

TRAFFIC IMPACT STUDY

12612 WOODBINE (KD) CORP.

PROPOSED CEMETERY DEVELOPMENT

12,612 & 12,586 WOODBINE AVENUE

TOWN OF WHITCHURCH-STOUFFVILLE

FILE NO: PRE26.014

JULY 9TH 2026

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1. Introduction

CANDEVCON GROUP INC. was retained by 12612 Woodbine (KD) Corp. to undertake a Traffic Impact Study in support of the proposed Cemetery Development at 12,612 & 12,586 Woodbine Avenue, which is immediately west of Woodbine Avenue and approximately 1,100 meters north of Stouffville Road in the Town of Whitchurch-Stouffville. **Figure 1** illustrates the location of the proposed Cemetery Development.

As a requirement of the approval process, the Town of Whitchurch-Stouffville and Region of York require the preparation of a Traffic Impact Study to evaluate the proposed Cemetery Development and to examine the implications of the proposed Cemetery Development on the adjacent transportation infrastructure.

Study parameters, assumptions and analytical approaches were presented through the terms of reference and were submitted to the Region of York staff. Information was subsequently exchanged with the Region and the principal study assumptions and the scope of work were agreed upon. The terms of reference and the correspondence with the Region are provided in **Appendix A**.

It is anticipated that the proposed Cemetery Development will be fully built-out and occupied by 2030. As a result, the study will analyze the traffic operations during 2035, which represents the five (5) year post full build-out.

The purpose of this Study is to determine the traffic impacts of the proposed Cemetery Development on the surrounding road network and at nearby intersections and to analyze the vehicular accesses.

The Traffic Impact Study addresses the future operations at the following intersections:

- Stouffville Road at Woodbine Avenue,
- Proposed Site Access '1' at Woodbine Avenue,
- Proposed Site Access '2' at Woodbine Avenue.

1. Introduction - Continued

The Stouffville Road at Woodbine Avenue intersection was studied under the Existing, Future Total Background and Future Total Traffic scenarios. The proposed Site Access '1' at Woodbine Avenue and proposed Site Access '2' at Woodbine Avenue intersections were studied under the Future Total Traffic scenario.

The Traffic Impact Study addresses the traffic operations during the Weekday A.M. and Weekday P.M. Peak Hours.



TRAFFIC IMPACT STUDY
12,612 & 12,586 WOODBINE AVENUE
PROPOSED CEMETERY DEVELOPMENT
TOWN OF WHITCHURCH-STOUFFVILLE

LOCATION PLAN



CDE CANDEVCON GROUP INC. CONSULTING ENGINEERS AND PLANNERS 3353 COREWAY DRIVE BRAMPTON ON L6P 0M7	
DATE: JUNE, 10th 2026	JOB No. W26027
DESIGN: S.N.	FIG. No.
SCALE: N.T.S.	1

2. Subject Development – Study Area

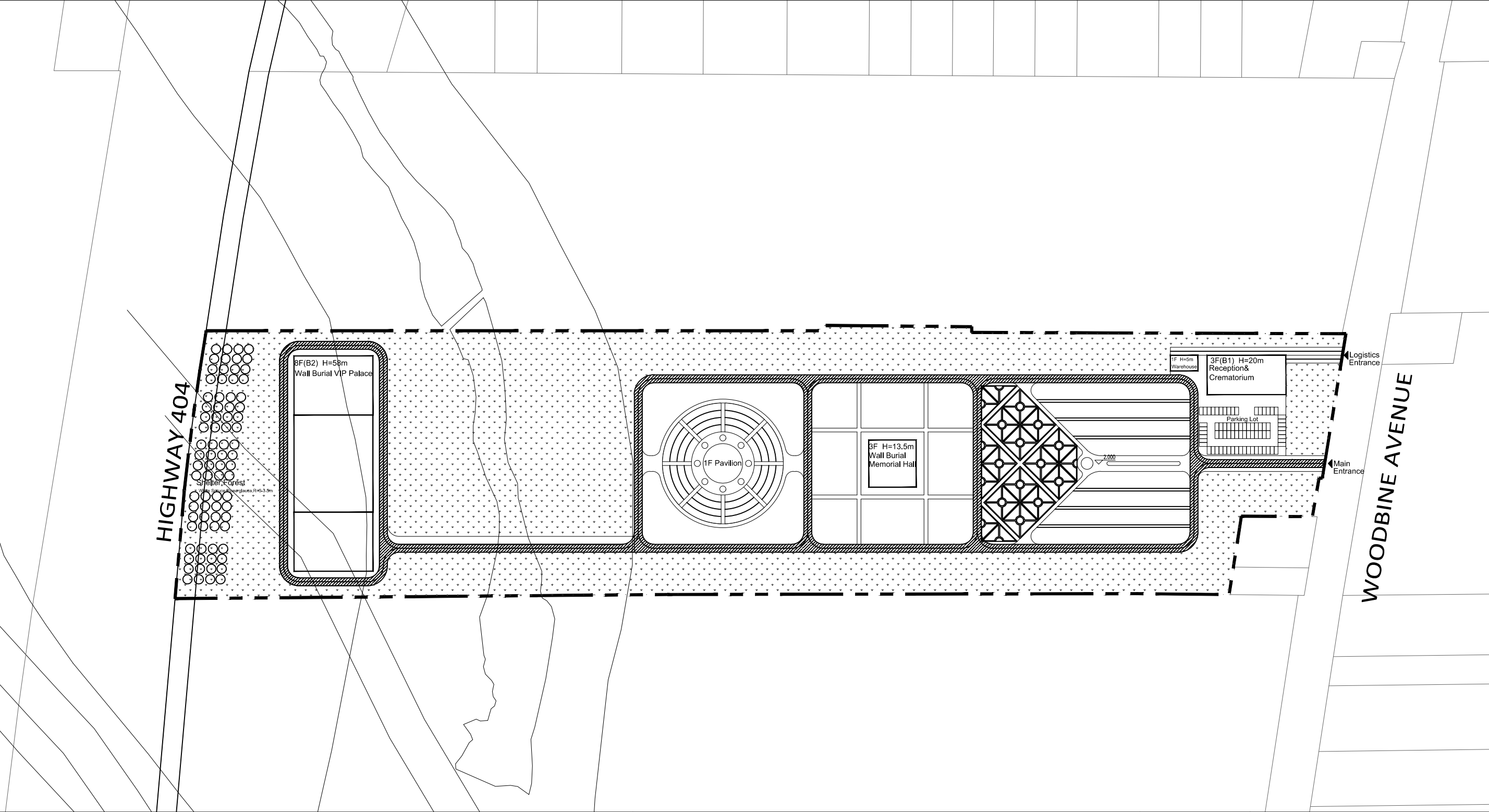
The Subject Property is located immediately west of Woodbine Avenue and approximately 1,100 meters north of Stouffville Road, in the Town of Whitchurch-Stouffville. The total area of the property is 17.06 hectares (42.15 acres).

The Subject Land is surrounded by the following land uses:

- To the north, existing agricultural with existing industrial beyond,
- To the east, Woodbine Avenue,
- To the south, an existing cemetery and existing residential,
- To the west, Highway 404.

The proposed Cemetery Development will replace existing agricultural with a graveyard, a mausoleum, a warehouse and a reception hall with a crematorium. The proposed Cemetery Development will have a total gross floor area (G.F.A.) of 1,063,474 ft². Two (2) full-moves accesses that connect with Woodbine Avenue will service the proposed Cemetery Development with the northerly access being exclusive to trucks servicing the reception hall with a crematorium.

The proposed Site Plan is provided in **Figure 2**.



TRAFFIC IMPACT STUDY
12,612 & 12,586 WOODBINE AVENUE
PROPOSED CEMETERY DEVELOPMENT
TOWN OF WHITCHURCH-STOUFFVILLE

PROPOSED SITE PLAN



CANDEVCON GROUP INC.
CONSULTING ENGINEERS AND PLANNERS
3350 COREWAY DRIVE
BRAMPTON ON. L6P 0M7
TEL (905) 794-0800
FAX (905) 794-0811

DATE:	JUNE. 17th 2026	JOB No.	W26027
DESIGN:	S.N.	FIG. No.	
SCALE:	1: 3000		

3. Existing and Future Road Network

3.1 Existing Road Network

The road network within the Study Area comprises Woodbine Avenue and Stouffville Road.

Woodbine Avenue

Woodbine Avenue is a north-south arterial road that is under the jurisdiction of the Region of York. North of the Stouffville Road at Woodbine Avenue intersection, Woodbine Avenue is a two (2) lane roadway with a rural cross-section and a posted speed limit of 80 km/h. At the Stouffville Road at Woodbine Avenue intersection, Woodbine Avenue is a four (4) lane roadway with an urban cross-section and a posted speed limit of 70 km/h. At the Stouffville Road at Woodbine Avenue intersection, a pedestrian sidewalk and a bicycle lane is provided on both sides.

Stouffville Road

Stouffville Road is an east-west arterial road that is under the jurisdiction of the Region of York. Stouffville Road comprises four (4) lanes and a posted speed limit of 70 km/h. Pedestrian sidewalks are not provided.

3.2 Future Road Network

As per the Region's 2026 10-Year Roads and Transit Capital Construction Program, there are no plans to widen Woodbine Avenue and Stouffville Road by the 2035 horizon year¹.

As illustrated in **Figure 2**, two (2) full-moves accesses that connect with Woodbine Avenue will service the proposed Cemetery Development with the northerly access being exclusive to trucks servicing the reception hall with a crematorium.

¹ 2026 10-Year Roads and Transit Capital Construction Program, York Region, November 27th, 2025.

4. Existing Traffic Conditions

4.1 Existing Traffic

For the intersection of Stouffville Road at Woodbine Avenue, turning movements counts were received from the Region of York, which are provided in **Appendix B**.

For the intersection of Stouffville Road at Woodbine Avenue, the turning movement counts taken on Thursday September 11th, 2025 from 7:00 A.M. to 6:15 P.M. captured the A.M. and P.M. Peak Hours. The A.M. and P.M. Peak Hour traffic volumes occurred between 8:00 A.M. and 9:00 A.M. and between 4:30 P.M. and 5:30 P.M., respectively. The 2025 Peak Hour traffic counts were projected to the existing year of 2026. The growth in background traffic is summarized in Section 5.2.

The Existing (2026) peak hour traffic volumes are provided in **Figures 3 and 4**.

4.2 Existing Traffic Analysis

The Existing (2026) peak hour traffic volumes are provided in **Figures 3 and 4** and the Level of Service (LOS) was analyzed using SYNCHRO STUDIO 12.0 software².

Woodbine Avenue at Stouffville Road was analyzed as an actuated uncoordinated signalized intersection with Stouffville Road as the main street. The lane configuration used in the analysis comprises: a left, two (2) through and a channelized right turning lane at the northbound, eastbound and westbound approaches; and a left, two (2) through and a right turning lane at the southbound approach. The signal timing plans were received from the Region of York and are included in **Appendix C**.

The results of the analysis are summarized in **Table 1**. The related calculations are provided in **Appendix E**. The Level of Service definitions for signalized and un-signalized intersections are included in **Appendix D** for reference.

² Synchro Studio Software, Version 12, CUBIC Transportation Systems, 2023.

Existing (2026) Traffic Volumes - A.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

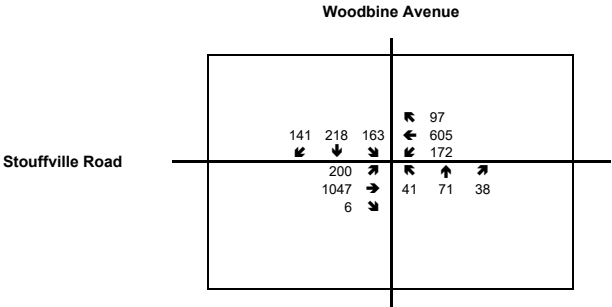


Figure No: 3
Date: June 16 2026
Prepared by: B.W.



Existing (2026) Traffic Volumes - P.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

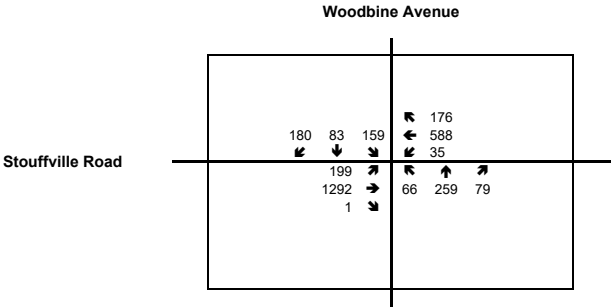


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Date: June 16 2026
Prepared by: B.W.



4. Existing Traffic Conditions - Continued

4.2 Existing Traffic Analysis - Continued

Table 1: Existing (2026) Traffic – Level of Service

Intersection	Turning Movement/ Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay ¹	95 th % Queue (m)	V/C	LOS	Delay ¹	95 th % Queue (m)
Woodbine Avenue at Stouffville Road (Signalized)	Overall	0.78	C	25.1	n/a	0.82	C	23.5	n/a
	EBL	0.53	B	15.4	34.7	0.52	B	15.3	35.1
	EBT	0.78	C	29.2	130.9	0.82	C	29.0	175.7
	EBR	0.01	A	0.0	0.0	0.00	A	0.0	0.0
	WBL	0.78	D	36.2	46.0	0.18	B	11.3	7.0
	WBT	0.51	C	24.2	73.5	0.44	C	23.0	62.0
	WBR	0.15	A	4.4	10.0	0.25	A	3.8	12.7
	NBL	0.15	C	27.5	17.1	0.18	C	27.5	21.4
	NBT	0.08	C	25.4	11.8	0.25	C	27.2	31.6
	NBR	0.08	A	0.3	0.0	0.16	A	4.9	8.7
	SBL	0.48	C	34.1	52.8	0.52	D	36.1	49.5
	SBT	0.23	C	27.0	28.7	0.09	C	25.6	13.5
	SBR	0.32	A	6.4	17.4	0.33	A	5.6	15.9

Note 1: Delays are measured in seconds per vehicle.

The analysis of the Existing (2026) Traffic Conditions indicates that the signalized intersection operates at a Level of Service “C” during the A.M. and P.M. Peak Hours.

All of the turning movements will operate at a Level of Service “D” or better during the A.M. and P.M. Peak Hours.

5. Future Total Background Traffic Conditions

5.1 Other Background Developments

This Traffic Impact Study will consider three (3) anticipated background developments within the vicinity of the Study Area.

A proposed Office Development owned by Transmetro Limited and located at 10 Gordon Collins Drive is immediately west of Woodbine Avenue and approximately 300 metres north of Stouffville Road (SPA21.012). The proposed Office Development comprises a two (2) storey office building with a G.F.A. of 23,500 ft². Two (2) full-moves accesses that connect with Gordon Collins Drive will service the anticipated background development. Details regarding the site-generated traffic volumes were taken from its Traffic Impact Assessment³. Relevant excerpts from the Traffic Impact Assessment are provided in **Appendix F**.

A proposed Industrial Development owned by 1065752 Ontario Inc. and located at 35 Gordon Collins Drive is immediately south of Gordon Collins Drive and approximately 250 metres west of Woodbine Avenue (ZBA25.009). The proposed Industrial Development comprises an industrial building with a G.F.A. of 54,430 ft². Two (2) accesses that connect with Gordon Collins Drive will service the anticipated background development. Details regarding the site-generated traffic volumes were taken from its Transportation Mobility Study⁴. Relevant excerpts from the Transportation Mobility Study are provided in **Appendix F**.

³ Traffic Impact Assessment - 10 Gordon Collins Drive, Poulos & Chung Limited, August 2021.

⁴ Transportation Mobility Study - 35 Gordon Collins Drive, AECOM Canada Ltd., March 6, 2025.

5. Future Total Background Traffic Conditions - Continued

5.1 Other Background Developments - Continued

A proposed Industrial Development owned by White Owl Properties Limited and located at 12,131 Woodbine Avenue is immediately east of Woodbine Avenue and approximately 400 metres south of Stouffville Road (SPA22.010). The proposed Industrial Development comprises 666,401 ft² of warehouse land use and 30,800 ft² of general light industrial land use. A full-moves access that connects with Woodbine Avenue will service the anticipated background development. Details regarding the site-generated traffic volumes were taken from its Transportation Impact Study Update⁵. Relevant excerpts from the Transportation Impact Study Update are provided in **Appendix F**.

The location of these anticipated background developments is illustrated in **Figure 5**.

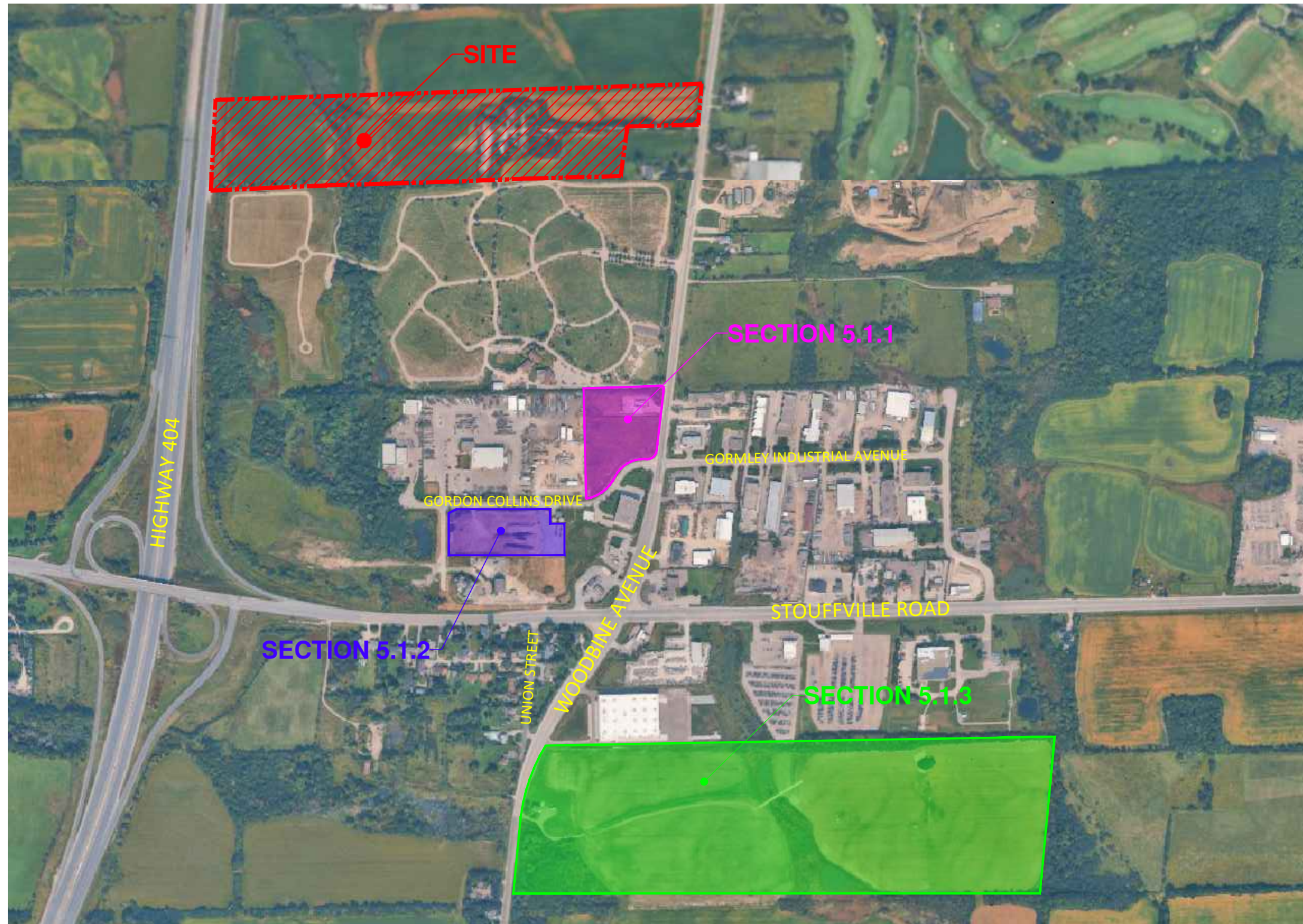
5.1.1 Proposed Office Development – 10 Gordon Collins Drive

For the office building (Land Use 710), trip generation formulae from the ITE Trip Generation Manual 10th Edition were applied for the A.M. and P.M. Peak Hours⁶.

Table 2 summarizes the trip generation formulae along with the percentages of incoming and outgoing trips for the A.M. and P.M. Peak Hours.

⁵ Transportation Impact Study Update - 12,131 Woodbine Avenue, Nextrans Consulting Engineers, October 2, 2023.

⁶ Trip Generation Manual (10th Edition), Institute of Transportation Engineers, September 2017.



TRAFFIC IMPACT STUDY
12,612 & 12,586 WOODBINE AVENUE
PROPOSED CEMETERY DEVELOPMENT
TOWN OF WHITCHURCH-STOUFFVILLE

LOCATION OF ANTICIPATED
BACKGROUND DEVELOPMENTS



CDE CANDEVCON GROUP INC. CONSULTING ENGINEERS AND PLANNERS 3350 COREWAY DRIVE BRAMPTON ON L6P 0M7	
DATE: JUNE. 17th 2026	JOB No. W26027
DESIGN: S.N.	FIG. No.
SCALE: N.T.S.	5

5. Future Total Background Traffic Conditions - Continued

5.1.1 Proposed Office Development – 10 Gordon Collins Drive - Continued

**Table 2: Proposed Office Development – 10 Gordon Collins Drive
- Trip Generation Formulae with Inbound and Outbound Percentages**

ITE Land Use	A.M. Peak Hour			P.M. Peak Hour		
	Fitted Curve Equation	% In	% Out	Fitted Curve Equation	% In	% Out
General Office Building (LU 710)	$T = 0.94X + 26.49$ (Note 1)	86%	14%	$\ln(T) = 0.95\ln(X) + 0.36$ (Note 1)	16%	84%

Note 1: T represents the number of trips and X represents every 1,000 ft² of Gross Floor Area (G.F.A.)

The resulting number of trips generated was determined by using the trip generation formulae provided in **Table 2** and the G.F.A. The proposed Office Development comprises a two (2) storey office building with a G.F.A. of 23,500 ft².

