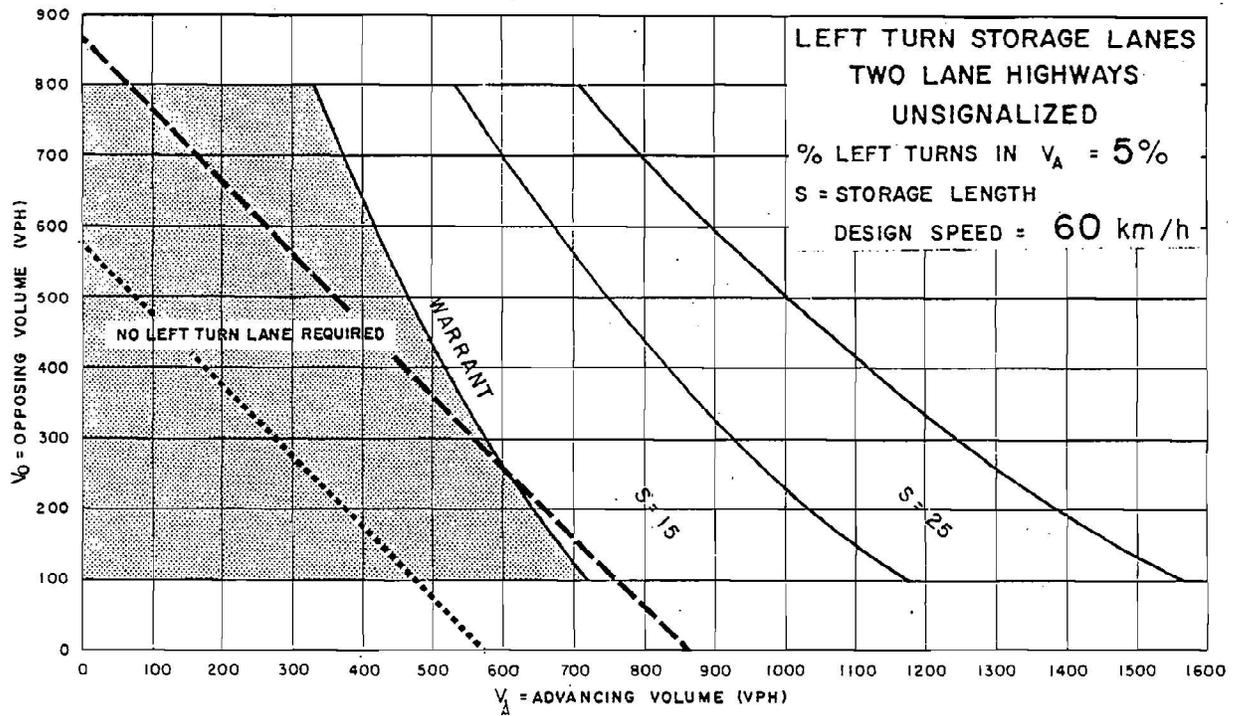


Figure EA-8



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

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

**County Road 5 / County Road 13**

Total 2036 - Westbound  
PM Peak Hour

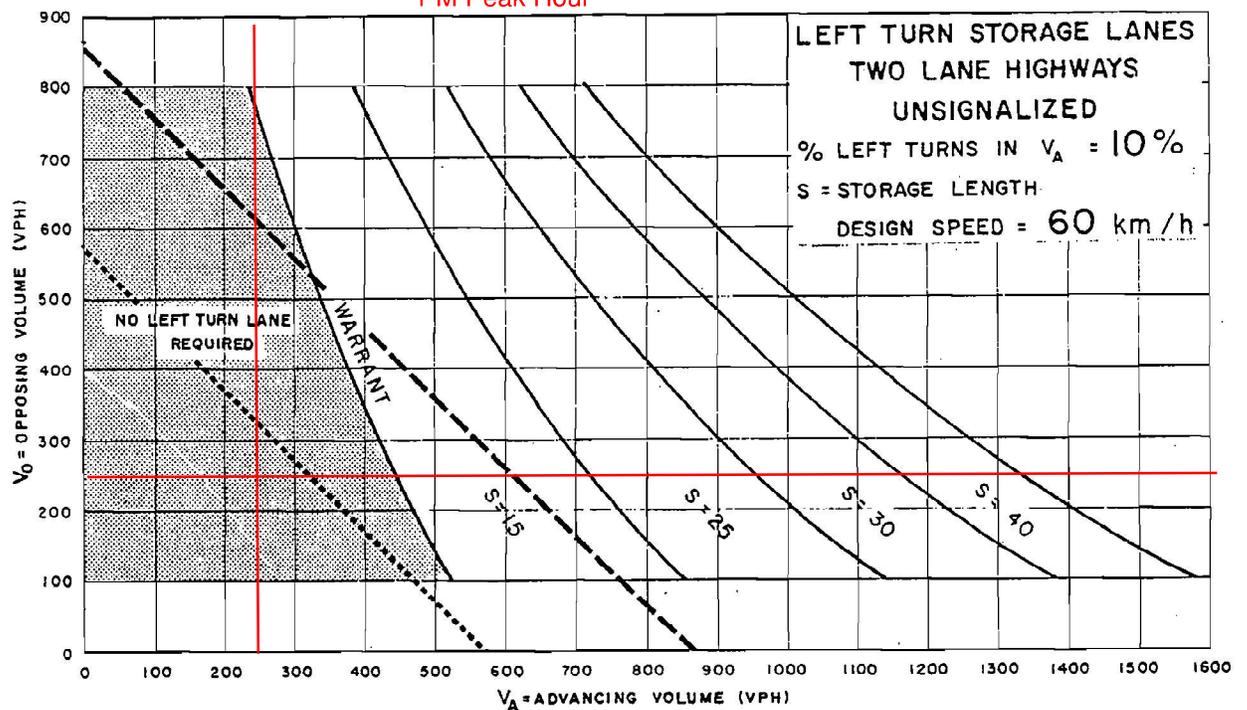
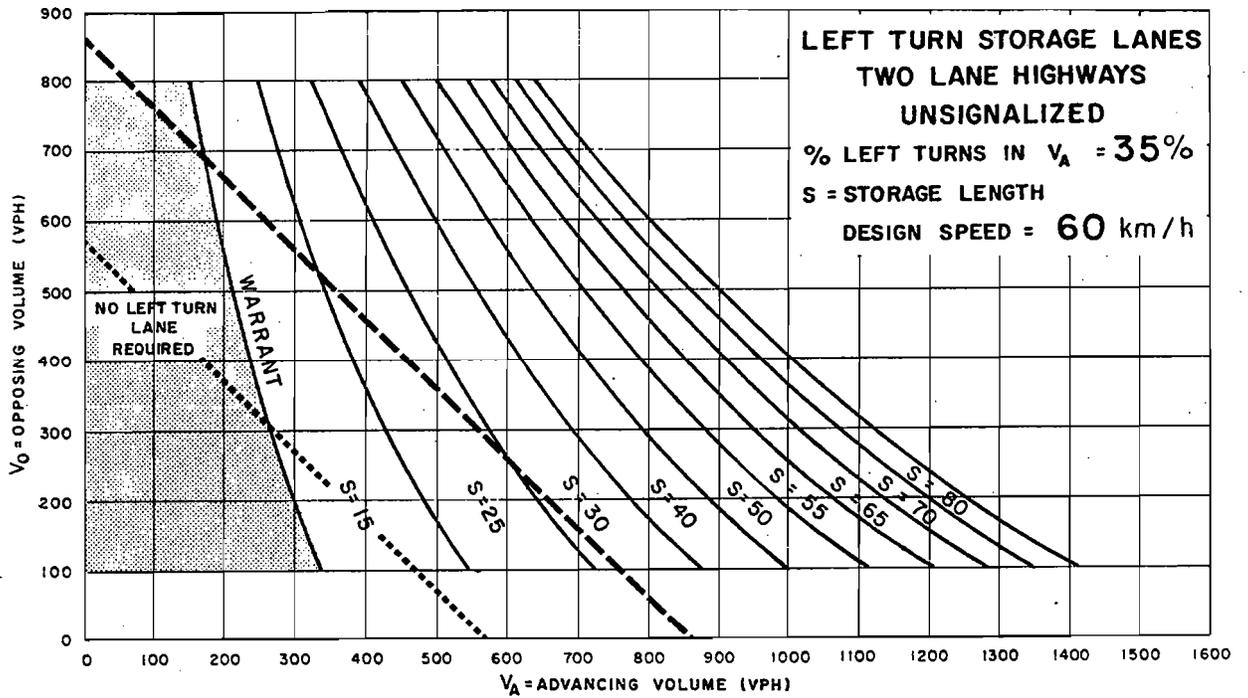


