TATHAM ENGINEERING

Enhancing our communities

45 Cindy Lane

TRANSPORTATION IMPACT BRIEF

2834556 Ontario Inc.

File 423499 | September 4, 2024

Document Control

File:

423499

Date:

September 4, 2024

Prepared by:

Tatham Engineering Limited
645 Veterans Drive, Unit D
Barrie, Ontario L4N 9H8
T 705-733-9037
tathameng.com

Prepared for:

2834556 Ontario Inc.
45 Cindy Lane
Lisle, Ontario L0M 1M0

Authored by:	Reviewed by:
Karolina Kukielka C.E.T., EIT, rcsi Engineering Intern	Michael Cullip B.Eng. & Mgmt., M.Eng., P.Eng. Vice President

Disclaimer	Copyright
The information contained in this document is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Tatham Engineering Limited undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.	This document may not be used for any purpose other than that provided in the contract between the Owner/Client and the Engineer nor may any section or element of this document be removed, reproduced, electronically stored or transmitted in any form without the express written consent of Tatham Engineering Limited.

Issue	Date	Description
1	September 4, 2024	Final Report

Document Contents

Tables

Figures

Appendices

1 Introduction

Tatham Engineering Limited was retained by Annu Holdings Ltd. to prepare a Transportation Impact Brief in support of the proposed residential development to be located at 45 Cindy Lane in the Township of Adjala-Tosorontio. The location of the development site is illustrated in Figure 1.

1.1 REPORT OBJECTIVE

The objective of this report is to address the requirements of the Township with respect to the potential impacts of the development on the study area road network. Recognizing that the volume of traffic to be generated by the proposed development will not be significant, the scope of this study has been limited to a transportation impact brief with a focus on the following:

- existing conditions, including a description of the study area road network, traffic volumes, operations and planned/ proposed improvements;
- details of the proposed development and anticipated trip generation; and
- transportation impacts associated with the proposed development.

1.2 REPORT STRUCTURE

The report is structured as follows:

- Chapter 1: introduction and study purpose
- Chapter 2: existing conditions, detailing the road system and corresponding traffic operations;
- Chapter 3: proposed development and associated details including land use and traffic volumes;
- Chapter 4: future traffic operations associated with the proposed development; and
- Chapter 5: summary of the report and key findings.

2 Existing Conditions

This chapter will describe the road network, traffic volumes and operations for the existing conditions.

2.1 ROAD NETWORK

The road network to be addressed by this study consists of Concession Road 3, Cindy Lane and their respective intersection. Aerial mapping and photographs of the road system are provided in Figure 2.

Concession Road 3

Concession Road 3 is a north-south local road under the jurisdiction of the Township. The road has a 2-lane rural cross-section (i.e. gravel shoulders and open ditches), providing 1 travel lane per direction. Concession Road 3 has a speed limit of 80 km/h and an assumed planning capacity of 400 vehicles per hour per lane (vphpl).

Cindy Lane

Cindy Lane is an east-west local road under the jurisdiction of the Township. The road has a 2-lane rural cross-section (gravel/grass shoulders and open ditches), providing 1 travel lane per direction. Cindy Lane has a speed limit of 50 km/h and an assumed planning capacity of 400 vphpl.

Concession Road 3 & Cindy Lane

The intersection of Concession Road 3 with Cindy Lane is a 3-leg unsignalized intersection with stop control on Cindy Lane. All approaches are single lane approaches (i.e. there are no exclusive turn lanes provided).

2.2 TRAFFIC VOLUMES

Traffic Counts

To determine the existing traffic volumes on the study area road network, a turning movement count was conducted at the intersection of Concession Road 3 with Cindy Lane on Thursday November 28, 2023 from 7:00 to 10:00 and 15:00 to 18:00. The observed peak hour traffic volumes are illustrated in Figure 3 with detailed count sheets provided in Appendix A.

Seasonal Variation

While the road network is local and not necessarily subject to significant seasonal variations, the through traffic volumes on Concession Road 3 were increased by 100% to consider peak summer operations (which is considered conservative in that it effectively doubles the observed volumes on the road).

In addition, consideration has also been given to the Silver Brooke Golf Club operations recognizing that such would not have been captured in the November 2023 traffic counts. Estimates of golf course related traffic were based on trip generation rates published in the *ITE Trip Generation Manual, 11th Edition* and considering an 18-hole golf course; the associated statistics are provided in Table 1.

Table 1: Trip Generation – Silver Brooke Golf Club

LAND USE	RATE/ ESTIMATE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			In	Out	Total	In	Out	Total
golf course (ITE 430)	rate	holes	1.39	0.37	1.76	0.59	0.35	0.94
	estimate	18 holes	25	7	32	27	25	52

The golf course volumes were distributed through the intersection of Concession Road 3 with Cindy Lane based on the traffic patterns observed during the 2023 traffic counts. To ensure a conservative approach, it has been assumed that all golf course traffic will travel through the subject intersection (whereas in reality some traffic travel to/from the east via Cindy Lane, accessing Tosorontio Sideroad 17). The associated golf course traffic is illustrated in Figure 4.

2024 Traffic Volumes

While the traffic counts were conducted in 2023, an explicit growth adjustment was not applied to account for background growth between 2023 and 2024. Rather, the year over year growth is considered as captured in the seasonal adjustments presented above. It is noted that a 1 or 2% growth rate, which is a typical adjustment, would not result in any appreciable change to the volumes over one year.

The resulting 2024 volumes, with seasonal adjustment, are illustrated in Figure 5.

2.3 TRAFFIC OPERATIONS

The capacity, and hence operations, of a road system is effectively dictated by its intersections. As such, the traffic assessment has focused on the operations of the study area intersection, based on the following:

- procedures outlined in the *Highway Capacity Manual 6th Edition*[1] (using Synchro v.11);
- the 2024 traffic volumes; and
- the existing intersection configuration and control.

The analysis considers the following metrics for the critical movements at unsignalized intersections (namely the stop-controlled movement):

- average delay (measured in seconds);
- level of service (LOS); and
- volume to capacity (v/c) ratio.

A level of service A corresponds to the best operating condition with minimal delays whereas level of service F corresponds to poor operations resulting from high intersection delays (level of service definitions are provided in Appendix B). A v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity while v/c of 1.0 indicates capacity has been reached.

A summary of the analysis is provided in Table 2, whereas detailed worksheets are included in Appendix C.

Table 2: Intersection Operations – 2024

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
Concession Rd 3 & Cindy Lane	WB LR	stop	10	A	0.02	11	B	0.15

L - left T - through R - right LTR - left-through-right LT - left-through TR - through-right LR - left-right

Based on the existing volumes, the subject intersection currently provides excellent overall levels of service (LOS B or better) with minor delays during both peak hours. As such, no improvements are required to support existing conditions.

[1] *Highway Capacity Manual, 6th Edition*. Transportation Research Board, October 2016.

3 Proposed Development

This chapter will provide additional details with respect to the proposed development, including its location, land use and the projected site generated traffic volumes and the assignment of such to the adjacent road network.

3.1 LOCATION

As illustrated in Figure 1, the subject site is located at 45 Cindy Lane in the Township of Adjala-Tosorontio.