The resulting number of trips generated is provided in **Table 3** for the A.M. and P.M. Peak Hours.

Table 3: Proposed Office Development – 10 Gordon Collins Drive - Site-Generated Trips

Land Use	G.F.A.	A.M. Peak Hour (Adj. Street)			P.M. Peak Hour (Adj. Street)		
		Trips In	Trips Out	Total	Trips In	Trips Out	Total
General Office Building (LU 710)	23,500 ft ²	42	7	49	5	24	29

The anticipated background development is expected to generate 49 net trips (42 inbound trips and 7 outbound trips) during the A.M. Peak Hour and 29 net trips (5 inbound trips and 24 outbound trips) during the P.M. Peak Hour.

5. Future Total Background Traffic Conditions - Continued

5.1.1 Proposed Office Development – 10 Gordon Collins Drive - Continued

The trip distribution and assignment assumed for the anticipated background development is based on the results of the 2016 transportation tomorrow survey and the existing traffic patterns.

The site-generated trip volumes and trip assignment used in the analysis are illustrated in **Figures 6 and 7** for the A.M. and P.M. Peak Hours.

5.1.2 Proposed Industrial Development – 35 Gordon Collins Drive

For the industrial building (Land Use 110), trip generation rates from the ITE Trip Generation Manual 11th Edition were applied for the A.M. and P.M. Peak Hours⁷.

Table 4 summarizes the trip generation rates along with the percentages of incoming and outgoing trips for the A.M. and P.M. Peak Hours.

**Table 4: Proposed Industrial Development – 35 Gordon Collins Drive
- Trip Generation Rates with Inbound and Outbound Percentages**

ITE Land Use	A.M. Peak Hour			P.M. Peak Hour		
	Trip Rate	% In	% Out	Trip Rate	% In	% Out
General Light Industrial (LU 110)	0.74 (Note 1)	88%	12%	0.65 (Note 1)	14%	86%

Note 1: The trip rates are per every 1,000 ft² of Gross Floor Area (G.F.A.)

⁷ Trip Generation Manual (11th Edition), Institute of Transportation Engineers, September 2021.

**Trip Assignment of Proposed Office Development (10 Gordon Collins Drive)
A.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

Note: The Location of the Anticipated Background Development is shaded in grey.

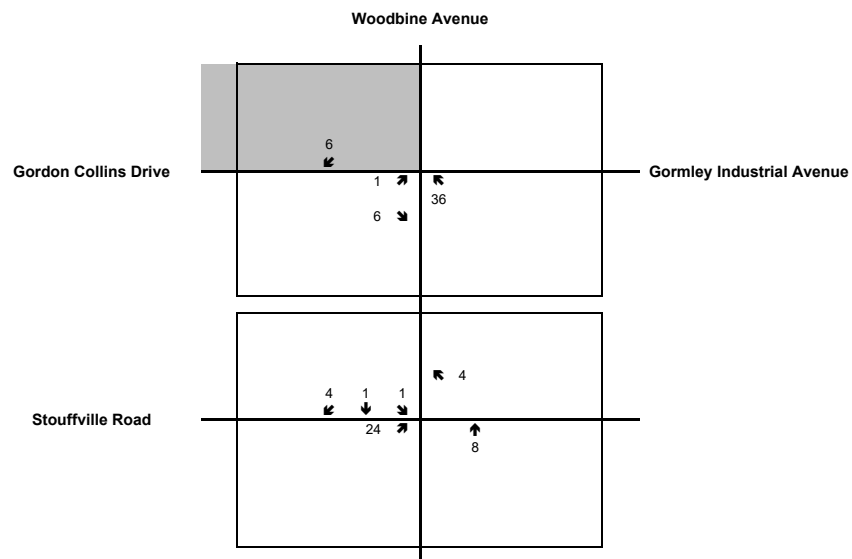


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Date: June 23 2026

Prepared by: B.W.



**Trip Assignment of Proposed Office Development (10 Gordon Collins Drive)
P.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

Note: The Location of the Anticipated Background Development is shaded in grey.

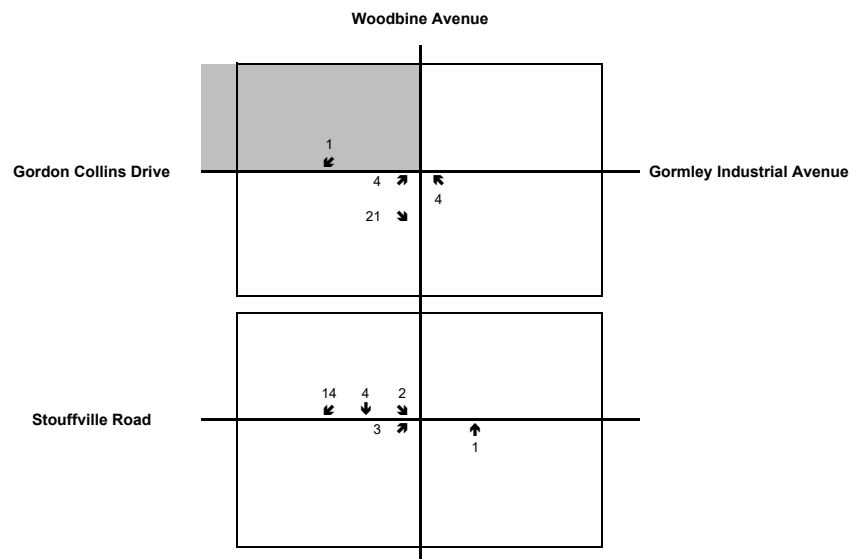


Figure No: 7

Date: June 23 2026

Prepared by: B.W.



5. Future Total Background Traffic Conditions - Continued

5.1.2 Proposed Industrial Development – 35 Gordon Collins Drive - Continued

The resulting number of trips generated was determined by using the trip generation rates provided in **Table 4** and the G.F.A. The proposed Industrial Development comprises an industrial building with a G.F.A. of 54,430 ft².

The resulting number of trips generated is provided in **Table 5** for the A.M. and P.M. Peak Hours.

**Table 5: Proposed Industrial Development – 35 Gordon Collins Drive
- Site-Generated Trips**

Land Use	G.F.A.	A.M. Peak Hour (Adj. Street)			P.M. Peak Hour (Adj. Street)		
		Trips In	Trips Out	Total	Trips In	Trips Out	Total
General Light Industrial (LU 110)	54,430 ft ²	36	5	41	5	30	35

The anticipated background development is expected to generate 41 net trips (36 inbound trips and 5 outbound trips) during the A.M. Peak Hour and 35 net trips (5 inbound trips and 30 outbound trips) during the P.M. Peak Hour.

The trip distribution and assignment of the anticipated background development is based on existing travel patterns.

5. Future Total Background Traffic Conditions - Continued

5.1.2 Proposed Industrial Development – 35 Gordon Collins Drive - Continued

The assumed trip distribution and assignment is as follows:

A.M. Peak Hour

- 30% from the north via Woodbine Avenue,
- 10% from the east via Gormley Industrial Avenue,
- 60% from the south via Woodbine Avenue or Stouffville Road.

Total 100% inbound

- 20% to the north via Woodbine Avenue,
- 80% to the south Woodbine Avenue or Stouffville Road.

Total 100% inbound

P.M. Peak Hour

- 100% from the south via Woodbine Avenue or Stouffville Road.

Total 100% inbound

- 30% to the north via Woodbine Avenue,
- 70% to the south Woodbine Avenue or Stouffville Road.

Total 100% inbound

The site-generated trip volumes and trip assignment used in the analysis are illustrated in **Figures 8 and 9** for the A.M. and P.M. Peak Hours.

5.1.3 Proposed Industrial Development – 12,131 Woodbine Avenue

For the general light industrial (Land Use 110) and warehouse (Land Use 150) land uses, the resulting number of trips generated for automobiles and heavy trucks was determined by using the trip generation rates from the ITE Trip Generation Manual 10th Edition and ITE Trip Generation Manual 11th Edition and the G.F.A. The proposed Industrial Development comprises 666,401 ft² of warehouse land use and 30,800 ft² of general light industrial land use.

**Trip Assignment of Proposed Industrial Development (35 Gordon Collins Drive)
A.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

Note: The Location of the Anticipated Background Development is shaded in grey.

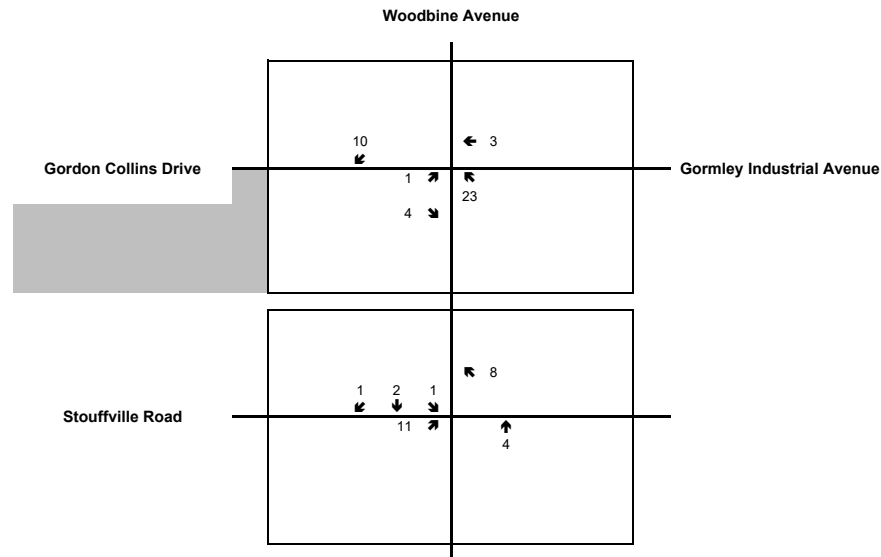


Figure No: 8

Date: June 23 2026

Prepared by: B.W.



**Trip Assignment of Proposed Industrial Development (35 Gordon Collins Drive)
P.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

Note: The Location of the Anticipated Background Development is shaded in grey.

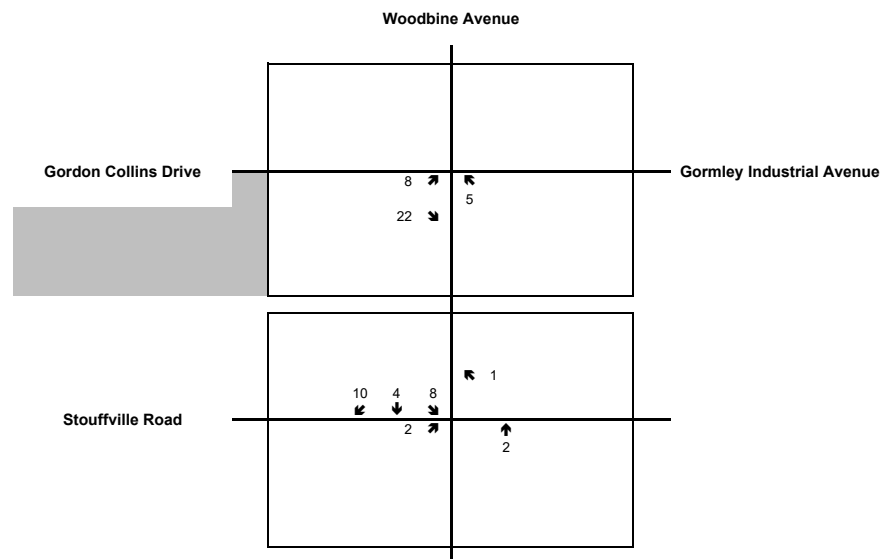


Figure No: 9

Date: June 23 2026

Prepared by: B.W.



5. Future Total Background Traffic Conditions - Continued

5.1.3 Proposed Industrial Development – 12,131 Woodbine Avenue - Continued

The resulting number of trips generated is provided in **Table 6** for the A.M. and P.M. Peak Hours.

**Table 6: Proposed Industrial Development – 12,131 Woodbine Avenue
- Site-Generated Trips**

Land Use	G.F.A.	A.M. Peak Hour (Adj. Street)			P.M. Peak Hour (Adj. Street)		
		Trips In	Trips Out	Total	Trips In	Trips Out	Total
General Light Industrial (LU 110)	30,800 ft ²	22	3	25	3	17	20
Warehousing (LU 150)	666,401 ft ²	334	100	434	108	281	389
Warehousing - Trucks (LU 150)		8	5	13	11	9	20
TOTAL	697,201 ft ²	364	108	472	122	307	429

The anticipated background development is expected to generate 472 net trips (364 inbound trips and 108 outbound trips) during the A.M. Peak Hour and 429 net trips (122 inbound trips and 307 outbound trips) during the P.M. Peak Hour.

The trip distribution and assignment of the anticipated background development is based on existing travel patterns.

5. Future Total Background Traffic Conditions - Continued

5.1.3 Proposed Industrial Development – 12,131 Woodbine Avenue - Continued

The assumed trip distribution and assignment is as follows:

A.M. Peak Hour

- 4% from the north via Woodbine Avenue,
- 48% from the east via Stouffville Road,
- 14% from the south via Woodbine Avenue,
- 34% from the west via Stouffville Road.

Total 100% inbound

- 13% to the north via Woodbine Avenue,
- 41% to the east via Stouffville Road,
- 16% to the south via Woodbine Avenue,
- 30% to the west via Stouffville Road.

Total 100% outbound

P.M. Peak Hour

- 15% from the north via Woodbine Avenue,
- 37% from the east via Stouffville Road,
- 13% from the south via Woodbine Avenue,
- 36% from the west via Stouffville Road.

Total 100% inbound

- 17% to the north via Woodbine Avenue,
- 38% to the east via Stouffville Road,
- 5% to the south via Woodbine Avenue,
- 41% to the west via Stouffville Road.

Total 100% outbound

The site-generated trip volumes and trip assignment used in the analysis are illustrated in **Figures 10 and 11** for the A.M. and P.M. Peak Hours.

**Trip Assignment of Proposed Industrial Development (12,131 Woodbine Avenue)
A.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

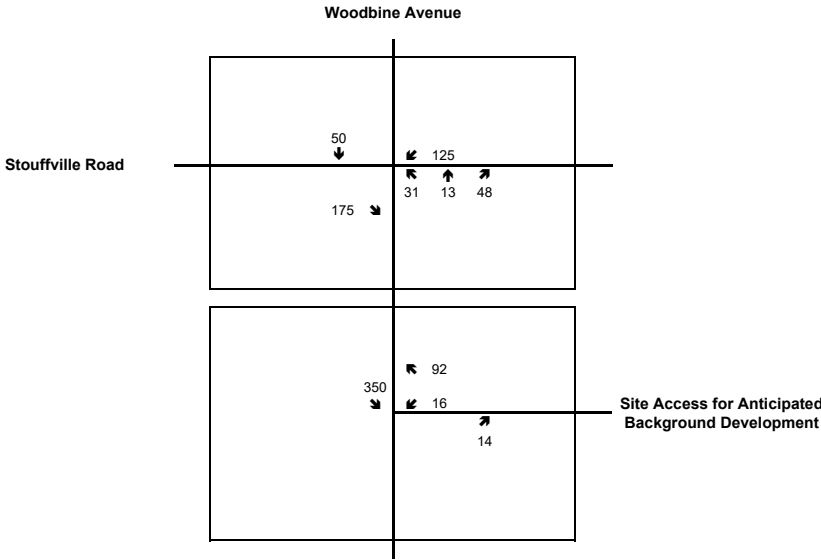


Figure No: 10
Date: June 18 2026
Prepared by: B.W.



**Trip Assignment of Proposed Industrial Development (12,131 Woodbine Avenue)
P.M. Peak Hour**

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

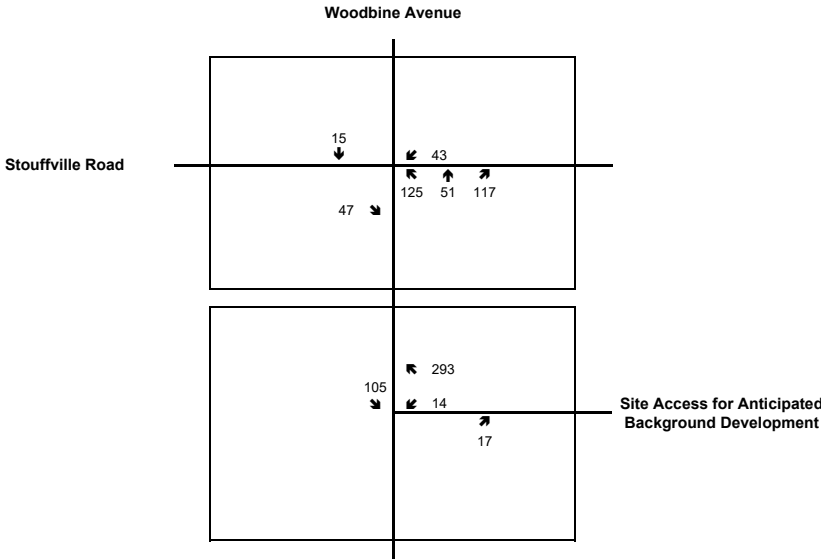


Figure No: 11
Date: June 18 2026
Prepared by: B.W.



5. Future Total Background Traffic Conditions - Continued

5.2 Traffic Growth Rate

The background traffic growth on Woodbine Avenue and Stouffville Road was derived from the traffic volume outputs that were provided by the Region of York's Activity Based Model for 2016 and 2036. The traffic volume outputs that were received from the Region of York are provided in **Appendix G**.

The growth rates from the Region of York's Activity Based Model and the growth rates that were used to determine the Future (2035) Total Background Traffic Volumes are summarized in **Table 7**.

Table 7: Growth of Background Traffic

Roadway	Annual Growth Rate			
	Travel Demand Forecasts - Region of York		Growth of Background Traffic – Future Total Background Volumes	
	A.M Peak Hour	P.M Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Woodbine Avenue NB	7.3%	0.5%	7.3%	0.5%
Stouffville Road EB	-0.4%	1.7%	0.5%	1.7%
Woodbine Avenue SB	0.8%	2.2%	0.8%	2.2%
Stouffville Road WB	1.4%	0.2%	1.4%	0.5%

For the Stouffville Road at Woodbine Avenue intersection, traffic growth was applied to the turning movements entering the roadway.

5. Future Total Background Traffic Conditions - Continued

5.3 Future (2035) Total Background Traffic

The Future (2035) Total Background Traffic was determined by projecting the Existing (2026) Traffic Volumes with nine (9) years of background growth and adding the site-generated trips from the anticipated background developments.

The Future (2035) Background Traffic Volumes are provided in **Figures 12 and 13** for the A.M. and P.M. Peak Hours.

5.4 Future (2035) Total Background Traffic Analysis

For the Future (2035) Total Background Traffic Volumes, the Level of Service was analyzed using SYNCHRO STUDIO 12.0 software.

For the intersection of Stouffville Road at Woodbine Avenue, the lane configuration and the signal timing plans used in the Existing (2026) Traffic Analysis were used in the Future (2035) Total Background Traffic Analysis.

The results of the analysis are summarized in **Table 8**. The related calculations are provided in **Appendix E**.

Future (2035) Total Background Traffic Volumes - A.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

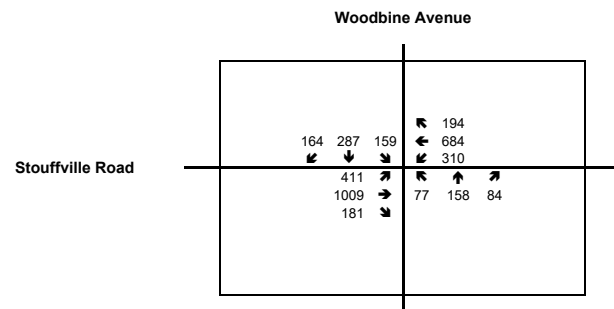


Figure No: 12

Date: June 18 2026

Prepared by: B.W.



Future (2035) Total Background Traffic Volumes - P.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

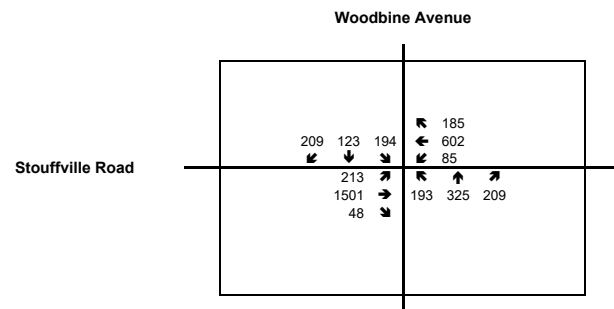


Figure No: 13

Date: June 18 2026

Prepared by: B.W.



5. Future Total Background Traffic Conditions - Continued

5.4 Future (2035) Total Background Traffic Analysis - Continued

Table 8: Future (2035) Total Background Traffic – Level of Service

Intersection	Turning Movement/ Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay ¹	95 th % Queue (m)	V/C	LOS	Delay ¹	95 th % Queue (m)
Woodbine Avenue at Stouffville Road (Signalized)	Overall	1.33	D	48.8	n/a	1.00	C	33.0	n/a
	EBL	1.18	F	126.4	147.2	0.57	B	16.7	37.7
	EBT	0.75	C	28.2	124.2	1.00	D	51.6	225.1
	EBR	0.26	A	10.0	25.2	0.12	A	1.1	2.2
	WBL	1.33	F	191.1	103.8	0.43	B	16.7	14.3
	WBT	0.58	C	25.7	84.9	0.45	C	23.2	63.6
	WBR	0.28	A	3.8	13.5	0.26	A	3.8	12.9
	NBL	0.31	C	30.9	29.6	0.55	D	35.8	57.3
	NBT	0.17	C	26.4	22.6	0.32	C	28.0	39.0
	NBR	0.18	A	5.7	10.3	0.38	A	10.0	26.6
	SBL	0.52	D	35.7	53.0	0.68	D	44.2	68.0
	SBT	0.30	C	27.9	37.0	0.14	C	26.0	18.6
	SBR	0.36	A	6.4	18.4	0.37	A	5.6	17.1

Note 1: Delays are measured in seconds per vehicle.