Figure EA-6



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

**County Road 5 / County Road 13**

Total 2036 - Eastbound  
 AM Peak Hour

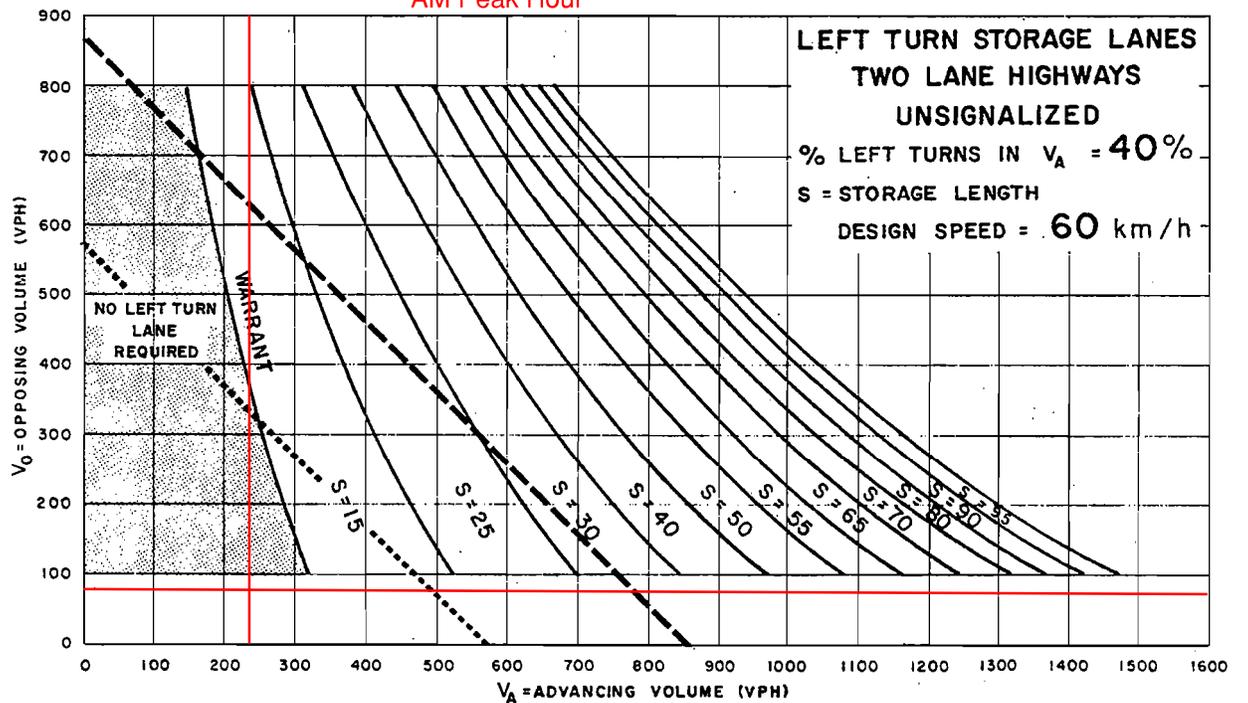
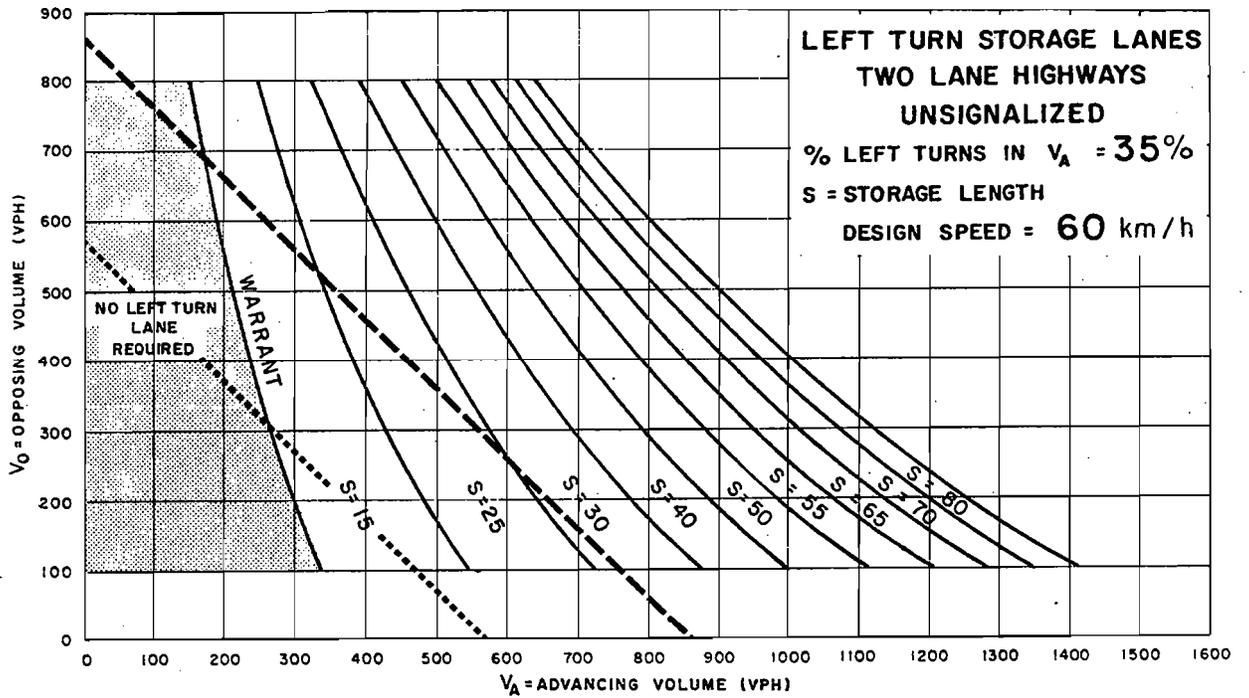