3.2 LAND USE

As per the site plan provided in Figure 6, the proposed development will consist of 8 single detached homes, each with frontage along Cindy Lane (the lots will be severed from the Silver Brooke Golf Club).

3.3 SITE ACCESS

3.3.1 Configuration

Each lot will have direct driveway access to Cindy Lane.

3.3.2 Sight Lines

The sight lines along Cindy Lane have been reviewed in context of the Transportation Association of Canada (TAC) geometric design requirements for minimum stopping sight distance, which provides sufficient distance for an approaching motorist to observe a stationary hazard in the road and bring their vehicle to a complete stop prior to the hazard. Based on TAC guidelines, the minimum stopping sight distance for a design speed of 60 km/h (reflective of the posted speed limit + 10 km/h) is 85 metres.

As evident in the site plan and aerial photos of the existing road network (Figure 6 and Figure 2 respectively), Cindy Lane is relatively straight and flat in the area of the proposed lots. There is a horizontal curve to the east of Lot 8 (the further lot to the east), and thus the sight lines at Lot 7 and Lot 8, which represent the most critical conditions, have been reviewed further. Based on field measures the following are noted:

- The sight lines to/from the west are in excess of 100 metres and thus satisfy the TAC sight distance guidelines for a 60 km/h design speed.
- The sight lines to/from the east vary between 75 and 100 metres across the frontage of the lot, with the reduced sight line observed from the west side of the lot. In this respect, it is

recommended that the driveway to Lot 8 be located towards the east limit of the lot to ensure that adequate sight lines are realized.

- Conversely, the driveway to Lot 7 should be located to the west limit of the lot to maximize the sight lines to/from the east.

It is noted that the minimum stopping sight distance for a design speed of 50 km/h (65 metres) is satisfied in all instances (i.e. motorists travelling at the speed limit will have sufficient distance to stop if required). Should site conditions preclude the recommended driveway locations for Lots 7 and 8, "Driveway Ahead" signage could be placed to the east of the development to alert driveways to the presence of the driveways.

Based on the above, the sight lines along Cindy Lane are considered acceptable.

3.4 SITE TRAFFIC

3.4.1 Trip Generation

The number of vehicle trips to be generated by the proposed development has been determined based on type of use, development size and trip generation rates published in the *ITE Trip Generation Manual, 11th Edition*. Based on the proposed development, trip rates for *single family detached* (ITE code 210) have been applied. The associated trip rates and trip estimates are provided in Table 3.

Table 3: Trip Generation – 45 Cindy Lane

LAND USE	RATE/ ESTIMATE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			In	Out	Total	In	Out	Total
single family detached (ITE 210)	rate	units	0.18	0.52	0.70	0.59	0.35	0.94
	estimate	8 units	1	4	5	5	3	8

As indicated, the proposed development is expected to generate 5 new trips during the AM peak hour and 8 new trips during the PM peak hour (total of inbound and outbound trips).

3.4.2 Trip Distribution

The distribution of the site generated trips has been developed based on the location of the site in relation to local and regional employment centres (i.e. Alliston, Angus, Base Borden, etc.) and travel patterns identified during the 2023 traffic counts. Based on the above, the following distribution was established:

- 45% to/from the north along Concession Road 3; and
- 55% to/from the south along Concession Road 3.

The resulting assignment of site traffic to the road network is illustrated in Figure 7.

4 Future Conditions

This chapter will address the future traffic conditions and the resulting impacts of the proposed development on the adjacent road system. The following areas are to be addressed:

- traffic volumes;
- intersections operations; and
- potential improvements to the study area road network, if necessary.

Given the limited scale of the development, the assessment has considered a single 5-year horizon (2029).

4.1 ROAD NETWORK

There are no improvements currently being considered to the study area road network that would otherwise impact the operations or capacity of the adjacent roads. As such, the road network as described in Section 2.1 has been maintained in the assessment of the future horizons.

4.2 TRAFFIC VOLUMES

4.2.1 Background Growth

Based on Census data from 2011, 2016 and 2021, the population of the Township increased from 10,603 persons in 2011 to 10,975 persons in 2016 and to 10,989 persons in 2021. This translates to growth of approximately 0.69% per annum from 2011 to 2016, 0.03% per annum from 2016 to 2021, and 0.36% per annum for the overall period between 2011 to 2021.

The County of Simcoe's *Transportation Master Plan* predicts the population of the Township to reach 11,970 by 2051, which translates to an annual growth rate of 0.29% when considering 2021 census population of 10,989 persons.

Based on the historical growth and population projections noted above, an annual growth rate of 1% has been applied to the through traffic volumes on Concession Road 3. No growth has been applied to Cindy Lane given the limited volumes.

4.2.2 Background Developments

There are no other developments in the immediate area that have been identified that would contribute any meaningful traffic volumes to the study area road network.

4.2.3 Total Traffic Volumes

The future total traffic volumes for the 2029 horizon year are illustrated in Figure 8. The volumes are based on the 2024 volumes, adjusted to reflect the noted 1% background growth rate, plus the additional traffic volumes to be generated by the proposed development.

4.3 TRAFFIC OPERATIONS

The intersection of Concession Road 3 with Cindy Lane was analyzed again to consider the future total traffic volumes. The results of the operational review are summarized in Table 4, with detailed worksheets provided in Appendix D. As indicated, the intersection of Concession Road 3 with Cindy Lane will continue to provide excellent operations (LOS B or better) with minor delays. As such, no improvements are required to support the future conditions; the road network will readily accommodate the additional volumes generated by the proposed development.

Table 4: Intersection Operations – 2029

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
Concession Rd 3 & Cindy Lane	WB LR	stop	10	A	0.03	11	B	0.16

L - left T - through R - right LTR - left-through-right LT - left-through TR - through-right LR - left-right

While not specifically noted, the operations at each intersection will also provide excellent operations given the limited volumes to/from each development lot and the limited volumes on Cindy Lane.

4.4 TURN LANE REQUIREMENTS

The traffic volumes on the study area roads are low, consistent with that of a local road network. Exclusive turn lanes at the noted intersection are not required nor are they recommended given the projected traffic volumes.

5 Summary

Proposed Development

The study has addressed the transportation impacts associated with the proposed residential development to be located at 45 Cindy Lane in the Township of Adjala-Tosorontio. Upon completion, the development is expected to generate 5 trips during AM peak hour and 8 trips during PM peak hour.