The analysis of the Future (2035) Total Background Traffic Conditions indicates that the signalized intersection will begin to operate at a Level of Service “D” during the A.M. Peak Hour and continue to operate at a Level of Service “C” during the P.M. Peak Hour. With the growth in background traffic, impacts will be moderate during the A.M. Peak Hour and low during the P.M. Peak Hour.

The eastbound left turning lane will begin to operate at a Level of Service “F” with a volume over capacity ratio that is greater than 1.0 and a queue length that may result in a spillback of vehicles into the adjacent lane during the A.M. Peak Hour.

5. Future Total Background Traffic Conditions - Continued

5.4 Future (2035) Total Background Traffic Analysis - Continued

The eastbound right turning lane may begin to operate with a queue length that may result in a spillback of vehicles into the adjacent lane during the A.M. Peak Hour.

The westbound left turning lane will begin to operate at a Level of Service “F” with a volume over capacity ratio that is greater than 1.0 during the A.M. Peak Hour.

6. Trip Generation and Distribution

6.1 Trip Generation

For the proposed Cemetery Development (Land Use 566), the trip generation rates from the ITE Trip Generation Manual Edition 11th Edition were applied for the A.M. and P.M. Peak Hours.

Table 9 summarizes the trip generation rates along with the percentages of incoming and outgoing trips for the A.M. and P.M. Peak Hours.

Table 9: Trip Generation Rates with Inbound and Outbound Percentages

ITE Land Use	A.M. Peak Hour			P.M. Peak Hour		
	Trip Rate	% In	% Out	Trip Rate	% In	% Out
Cemetery (LU 566)	0.17 (See Note 1)	80%	20%	0.46 (See Note 1)	31%	69%

Note 1: Trip rate is per acre.

6.2 Total Site-Generated Trips

The resulting number of trips generated were determined using the trip generation rates provided in **Table 9** and the area of the Subject Property. The proposed Cemetery Development comprises 42.15 acres.

The resulting number of trips generated is provided in **Table 10**.

Table 10: Site-Generated Trips

ITE Land Use	Acres	A.M. Peak Hour			P.M. Peak Hour		
		Trips In	Trips Out	Total	Trips In	Trips Out	Total
Cemetery (LU 566)	42.15	6	1	7	6	13	19

6. Trip Generation and Distribution - Continued

6.2 Total Site-Generated Trips - Continued

The proposed Cemetery Development is expected to generate a total of 7 net trips during the A.M. Peak Hour (6 inbound trips and 1 outbound trips) and 19 net trips during the P.M. Peak Hour (6 inbound trips and 13 outbound trips).

6.3 Trip Distribution and Assignment

The all-day all-purpose trip distribution from the 2022 Transportation Tomorrow Survey and the future road network was utilized for the assumed trip distribution and trip assignment.

The assumed trip distribution and assignment is as follows:

- 12% to/from the north via Woodbine Avenue,
- 42% to/from the east via Stouffville Road,
- 15% to/from the south via Woodbine Avenue,
- 31% to/from the west via Stouffville Road.

The site-generated trip volumes and trip assignment used in the analysis are illustrated in **Figures 14 and 15**.

Trip Assignment of Subject Development - A.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

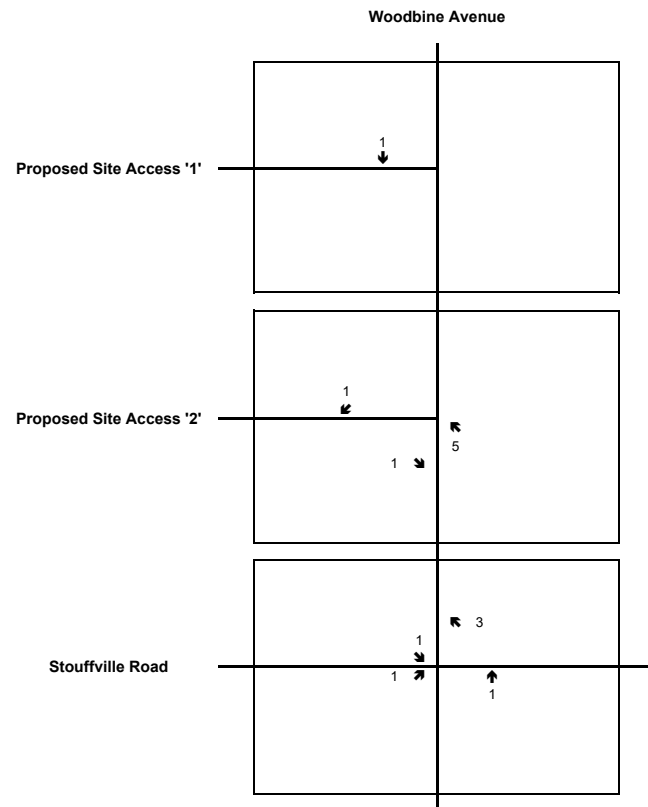


Figure No: 14

Date: June 18 2026

Prepared by: B.W.



Trip Assignment of Subject Development - P.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

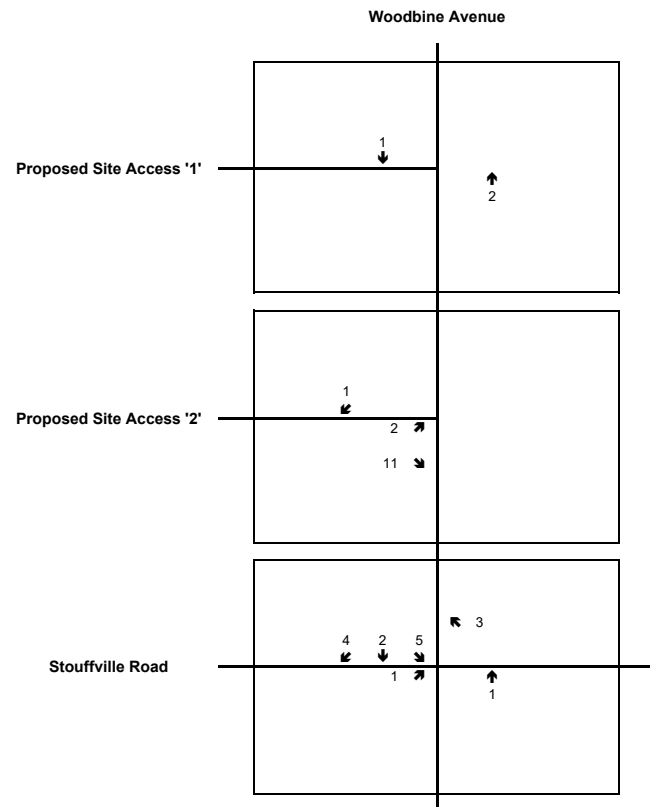


Figure No: 15

Date: June 18 2026

Prepared by: B.W.



7. Future Total Traffic Conditions

7.1 Future (2035) Total Traffic

The Future (2035) Total Traffic is based on the Future (2035) Total Background Traffic Volumes plus the Site Generated Traffic Volumes for the proposed Cemetery Development. The Future (2035) Total Traffic Volumes during the A.M. and P.M. Peak Hours are provided in **Figures 16 and 17**.

7.2 Future (2035) Total Traffic Analysis

For the Future (2035) Total Traffic Volumes, the Level of Service was analyzed using SYNCHRO STUDIO 12.0 software.

For the intersection of Stouffville Road at Woodbine Avenue, the lane configuration and the signal timing plans used in the Existing (2026) Traffic Analysis were used in the Future (2035) Total Traffic Analysis.

Proposed Site Access '1' at Woodbine Avenue and proposed Site Access '2' at Woodbine Avenue were analyzed as an un-signalized intersection with a stop-control at the eastbound approach. The lane configuration that was used in the analysis comprises a left and a through lane at the northbound approach; a shared left-right turning lane at the eastbound approach; and a shared through-right turning lane at the southbound approach.

The results of the analysis are summarized in **Table 11**. The related calculations are provided in **Appendix E**.

Future (2035) Total Traffic Volumes- A.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

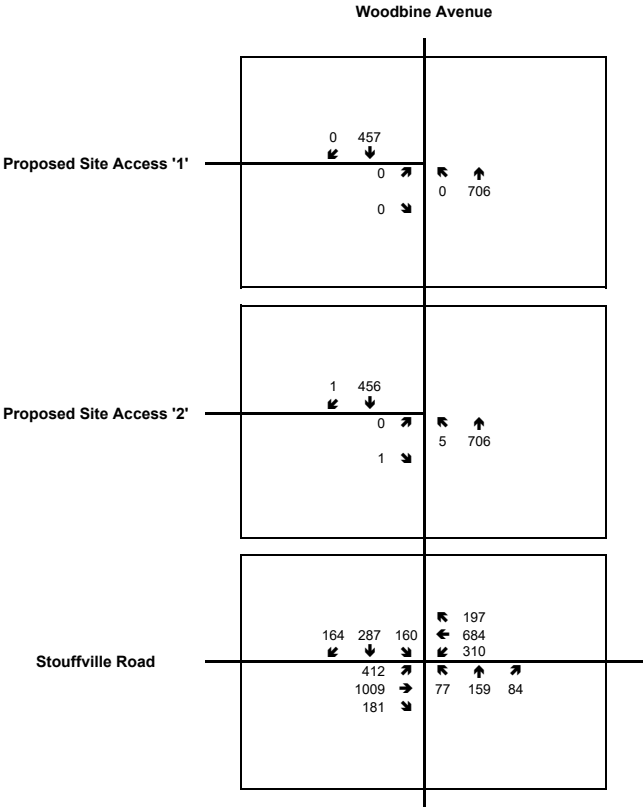


Figure No: 16

Date: June 18 2026

Prepared by: B.W.



Future (2035) Total Traffic Volumes- P.M. Peak Hour

W26027
Proposed Cemetery Development
12612 Woodbine (KD) Corp.
Town of Whitchurch-Stouffville

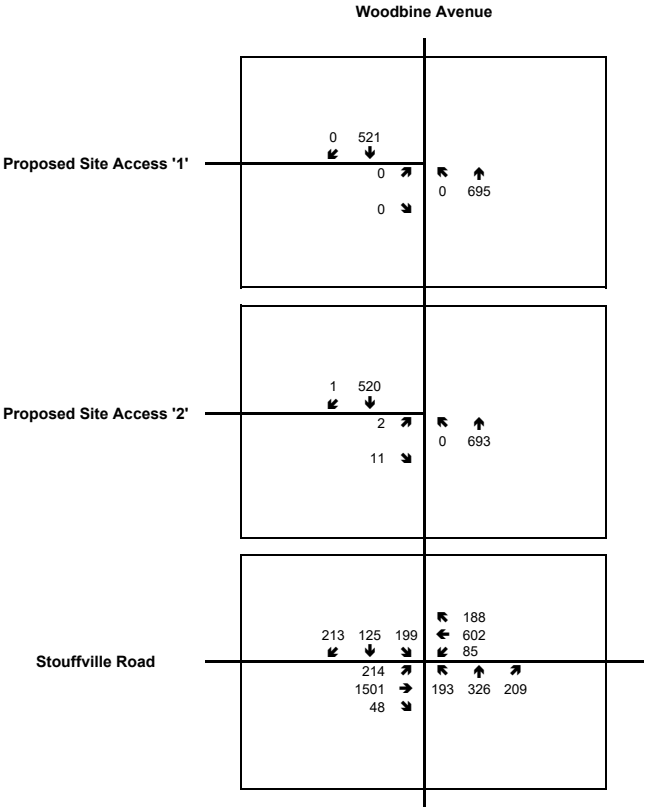


Figure No: 17

Date: June 18 2026

Prepared by: B.W.



7. Future Total Traffic Conditions - Continued

7.2 Future (2035) Total Traffic Analysis - Continued

Table 11: Future (2035) Total Traffic – Level of Service

Intersection	Turning Movement/ Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay ¹	95 th % Queue (m)	V/C	LOS	Delay ¹	95 th % Queue (m)
Woodbine Avenue at Stouffville Road (Signalized)	Overall	1.33	D	48.9	n/a	1.00	C	33.0	n/a
	EBL	1.19	F	127.4	147.7	0.57	B	16.7	37.8
	EBT	0.75	C	28.2	124.2	0.45	D	51.6	225.1
	EBR	0.26	A	10.0	25.2	0.45	A	1.1	2.2
	WBL	1.33	F	191.1	103.8	0.51	B	16.7	14.3
	WBT	0.58	C	25.7	84.9	0.40	C	23.2	63.6
	WBR	0.28	A	3.8	13.6	0.40	A	3.8	13.1
	NBL	0.31	C	30.9	29.6	0.30	D	35.9	57.4
	NBT	0.17	C	26.5	22.7	0.30	C	28.0	39.1
	NBR	0.18	A	5.7	10.3	0.30	A	10.0	26.6
	SBL	0.52	D	35.8	53.3	0.30	D	45.6	71.0
	SBT	0.30	C	27.9	37.0	0.30	C	26.1	18.8
	SBR	0.36	A	6.4	18.4	0.30	A	5.6	17.3
Proposed Site Access '1' at Woodbine Avenue (Un-signalized)	Overall	0.01	A	0.0	n/a	0.04	A	0.2	n/a
	EB Approach	0.00	B	11.3	0.0	0.04	B	14.3	0.8
	NBL	0.01	A	8.4	0.0	0.00	A	0.0	0.0
	NBT	0.00	A	01.0	0.0	0.00	A	0.0	0.0
	SB Approach	0.00	A	0.0	0.0	0.00	A	0.0	0.0
Proposed Site Access '2' at Woodbine Avenue (Un-signalized)	Overall	0.00	A	0.0	n/a	0.00	A	0.0	n/a
	EB Approach	0.00	A	0.0	0.0	0.00	A	0.0	0.0
	NBL	0.00	A	0.0	0.0	0.00	A	0.0	0.0
	NBT	0.00	A	0.0	0.0	0.00	A	0.0	0.0
	SB Approach	0.00	A	0.0	0.0	0.00	A	0.0	0.0

Note 1: Delays are measured in seconds per vehicle.

7. Future Total Traffic Conditions - Continued

7.2 Future (2035) Total Traffic Analysis - Continued

Woodbine Avenue at Stouffville Road

The Future (2035) Total Traffic Analysis indicates that the signalized intersection will continue to operate at a Level of Service “D” during the A.M. Peak Hour and a Level of Service “C” during the P.M. Peak Hour. With the inclusion of site-generated traffic, traffic impacts to the intersection are minimal during the A.M. and P.M. Peak Hours.

The eastbound left turning lane will continue to operate at a Level of Service “F” with a volume over capacity ratio that is greater than 1.0 and a queue length that may result in a spillback of vehicles into the adjacent lane during the A.M. Peak Hour.

The eastbound right turning lane may continue to operate with a queue length that may result in a spillback of vehicles into the adjacent lane during the A.M. Peak Hour.

The westbound left turning lane will continue to operate at a Level of Service “F” with a volume over capacity ratio that is greater than 1.0 during the A.M. Peak Hour.

Proposed Site Access ‘1’ at Woodbine Avenue

The Future (2035) Total Traffic Analysis indicates that the un-signalized intersection will operate at a Level of Service “A” during the A.M. and P.M. Peak Hours.

All of the turning movements will operate at a Level of Service “B” or better during the the A.M. and P.M. Peak Hours.

7. Future Total Traffic Conditions - Continued

7.2 Future (2035) Total Traffic Analysis - Continued

Proposed Site Access '2' at Woodbine Avenue

The Future (2035) Total Traffic Analysis indicates that the un-signalized intersection will operate at a Level of Service "A" during the A.M. and P.M. Peak Hours.

All of the turning movements will operate at a Level of Service "A" during the the A.M. and P.M. Peak Hours. Since this access will be exclusive to trucks servicing the reception hall with crematorium, its use will be seldom; resulting in minimal delays.

7.2.1 Future (2035) Total Traffic Analysis – Recommended Improvements

For the intersection of Woodbine Avenue at Stouffville Road, there are critical turning movements during the A.M. Peak Hour that are mainly attributed to the growth in background traffic.

To address traffic operation concerns, the following recommendations should be considered for the 2035 horizon year:

Woodbine Avenue at Stouffville Road

- Modify the Weekday A.M. Signal Timing Plans,
- Extend the storage of the right turning lane by 15 metres for the eastbound approach.

The results of the analysis are summarized in **Table 12**. The related calculations are provided in **Appendix E**.

7. Future Total Traffic Conditions - Continued

7.2.1 Future (2035) Total Traffic Analysis – Recommended Improvements

Table 12: Future (2035) Total Traffic – Level of Service – with Improvements

Intersection	Turning Movement/ Approach	A.M. Peak Hour				P.M. Peak Hour			
		V/C	LOS	Delay ¹	95 th % Queue (m)	V/C	LOS	Delay ¹	95 th % Queue (m)
Woodbine Avenue at Stouffville Road (Signalized)	Overall	0.97	D	36.0	n/a	1.00	C	33.0	n/a
	EBL	0.97	D	55.0	128.3	0.57	B	16.7	37.8
	EBT	0.92	D	45.7	160.1	1.00	D	51.6	225.1
	EBR	0.31	B	13.5	29.9	0.12	A	1.1	2.2
	WBL	0.89	D	50.2	94.3	0.43	B	16.7	14.3
	WBT	0.70	C	33.6	95.9	0.45	C	23.2	63.6
	WBR	0.32	A	4.9	15.3	0.27	A	3.8	13.1
	NBL	0.33	C	33.1	30.5	0.55	D	35.9	57.4
	NBT	0.19	C	28.0	23.4	0.32	C	28.0	39.1
	NBR	0.19	A	6.0	10.6	0.38	A	10.0	26.6
	SBL	0.56	D	38.9	54.9	0.70	D	45.6	71.0
	SBT	0.32	C	29.6	38.1	0.14	C	26.1	18.8
	SBR	0.37	A	6.9	19.0	0.37	A	5.6	17.3

Note 1: Delays are measured in seconds per vehicle.

With the recommended improvements, all of the turning movements will operate at an acceptable Level of Service during the A.M. and P.M. Peak Hours.

8. Summary

The proposed Cemetery Development is expected to generate a total of 7 net trips during the A.M. Peak Hour (6 inbound trips and 1 outbound trips) and 19 net trips during the P.M. Peak Hour (6 inbound trips and 13 outbound trips). Traffic impacts due to the inclusion of site-generated trips are minimal during the A.M. and P.M. Peak Hours.

Two (2) full-moves accesses that connect with Woodbine Avenue will service the proposed Cemetery Development with the northerly access being exclusive to trucks servicing the reception hall with a crematorium. Since the use of the northerly access will be seldom and the Subject Property currently has two (2) driveways that connect with Woodbine Avenue, two (2) accesses for the Subject Property is acceptable.

For the proposed site accesses, the following recommendations should be considered:

Proposed Site Access '1' at Woodbine Avenue

- A left turning lane with 15 metres of storage at the northbound approach,
- A stop-control at the eastbound approach.

Proposed Site Access '2' at Woodbine Avenue

- A left turning lane with 15 metres of storage at the northbound approach,
- A stop-control at the eastbound approach.

For the intersection of Woodbine Avenue at Stouffville Road, there are critical turning movements during the A.M. Peak Hour that are mainly attributed to the growth in background traffic.

8. Summary - Continued

To address traffic operation concerns, the following recommendations should be considered for the 2035 horizon year:

Woodbine Avenue at Stouffville Road

- Modify the Weekday A.M. Signal Timing Plans,
- Extend the storage of the right turning lane by 15 metres for the eastbound approach.

With the recommended improvements, all of the turning movements will operate at an acceptable Level of Service during the A.M. and P.M. Peak Hours.

With the recommended improvements, the concerned intersections will operate at acceptable Levels of Service during the A.M. and P.M. Peak Hours for the 2035 horizon year. Traffic impacts due to the inclusion of site-generated trips are minimal.

This Report was prepared by:

CANDEVCON GROUP INC.