Figure EA-9



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

**County Road 5 / County Road 13**

Total 2036 - Eastbound  
PM Peak Hour

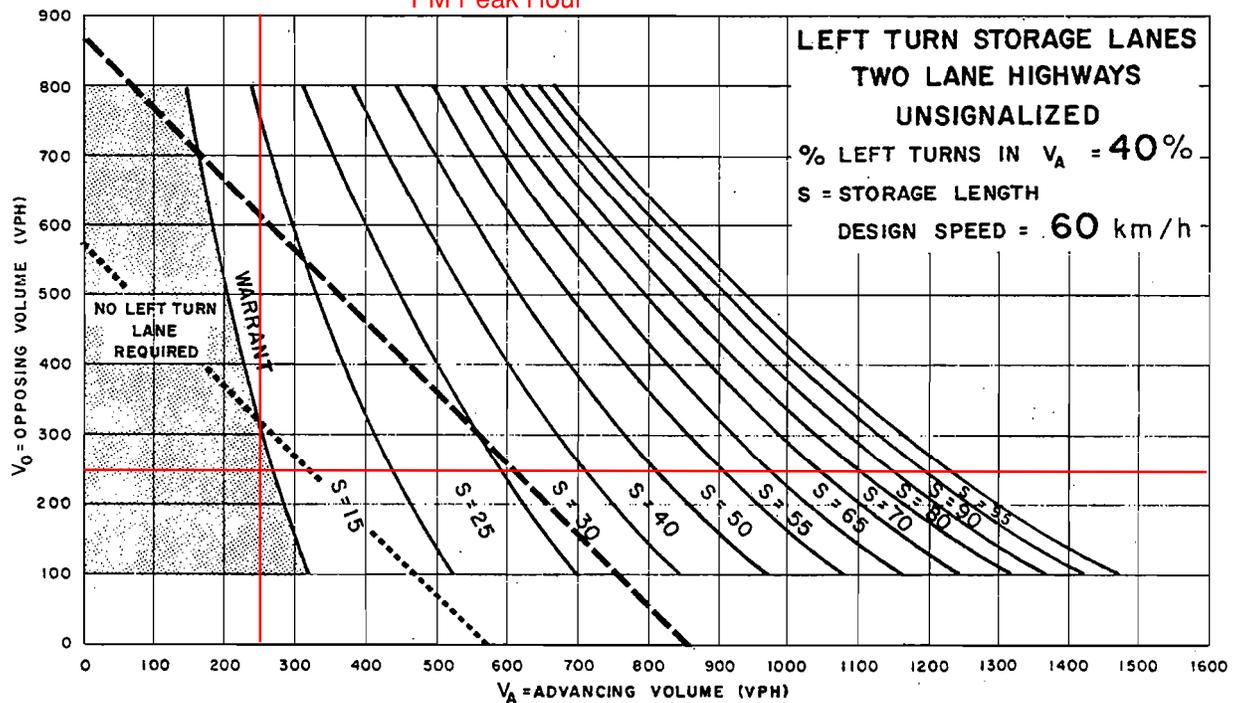


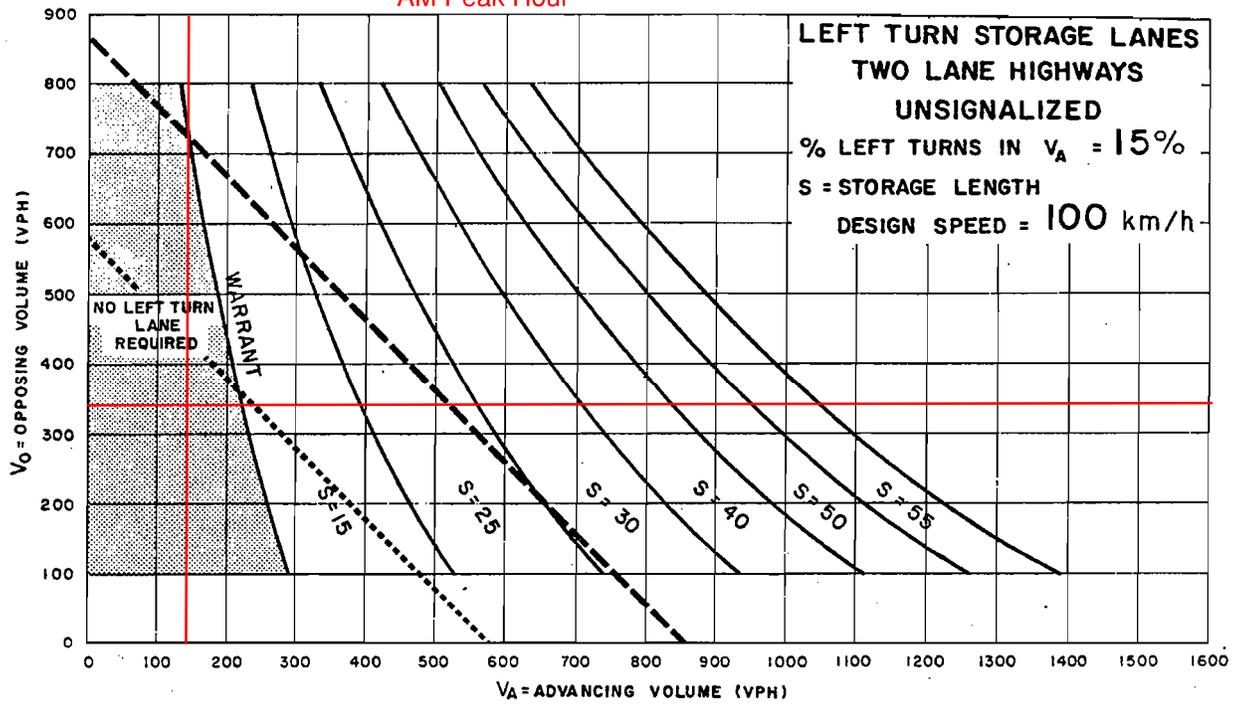
Figure EA-9

# County Road 5 / Concession 6

AT-GRADE INTERSECTIONS

Total 2036 - Westbound  
AM Peak Hour

APPENDIX 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