Transportation Impacts

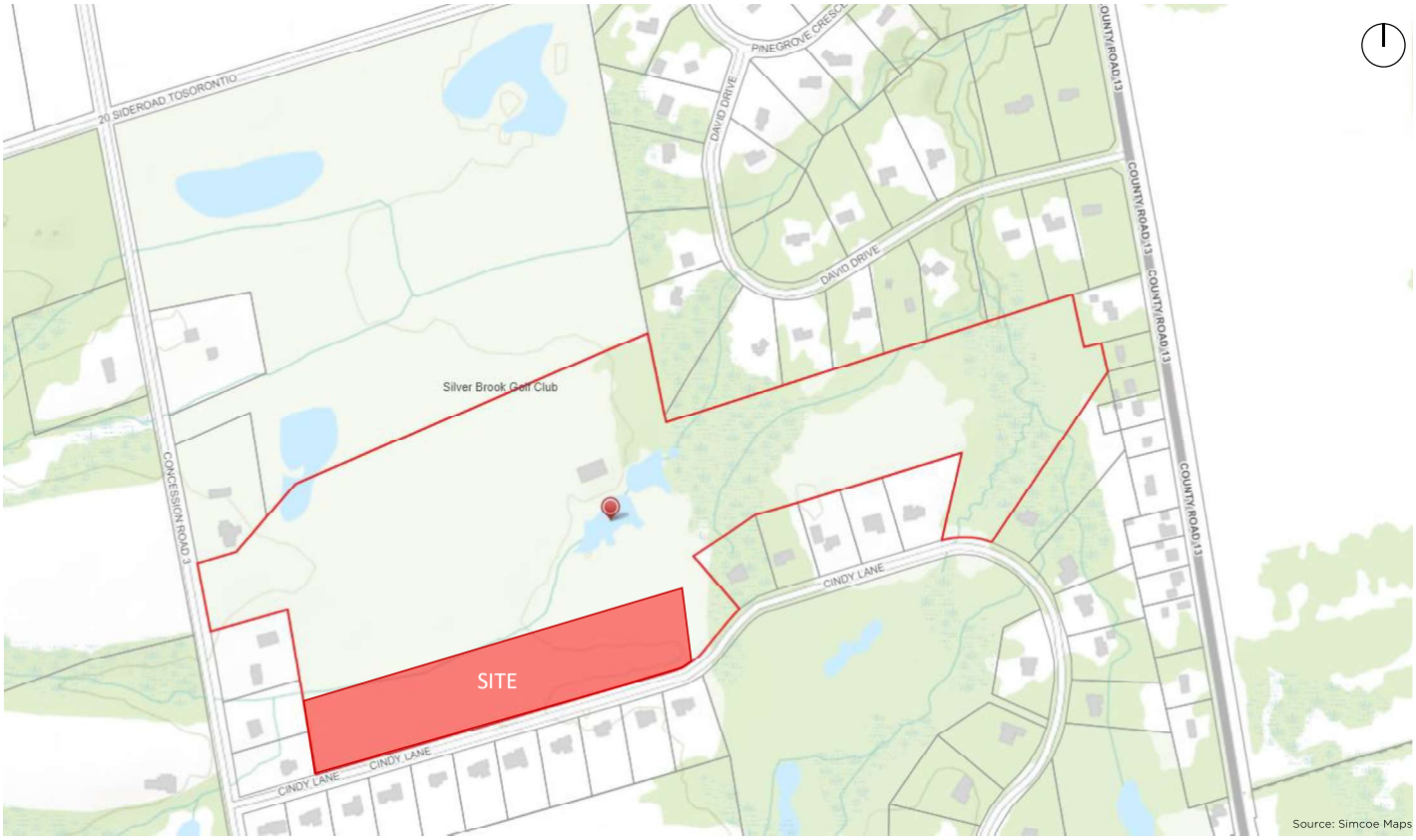
In addressing the study area traffic operations, the intersection of Concession Road 3 with Cindy Lane was analysed under existing (2024) and future (2029) horizon periods. Based on these assessments, the area road system can readily accommodate the development with no improvements required.

Sight Line Assessment

Sight lines along Cindy Avenue were reviewed in context of TAC guidelines for minimum stopping sight distances. While the sight lines to/from the west satisfy the TAC guidelines, the sight lines to/from the east are somewhat limited at Lots 7 and 8 due to the horizontal curvature on Cindy Lane. It is recommended that the driveway to Lot 7 be located at the west limit of the lot and the driveway to Lot 8 be located at the east limit of the lot in order to maximize sight lines and satisfy the TAC guidelines for minimum stopping sight distance. Should site conditions preclude the recommended driveway locations for Lots 7 and 8, "Driveway Ahead" signage could be placed to the east of the development to alert driveways to the presence of the driveways.

Turn Lane Requirements

Given the limited volumes on the road network, exclusive turn lanes are not warranted at the study area intersection.