Brian Wong, P. Eng.
Intermediate Transportation Engineer



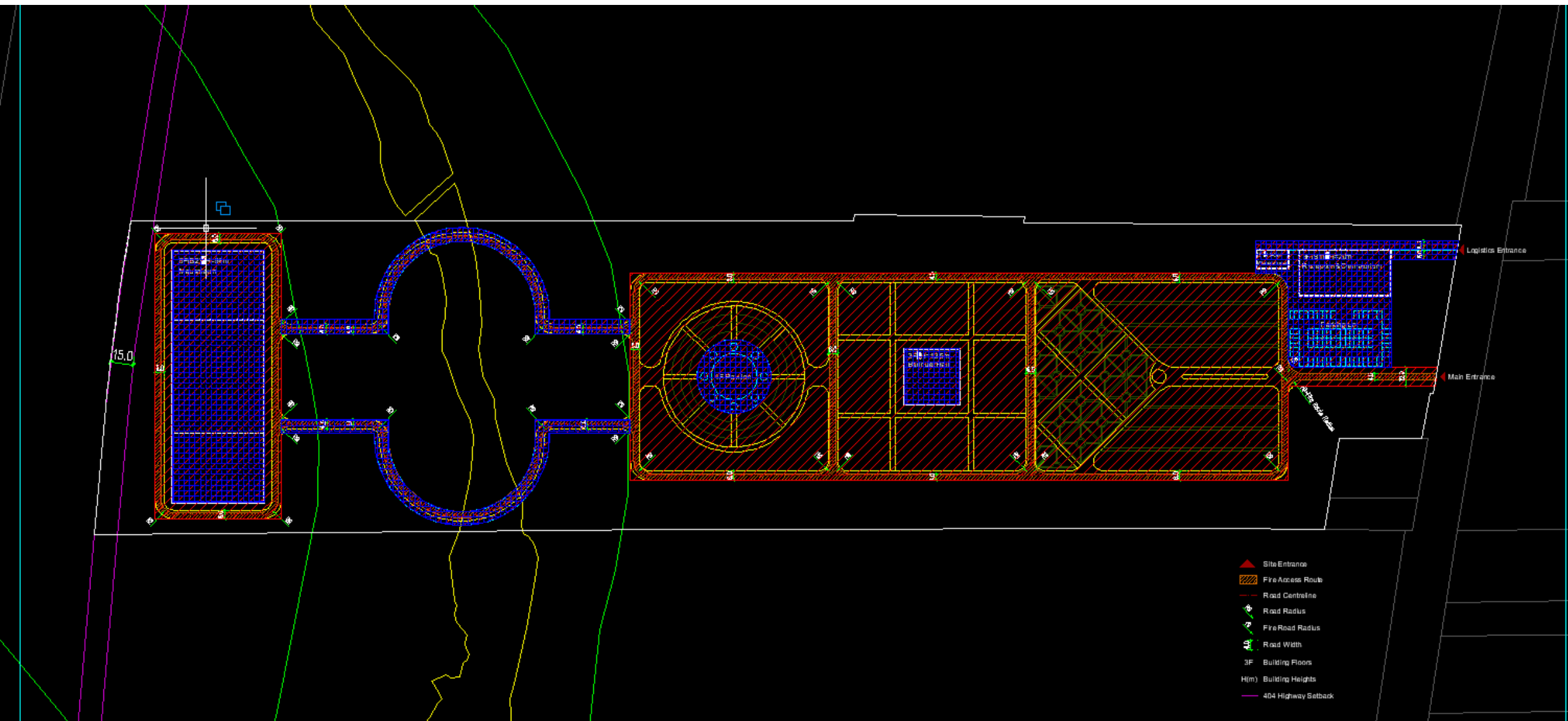
David Lee, P. Eng.
Project Manager

APPENDIX A

TERMS OF REFERENCE

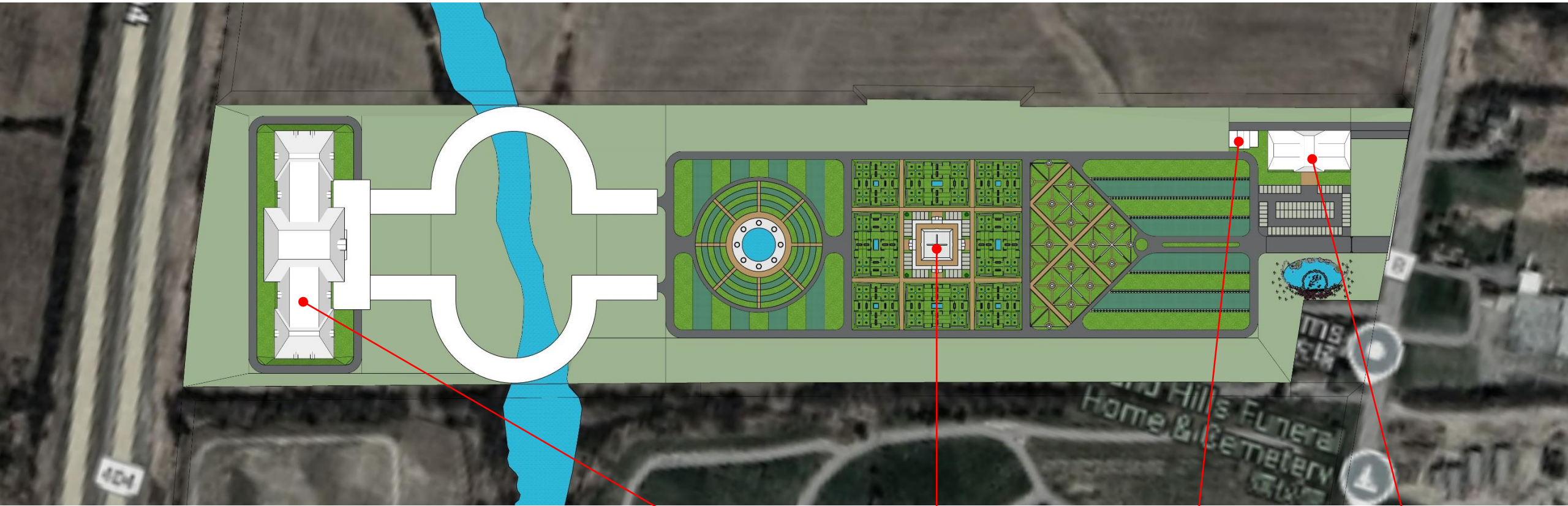
Traffic Impact Study – Terms of Reference

- a) Assemble, review and confirm background data (i.e. traffic volume/flow on the adjacent road network during weekday peak hours) available from official sources, existing road geometry and access locations.
- b) Conduct turning movement counts (if necessary) at the Stouffville Road at Woodbine Avenue intersection during Weekday AM and Weekday PM Peak Hours.
- c) Establish existing traffic patterns and historic travel growth rates for the study area.
- d) Consult with the Region of York and Town of Whitchurch-Stouffville to confirm data as required (i.e. growth trends, other proposed development timing etc.), issues/developments to be addressed and any anticipated future road improvements.
- e) Assess future trips generated by the proposed Cemetery Development during Weekday AM and Weekday PM Peak Hours.
- f) Develop the trip distribution and traffic assignment for the proposed Cemetery Development during Weekday AM and Weekday PM Peak Hours.
- g) Establish the five (5) year time horizon post build-out for the proposed Cemetery Development to forecast future peak periods of street traffic.
- h) Analyze the traffic operations during peak periods at the following key site access points. (To be confirmed with the Region of York and Town of Whitchurch-Stouffville)
 - Stouffville Road at Woodbine Avenue,
 - Proposed Site Access “1” at Woodbine Avenue,
 - Proposed Site Access “2” at Woodbine Avenue.
- i) Complete traffic operations and volume-capacity analyses using the Synchro 12.0 software.
- j) Assess existing and future (five (5) year post horizon) total background and total traffic operations at the proposed key access points mentioned above.
- k) Prepare a Study to summarize the findings of the traffic impact analyses, as well as recommend any improvements required to mitigate the traffic impacts. Submit Study to the Region of York and Town of Whitchurch-Stouffville for review/comments.
- l) Provide and circulate copies of the Study to all applicable approval authorities (first submission only).



开发区域=50% (景观, 透水道路, 墓位)
 Disruption Area =50% (landscape, pervious road , cemetery)

不透水区域=14.61% (建筑, 硬质广场, 桥梁)
 Impervious Surface = 14.61 % (buildings, squares, bridges)



经济技术指标 Technical Indicators					
用地面积 Land Area		170561.64			m²
总建筑面积 GFA		98800			m²
计容建筑面积 Building area included in the plot ratio		77000			m²
其中	VIP壁葬宫殿 (8F+B2) Mausoleum (8F+B2)	88000	地上 above ground	70400	m²
			地下 underground	17600	
	壁葬纪念馆 (3F) Banquet Hall (3F)	1500			m²
	综合接待+殡仪馆+火葬场 (3F+B1) Reception & Crematorium (3F+B1)	9000	地上 above ground	4800	m²
			地下 underground	4200	
	内部仓库停车库 (1F) Warehouse (1F)	300			m²
容积率 FSI		0.45			
停车位 Parking Spaces		176	地上 above ground	76	辆
			地下 underground	100	
总土方量 (压实量/0.7折算后) Total Earthwork Volume		100W			m³

VIP壁葬宫殿
(地上8F+地下2F)

Mausoleum
(8F+B2)

壁葬纪念馆
(3F)

Banquet Hall
(3F)

内部仓库停车库
(1F)

Warehouse
(1F)

综合接待+殡仪馆+火葬场
(地上3F+地下1F)

Reception & Crematorium
(3F+B1)

Brian Wong

From: Schleihauf, David <David.Schleihauf@york.ca>
Sent: June 4, 2026 11:07 AM
To: Brian Wong
Cc: David Lee; Bui, Vi; Wong, Veronica; Filing West
Subject: RE: W26027 - 12612 & 12586 Woodbine Avenue (PRE26.014) - Terms of Reference (York Region)

EXTERNAL EMAIL. PROCEED WITH CAUTION.

Hello Brian,

Please see our comments below regarding the terms of reference.

1. The transportation study shall be consistent with the Region's [Transportation Mobility Plan Guidelines](#) (2025) and [Access Guidelines](#) (November 2020).
2. Generally, one access to Woodbine Avenue would be permitted, any additional access needs to be justified in the study.
3. Exclusive turn lanes will be required at the access(es) to Woodbine Avenue. A design drawing, designed to Regional standards, shall be provided.
4. We accept growth calculations in three different ways, namely from historic AADT analysis, EMME model analysis or from recently approved studies in the area. Please document the method used in the report, and provide relevant calculations in an appendix.
5. Traffic Counts, Signal Timings, model outputs, and historical AADTs can be purchased through traffic.data@york.ca.
6. As per the Region's [2026 10-Year Roads and Transit Capital Construction Program](#), there are no planned improvements in the vicinity of the site.
7. Minimum five metre by five metre daylight triangles will be required at the access(es) to Woodbine Avenue.
8. The applicant shall provide a 36 metre right-of-way for this section of Woodbine Avenue. As such, all municipal setbacks shall be referenced from a point 18 metres from the centreline of construction on Woodbine Avenue and any additional lands required for turn lanes at intersections will be conveyed to York Region for public highway purposes, free of all costs and encumbrances, to the satisfaction of York Region Solicitor.

Please note, this is not an approval, the Region will provide additional detailed comments when a study is submitted for review.

Regards,

Our working hours may be different. Please do not feel obligated to reply outside of your scheduled working hours. Let's work together to help foster healthy work-life boundaries.

David Schleihauf, P.Eng. | Senior Transportation Planning Specialist, Transportation Development Planning, Transportation & Infrastructure Planning Branch, Public Works Department

1-877-464-9675 ext. 77857

Our Mission: **Working together to serve our thriving communities – today and tomorrow**

From: Brian Wong <brian@candevcon.com>
Sent: Wednesday, June 3, 2026 5:14 PM
To: Bui, Vi <Vi.Bui@york.ca>
Cc: David Lee <david@candevcon.com>; Filing West <filingwest@candevcon.com>
Subject: RE: W26027 - 12612 & 12586 Woodbine Avenue (PRE26.014) - Terms of Reference (York Region)

STOP! External Email: Are you expecting this email from this sender? Does the message include a QR Code? If the message seems out of the ordinary or requests your credentials, forward it to isitsafe@york.ca

Hello Vi,

I am just following up.

If you require any further information, please do not hesitate to contact me.

Brian Wong, P.Eng.

Intermediate Transportation Engineer

CANDEVCON GROUP INC.
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From: Brian Wong
Sent: May 28, 2026 9:26 AM
To: 'Bui, Vi' <vi.bui@york.ca>
Cc: David Lee <david@candevcon.com>; Filing West <filingwest@candevcon.com>
Subject: RE: W26027 - 12612 & 12586 Woodbine Avenue (PRE26.014) - Terms of Reference (York Region)

Good Morning Vi,

I am just following up with the email below.

If you require any further information, please do not hesitate to contact me.

Brian Wong, P.Eng.

Intermediate Transportation Engineer

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From: Brian Wong
Sent: May 21, 2026 9:51 AM
To: Bui, Vi <vi.bui@york.ca>
Cc: David Lee <david@candevcon.com>; Filing West <filingwest@candevcon.com>
Subject: W26027 - 12612 & 12586 Woodbine Avenue (PRE26.014) - Terms of Reference (York Region)

Good Morning Vi,

We are preparing Traffic Impact Study for a proposed Cemetery Development (PRE26.014) that is immediately west of Woodbine Avenue and approximately 1,100 meters north of Stouffville Road. Please find the Terms of Reference and the latest Site Plan attached for your review and comment.

If you require any further information, please do not hesitate to contact me.

Brian Wong, P.Eng.

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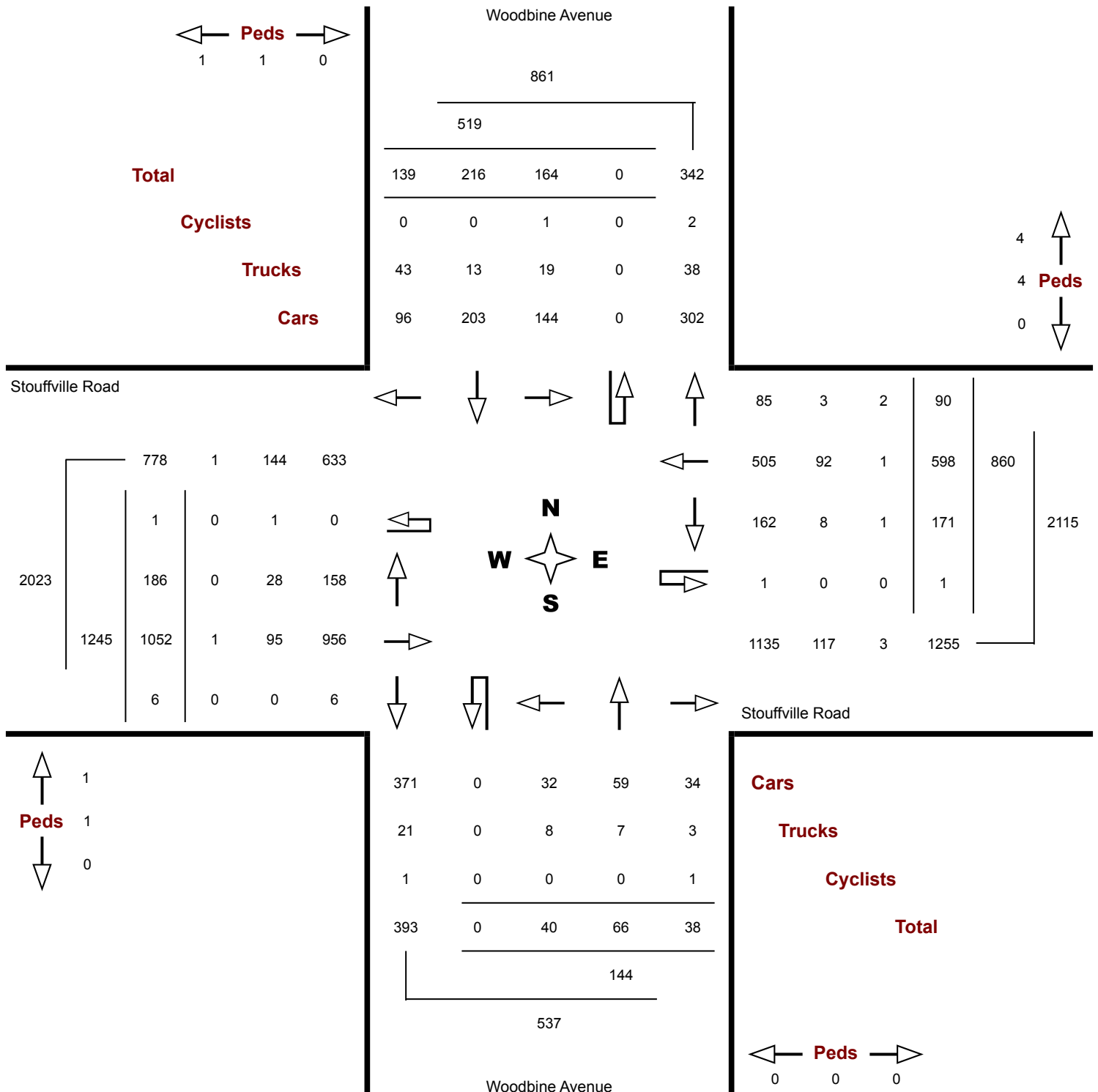
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APPENDIX B

TURNING MOVEMENT COUNTS

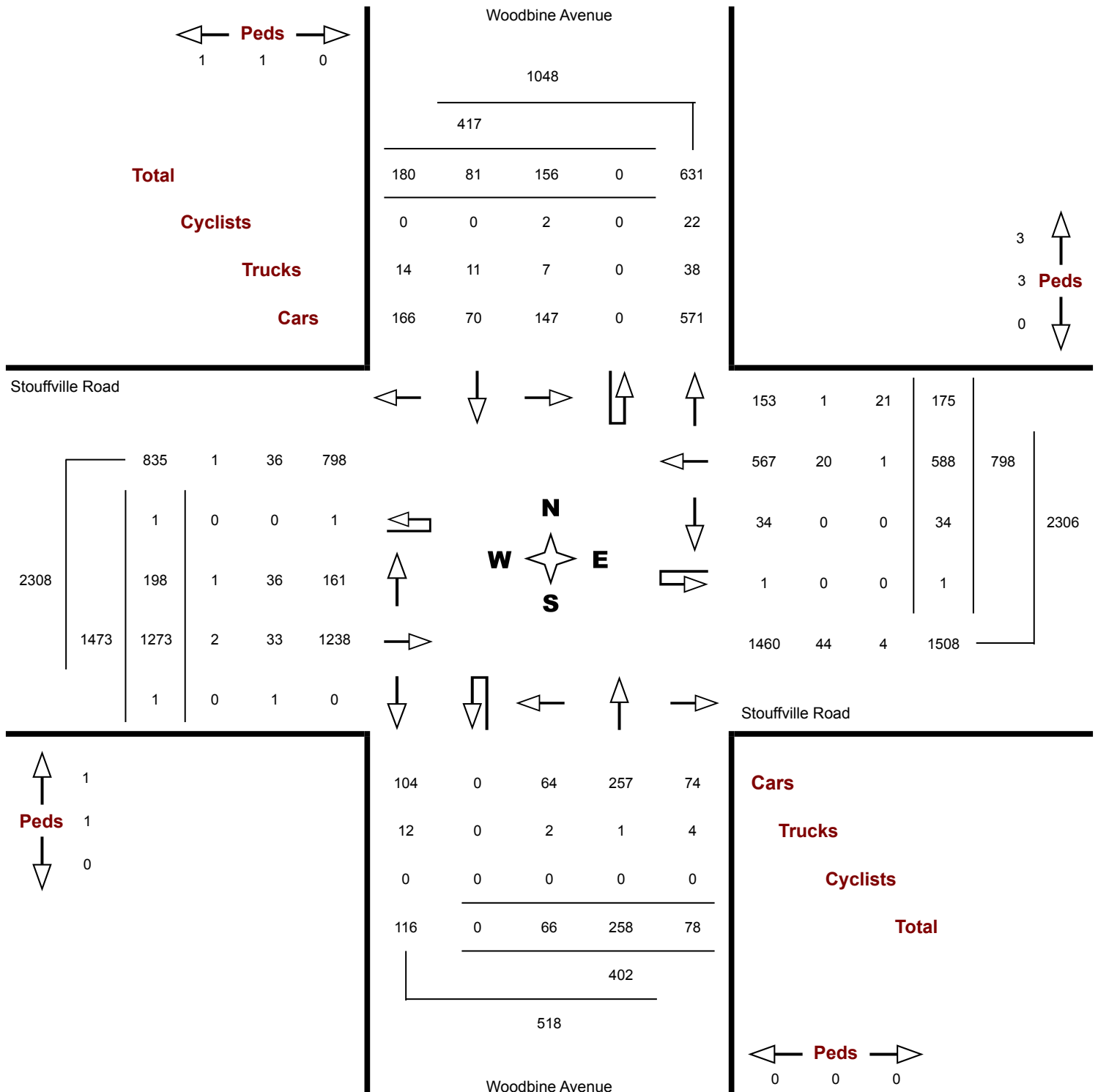
Turning Movement Count Peak Hour Diagram

Location	Woodbine Avenue @ Stouffville Road	GeolD	Y0469
Municipality	Whitchurch-Stouffville	Traffic Control	Traffic signal
Jurisdiction	Regional municipality	Count Period	7:00 AM - 6:15 PM
Count Date	Thursday, September 11, 2025	Peak Hour	8:00 AM - 9:00 AM
Major dir.	North-South		



Turning Movement Count Peak Hour Diagram

Location	Woodbine Avenue @ Stouffville Road	GeolD	Y0469
Municipality	Whitchurch-Stouffville	Traffic Control	Traffic signal
Jurisdiction	Regional municipality	Count Period	7:00 AM - 6:15 PM
Count Date	Thursday, September 11, 2025	Peak Hour	4:30 PM - 5:30 PM
Major dir.	North-South		



Turning Movement Count - Details Report (Hourly)

Location:

Woodbine Avenue @ Stouffville Road

Municipality:

Whitchurch-Stouffville

Start Date:

2025-09-11 7:00

End Date:

2025-09-11 18:00

Geo ID:

Y0469

Woodbine Avenue											Stouffville Road										
North Approach						South Approach					East Approach					West Approach					
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
7:00	7:15	28	44	33	0	105	5	7	4	0	16	13	168	23	0	204	30	136	0	0	166
7:15	7:30	51	41	32	0	124	12	9	8	0	29	16	193	9	0	218	46	175	0	0	221
7:30	7:45	43	55	15	0	113	11	10	5	0	26	24	152	16	0	192	33	238	1	1	273
7:45	8:00	37	62	29	0	128	17	15	12	0	44	31	139	20	0	190	41	228	1	0	270
Total		159	202	109	0	470	45	41	29	0	115	84	652	68	0	804	150	777	2	1	930
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
8:00	8:15	45	48	42	0	135	5	18	4	0	27	35	174	15	0	224	39	234	1	0	274
8:15	8:30	42	72	40	0	154	8	7	18	0	33	50	148	22	0	220	48	285	2	0	335
8:30	8:45	42	64	23	0	129	9	18	9	0	36	58	141	29	0	228	53	274	1	1	329
8:45	9:00	35	32	34	0	101	18	23	7	0	48	28	135	24	1	188	46	259	2	0	307
Total		164	216	139	0	519	40	66	38	0	144	171	598	90	1	860	186	1052	6	1	1245
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
11:00	11:15	29	9	34	0	72	16	20	8	0	44	14	103	12	1	130	42	165	0	0	207
11:15	11:30	22	15	39	0	76	12	9	12	0	33	6	118	19	0	143	43	160	2	0	205
11:30	11:45	34	18	38	0	90	17	18	12	0	47	8	125	8	0	141	54	186	0	0	240
11:45	12:00	34	20	50	0	104	11	15	6	0	32	11	115	7	0	133	48	194	2	1	245
Total		119	62	161	0	342	56	62	38	0	156	39	461	46	1	547	187	705	4	1	897
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
12:00	12:15	32	15	49	1	97	23	14	6	0	43	13	128	17	0	158	43	170	0	1	214
12:15	12:30	25	14	42	0	81	17	56	17	0	90	4	149	10	1	164	45	197	1	0	243
12:30	12:45	22	14	40	1	77	10	16	12	0	38	7	134	17	0	158	62	184	0	0	246
12:45	13:00	13	22	52	2	89	10	11	7	0	28	10	123	16	0	149	49	201	0	0	250
Total		92	65	183	4	344	60	97	42	0	199	34	534	60	1	629	199	752	1	1	953
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT

13:00	13:15	32	12	45	0	89	10	19	7	0	36	11	145	16	0	172	42	205	1	1	249
13:15	13:30	30	17	25	0	72	13	19	9	0	41	11	144	16	1	172	46	192	0	0	238
13:30	13:45	28	19	36	1	84	14	41	10	0	65	11	141	18	0	170	36	193	1	1	231
13:45	14:00	21	16	38	0	75	10	33	8	0	51	12	152	26	0	190	54	198	0	2	254
Total		111	64	144	1	320	47	112	34	0	193	45	582	76	1	704	178	788	2	4	972

Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
15:00	15:15	32	17	55	0	104	17	35	13	0	65	5	162	25	0	192	50	253	0	0	303
15:15	15:30	30	17	42	0	89	13	32	7	0	52	11	144	25	1	181	47	252	1	0	300
15:30	15:45	30	18	32	0	80	10	50	20	0	80	7	130	38	0	175	64	273	0	1	338
15:45	16:00	28	21	36	0	85	12	57	18	0	87	13	155	42	0	210	45	300	0	0	345
Total		120	73	165	0	358	52	174	58	0	284	36	591	130	1	758	206	1078	1	1	1286

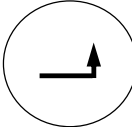
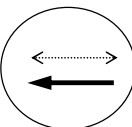
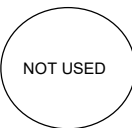
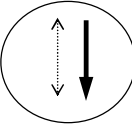
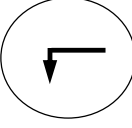
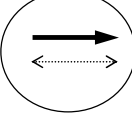
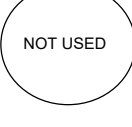
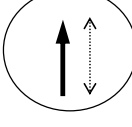
Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
16:00	16:15	42	28	50	0	120	23	63	24	0	110	11	124	30	0	165	45	293	0	0	338
16:15	16:30	36	16	54	0	106	9	60	20	0	89	11	120	41	0	172	59	313	0	0	372
16:30	16:45	40	17	43	0	100	20	62	23	0	105	9	139	53	0	201	58	326	0	0	384
16:45	17:00	27	17	45	0	89	15	62	21	0	98	5	136	31	0	172	42	300	0	0	342
Total		145	78	192	0	415	67	247	88	0	402	36	519	155	0	710	204	1232	0	0	1436

Time Period		LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT	LT	TH	RT	U -Turn	TOT
17:00	17:15	46	25	48	0	119	22	65	16	0	103	12	154	45	1	212	55	334	1	1	391
17:15	17:30	43	22	44	0	109	9	69	18	0	96	8	159	46	0	213	43	313	0	0	356
17:30	17:45	32	25	31	0	88	15	51	14	0	80	5	152	26	0	183	41	331	0	0	372
17:45	18:00	23	15	29	0	67	15	46	12	0	73	9	148	38	0	195	31	255	0	0	286
Total		144	87	152	0	383	61	231	60	0	352	34	613	155	1	803	170	1233	1	1	1405

Grand Total		1054	847	1245	5	3151	428	1030	387	0	1845	479	4550	780	6	5815	1480	7617	17	10	9124
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APPENDIX C

SIGNAL TIMING PLANS

LOCATION: Woodbine (YR 8) & Stouffville Rd (YR 14) CTCS: 49 MODE/COMMENT: SA PREPARED/CHECKED BY: MAB PREPARATION DATE: June 12, 2025 IMPLEMENTATION DATE: June 12, 2025		MUNICIPALITY: Stouffville COMPUTER SYSTEM: Centrac CONTROLLER/CABINET TYPE: Econolite EOS / TS2T1 CONFLICT FLASH: Red & Red DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s) CHANNEL/DROP:		
NEMA Phase (York)		Free	Phase Mode (Fixed/Demanded/Callable)	Remarks
	Local Plan System Plan	All Day Pattern 99 Plan 99		
1. E/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 10 MAX2 0 AMB 3 ALR 1 SPLIT		Callable/Extendable by Setback Loop	Pedestrian Minimums: EWWK = 7 sec., EWFD = 26 sec. NSWK = 7 sec., NSFD = 21 sec. Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction.
2. Westbound  Stouffville Rd	WLK 7 FDW 26 MIN 40 EXT 0 MAX1 40 MAX2 0 AMB 5.0 ALR 3.0 SPLIT	0	Fixed	Emergency vehicle pre-emption 4: Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction. NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is served. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split during coordinated operation or serves MAX1 during Free operation. If a pedestrian call is received, the pedestrian minimum will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
3. NOT USED 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
4. Southbound  Woodbine Ave	WLK 7 FDW 21 MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.5 ALR 2.5 SPLIT	0	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	During coordinated operation, the signal constantly cycles through main street FDW to improve response time to side street vehicle and pedestrian demand.
5. W/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3 ALR 1 SPLIT	0	Callable/Extendable by Setback Loop	During free plan, signal rests in EWWK and does not cycle through EWFD unless there is side street vehicle or pedestrian demand. EWFD reverts to EWWK if there is no side street demand at the end of the EWFD. Updated to EOS firmware
6. Eastbound  Stouffville Rd	WLK 7 FDW 26 MIN 40 EXT 0 MAX1 40 MAX2 0 AMB 5.0 ALR 3.0 SPLIT	0	Fixed	
7. NOT USED 	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
8. Northbound  Woodbine Ave	WLK 7 FDW 21 MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.5 ALR 2.5 SPLIT	0	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	
	CL OF VP	0 (FREE) 0 (FREE) 0 (FREE)		

NOTES:

APPENDIX D

LEVEL OF SERVICE DEFINITIONS

Table 8-1 Signalized Intersection Level of Service

Control Delay Per Vehicle (s)	LOS
≤10	A
10 to 20	B
20 to 35	C
35 to 55	D
55 to 80	E
>80	F

Signing Settings

For an unsignalized two-way stopped controlled (TWSC), all-way stop-controlled (AWSC) or a roundabout intersection, the Level of Service for the intersection is calculated by taking the Intersection Delay and converting it to a letter using Table 8-2.

Table 8-2 TWSC, AWSC and Roundabout Level of Service Criteria

Control Delay Per Vehicle (s)	LOS
≤10	A
10 to 15	B
15 to 25	C
25 to 35	D
35 to 50	E
>50	F

The LOS criteria for TWSC, AWSC and roundabout intersections are different than that used for a signalized intersection. The primary reason for this is that drivers expect different levels of performance between signalized and unsignalized intersections.

Intersection Capacity Utilization

Intersection Capacity Utilization is the 2003 (ICU 2003) for the intersection. Full details of the ICU 2003 can be found in the topic, Intersection Capacity (ICU) Report (see page 24-10). A full description of ICU 2003 along with commentary and instructions is available in the reference book, **Intersection Capacity Utilization 2003** available from Trafficware.

The ICU is shown for unsignalized intersections because it represents the potential capacity for the intersection if it were to be signalized.

ICU Level of Service

The ICU Level of Service (LOS) gives insight into how an intersection is functioning and how much extra capacity is available to handle traffic fluctuations and incidents. ICU is not a value that can be measured with a stopwatch, but it does give a good reading on the conditions that can be expected at the intersection. Full details of the ICU LOS can be found in the topic, Intersection Capacity (ICU) Report.

Letters A to H are assigned to the intersection based on the Intersection Capacity Utilization using Table 8-3. Note that the ICU 2003 includes additional levels past F to further differentiate congested operation.

APPENDIX E

SIGNALIZED AND UN-SIGNALIZED INTERSECTION CAPACITY ANALYSIS FOR EXISTING (2026), FUTURE (2035) TOTAL BACKGROUND AND FUTURE (2035) TOTAL TRAFFIC SCENARIOS

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Existing AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1047	6	172	605	97	41	71	38	163	218	141
Future Volume (vph)	200	1047	6	172	605	97	41	71	38	163	218	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1587	3349	1633	1738	3174	1585	1521	3288	1512	1630	3444	1247
Flt Permitted	0.322			0.144			0.606			0.705		
Satd. Flow (perm)	538	3349	1613	263	3174	1564	969	3288	1487	1205	3444	1230
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			104			98			152
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			396.7	
Travel Time (s)		18.0			23.3			28.8			20.4	
Confl. Peds. (#/hr)	1					1	1		4	4		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	15%	9%	0%	5%	15%	3%	20%	11%	8%	12%	6%	31%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	1126	6	185	651	104	44	76	41	175	234	152
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	56.7	43.0	43.0	51.3	40.3	40.3	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.43	0.43	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.53	0.78	0.01	0.78	0.51	0.15	0.15	0.08	0.08	0.48	0.23	0.32
Control Delay (s/veh)	15.4	29.2	0.0	36.2	24.2	4.4	27.5	25.4	0.3	34.1	27.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.4	29.2	0.0	36.2	24.2	4.4	27.5	25.4	0.3	34.1	27.0	6.4
LOS	B	C	A	D	C	A	C	C	A	C	C	A
Approach Delay (s/veh)		26.9			24.4			19.6			23.7	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	21.2	103.1	0.0	16.4	55.1	0.0	7.2	6.0	0.0	30.3	18.7	0.0
Queue Length 95th (m)	34.7	130.9	0.0	#46.0	73.5	10.0	17.1	11.8	0.0	52.8	28.7	17.4
Internal Link Dist (m)		325.3			428.9			535.3			372.7	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

Existing AM

3: Stouffville Road & Woodbine Avenue

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	411	1440	749	238	1280	693	290	986	514	361	1033	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.78	0.01	0.78	0.51	0.15	0.15	0.08	0.08	0.48	0.23	0.32

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay (s/veh): 25.1

Intersection LOS: C

Intersection Capacity Utilization 89.3%

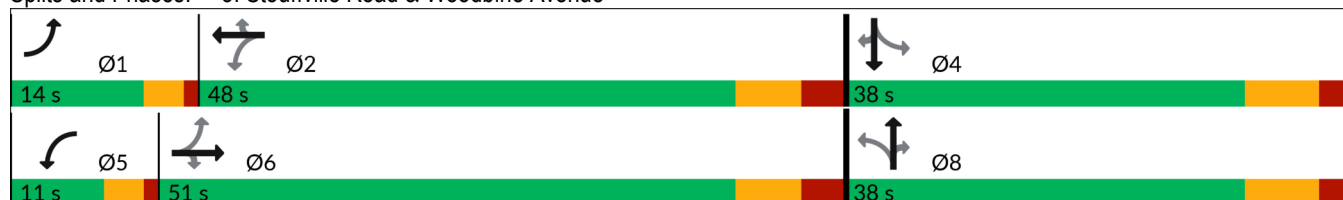
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Existing PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	1292	1	35	588	176	66	259	79	159	83	180
Future Volume (vph)	199	1292	1	35	588	176	66	259	79	159	83	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1547	3544	816	1825	3544	1617	1772	3650	1555	1755	3202	1512
Flt Permitted	0.329			0.096			0.697			0.582		
Satd. Flow (perm)	535	3544	806	184	3544	1595	1299	3650	1532	1073	3202	1492
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			187			98			191
Link Speed (k/h)		70			70			70				70
Link Distance (m)		349.3			452.9			559.3				396.7
Travel Time (s)		18.0			23.3			28.8				20.4
Confl. Peds. (#/hr)	1					1	1		3	3		1
Confl. Bikes (#/hr)			2			1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	3%	100%	0%	3%	1%	3%	0%	5%	4%	14%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	1374	1	37	626	187	70	276	84	169	88	191
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	57.1	47.1	47.1	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.47	0.47	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.52	0.82	0.00	0.18	0.44	0.25	0.18	0.25	0.16	0.52	0.09	0.33
Control Delay (s/veh)	15.3	29.0	0.0	11.3	23.0	3.8	27.5	27.2	4.9	36.1	25.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.3	29.0	0.0	11.3	23.0	3.8	27.5	27.2	4.9	36.1	25.6	5.6
LOS	B	C	A	B	C	A	C	C	A	D	C	A
Approach Delay (s/veh)		27.2			18.3			22.9			21.0	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	21.4	130.3	0.0	2.9	46.6	0.0	10.3	21.2	0.0	28.0	7.1	0.0
Queue Length 95th (m)	35.1	#175.7	0.0	7.0	62.0	12.7	21.4	31.6	8.7	49.5	13.5	15.9
Internal Link Dist (m)		325.3			428.9			535.3			372.7	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

Existing PM

3: Stouffville Road & Woodbine Avenue

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	408	1674	432	209	1422	752	390	1098	529	322	963	582
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.82	0.00	0.18	0.44	0.25	0.18	0.25	0.16	0.52	0.09	0.33

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 99.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.82

Intersection Signal Delay (s/veh): 23.5

Intersection LOS: C

Intersection Capacity Utilization 97.0%

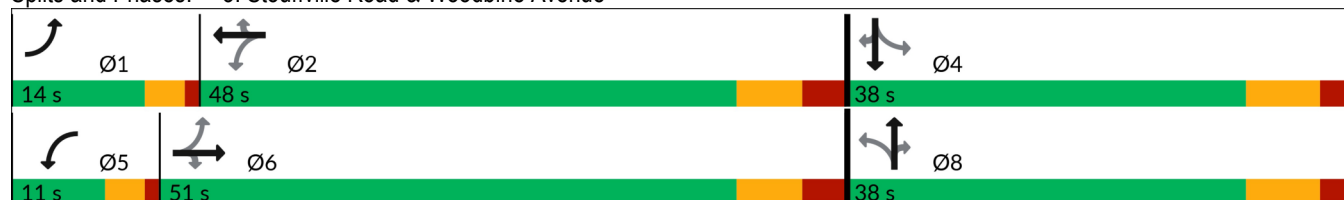
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	411	1009	181	310	684	194	77	158	84	159	287	164
Future Volume (vph)	411	1009	181	310	684	194	77	158	84	159	287	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1587	3349	1633	1738	3174	1585	1521	3288	1512	1630	3444	1247
Flt Permitted	0.273			0.161			0.564			0.644		
Satd. Flow (perm)	456	3349	1613	295	3174	1564	902	3288	1487	1101	3444	1230
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			209			98			176
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			396.7	
Travel Time (s)		18.0			23.3			28.8			20.4	
Confl. Peds. (#/hr)	1					1	1		4	4		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	15%	9%	0%	5%	15%	3%	20%	11%	8%	12%	6%	31%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	442	1085	195	333	735	209	83	170	90	171	309	176
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	57.0	43.0	43.0	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.43	0.43	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	1.18	0.75	0.26	1.33	0.58	0.28	0.31	0.17	0.18	0.52	0.30	0.36
Control Delay (s/veh)	126.4	28.2	10.0	191.1	25.7	3.8	30.9	26.4	5.7	35.7	27.9	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	126.4	28.2	10.0	191.1	25.7	3.8	30.9	26.4	5.7	35.7	27.9	6.4
LOS	F	C	A	F	C	A	C	C	A	D	C	A
Approach Delay (s/veh)		51.3			65.2			22.1			24.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	~71.7	97.5	11.1	~51.6	64.2	0.0	14.3	13.8	0.0	30.0	25.2	0.0
Queue Length 95th (m)	#147.2	124.2	25.2	#103.8	84.9	13.5	29.6	22.6	10.3	53.0	37.0	18.4
Internal Link Dist (m)		325.3			428.9			535.3			372.7	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	373	1440	749	251	1269	751	270	986	514	330	1033	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.75	0.26	1.33	0.58	0.28	0.31	0.17	0.18	0.52	0.30	0.36

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.33

Intersection Signal Delay (s/veh): 48.8

Intersection LOS: D

Intersection Capacity Utilization 105.7%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	1501	48	85	602	185	193	325	209	194	123	209
Future Volume (vph)	213	1501	48	85	602	185	193	325	209	194	123	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1547	3544	816	1825	3544	1617	1772	3650	1555	1755	3202	1512
Flt Permitted	0.320			0.098			0.669			0.544		
Satd. Flow (perm)	521	3544	806	188	3544	1595	1247	3650	1532	1003	3202	1492
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			197			168			222
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			396.7	
Travel Time (s)		18.0			23.3			28.8			20.4	
Confl. Peds. (#/hr)	1					1	1		3	3		1
Confl. Bikes (#/hr)			2			1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	3%	100%	0%	3%	1%	3%	0%	5%	4%	14%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	1597	51	90	640	197	205	346	222	206	131	222
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	56.9	44.9	44.9	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.45	0.45	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.26	0.55	0.32	0.38	0.68	0.14	0.37
Control Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.8	28.0	10.0	44.2	26.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.8	28.0	10.0	44.2	26.0	5.6
LOS	B	D	A	B	C	A	D	C	A	D	C	A
Approach Delay (s/veh)		46.0			18.4			24.9			24.6	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	23.2	~182.5	0.0	7.2	48.0	0.0	33.9	27.2	7.9	36.2	10.7	0.0
Queue Length 95th (m)	37.7	#225.1	2.2	14.3	63.6	12.9	57.3	39.0	26.6	#68.0	18.6	17.1
Internal Link Dist (m)		325.3			428.9			535.3			372.7	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	400	1597	417	211	1421	757	375	1098	578	301	963	604
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.26	0.55	0.32	0.38	0.68	0.14	0.37

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 99.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 33.0

Intersection LOS: C

Intersection Capacity Utilization 104.7%

ICU Level of Service G

Analysis Period (min) 15

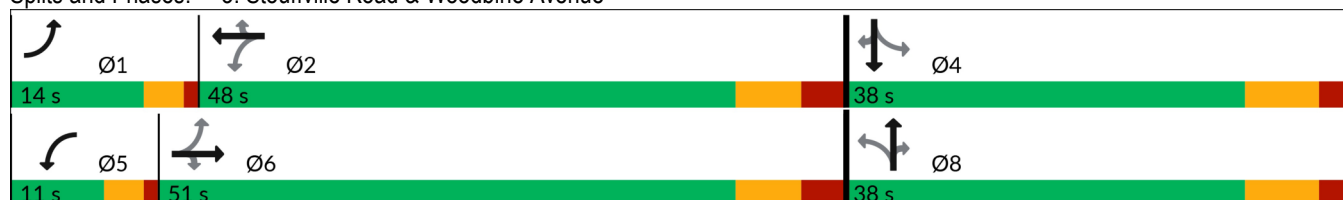
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Traffic AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	412	1009	181	310	684	197	77	159	84	160	287	164
Future Volume (vph)	412	1009	181	310	684	197	77	159	84	160	287	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1587	3349	1633	1738	3174	1585	1521	3288	1512	1630	3444	1247
Flt Permitted	0.273			0.161			0.564			0.644		
Satd. Flow (perm)	456	3349	1613	295	3174	1550	902	3288	1487	1101	3444	1230
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			212			98			176
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			322.1	
Travel Time (s)		18.0			23.3			28.8			16.6	
Confl. Peds. (#/hr)	1					1	1		4	4		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	15%	9%	0%	5%	15%	3%	20%	11%	8%	12%	6%	31%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	1085	195	333	735	212	83	171	90	172	309	176
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	57.0	43.0	43.0	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.43	0.43	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	1.19	0.75	0.26	1.33	0.58	0.28	0.31	0.17	0.18	0.52	0.30	0.36
Control Delay (s/veh)	127.4	28.2	10.0	191.1	25.7	3.8	30.9	26.5	5.7	35.8	27.9	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	127.4	28.2	10.0	191.1	25.7	3.8	30.9	26.5	5.7	35.8	27.9	6.4
LOS	F	C	A	F	C	A	C	C	A	D	C	A
Approach Delay (s/veh)		51.6			65.1			22.1			24.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	~72.1	97.5	11.1	~51.6	64.2	0.0	14.3	14.0	0.0	30.2	25.2	0.0
Queue Length 95th (m)	#147.7	124.2	25.2	#103.8	84.9	13.6	29.6	22.7	10.3	53.3	37.0	18.4
Internal Link Dist (m)		325.3			428.9			535.3			298.1	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Traffic AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	373	1440	749	251	1269	747	270	986	514	330	1033	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.75	0.26	1.33	0.58	0.28	0.31	0.17	0.18	0.52	0.30	0.36

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.33

Intersection Signal Delay (s/veh): 48.9

Intersection LOS: D

Intersection Capacity Utilization 105.9%

ICU Level of Service G

Analysis Period (min) 15

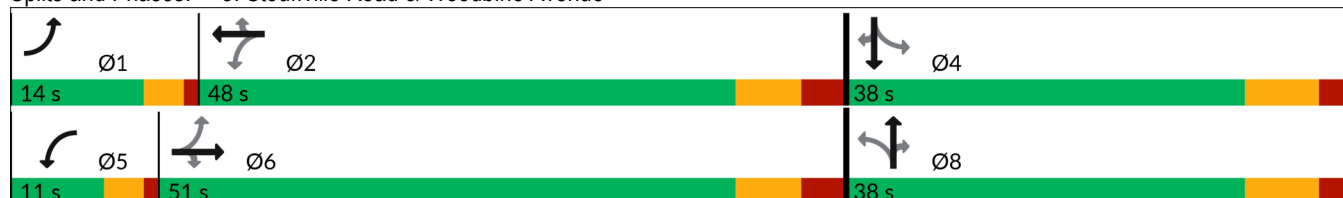
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Un-signalized Intersection Capacity Analysis 13: Woodbine Avenue & Proposed Site Access 1

Future Total Traffic AM

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	5	706	456	1
Future Vol, veh/h	0	1	5	706	456	1
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	-	15	-	-	-
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	1	5	767	496	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1274	496	497	0	-	0
Stage 1	496	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	184	574	1067	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	574	1067	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	11.29	0.06		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1067	-	574	-	-	
HCM Lane V/C Ratio	0.005	-	0.002	-	-	
HCM Ctrl Dly (s/v)	8.4	-	11.3	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM Un-signalized Intersection Capacity Analysis 16: Woodbine Avenue & Proposed Site Access 2