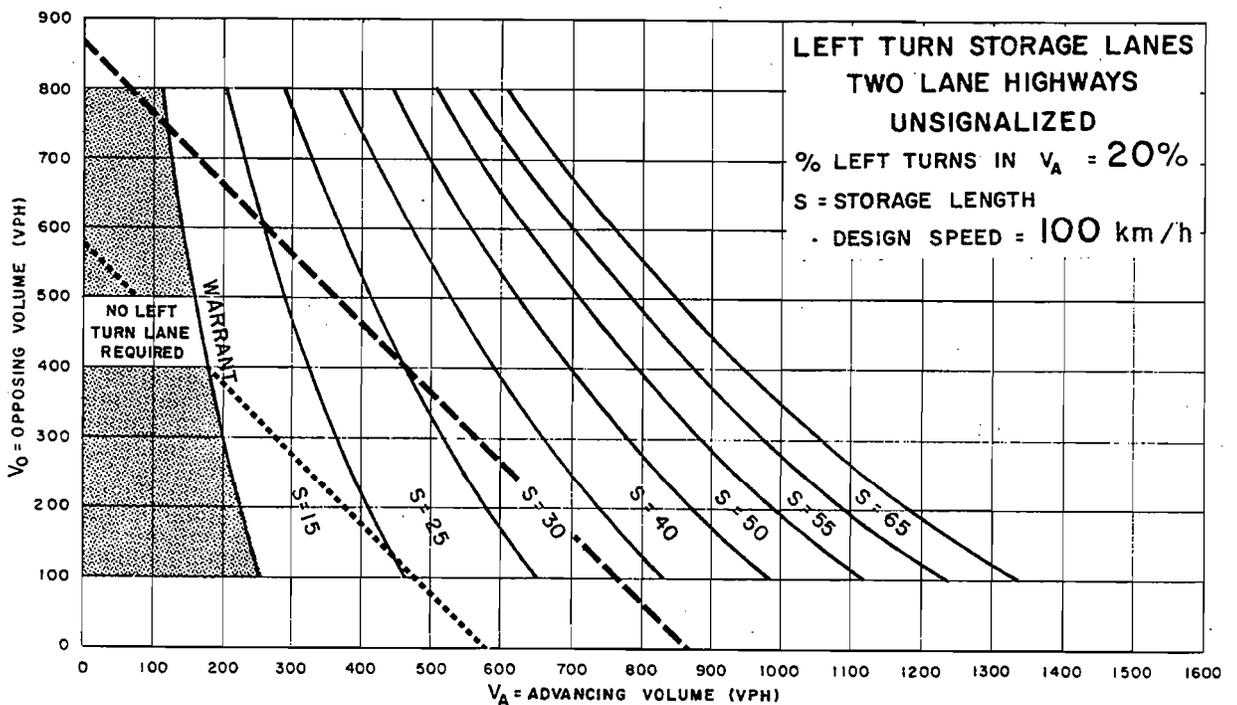


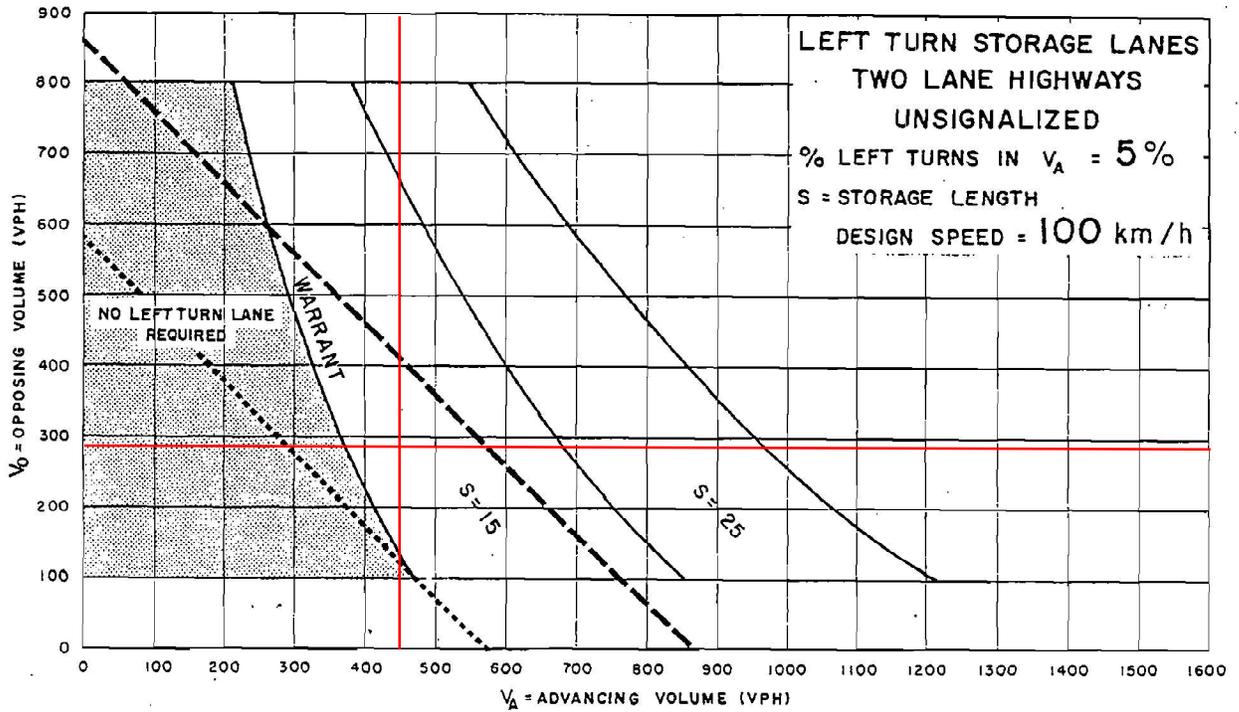
Figure EA-23

# County Road 5 / Concession 6

AT-GRADE INTERSECTIONS

Total 2036 - Westbound  
PM Peak Hour

APPENDIX 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

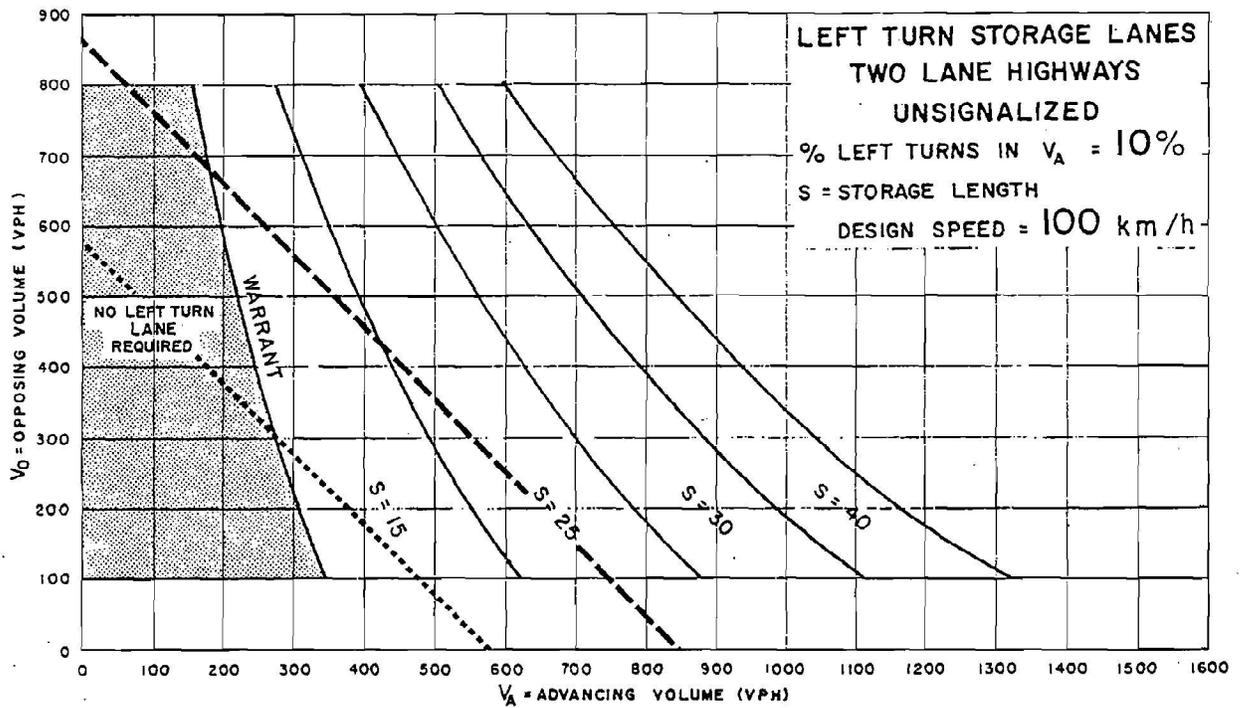


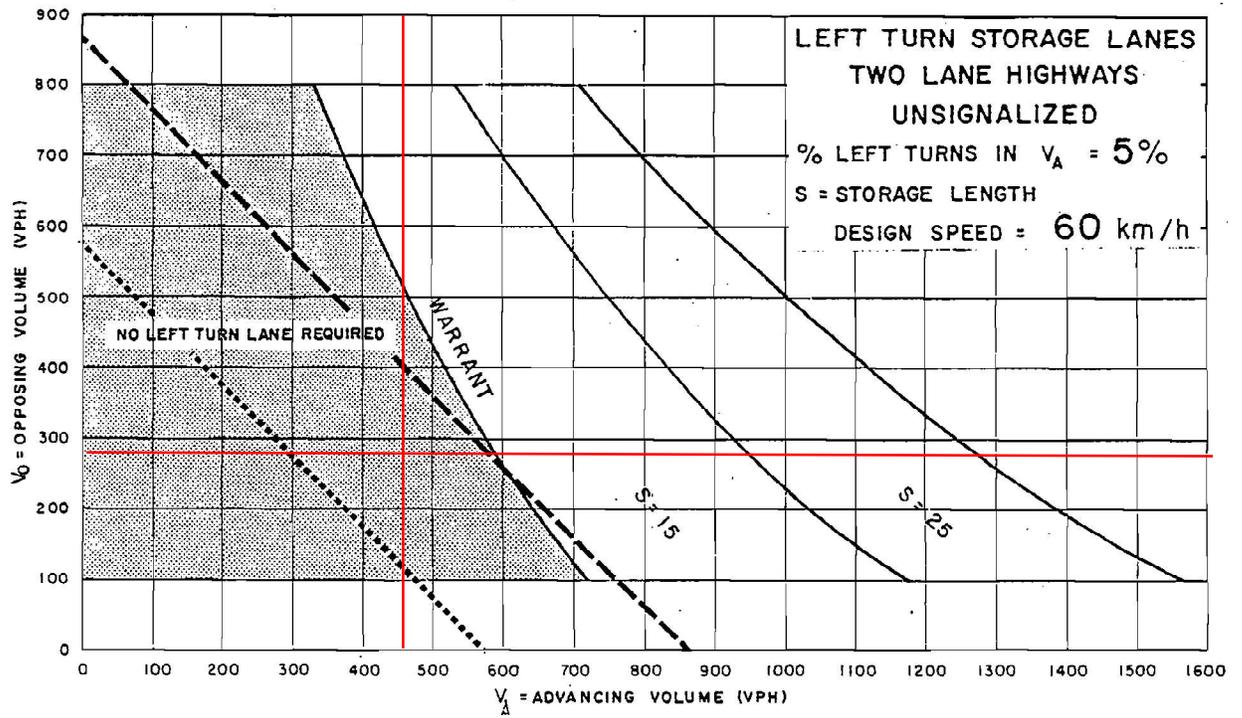
Figure EA-22