45 CINDY LANE

Figure 1: Site Location

45 CINDY LANE

Figure 2A: Area Road Network

Looking east along Cindy Lane from Concession Road 3

45 CINDY LANE

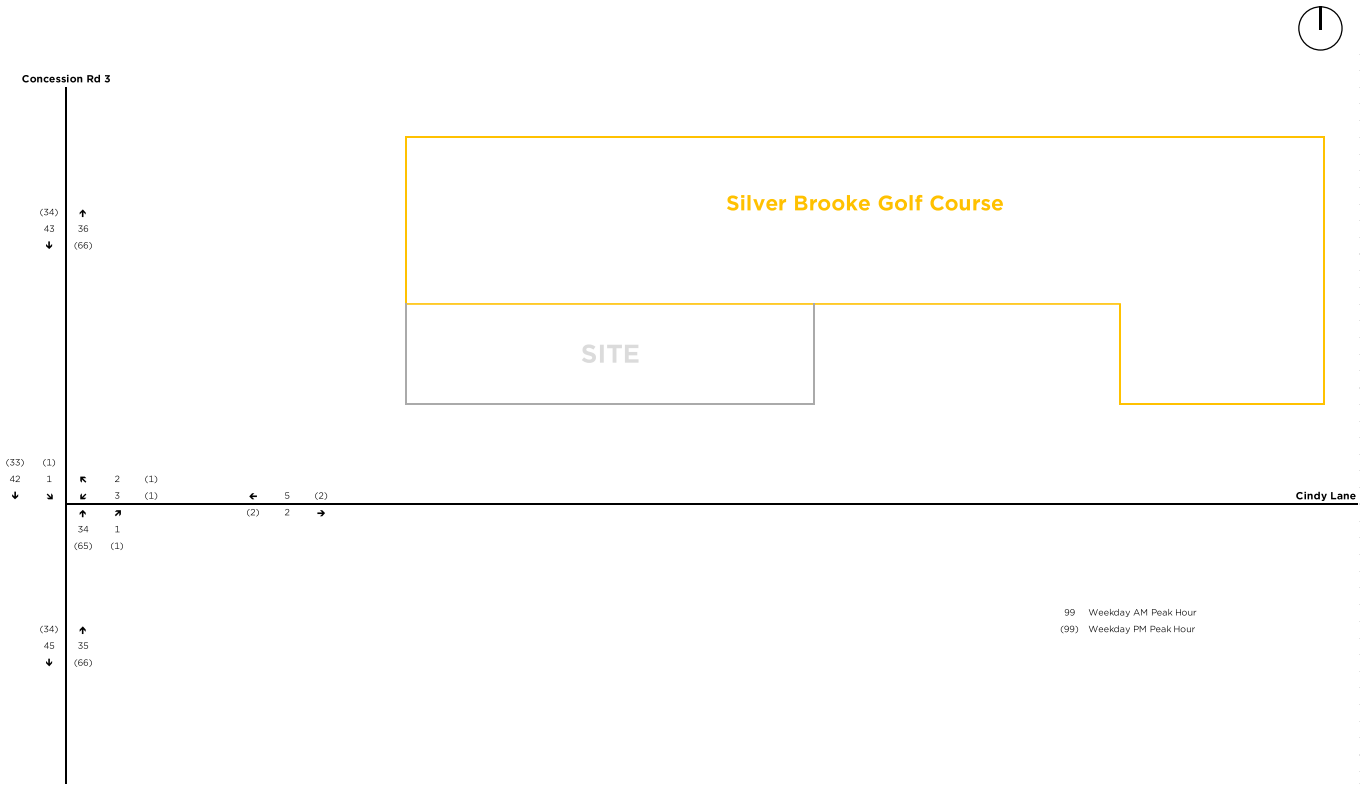
Figure 2B: Area Road Network

Looking east along Cindy Lane from Lot 8

Looking west along Cindy Lane from Lot 8

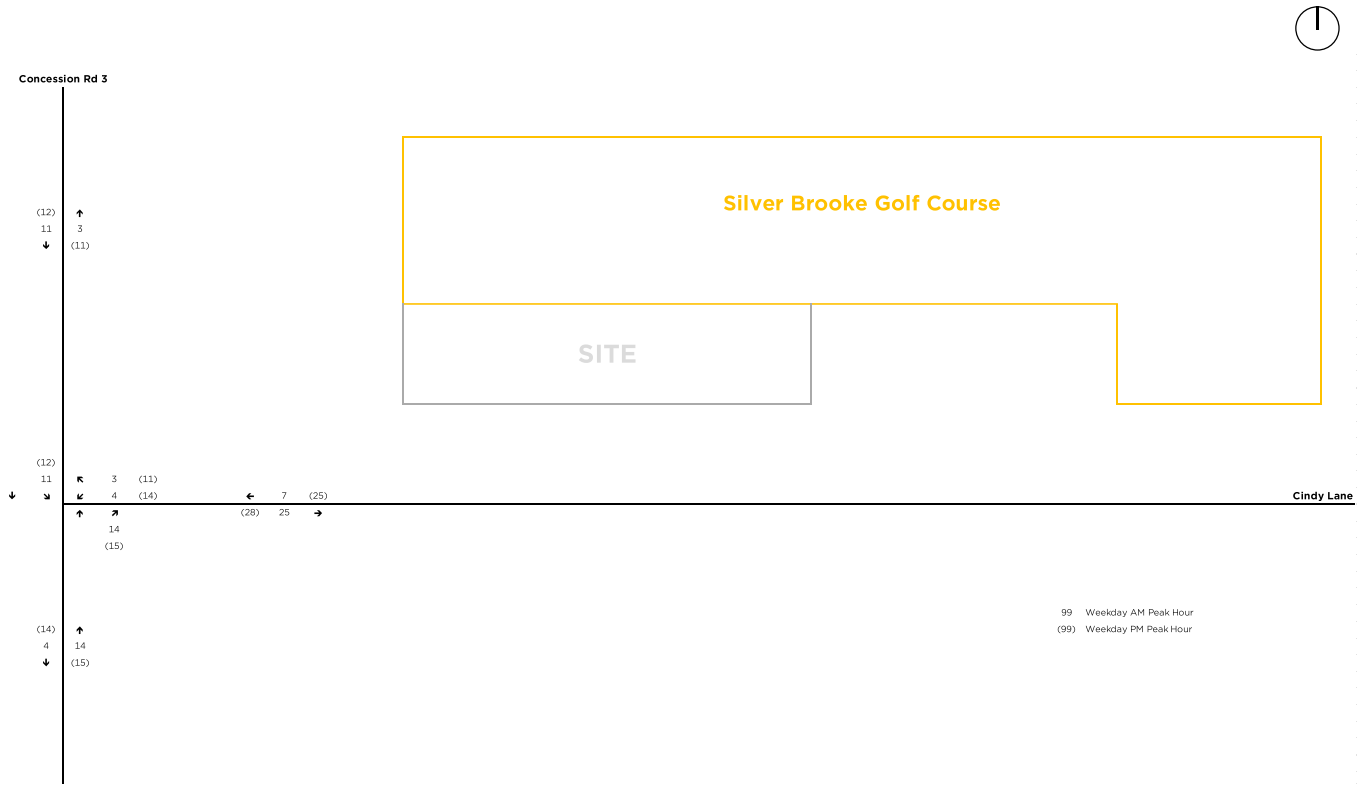