Future Total Traffic AM

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	706	457	0
Future Vol, veh/h	0	0	0	706	457	0
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	-	15	-	-	-
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	767	497	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1264	497	497	0	-	0
Stage 1	497	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	187	573	1067	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	573	1067	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1067	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Ctrl Dly (s/v)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Traffic PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	1501	48	85	602	188	193	326	209	199	125	213
Future Volume (vph)	214	1501	48	85	602	188	193	326	209	199	125	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1547	3544	816	1825	3544	1617	1772	3650	1555	1755	3202	1512
Flt Permitted	0.320			0.098			0.668			0.544		
Satd. Flow (perm)	521	3544	806	188	3544	1581	1245	3650	1532	1003	3202	1492
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			200			168			227
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			270.8	
Travel Time (s)		18.0			23.3			28.8			13.9	
Confl. Peds. (#/hr)	1						1	1		3	3	1
Confl. Bikes (#/hr)			2			1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	3%	100%	0%	3%	1%	3%	0%	5%	4%	14%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	1597	51	90	640	200	205	347	222	212	133	227
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	56.9	44.9	44.9	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.45	0.45	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.27	0.55	0.32	0.38	0.70	0.14	0.37
Control Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.9	28.0	10.0	45.6	26.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.9	28.0	10.0	45.6	26.1	5.6
LOS	B	D	A	B	C	A	D	C	A	D	C	A
Approach Delay (s/veh)		46.0			18.4			24.9			25.2	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	23.3	~182.5	0.0	7.2	48.0	0.0	33.9	27.2	7.9	37.5	11.0	0.0
Queue Length 95th (m)	37.8	#225.1	2.2	14.3	63.6	13.1	57.4	39.1	26.6	#71.0	18.8	17.3
Internal Link Dist (m)		325.3			428.9			535.3			246.8	

Synchro 12 Report

HCM Signalized Intersection Capacity Analysis

3: Stouffville Road & Woodbine Avenue

Future Total Traffic PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		15.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	400	1597	417	211	1421	753	374	1098	578	301	963	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.27	0.55	0.32	0.38	0.70	0.14	0.37

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 99.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 33.0

Intersection LOS: C

Intersection Capacity Utilization 105.0%

ICU Level of Service G

Analysis Period (min) 15

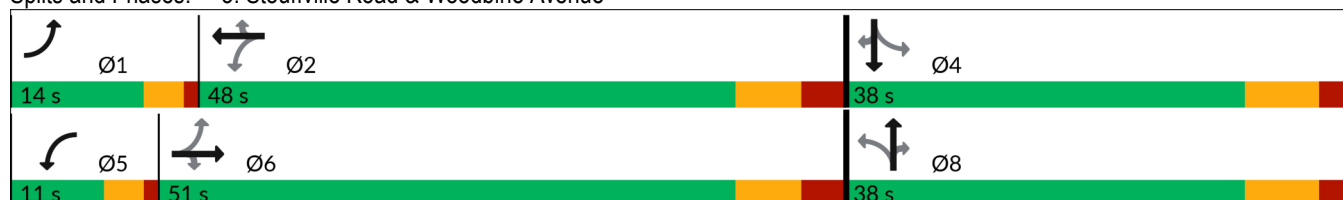
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



HCM Un-signalized Intersection Capacity Analysis 10: Woodbine Avenue & Proposed Site Access 1

Future Total Traffic PM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	11	0	693	520	1
Future Vol, veh/h	2	11	0	693	520	1
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	-	15	-	-	-
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	2	12	0	753	565	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1319	566	566	0	-	0
Stage 1	566	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	173	524	1006	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	524	1006	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	14.34	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1006	-	399	-	-	
HCM Lane V/C Ratio	-	-	0.035	-	-	
HCM Ctrl Dly (s/v)	0	-	14.3	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM Un-signalized Intersection Capacity Analysis 13: Woodbine Avenue & Propose Site Access 2

Future Total Traffic PM

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	695	521	0
Future Vol, veh/h	0	0	0	695	521	0
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	-	15	-	-	-
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	755	566	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1322	566	566	0	-	0
Stage 1	566	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	173	523	1006	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	523	1006	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1006	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Ctrl Dly (s/v)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM Signalized Intersection Capacity Analysis
3: Stouffville Road & Woodbine Avenue

Future Total Traffic AM - with Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	412	1009	181	310	684	197	77	159	84	160	287	164
Future Volume (vph)	412	1009	181	310	684	197	77	159	84	160	287	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		30.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1587	3349	1633	1738	3174	1585	1521	3288	1512	1630	3444	1247
Flt Permitted	0.240			0.121			0.564			0.644		
Satd. Flow (perm)	401	3349	1612	221	3174	1550	902	3288	1487	1101	3444	1230
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			212			98			176
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			322.1	
Travel Time (s)		18.0			23.3			28.8			16.6	
Confl. Peds. (#/hr)	1					1	1		4	4		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	15%	9%	0%	5%	15%	3%	20%	11%	8%	12%	6%	31%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	1085	195	333	735	212	83	171	90	172	309	176
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	23.0	42.0	42.0	22.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	23.0%	42.0%	42.0%	22.0%	41.0%	41.0%	36.0%	36.0%	36.0%	36.0%	36.0%	36.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	57.7	35.1	35.1	53.9	33.0	33.0	28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.58	0.35	0.35	0.54	0.33	0.33	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.97	0.92	0.31	0.89	0.70	0.32	0.33	0.19	0.19	0.56	0.32	0.37
Control Delay (s/veh)	55.0	45.7	13.5	50.2	33.6	4.9	33.1	28.0	6.0	38.9	29.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.0	45.7	13.5	50.2	33.6	4.9	33.1	28.0	6.0	38.9	29.6	6.9
LOS	D	D	B	D	C	A	C	C	A	D	C	A
Approach Delay (s/veh)		44.5			33.1			23.5			26.0	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	59.1	114.7	13.1	46.6	72.6	0.0	14.8	14.4	0.0	31.2	26.0	0.0
Queue Length 95th (m)	#128.3	#160.1	29.9	#94.3	95.9	15.3	30.5	23.4	10.6	54.9	38.1	19.0
Internal Link Dist (m)		325.3			428.9			535.3			298.1	

HCM Signalized Intersection Capacity Analysis 3: Stouffville Road & Woodbine Avenue

Future Total Traffic AM - with Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		30.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	456	1174	628	394	1047	653	252	920	486	308	964	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.92	0.31	0.85	0.70	0.32	0.33	0.19	0.19	0.56	0.32	0.37

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 36.0

Intersection LOS: D

Intersection Capacity Utilization 105.9%

ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue

 Ø1	 Ø2	 Ø4
23 s	41 s	36 s
 Ø5	 Ø6	 Ø8
22 s	42 s	36 s

HCM Signalized Intersection Capacity Analysis
3: Stouffville Road & Woodbine Avenue

Future Total Traffic PM - with Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	1501	48	85	602	188	193	326	209	199	125	213
Future Volume (vph)	214	1501	48	85	602	188	193	326	209	199	125	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	135.0		30.0	140.0		90.0	115.0		115.0	135.0		180.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1547	3544	816	1825	3544	1617	1772	3650	1555	1755	3202	1512
Flt Permitted	0.320			0.098			0.668			0.544		
Satd. Flow (perm)	521	3544	806	188	3544	1581	1245	3650	1532	1003	3202	1492
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			200			168			227
Link Speed (k/h)		70			70			70			70	
Link Distance (m)		349.3			452.9			559.3			270.8	
Travel Time (s)		18.0			23.3			28.8			13.9	
Confl. Peds. (#/hr)	1						1	1		3	3	1
Confl. Bikes (#/hr)			2			1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	3%	100%	0%	3%	1%	3%	0%	5%	4%	14%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	1597	51	90	640	200	205	347	222	212	133	227
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	7.0	33.0	33.0	7.0	33.0	33.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	41.0	41.0	11.0	41.0	41.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (s)	14.0	51.0	51.0	11.0	48.0	48.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	14.0%	51.0%	51.0%	11.0%	48.0%	48.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	5.5	5.5	5.5	5.5	5.5	5.5
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	8.0	8.0	4.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	Max	None	Max	Max	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	56.9	44.9	44.9	51.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.57	0.45	0.45	0.51	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.27	0.55	0.32	0.38	0.70	0.14	0.37
Control Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.9	28.0	10.0	45.6	26.1	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	51.6	1.1	16.7	23.2	3.8	35.9	28.0	10.0	45.6	26.1	5.6
LOS	B	D	A	B	C	A	D	C	A	D	C	A
Approach Delay (s/veh)		46.0			18.4			24.9			25.2	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	23.3	~182.5	0.0	7.2	48.0	0.0	33.9	27.2	7.9	37.5	11.0	0.0
Queue Length 95th (m)	37.8	#225.1	2.2	14.3	63.6	13.1	57.4	39.1	26.6	#71.0	18.8	17.3
Internal Link Dist (m)		325.3			428.9			535.3			246.8	

HCM Signalized Intersection Capacity Analysis 3: Stouffville Road & Woodbine Avenue

Future Total Traffic PM - with Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	135.0		30.0	140.0		90.0	115.0		115.0	135.0		180.0
Base Capacity (vph)	400	1597	417	211	1421	753	374	1098	578	301	963	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.00	0.12	0.43	0.45	0.27	0.55	0.32	0.38	0.70	0.14	0.37

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 99.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 33.0

Intersection LOS: C

Intersection Capacity Utilization 105.0%

ICU Level of Service G

Analysis Period (min) 15

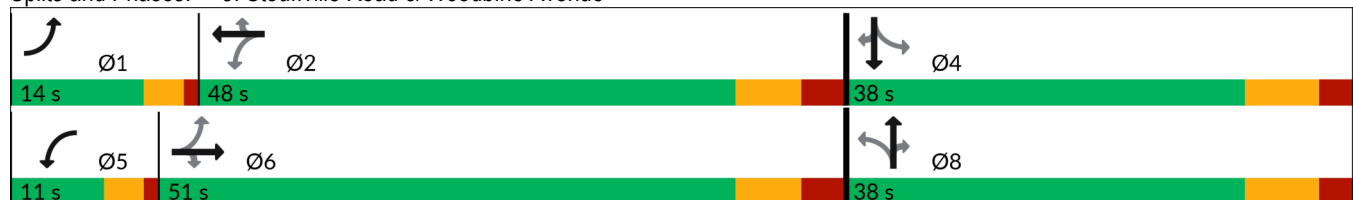
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Stouffville Road & Woodbine Avenue



APPENDIX F

RELEVANT BACKGROUND INFORMATION TO THE ANTICIPATED BACKGROUND DEVELOPMENTS

Transmetro Limited

10 Gordon Collins Drive

Proposed Office Development

Woodbine Avenue north of Stouffville Road

Town of Whitchurch-Stouffville (Gormley)

Traffic Impact Assessment

1st resubmission

August 2021

4.1 Site Access

The site is planned to have 2 access points off of Gordon Collins Drive on the south side of the site. One entrance will be at the approximate midpoint of the Gordon Collins frontage while the second entrance will be at the western most edge of the site.

4.2 Trip Generation, Distribution & Assignment

Figure 8 presents the vehicle trip generation characteristics of the site. The trip rates selected were obtained from the Institute of Transportation Engineers' Trip Generation Manual, 10th Edition.

The figure shows that there are no reductions applied to the employment trip generation. This is due to the fact that existing transit and active transportation modal splits are low. Existing employment trip modal split in the vicinity of the site was examined using data from the Transportation for Tomorrow Survey (TTS) conducted by the Data Management Group at University of Toronto. Thus, to perform a conservative analysis, no reductions were applied to the residential trip rates.

It should be noted that the development is not expected to generate a large number of trips (less than 50 during either peak hour). The office trip distribution and assignment patterns are based on:

- Information from the 2016 TTS results;
- Existing traffic patterns.

Figure 9 illustrates a summary of the TTS distribution results for employment trips in the vicinity of the site.

These distribution patterns (along with the existing traffic patterns) were used to assign the site generated traffic to the area roadway network.

Figure 10 shows the site traffic assigned to the boundary roadway network.

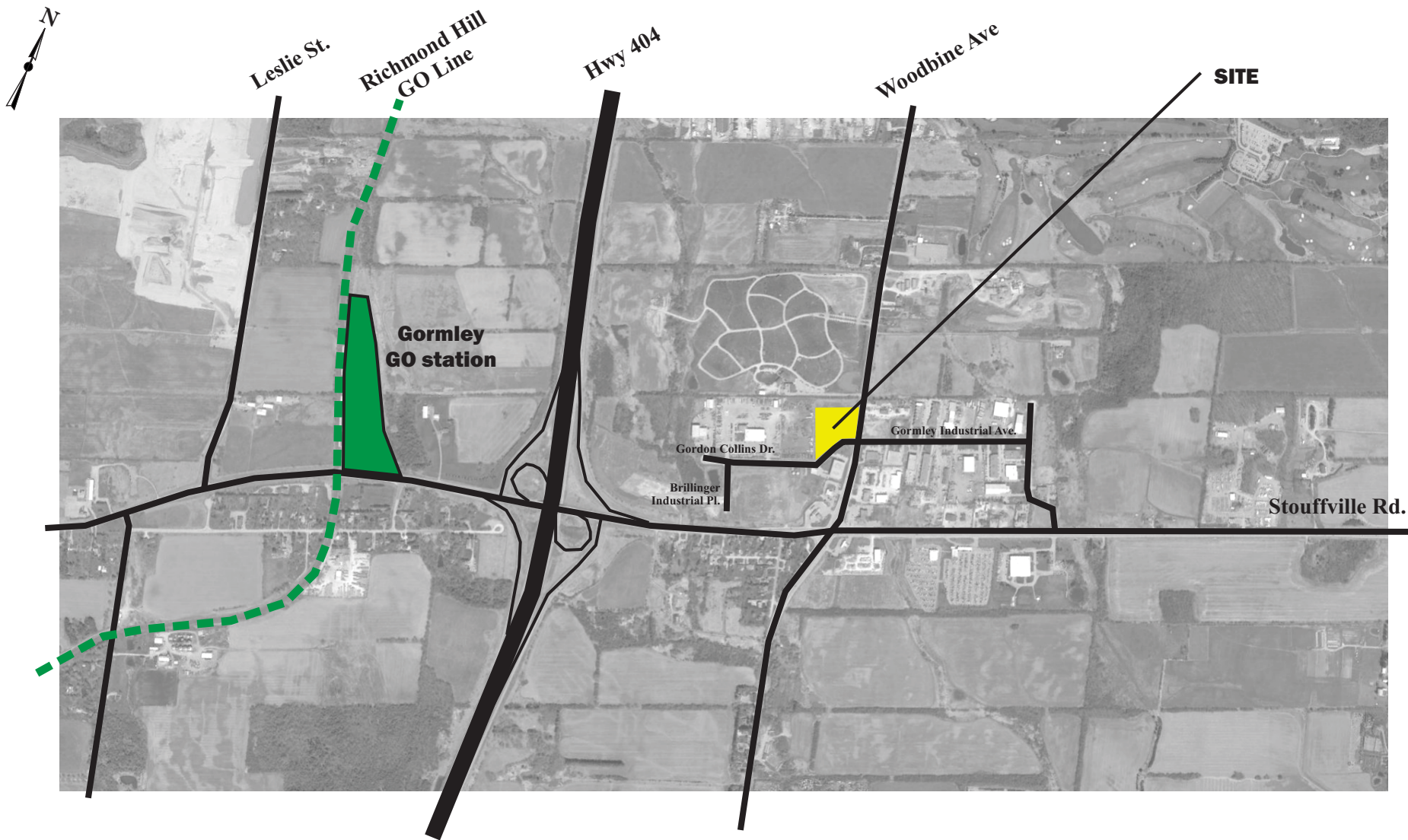
5 Development Traffic Impact Assessment

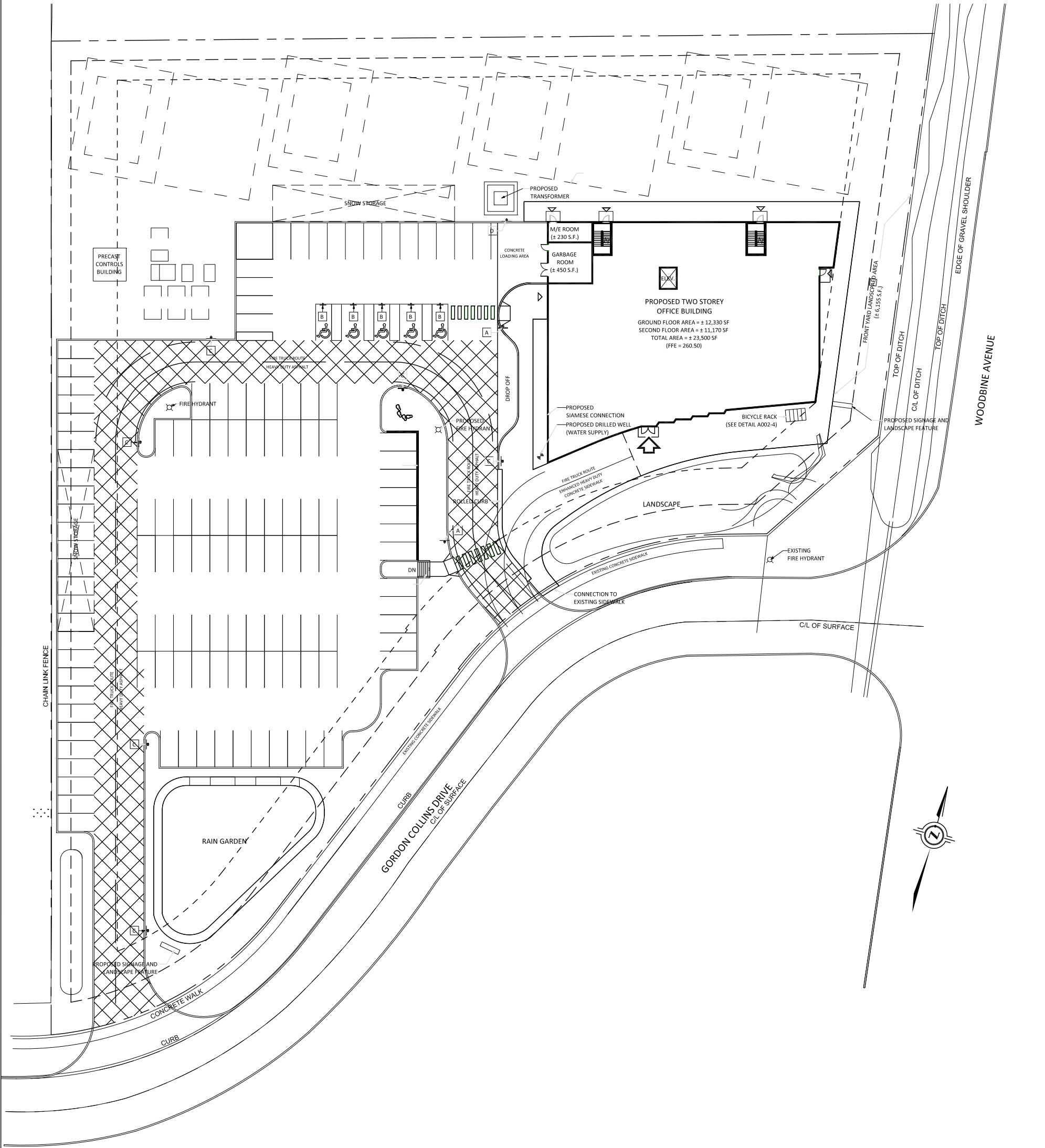
The total traffic volumes were created by superimposing the site traffic (figure 10) onto the future background traffic (figure 5-c).

The total future traffic volumes are presented in Figure 11.

These total volumes were assessed using the Synchro program. The results are summarized in Figure 12. Reviewing the results, the following can be concluded:

- Due to the small traffic volumes generated by the subject site the operations of the area intersections remain essentially unchanged from the background condition;
- The one exception to this is the intersection of Gordon Collins Drive / Woodbine Ave;
- The addition of the site traffic does make a noticeable impact to the operations of this intersection. However, this intersection still operates with an acceptable level of service.