# County Road 5 / Concession 6

AT-GRADE INTERSECTIONS

Total 2036 - Westbound  
PM Peak Hour

APPENDIX 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

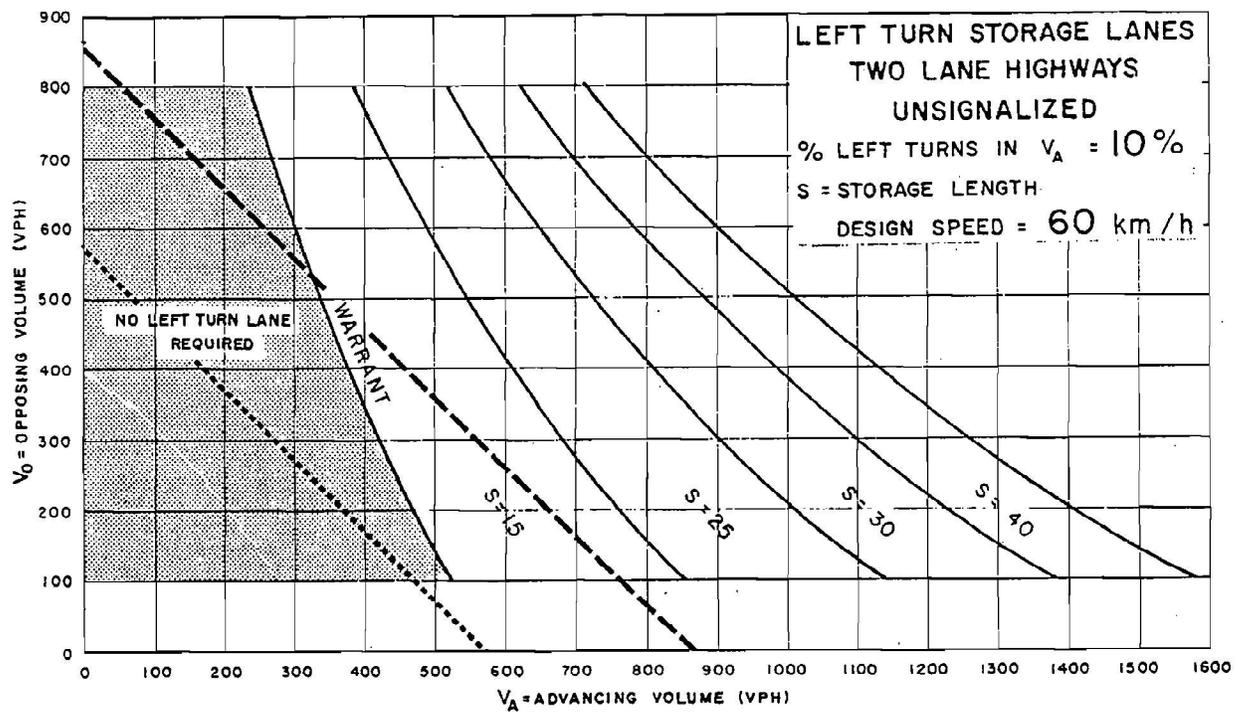


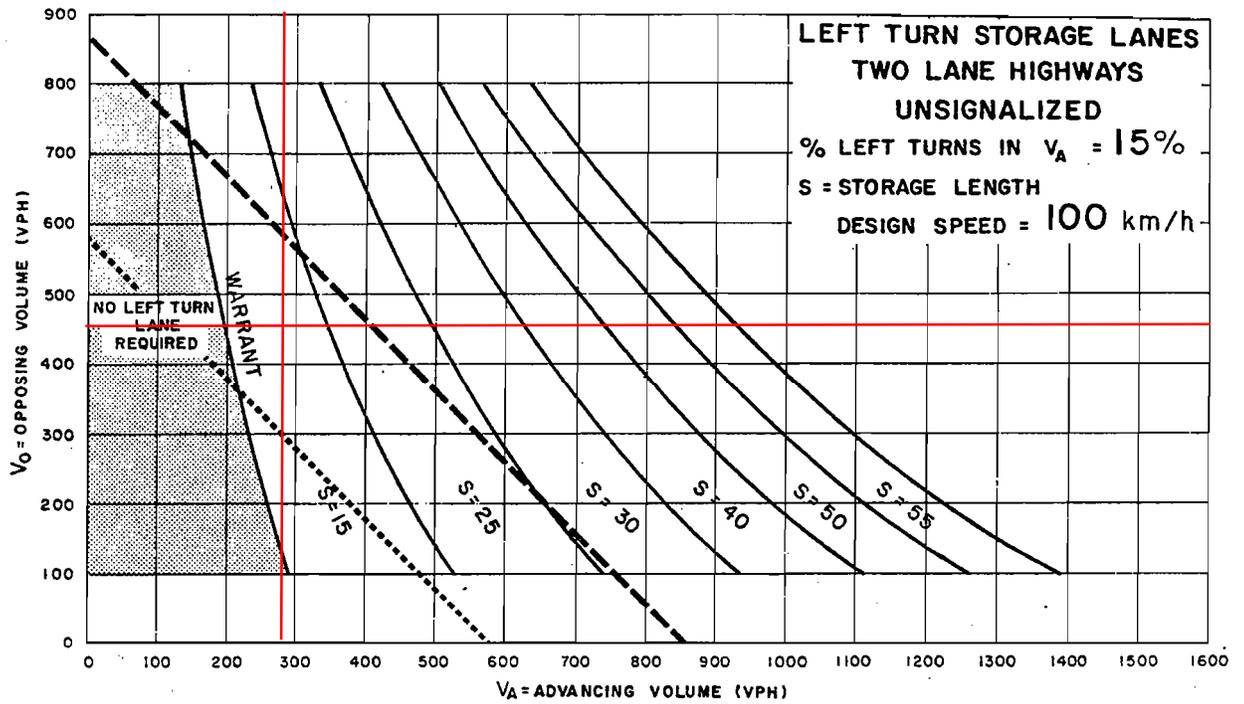
Figure EA-6

# County Road 5 / Concession 6

AT-GRADE INTERSECTIONS

Total 2036 - Eastbound  
PM Peak Hour