45 CINDY LANE

Figure 2C: Area Road Network



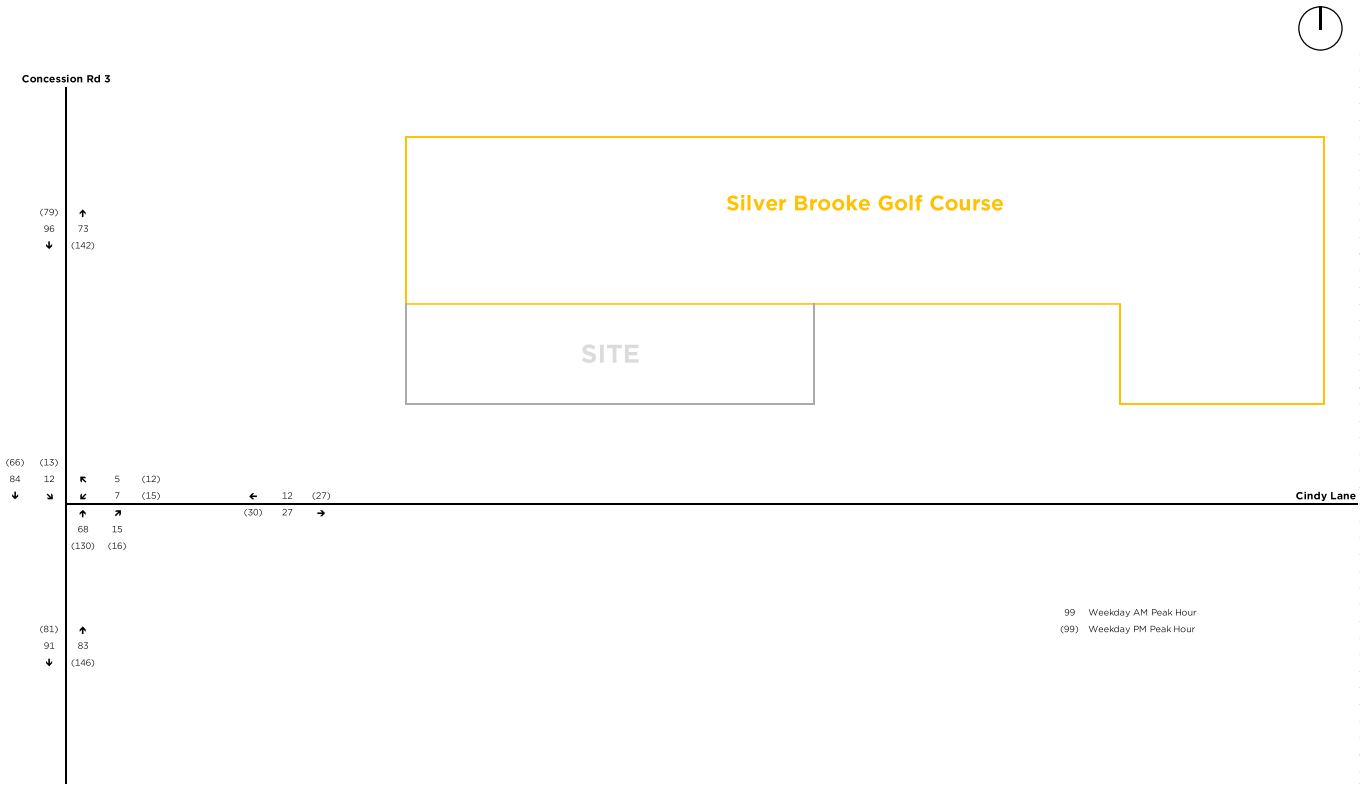
45 CINDY LANE

Figure 3: Traffic Volumes – 2023 Counts



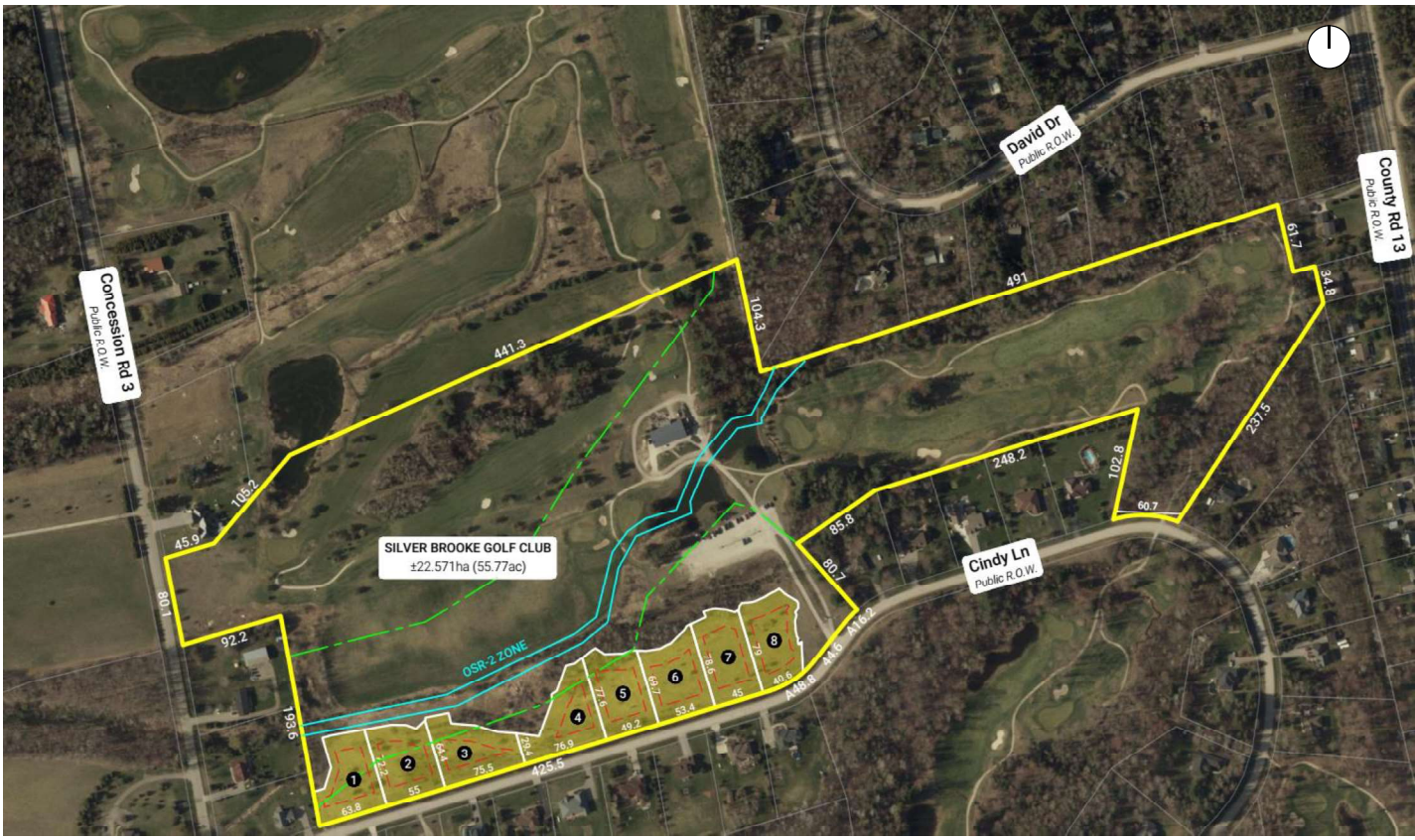
45 CINDY LANE

Figure 4: Traffic Volumes – Silver Brooke Golf Course

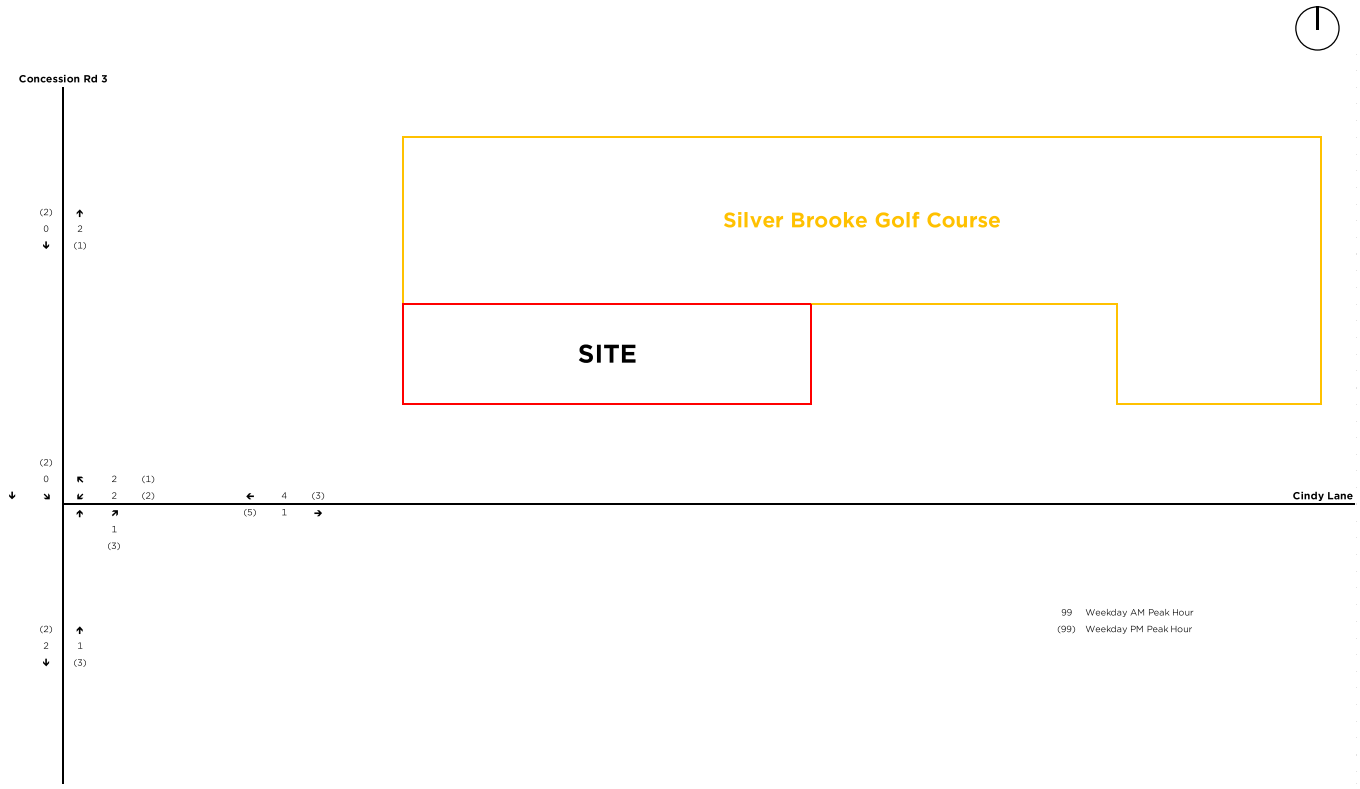


45 CINDY LANE