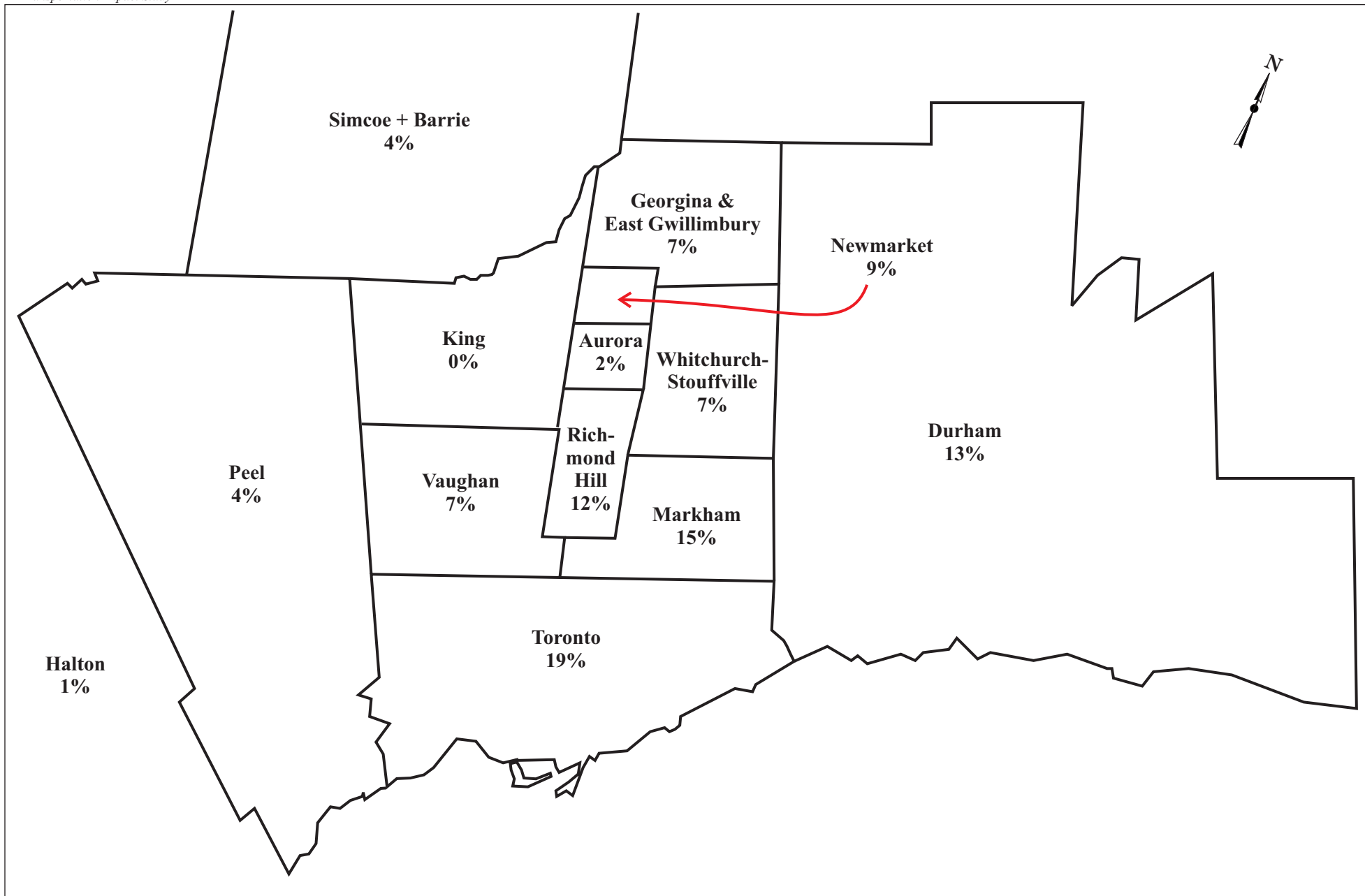


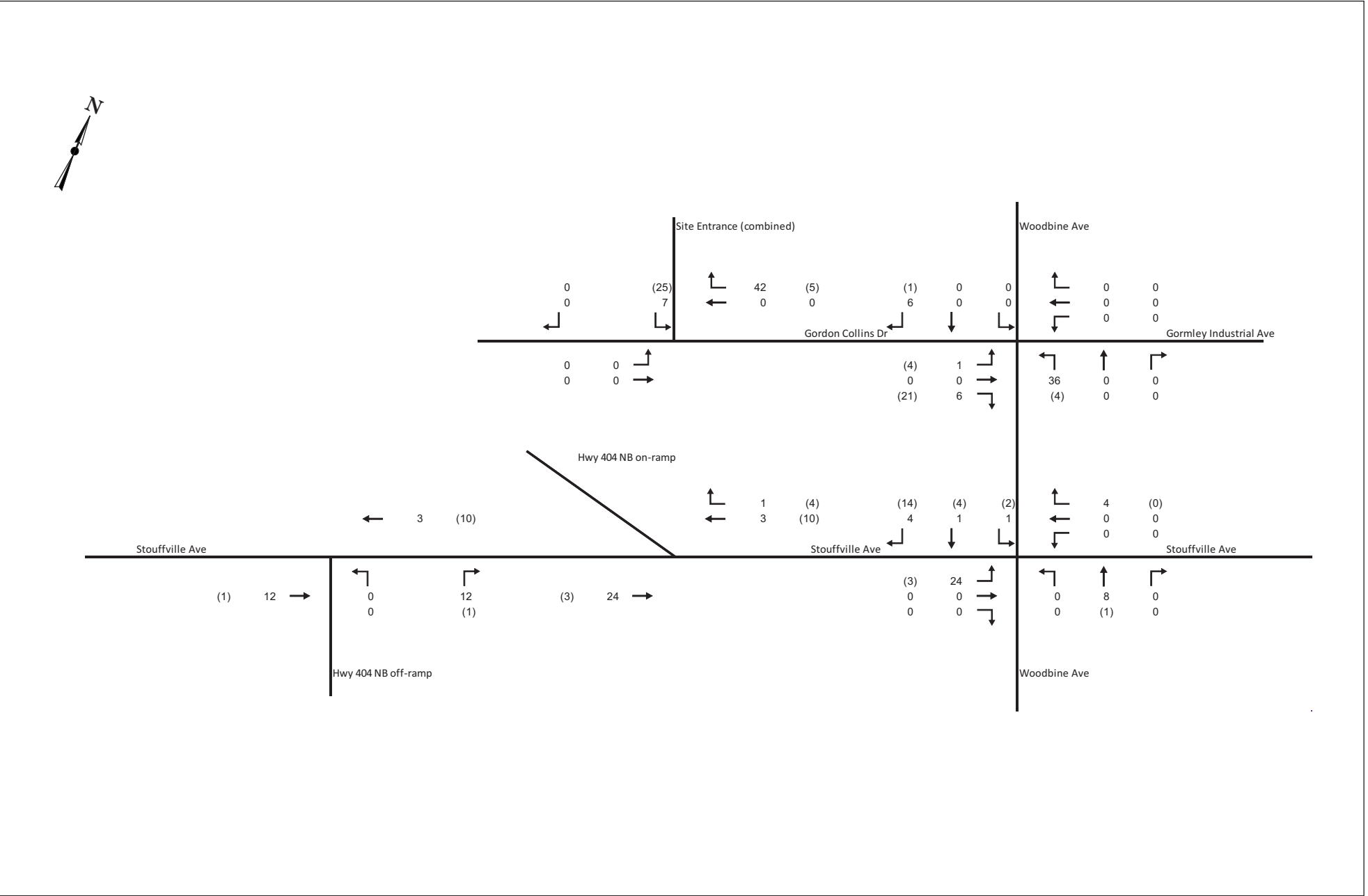
ITE Trip Generation Rates (10th edition)

Land Use	ITE Code	Unit	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
General Office Building	710	1000 sqft GFA	86%	14%	$T=0.94*(x)+26.49$	16%	84%	$T=e^{(0.95*\ln(x))+0.36}$

Estimated Vehicle Trips

General Office Building	23.5	42	7	49	5	24	29
-------------------------	------	----	---	----	---	----	----







Legend:

AM peak hour volume

732 (1281)

PM peak hour volume

Site Volumes
Figure 10

Transportation Mobility Study - 35 Gordon Collins Drive

1065752 Ontario Inc.

Project number: 60719636

March 6, 2025



Figure 1. Study Area

2. Methodology

2.1 Data Collection

The turning movement count (TMC) data at the Study Area intersections were collected by Ontario Traffic Inc. on behalf of AECOM, on April 10, 2024. The raw counts were collected for 8 hours, from 7:00 to 10:00 AM, from 12:00 to 2:00 PM, and from 3:00 to 6:00 PM. The signal timing plans (STP) for the three (3) signalized intersections were provided by the Regional Municipality of York. The TMC data and STPs are presented in **Appendix C**.

Table 1. TMC Data Inventory

Intersection	Intersection Control	TMC Collection Date	Source
Highway 404 West Ramp Terminal and Stouffville Road	Signalized	April 10, 2024	Ontario Traffic Inc.
Highway 404 East Ramp Terminal and Stouffville Road	Signalized		
Woodbine Avenue and Stouffville Road	Signalized		
Woodbine Avenue and Gordon Collins Drive / Gormley Industrial Avenue	Two-way Stop-Controlled		

5. Future Total Conditions

5.1 Traffic Volumes

5.1.1 Site Traffic – Trip Generation

Automobile trip generation for the proposed development was determined based on rates from the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE). The values published in the Trip Generation Manual are based on historical data from sites with a similar land use. A rate is given for land uses in the form of a fitted curve equation or as an average rate. In this study, the number of trips generated by the proposed development was determined based on the ITE land-use type 110 (i.e., General Light Industrial) using the fitted curve in the AM peak period and the average rate in the PM peak period.

The number of automobile trips generated by the proposed industrial development during the weekday AM and PM peak hours are presented in **Table 12**. As shown in **Table 12**, the proposed development is anticipated to generate a total of 41 trips in the AM peak hour, with 36 inbound and 5 outbound trips. During the PM peak hour, the site is anticipated to generate a total of 35 trips, with 5 inbound and 30 outbound trips.

Table 12. Estimated Number of Trips Generated by the Proposed Development

ITE Land Use – Description	GFA (1000 Sq. Ft)	Trip Generation					
		Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
110 – General Light Industrial	54.43	36	5	41	5	30	35
Total		36	5	41	5	30	35

5.1.2 Mode Split

Due to the industrial nature of the proposed development, the rural environment the proposed development is in, and the lack of active transportation and transit facilities around the site, all inbound and outbound trips generated by the proposed development are assumed to be vehicle trips.

5.1.3 Site Traffic – Trip Distribution

The site-generated traffic was distributed and assigned to the road network in the Study Area based on the existing traffic patterns obtained from the TMC data at the Study Area intersections. The distribution of the site-generated traffic is presented in **Table 13**. The traffic volumes generated from the proposed development in the AM and PM peak hours are illustrated in **Figure 7**.

Table 13. Estimated Site Traffic Trip Distribution

Direction	AM Peak Hour		PM Peak Hour	
	Inbound Traffic	Outbound Traffic	Inbound Traffic	Outbound Traffic
North	30%	20%	0%	30%
East	10%	0%	0%	0%
South	60%	80%	100%	70%
West	0%	0%	0%	0%

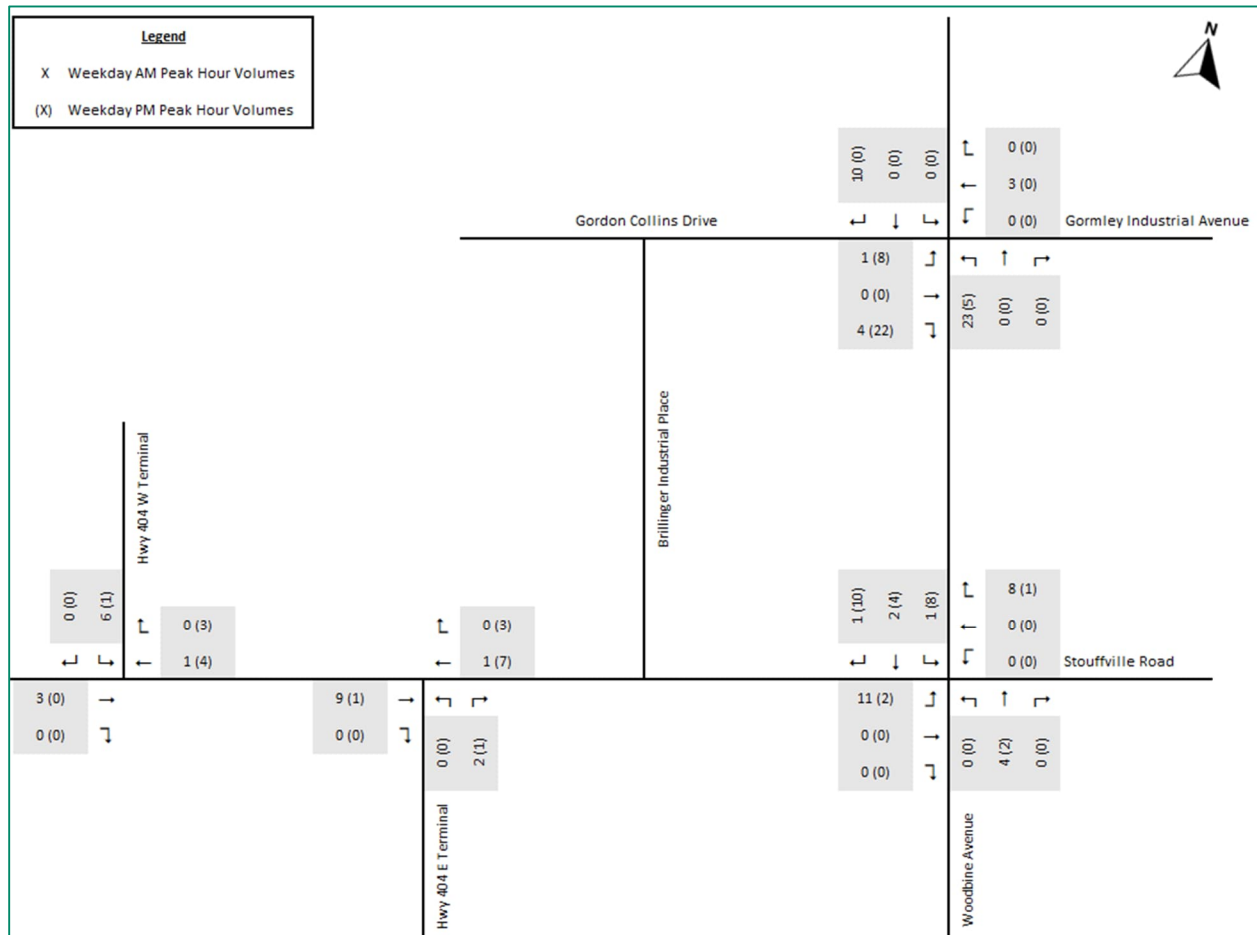


Figure 7. Site Traffic Volumes Generated by the Proposed Developments

5.1.4 Future Total Traffic Volumes

The turning movement volumes under the Future Total Conditions scenario in 2025 and 2030 were estimated by adding the site traffic to the corresponding Future Background scenario. The Future Total traffic volumes during the AM and PM peak hours are presented in **Figure 8** for the 2025 horizon year and in **Figure 9** for the 2030 horizon year.

Firm Name: Joseph N. Campitelli Architect
Certificate of Practice Number: 5859
Firm Certificate of Practice Number: 4067

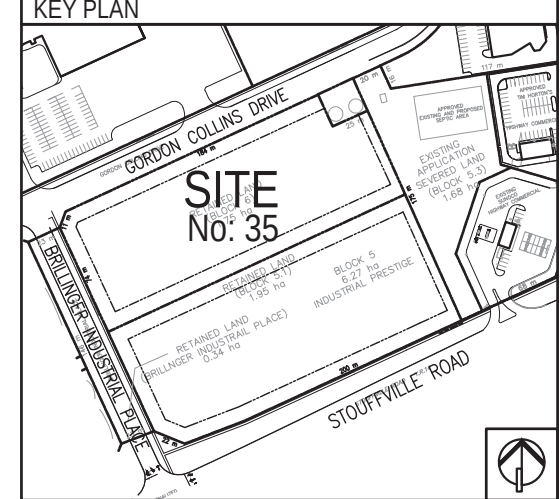
The architect noted above has exercised responsible control with respect to design activities.
The architect's seal number is the architect's BCIN.

Item	ONTARIO'S 2012 BUILDING CODE Data Matrix Part 3 or 9				OBC Reference			
	References are to Division B unless noted (A) for Division A or (C) for Division C.							
1	Project Description: Industrial Building	☐ New ☐ Addition ☐ Change of Use	☐ Part 11 11.1 to 11.4	☒ Part 3 1.1.2 [A] & 9.10.1.3	☐ Part 9 1.1.2 [A] & 9.10.1.3			
2	Major Occupancy(s)	Group F2		3.1.2.1.(1)	9.10.2.			
3	Building Area(m ²)	Existing: 4,069m ² New: 5,057m ² Total: 9,126m ²		1.4.1.2 [A]	1.4.1.2 [A]			
4	Gross Area	Existing: 5,057m ² New: 5,057m ² Total: 10,114m ²		1.4.1.2 [A]	1.4.1.2 [A]			
5	Number of Storeys / Fire Fighter Access	Above Grade: 3 Below Grade: 0		1.4.1.2 [A] & 3.2.1.1.	1.4.1.2 [A] & 9.10.4			
6	Number of Streets / Fire Fighter Access	Section 3.2.2.69 - Group F2		3.2.2.10 & 3.2.5.	9.10.20.			
7	Building Classification	Section 3.2.2.69 - Group F2		3.2.2.20 - .83	9.10.2.			
8	Sprinkler System Proposed	☒ Entire building ☐ Selected compartments ☐ Basement ☐ In lieu of roof rating ☐ Not required		3.2.2.20 - .83 3.2.2.15. 3.2.2.17. INDEX	9.10.8.2. 9.10.8. 9.10.2.			
9	Standpipe required	☐ Yes ☒ No		3.2.9.	N/A			
10	Fire Alarm required	☒ Yes ☐ No		3.2.4.	9.10.18.			
11	Water Service / Supply is Adequate	☒ Yes ☐ No		3.2.5.7.	N/A			
12	High Building	☐ Yes ☒ No		3.2.8.	N/A			
13	Construction Restrictions	☐ Combustible permitted ☒ Non-combustible required ☐ Both		3.2.2.20 - .83	9.10.6.			
14	Mezzanine(s) Area m ²	123m ²		3.2.1.1.(3)-(8)	9.10.4.1.			
15	Occupant Load Based on	☐ m ² /person ☒ Design of building		3.1.17.	9.1.3.			
	Basement	Occupancy: N/A Load: 150 Persons						
	1st Floor	Occupancy: N/A Load: 150 Persons						
	Mezzanine	Occupancy: N/A Load: 9 Persons						
	2nd Floor	Occupancy: N/A Load: 9 Persons						
	3rd Floor	Occupancy: N/A Load: 9 Persons						
	(Additional floor areas continue on last page)							
16	Barrier-free Design	☒ Yes (Office Space) ☐ No (Exempt as per 3.8.1.1.(1)(b))		3.8.	9.5.2.			
17	Hazardous Substances	☐ Yes ☒ No		3.3.1.2. & 3.3.1.19.	9.10.1.3(4)			

SITE STATISTICS	ZONING BY LAW		PROPOSED	
	ZONING BY LAW		INDUSTRIAL UNITS W/ OFFICE SPACE	
1. ZONING	EBP-5(u)(n)-(18) TOWN OF WHITCHURCH-STOUFFVILLE ZONING BY-LAW		17.612.3m2	
2. SITE AREA	0.8ha (0.4ha)		1.76ha (Block 6)	
3. SETBACKS	FRONT YARD - 10.0m REAR YARD - 10.0m EXTERIOR SIDE YARD - 10.0m INTERIOR SIDE YARD - 6.0m		FRONT YARD - 56.03m REAR YARD - 54.60m EXTERIOR SIDE YARD - 23.40m INTERIOR SIDE YARD - 20.80m	
4. BLDG. HEIGHT	Max. 20m		15.64m	
5. COVERAGE	35%		23.1% (4,069.3m ²)	
6. FSI / GFA	N/A		1 STOREY OFFICES - 818 sm 3 STOREY DECOR/OFFICE - 1,308 sm REAR UNITS AREA - 2,789 sm UTILITY ROOMS - 26 sm MEZZ. LEVEL (UNIT 1) - 116 sm TOTAL: 5,057.3m ²	
7. PARKING	REQUIRED PARKING: OFFICES SPACES (5/100sm): 2,127sm @ 5/100: 107 CARS REAR UNITS AREA (2/100sm): 2,789.3sm @ 2/100: 56 CARS TOTAL REQUIRED: 163 CARS BARRIER FREE PARKING REQ. 8/W 101-200 SPACES - 1 BF SPACE + 3% TOTAL REQ. - 6 BF SPACES (1+ (35x163)) 10 SMALL LOADING SPACES PER UNIT (10 SPACES REQ.)		163 PARKING SPACES TYP. PARKING 2.75m x 5.5m 49 ADDITIONAL SPACES AT GRAVEL OPEN STORAGE / PARKING 6 BARRIER FREE SPACES (INCLUDED) TYPE A (3.4m x 5.5m) - 3 TYPE B (2.4m x 5.5m) - 3 2 CARPOOL PARKING SPACE (INCLUDED)	
8. LOADING	10% OF LOT AREA (1,761sm REQ.) 50% OF FRONT YARD AREA (YARD AREA = 4,731sm) MIN. 4.5m LANDSCAPE STRIP @ FRONT, REAR + EXTERIOR SIDE YARDS MIN. 3.0m LANDSCAPE STRIP @ INTERIOR SIDE YARD		5 SMALL LOADING SPACES (SL) 3.0(W) x 4.2(L) x 2.5m (H) / EACH 5 LARGE LOADING SPACES (LL) 3.6(W) x 16(L) x 4.25m (H) / EACH 50% OF LOT AREA (3,748sm) 50% (2,600sm) 4.5m @ EXTR. SIDE YARD + REAR YARD 8.25m @ FRONT YARD 0m STRIP @ INTERIOR PROP. LINE	
9. LANDSCAPE	N/A		UNIT 1-2: 20 PEOPLE UNITS 3-10: 18 PEOPLE/UNIT (x8) TOTAL: 164 PEOPLE (MAX.)	
10. OCCUPANT LOAD	N/A			

LEGEND	
	3-STOREY OFFICE SPACE
	1-STOREY OFFICE SPACE
	1-STOREY INDUSTRIAL BLDG.
	PAINTED LINES
	NO PARKING
	FIRE ROUTE ACCESS (5m x 147.2m (L))
	LANDSCAPE AREA
	BACKLIT SOFFIT / LED STRIP LIGHT T.B.C.
	LANDSCAPE UPLIGHT FIXTURE
	EXTERIOR SOFFIT LIGHT FIXTURE
	WALL MOUNTED EXTERIOR LIGHT FIXTURE
	FIRE HYDRANT
	CURB DEPRESSION
	FIRE ROUTE SIGN AS PER T.W.S. FIRE-ROUTE BY-LAW
ABBREVIATIONS LEGEND	
CATV	CABLE PEDESTAL
FH	FIRE HYDRANT
LS	MUNICIPAL STREET LIGHT
VW	VALVE & CHAMBER
LL	LARGE LOADING SPACE 3.6x16.0x4.25m (H)
SL	SMALL LOADING SPACE 3.6x9.0x4.25m (H)
MH	MANHOLE (REF. TO GRADING)
CB	CATCH BASIN (REF. TO GRADING)

SURVEY INFORMATION
INFORMATION FOR THIS SITE PLAN WAS TAKEN FROM THE FOLLOWING:
PLAN OF SURVEY OF PART OF LOT 1 CONCESSION 3 GEOGRAPHIC TOWNSHIP OF WHITCHURCH TOWN OF WHITCHURCH-STOUFFVILLE REGIONAL MUNICIPALITY OF YORK
DATED: APRIL 19, 2016
LLOYD & PURCELL LTD.
ONTARIO LAND SURVEYORS
228 GORDON STREET, UNIT 28, NEWMARKET, ON, L3Y 8Z1



GORMLEY INDUSTRIAL PARK
PROPOSED INDUSTRIAL BUILDING

35 GORDON COLLINS DRIVE
GORMLEY, ON



1065752 ONTARIO INC.
8 FAIRLEY LINE
STOUFFVILLE, ON

10 BIRCH AVE. UNIT 3, MARKHAM, ON L3R 0A2
TEL: 905-887-8800 FAX: 905-887-9400
EMAIL: info@jncarchitect.com

JOSEPH N. CAMPITELLI
ARCHITECT INC.