APPENDIX 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

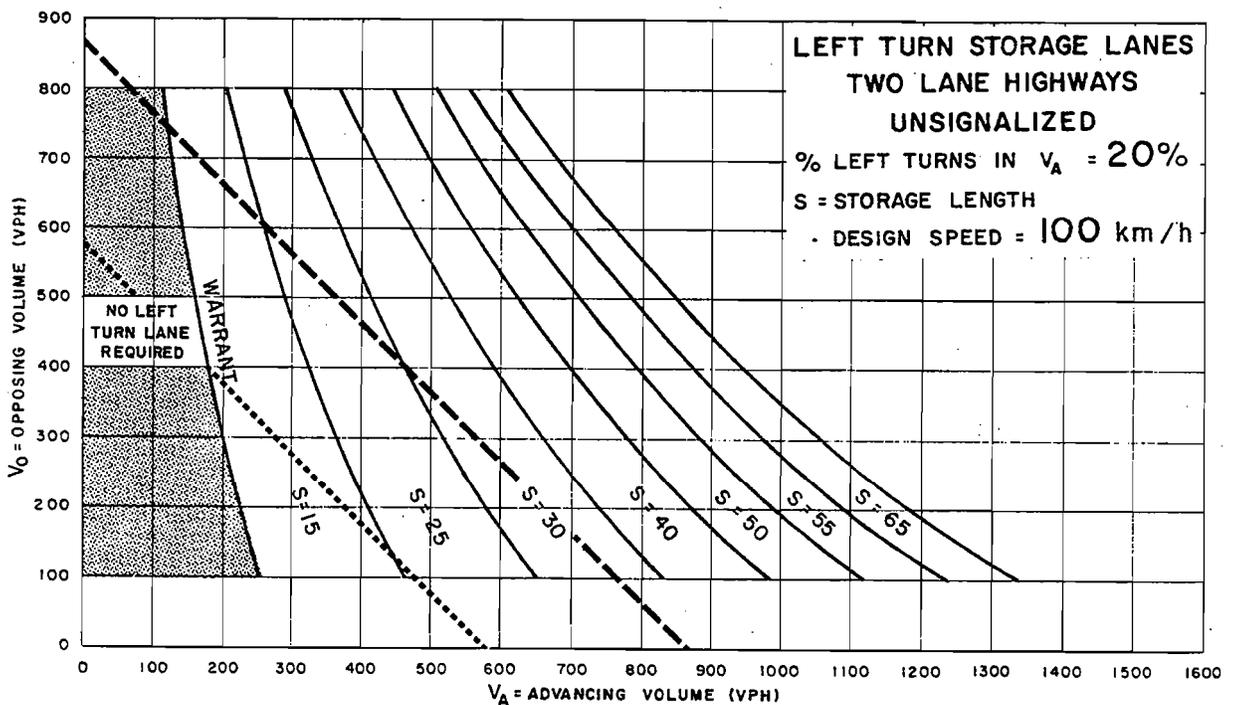


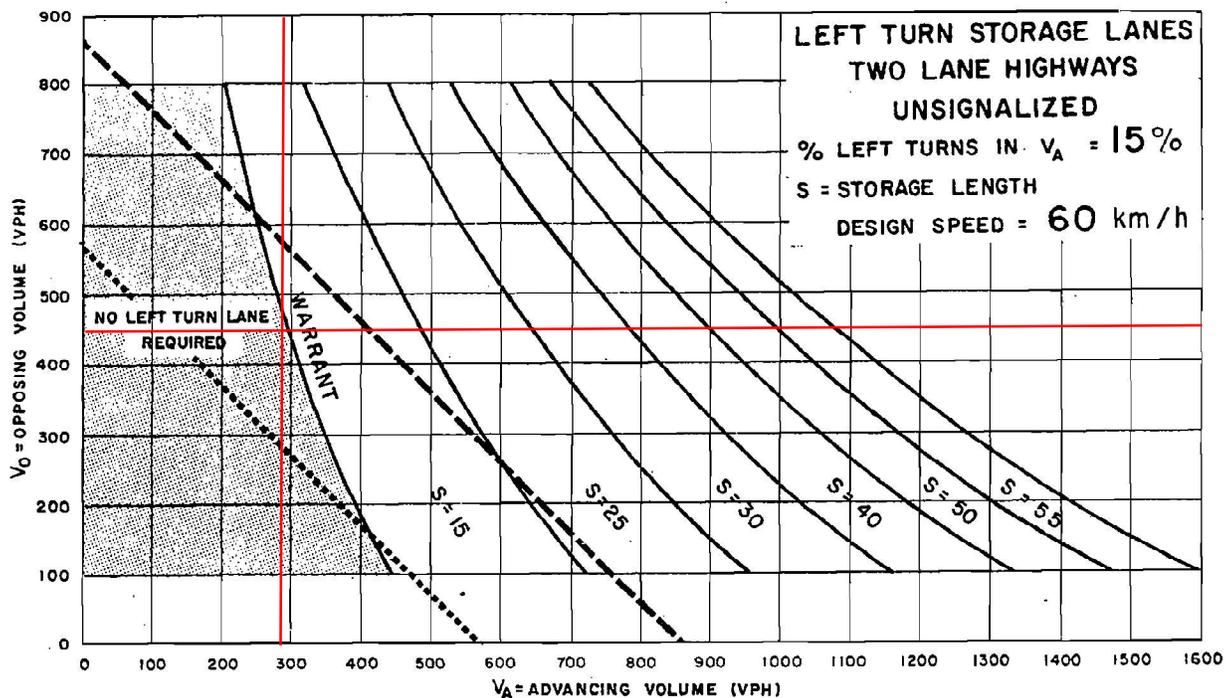
Figure EA-23

# County Road 5 / Concession 6

AT-GRADE INTERSECTIONS

Total 2036 - Eastbound  
PM Peak Hour

APPENDIX 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

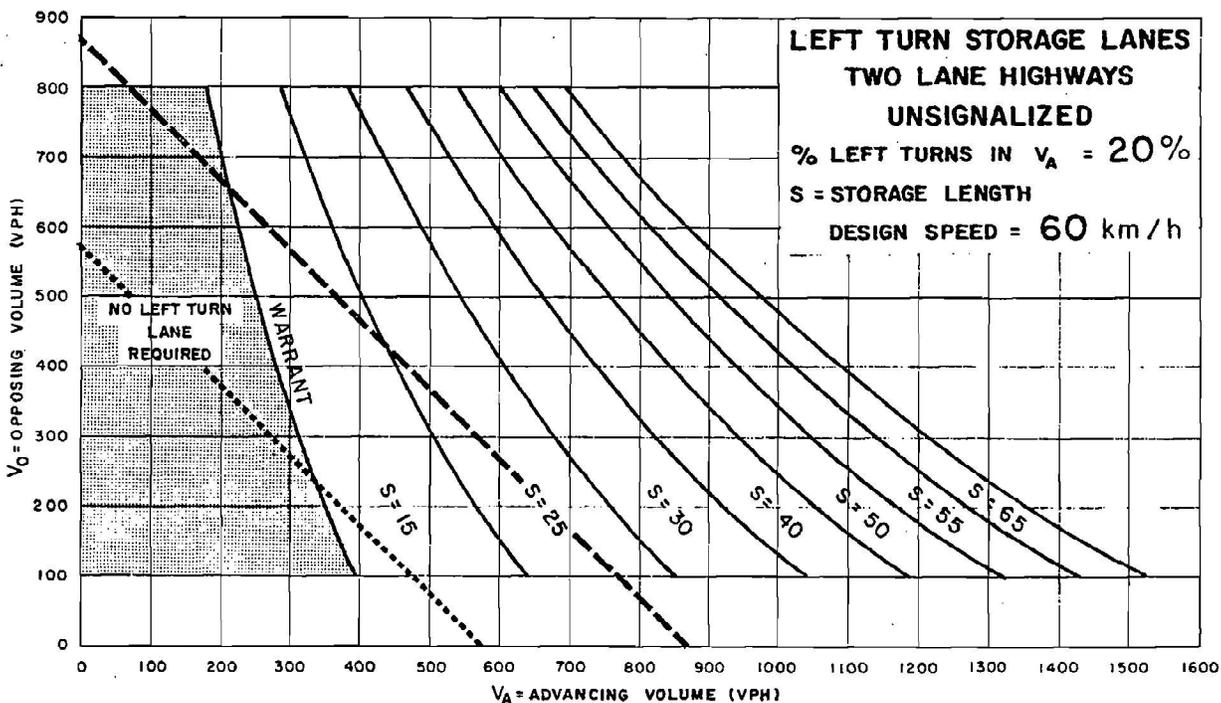
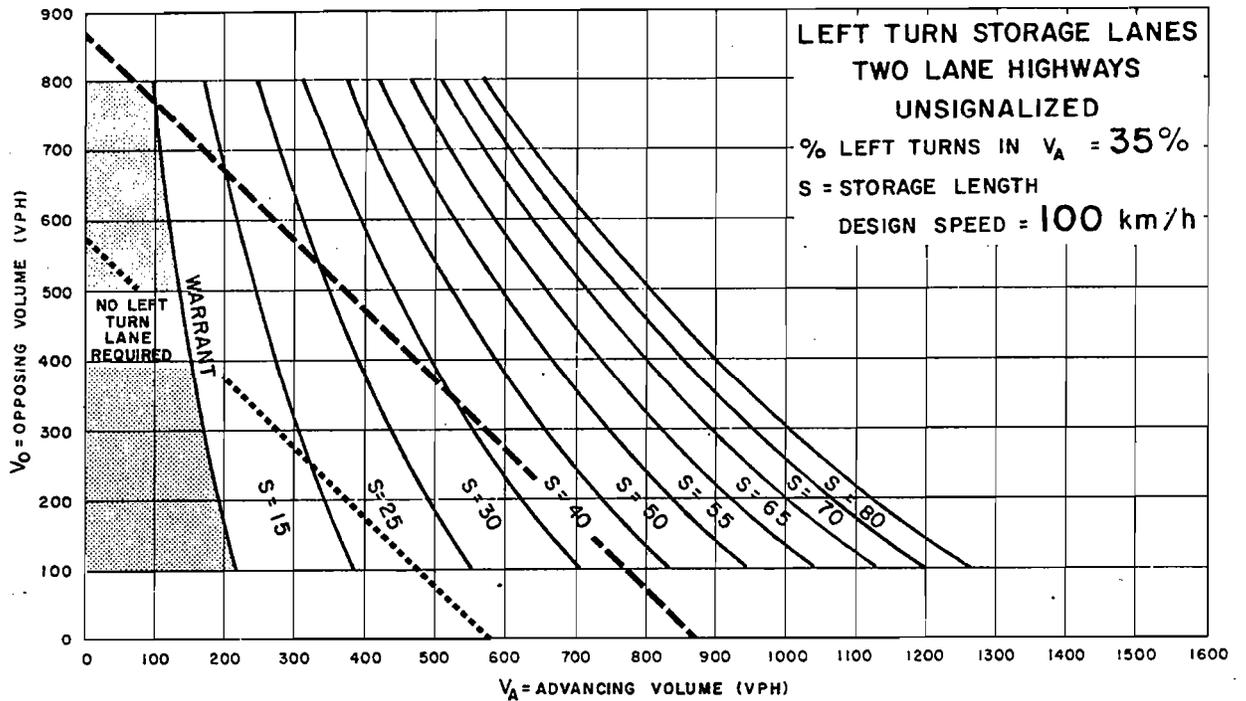