Figure 5: Traffic Volumes – 2024 Existing

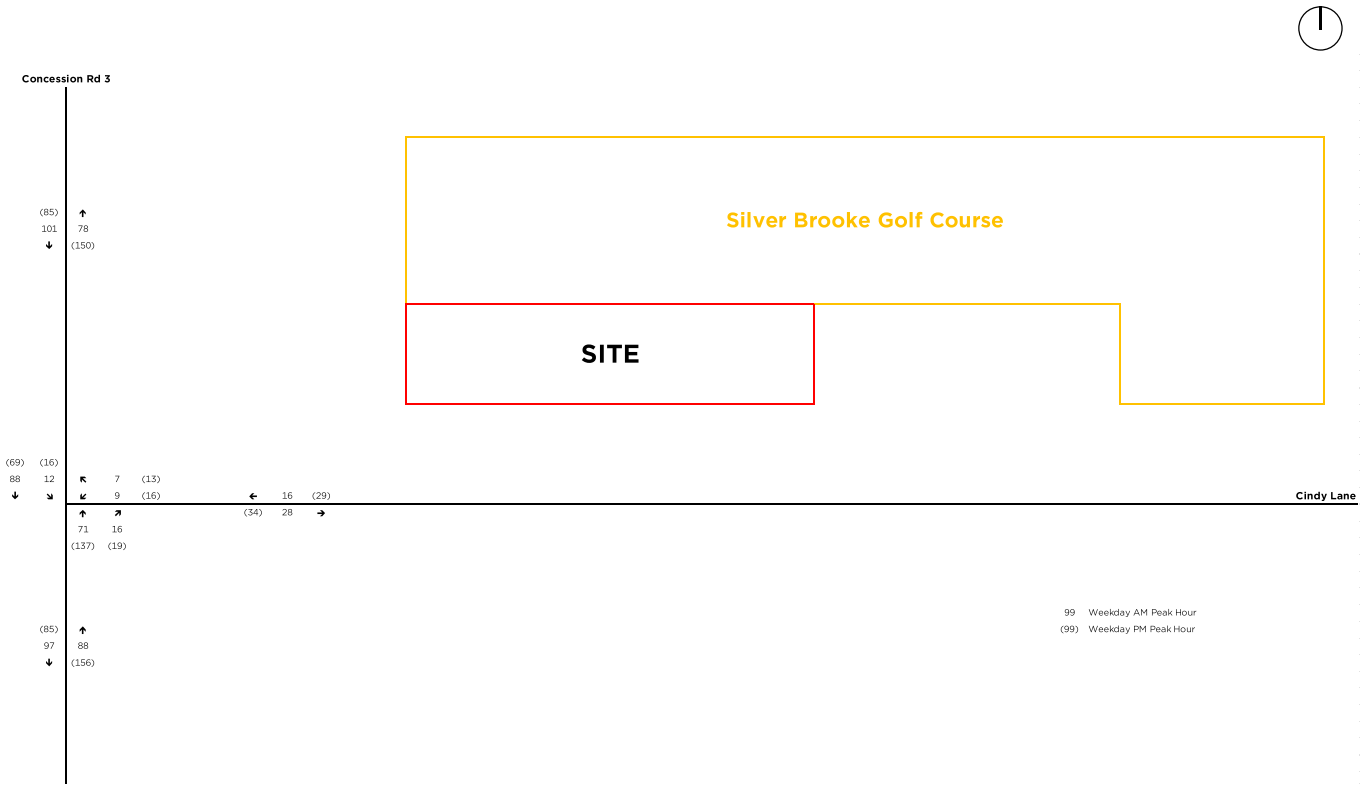


45 CINDY LANE
Figure 6: Site Plan



45 CINDY LANE

Figure 7: Site Generated Traffic



45 CINDY LANE

Figure 6: Traffic Volumes – 2029 Total

Appendix A:
Traffic Counts

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-385 - Tatham Engineering Ltd