Figure EA-7



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

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

**County Road 13 / Street C**

Total 2036 - Southbound  
AM Peak Hour

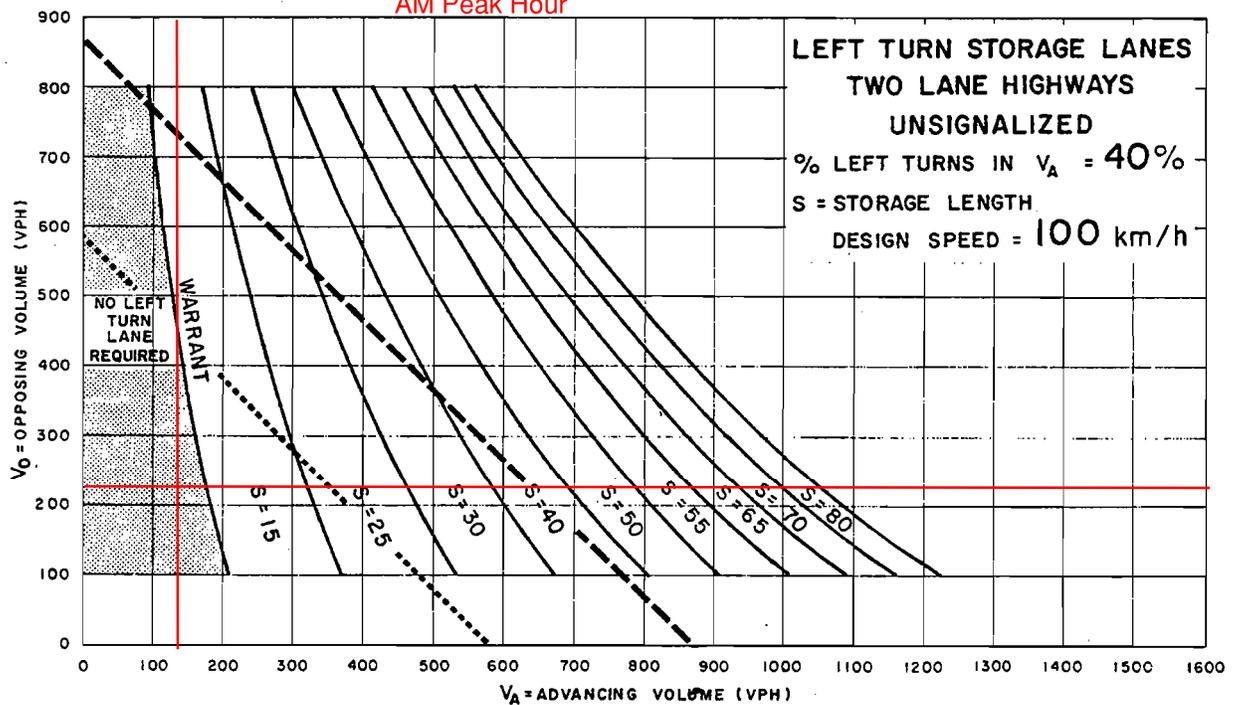
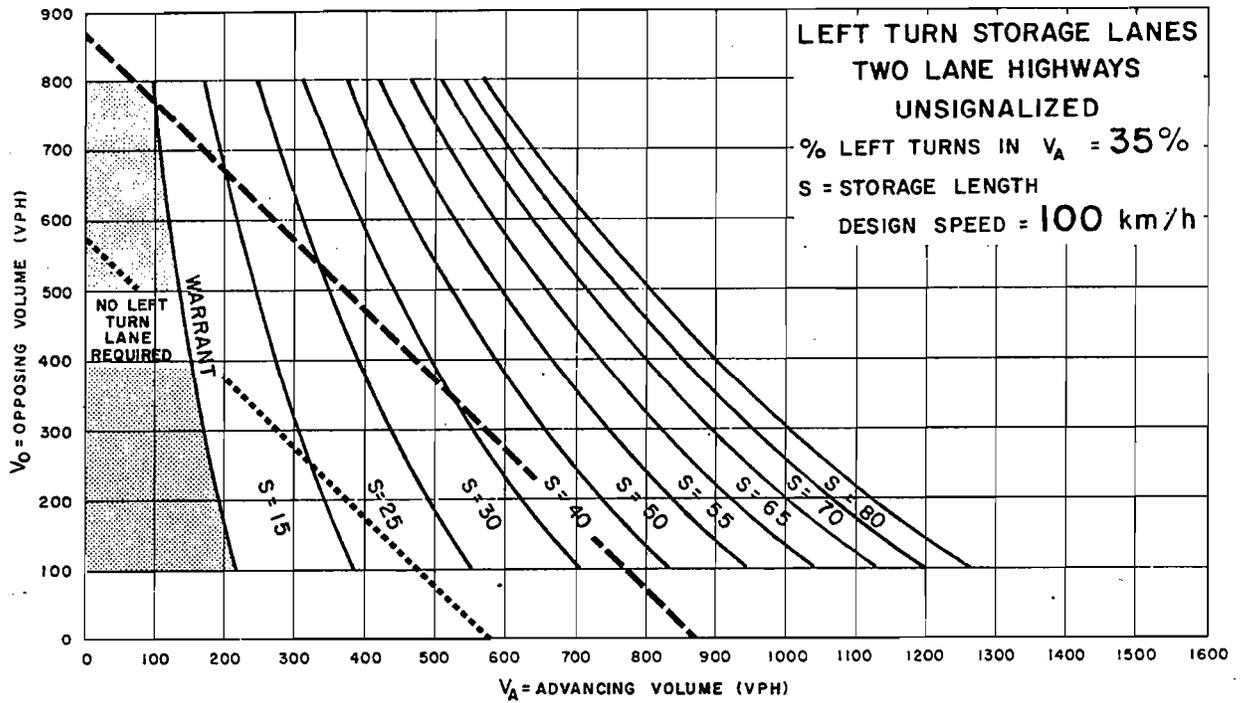