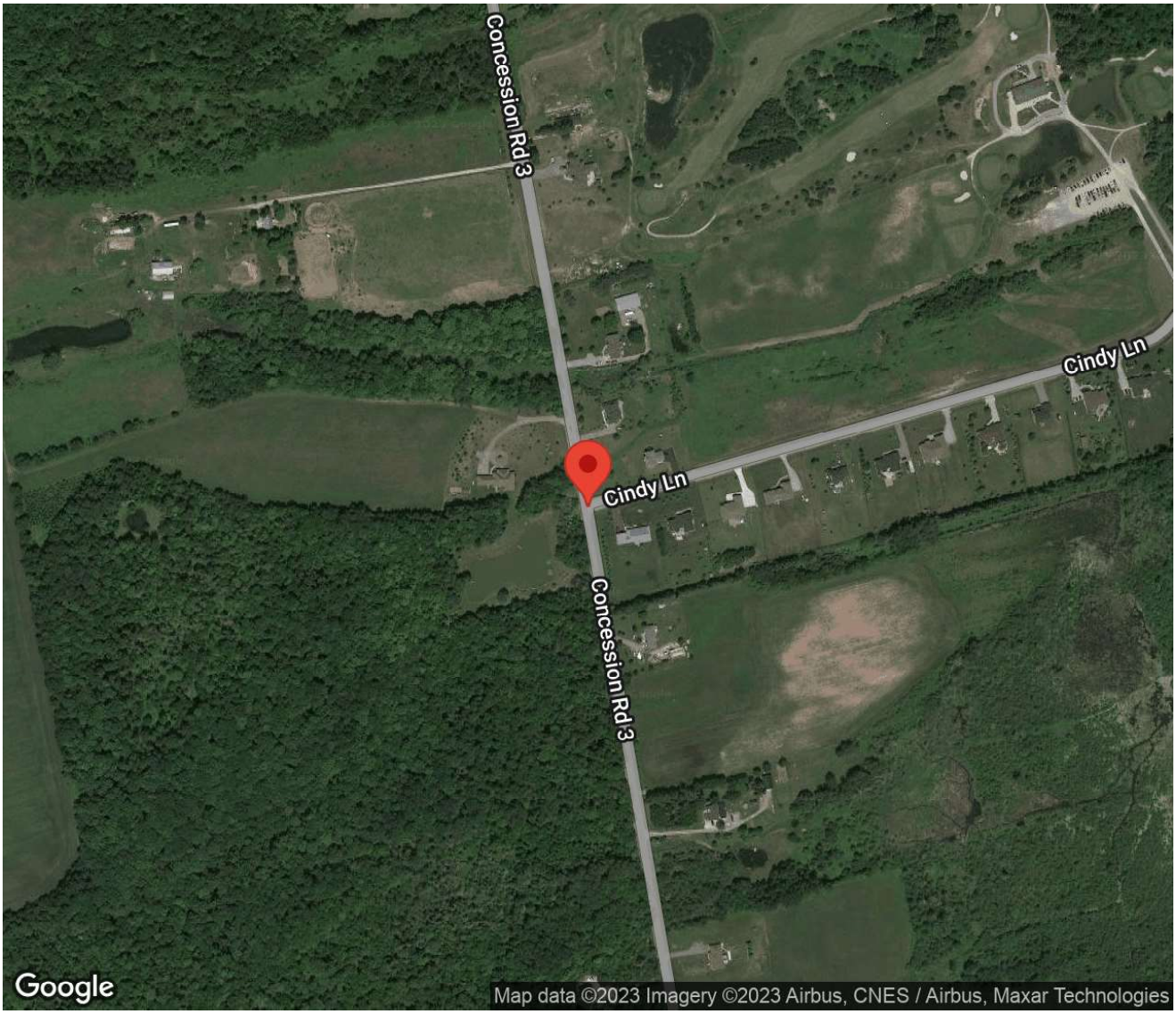
Intersection Count Report

Intersection:	Concession Rd 3 & Cindy Ln
Municipality:	Adjala-Tosorontio
Count Date:	Tuesday, Nov 28, 2023
Site Code:	2338500001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Concession Rd 3 & Cindy Ln
Site Code:	2338500001
Municipality:	Adjala-Tosorontio
Count Date:	Nov 28, 2023



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

Concession Rd 3 - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	1	40	0	0	41	0	0	27	0	0	27	0	68
08:00 - 09:00	0	40	0	0	40	0	0	23	3	0	26	0	66
09:00 - 10:00	1	24	0	0	25	0	0	19	0	0	19	0	44
BREAK													
15:00 - 16:00	2	37	0	0	39	0	0	55	1	0	56	0	95
16:00 - 17:00	2	26	0	0	28	0	0	54	2	0	56	0	84
17:00 - 18:00	4	26	0	0	30	0	0	43	5	0	48	0	78
GRAND TOTAL	**10**	**193**	**0**	**0**	**203**	**0**	**0**	**221**	**11**	**0**	**232**	**0**	**435**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Concession Rd 3 & Cindy Ln
Site Code:	2338500001
Municipality:	Adjala-Tosorontio
Count Date:	Nov 28, 2023

Cindy Ln - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	1	0	1	0	2	0	0	0	0	0	0	0	2
08:00 - 09:00	4	0	1	0	5	0	0	0	0	0	0	0	5
09:00 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0
BREAK													
15:00 - 16:00	1	0	1	0	2	0	0	0	0	0	0	0	2
16:00 - 17:00	0	0	2	0	2	0	0	0	0	0	0	0	2
17:00 - 18:00	5	0	1	0	6	0	0	0	0	0	0	0	6
GRAND TOTAL	**11**	**0**	**6**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

North Approach - Concession Rd 3

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	1	13	0	0	14	0	0	0	0	0	0	0	0	0	0	0
07:15	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0
07:30	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
07:45	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
08:00	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
08:15	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0
08:30	0	13	0	0	13	0	1	0	0	1	0	0	0	0	0	0
08:45	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0
09:00	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	0
09:15	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
09:30	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
09:45	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	101	0	0	103	0	3	0	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

North Approach - Concession Rd 3

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	0
15:15	1	13	0	0	14	0	0	0	0	0	0	0	0	0	0	0
15:30	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
15:45	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
16:00	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0
16:15	1	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0
16:30	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	0
16:45	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
17:00	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0
17:15	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:30	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0
17:45	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	8	86	0	0	94	0	3	0	0	3	0	0	0	0	0	0
GRAND TOTAL	10	187	0	0	197	0	6	0	0	6	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

South Approach - Concession Rd 3

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:30	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
07:45	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
08:00	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0
08:15	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
08:30	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
08:45	0	2	2	0	4	0	2	0	0	2	0	0	0	0	0	0
09:00	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
09:15	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
09:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
09:45	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	66	3	0	69	0	3	0	0	3	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

South Approach - Concession Rd 3

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
15:15	0	22	0	0	22	0	0	0	0	0	0	0	0	0	0	0
15:30	0	17	0	0	17	0	1	0	0	1	0	0	0	0	0	0
15:45	0	11	1	0	12	0	0	0	0	0	0	0	0	0	0	0
16:00	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0
16:15	0	10	1	0	11	0	1	0	0	1	0	0	0	0	0	0
16:30	0	15	1	0	16	0	1	0	0	1	0	0	0	0	0	0
16:45	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0
17:00	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	0
17:15	0	12	1	0	13	0	0	0	0	0	0	0	0	0	0	0
17:30	0	15	3	0	18	0	0	0	0	0	0	0	0	0	0	0
17:45	0	9	1	0	10	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	148	8	0	156	0	4	0	0	4	0	0	0	0	0	0
GRAND TOTAL	**0**	**214**	**11**	**0**	**225**	**0**	**7**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

East Approach - Cindy Ln

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
08:30	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Municipality: Adjala-Tosorontio
Count Date: Nov 28, 2023

East Approach - Cindy Ln

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	11	0	6	0	17	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 10:00:00

One Hour Peak
From: 07:30:00
To: 08:30:00

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Count Date: Nov 28, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Concession Rd 3 runs N/S

North Approach

	Out	In	Total
Cars	42	36	78
Trucks	0	0	0
Bicycles	0	0	0
	42	**36**	**78**

Concession Rd 3

Bicycles	0	0	0
Trucks	0	0	0
Cars	42	0	0
Totals	**42**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

Totals	**34**	**1**	**0**
Cars	34	1	0
Trucks	0	0	0
Bicycles	0	0	0

Concession Rd 3

East Approach

	Out	In	Total
Cars	5	1	6
Trucks	0	0	0
Bicycles	0	0	0
	5	**1**	**6**

Cindy Ln

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	2	2	0	0
	3	3	0	0

South Approach

	Out	In	Total
Cars	35	45	80
Trucks	0	0	0
Bicycles	0	0	0
	35	**45**	**80**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Count Date: Nov 28, 2023
Period: 07:00 - 10:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Concession Rd 3						South Approach Concession Rd 3						East Approach Cindy Ln						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	0	14		0	0	14		11	0	0	0	11	1		1	0	0	2					0		27
07:45	0	5		0	0	5		7	0	0	0	7	0		0	0	0	0					0		12
08:00	0	7		0	0	7		6	1	0	0	7	0		1	0	0	1					0		15
08:15	0	16		0	0	16		10	0	0	0	10	2		0	0	0	2					0		28
Grand Total	**0**	**42**		**0**	**0**	**42**		**34**	**1**	**0**	**0**	**35**	**3**		**2**	**0**	**0**	**5**					**0**	**0**	**82**
Approach %	0	100		0		-		97.1	2.9	0		-	60		40	0		-						-	
Totals %	0	51.2		0		51.2		41.5	1.2	0		42.7	3.7		2.4	0		6.1						0	
PHF	**0**	**0.66**		**0**		**0.66**		**0.77**	**0.25**	**0**		**0.8**	**0.38**		**0.5**	**0**		**0.63**						**0**	**0.73**
Cars	0	42		0		42		34	1	0		35	3		2	0		5						0	82
% Cars	0	100		0		100		100	100	0		100	100		100	0		100						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Bicycles	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Bicycles	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	15:15:00
To:	18:00:00	To:	16:15:00

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Count Date: Nov 28, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Concession Rd 3 runs N/S

North Approach

	Out	In	Total
Cars	33	65	98
Trucks	1	1	2
Bicycles	0	0	0
	34	**66**	**100**

Concession Rd 3

Bicycles	0	0	0
Trucks	1	0	0
Cars	32	1	0
Totals	**33**	**1**	**0**

Peds: 0

Peds: 0

Peds: 0

Concession Rd 3

Totals	**65**	**1**	**0**
Cars	64	1	0
Trucks	1	0	0
Bicycles	0	0	0

East Approach

	Out	In	Total
Cars	1	2	3
Trucks	0	0	0
Bicycles	0	0	0
	1	**2**	**3**

Cindy Ln

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	1	1	0	0
	0	0	0	0

South Approach

	Out	In	Total
Cars	65	32	97
Trucks	1	1	2
Bicycles	0	0	0
	66	**33**	**99**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Concession Rd 3 & Cindy Ln
Site Code: 2338500001
Count Date: Nov 28, 2023
Period: 15:00 - 18:00

Peak Hour Data (15:15 - 16:15)

Start Time	North Approach Concession Rd 3						South Approach Concession Rd 3						East Approach Cindy Ln						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:15	1	13		0	0	14		22	0	0	0	22	0		0	0	0	0				0		0	36
15:30	0	4		0	0	4		18	0	0	0	18	0		0	0	0	0				0		0	22
15:45	0	10		0	0	10		11	1	0	0	12	0		1	0	0	1				0		0	23
16:00	0	6		0	0	6		14	0	0	0	14	0		0	0	0	0				0		0	20
Grand Total	**1**	**33**		**0**	**0**	**34**		**65**	**1**	**0**	**0**	**66**	**0**		**1**	**0**	**0**	**1**				**0**	**0**		**101**
Approach %	2.9	97.1		0		-		98.5	1.5	0		-	0		100	0		-					-		
Totals %	1	32.7		0		33.7		64.4	1	0		65.3	0		1	0		1					0		
PHF	**0.25**	**0.63**		**0**		**0.61**		**0.74**	**0.25**	**0**		**0.75**	**0**		**0.25**	**0**		**0.25**					**0**		**0.7**
Cars	1	32		0		33		64	1	0		65	0		1	0		1					0		99
% Cars	100	97		0		97.1		98.5	100	0		98.5	0		100	0		100					0		98
Trucks	0	1		0		1		1	0	0		1	0		0	0		0					0		2
% Trucks	0	3		0		2.9		1.5	0	0		1.5	0		0	0		0					0		2
Bicycles	0	0		0		0		0	0	0		0	0		0	0		0					0		0
% Bicycles	0	0		0		0		0	0	0		0	0		0	0		0					0		0
Peds					0	-					0	-					0	-				0	-		0
% Peds					0	-					0	-					0	-				0	-		

Appendix B:
LOS Definitions

TATHAM ENGINEERING

Level of Service – Unsignalized Intersections

Level of Service (LOS) for unsignalized intersections is defined in terms of control delay for each critical lane. Control delay includes initial deceleration, queue move-up time, stopped delay and final acceleration delay, and is a function of the service rate or capacity of the approach and degree of saturation.

The following table describes in detail the characteristics of each level of service, with A being the best and F being the worst.

LOS	EXPECTED DELAY TO STREET TRAFFIC	DELAY (sec/veh)
A	Little or no delays	$0 < d \leq 10$
B	Short traffic delays	$10 < d \leq 15$
C	Average traffic delays	$15 < d \leq 25$
D	Long traffic delays	$25 < d \leq 35$
E	Very long traffic delays	$35 < d \leq 50$
F	Extreme delays with queuing which may cause congestion affecting other traffic movements in the intersection	$50 < d$

source: 2010 Highway Capacity Manual

TATHAM ENGINEERING

Level of Service – Signalized Intersections

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is made up of a number of factors that relate to control, geometrics, traffic and incidents. Only the portion of total delay attributed to the control facility is quantified. This control delay includes initial deceleration, queue move-up time, stopped delay and final acceleration delay.

The following table describes in detail the characteristics of each level of service, with A being the best and F being the worst.

LOS	EXPECTED DELAY TO STREET TRAFFIC	DELAY (sec/veh)
A	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all at this LOS. Short cycle lengths may also contribute to low delay.	$0 < d \leq 10$
B	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop at this level than at LOS A, causing longer average delays.	$10 < d \leq 20$
C	These higher delays may result from fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	$20 < d \leq 35$
D	At this level, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavourable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures become noticeable.	$35 < d \leq 55$
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	$55 < d \leq 80$
F	At this level, oversaturation occurs when arrival flow rates exceed the design capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such high delay levels. LOS F is considered to be unacceptable to most drivers.	$80 < d$

source: 2010 Highway Capacity Manual

Appendix C:
Traffic Operations - Existing

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	5	68	15	12	84
Future Vol, veh/h	7	5	68	15	12	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	80	80	66	66
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	8	85	19	18	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	258	95	0	0	104	0
Stage 1	95	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	735	967	-	-	1500	-
Stage 1	934	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	725	967	-	-	1500	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	860	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	809	1500	-
HCM Lane V/C Ratio	-	-	0.024	0.012	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	12	130	16	13	66
Future Vol, veh/h	15	12	130	16	13	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	75	75	61	61
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	60	48	173	21	21	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	334	184	0	0	194	0
Stage 1	184	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	665	864	-	-	1373	-
Stage 1	852	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	654	864	-	-	1373	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1373	-
HCM Lane V/C Ratio	-	-	0.147	0.016	-
HCM Control Delay (s)	-	-	10.8	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	1022	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	1022	1084
Mov Cap-2 Maneuver	-	-	-	-	1022	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Appendix D:
Traffic Operations - Total

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	7	71	16	12	88
Future Vol, veh/h	9	7	71	16	12	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	80	80	66	66
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	11	89	20	18	133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	268	99	0	0	109	0
Stage 1	99	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	726	962	-	-	1494	-
Stage 1	930	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	717	962	-	-	1494	-
Mov Cap-2 Maneuver	717	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	807	1494	-
HCM Lane V/C Ratio	-	-	0.031	0.012	-
HCM Control Delay (s)	-	-	9.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	13	137	19	16	69
Future Vol, veh/h	16	13	137	19	16	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	75	75	61	61
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	64	52	183	25	26	113

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	361	196	0	0	208	0
Stage 1	196	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	642	850	-	-	1375	-
Stage 1	842	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	629	850	-	-	1375	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	1375	-
HCM Lane V/C Ratio	-	-	0.163	0.019	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-