Figure EA-25



**County Road 13 / Street C**  
Total 2036 - Southbound  
PM Peak Hour

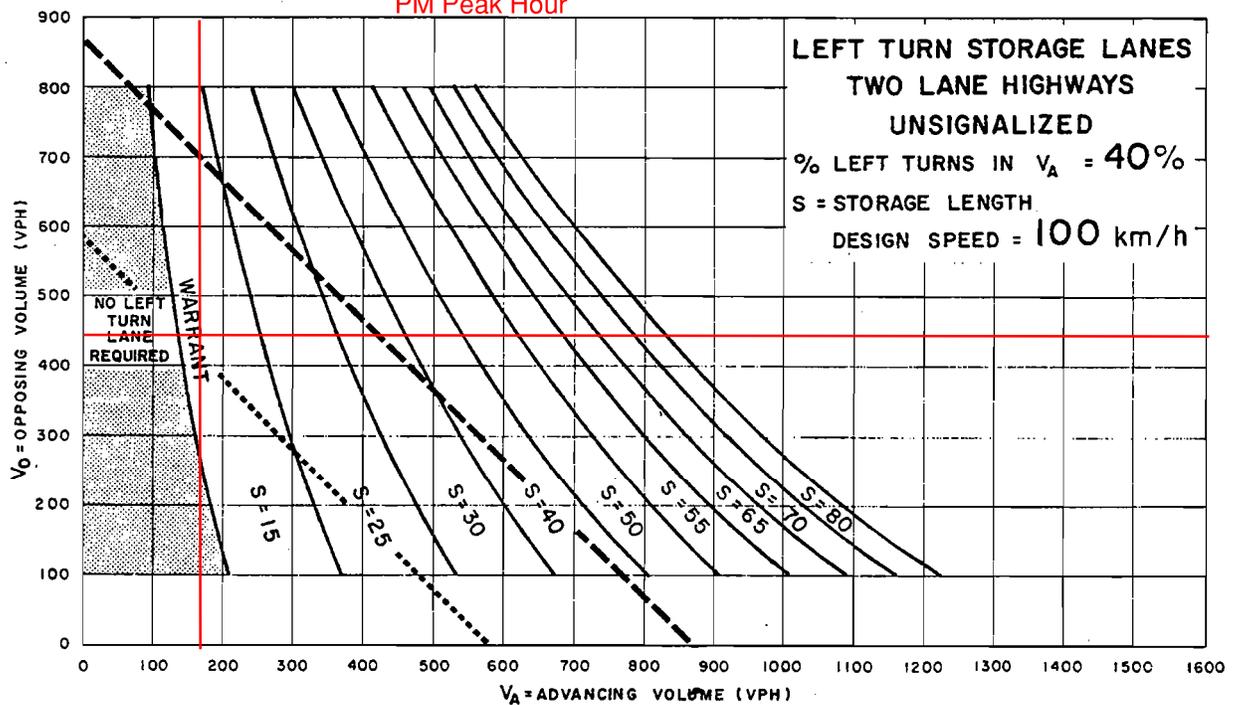
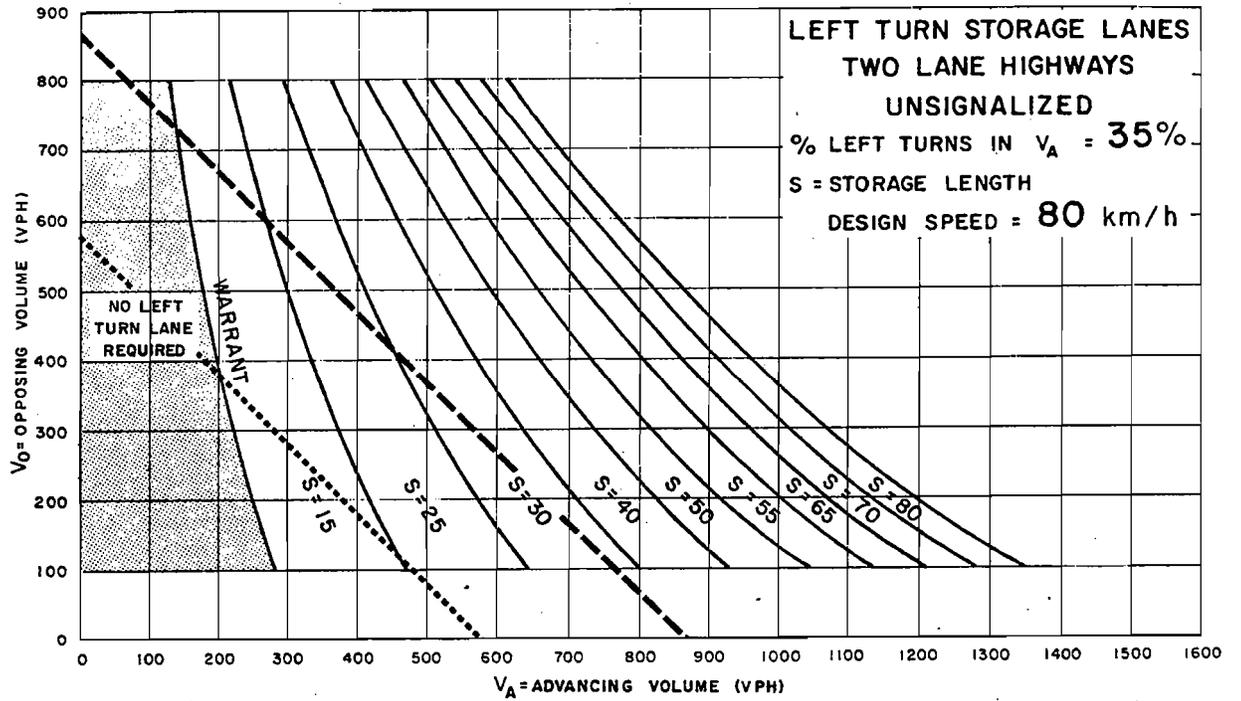


Figure EA-25



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

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

**County Road 13 / Street C**

Total 2036 - Southbound  
PM Peak Hour

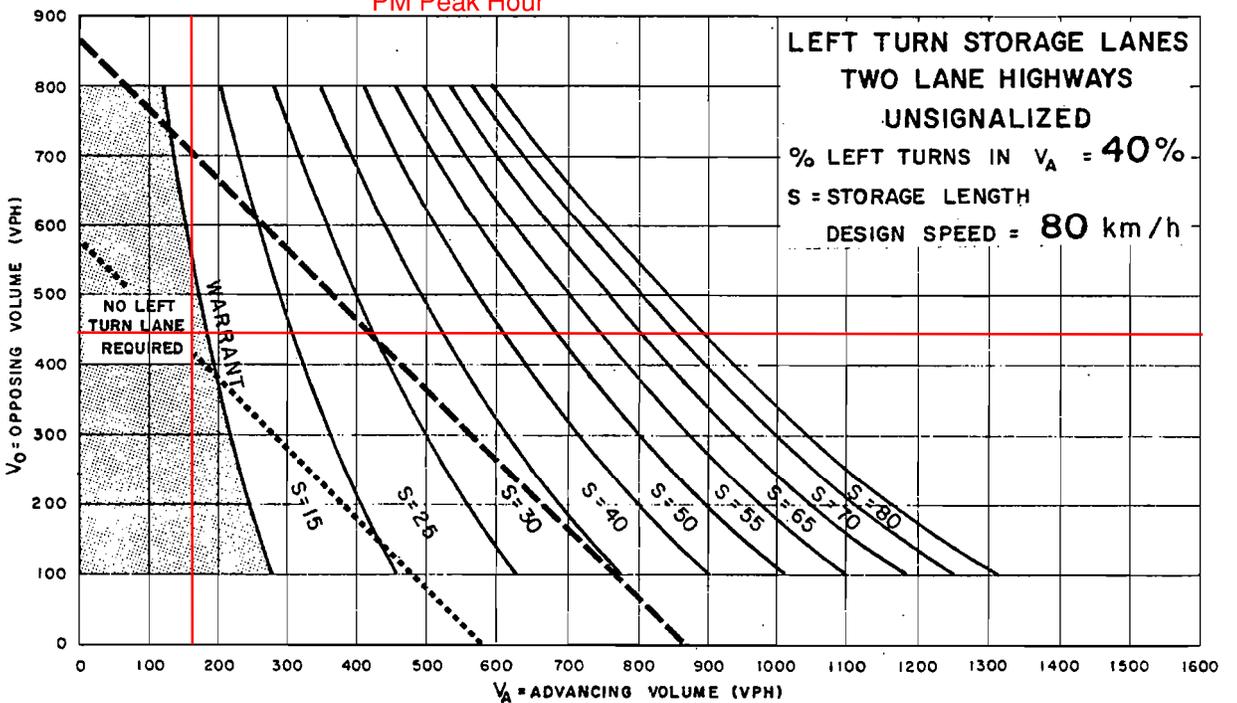


Figure EA-17