This drawing, as an instrument of service, is provided by, and is the property of, Joseph N. Campitelli Architect Inc. ("Architect"). The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify the Architect, of any variations from the supplied information. The Architect is not responsible for the accuracy of survey, structural, mechanical, electrical, engineering information, etc., which is shown on this drawing. Refer to the appropriate engineering drawings before proceeding with the work. Construction must conform to all applicable codes and requirements of the authorities having jurisdiction. Unless otherwise noted, no investigation has been undertaken or reported on by the Architect. In regard to the environmental condition of the site to which this drawing relates, this drawing is not to be used for construction purposes unless countersigned by the Architect.

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.Arch., O.A.A., M.R.A.I.C.

DATE: _____

DWG. ISSUES	DESCRIPTION	DATE
1.	MAY.08.2023 ISSUED FOR CLIENT REVIEW	RD
2.	MAY.12.2023 ISSUED FOR COORDINATION	RD
3.	JUN.09.2023 ISSUED FOR COORDINATION	RD
4.	JUN.29.2023 ISSUED FOR COORDINATION	RD
5.	DEC.08.2023 ISSUED FOR SPA	RD
6.	FEB.22.2024 ISSUED FOR SPA UNITS, COORD.	RD
7.	AUG.07.2024 ISSUED FOR COORD.	RD
8.	SEP.11.2024 ISSUED FOR SPA COORDINATION	RD
9.	JAN.17.2025 ISSUED FOR COORDINATION	RD

SPA File No: CAPP 23.005

INFO	DESCRIPTION
PROJECT ARCHITECT	J. CAMPITELLI
ASSISTANT DESIGNER	R.D.
DRAWN BY	R.D.
CHECKED BY	J.C.
SHEET TITLE	SITE PLAN
DWG. NO.	218.15 D
SCALE	1:300
DATE PRINTED	JAN.17.2025
PROJECT NO.	218.15 D

A.100



nextrans.ca

Transportation Impact Study Update

PROPOSED INDUSTRIAL DEVELOPMENT

12131 Woodbine Avenue
Town of Whitchurch-Stouffville

October 2, 2023

Town File No.: SPA22.010
Region File No.: SP.22.W.0107
Project No.: NT-20-039

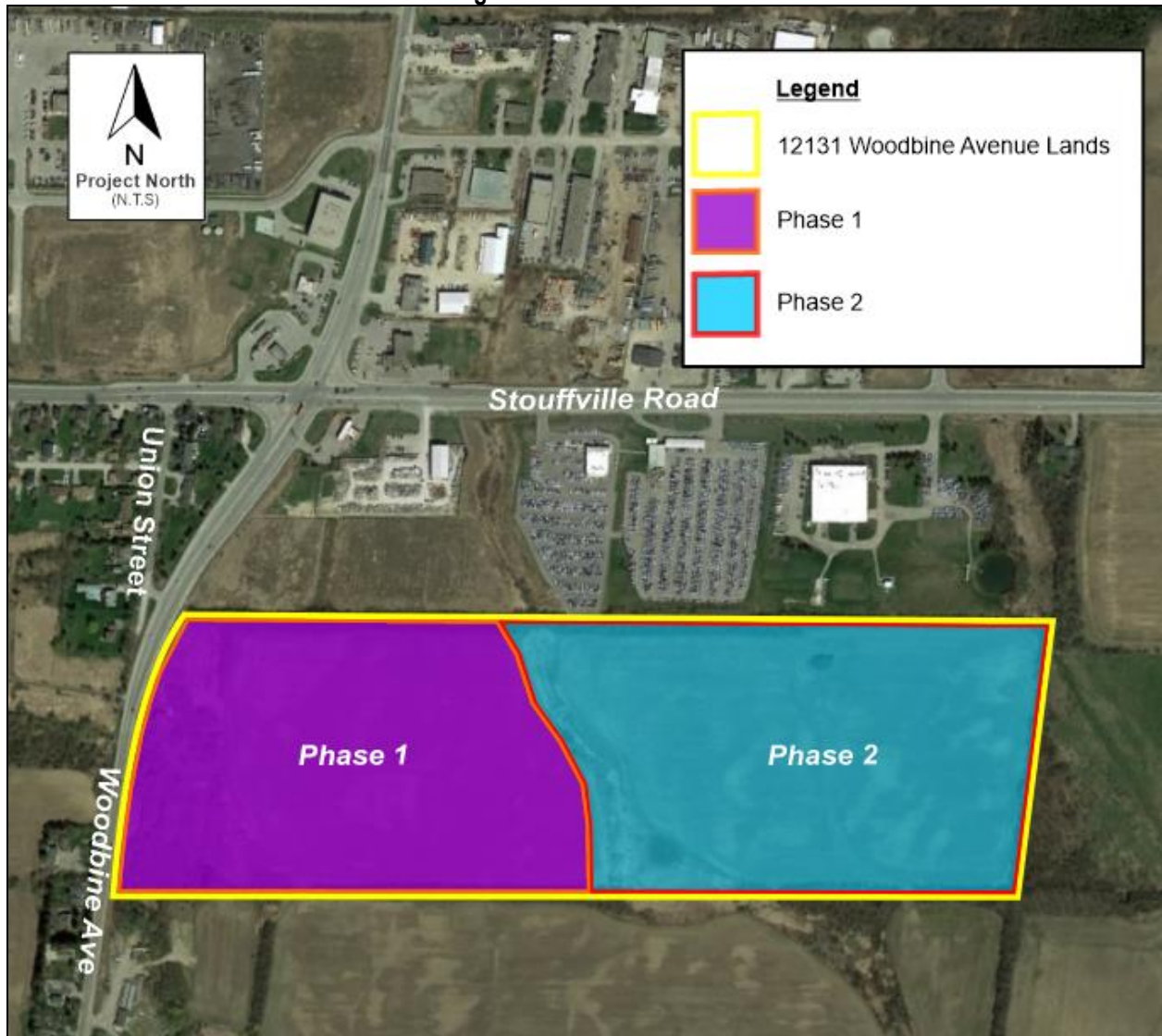
Prepared for: White Owl Properties Limited

1.0 INTRODUCTION

Nextrans Consulting Engineers (herein referred to as “Nextrans”), a division of NextEng Consulting Group Inc., has been retained by White Owl Properties Limited (the “client”) to undertake this Transportation Impact Study (TIS) for Phase 1 of a proposed development in support of a third submission for an Site Plan Control Application. The subject development (Phase 1) is located southeast of Woodbine Avenue and Stouffville Road and is municipally known as 12131 Woodbine Avenue (herein referred to as the “subject site”), in the Town of Whitchurch-Stouffville and Regional Municipality of York. The lands at 12131 Woodbine Avenue are currently vacant with the exception of the existing 223m² (2,400ft²) farmhouse which will be used as a project site office.

The subject site encompasses the west portion of the 12131 Woodbine Avenue lands, bounded by Woodbine Avenue to the west, Berzcy Creek Tributary to the east, and adjacent properties to the north and south. The site location is provided in **Figure 1-1**.

Figure 1-1: Site Location



4.0 SITE TRAFFIC

The following section discusses the calculation, distribution, and assignment of the weekday AM and PM peak hour auto and truck trips generated by the site. The site traffic volumes were assessed for both the Phase 1 buildout for the five-year horizon (2028) and the Phase 1 and Phase 2 full buildout for the ten-year horizon (2033).

4.1. TRIP GENERATION

The auto trip generation for the proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition using the following land use codes (LUC). Heavy truck trip generation for the proposed developed was derived from the ITE Trip Generation Manual 10th Edition Supplement.

Phase 1

- Building 1: ITE LUC 110 General Light Industrial
- Building 2: ITE LUC 150 Warehousing
- Building 3: ITE LUC 150 Warehousing

Phase 2

- Building 4: ITE LUC 150 Warehousing

The weekday AM and PM peak hour trip generation volumes for the proposed development were calculated for the weekday AM and PM peak hour of adjacent street traffic. The summary of trips generated by the subject development is shown in **Table 4-1**.

Table 4-1: Site Trip Generation During the Weekday AM and PM Peak Hour for the Proposed Development

Phase	Land Use	GFA	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
1	General Light Industrial (ITE LUC 110)	2,861m ² (30,800ft ²)	Auto Directional Distribution	88%	12%	100%	14%	86%	100%
			Auto Trip Rate	0.71	0.10	0.81	0.10	0.55	0.65
			Auto Site Trips	22	3	25	3	17	20
	General Light Industrial (ITE LUC 110) – Heavy Trucks		Truck Directional Distribution	63%	37%	100%	50%	50%	100%
			Truck Trip Rate	0.00	0.00	0.00	0.00	0.00	0.00
			Truck Site Trips	0	0	0	0	0	0
	Warehousing (ITE LUC 150)	27,537m ² (296,401ft ²)	Auto Directional Distribution	77%	23%	100%	28%	72%	100%
			Auto Trip Rate	0.57	0.17	0.74	0.18	0.47	0.65
			Auto Site Trips	123	37	160	41	107	148
	Warehousing (ITE LUC 150) – Heavy Trucks		Truck Directional Distribution	52%	48%	100%	52%	48%	100%
			Truck Trip Rate	0.01	0.01	0.02	0.02	0.01	0.03
			Truck Site Trips	4	2	6	5	4	9
Total Phase 1 Trips			149	42	191	49	128	177	
2	Warehousing (ITE LUC 150)	34,374m ² (370,000ft ²)	Auto Directional Distribution	77%	23%	100%	28%	72%	100%
			Auto Trip Rate	0.57	0.17	0.74	0.18	0.47	0.65
			Auto Site Trips	211	63	274	67	174	241
	Warehousing (ITE LUC 150) – Heavy Trucks		Truck Directional Distribution	52%	48%	100%	52%	48%	100%
			Truck Trip Rate	0.01	0.01	0.02	0.02	0.01	0.03
			Truck Site Trips	4	3	7	6	5	11
	Total Phase 2 Trips			215	66	281	73	179	252
Total Auto Trips Generated (Phase 1 and Phase 2)			356	103	459	111	298	409	
Total Heavy Truck Trips Generated (Phase 1 and Phase 2)			8	5	13	11	9	20	
Total Trips Generated (Phase 1 and Phase 2)			364	108	472	122	307	429	

In Phase 1 for the 2028 horizon, the resulting total trip generation for the proposed development yields 191 trips (149 in, 42 out) and 177 trips (49 in, 128 out) in the weekday AM and PM peak hours, respectively.

For the 2033 horizon which assumes the full buildout for Phases 1 and 2, the resulting total trip generation for the proposed development yields 472 trips (364 in, 108 out) and 429 trips (122 in, 307 out) in the weekday AM and PM peak hours, respectively.

4.2. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution for the proposed industrial uses was assumed to be based on the existing trip distribution of the intersection study area based on the existing traffic volumes observed for this study. The trip distribution for the site-generated heavy truck traffic volumes were also assumed to be based on the existing trip distribution.

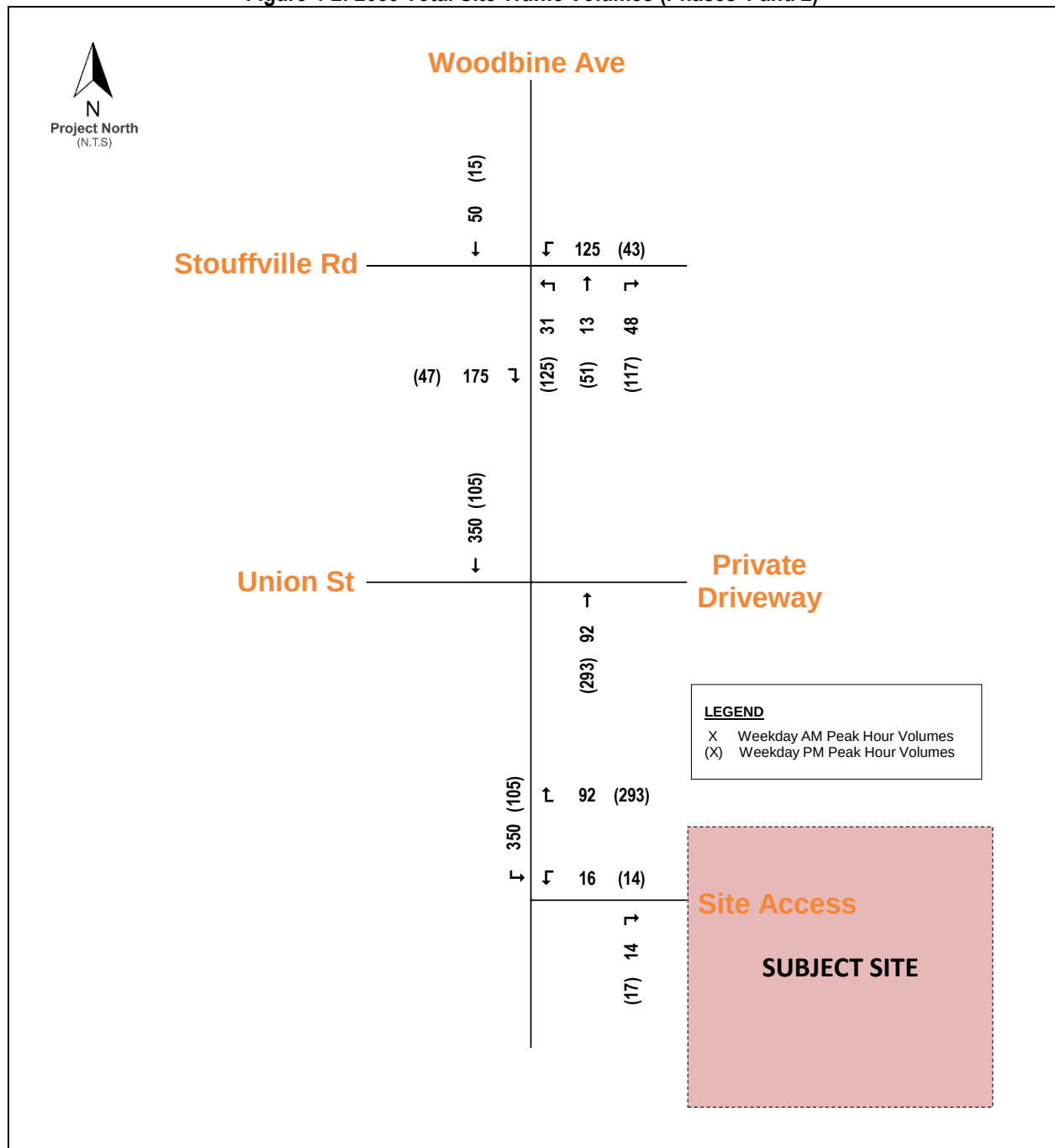
The trip distribution is summarized in **Table 4-2**.

Table 4-2: Site Trip Distribution

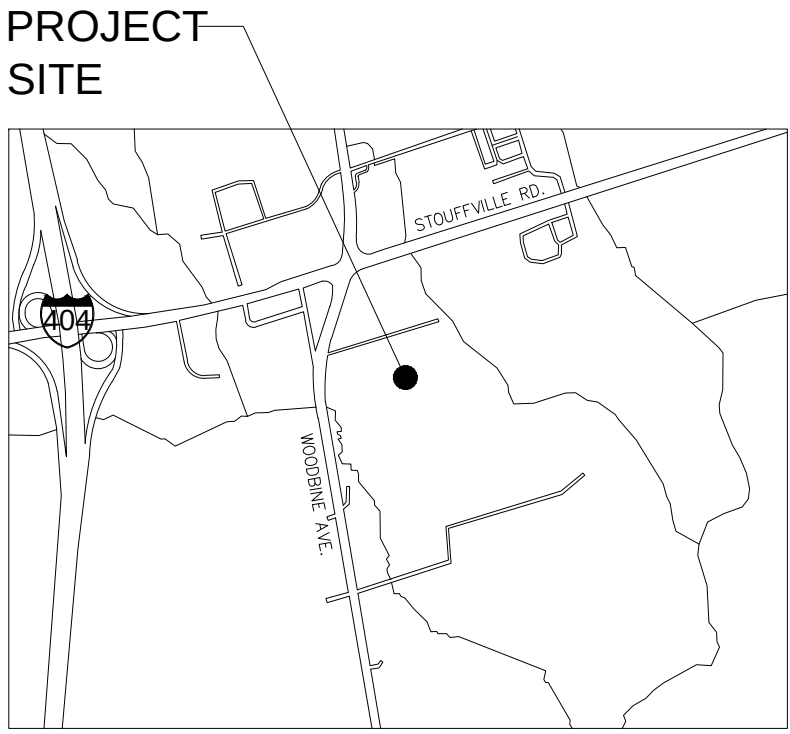
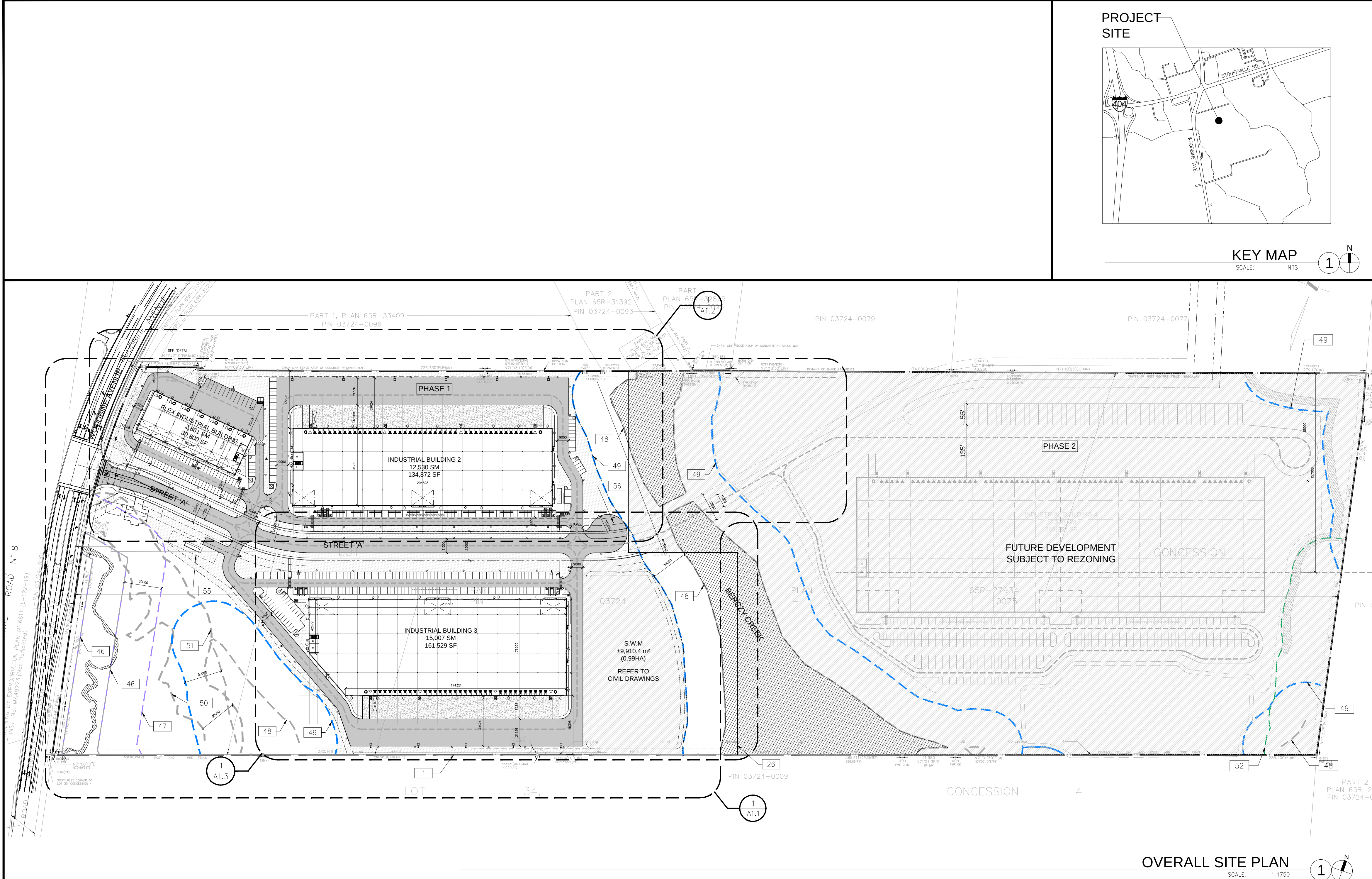
Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour	
		In	Out	In	Out
Stouffville Road	Eastbound	48%	41%	37%	38%
	Westbound	34%	30%	36%	41%
Woodbine Avenue	Northbound	4%	13%	15%	17%
	Southbound	14%	16%	13%	5%
TOTAL		100%	100%	100%	100%

The site-generated traffic was assigned accordingly to reflect the configuration of the proposed site access, turning restrictions, and based on logical routing. The trip assignment of total site traffic volumes for the proposed development is illustrated in **Figure 4-1** for the 2028 horizon (Phase 1) and **Figure 4-2** for the 2033 horizon (Phase 1 and Phase 2).

Figure 4-2: 2033 Total Site Traffic Volumes (Phases 1 and 2)



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KEY MAP
SCALE: NTS

OVERALL SITE PLAN
SCALE: 1:1750

GENERAL NOTES

- PROPERTY LINE
- 2750x5500mm PARKING STALL, PAINTED PARKING STRIPING PER CITY STANDARDS.
- PRINCIPLE ENTRY WITH BARRIER FREE ACCESS - TENANT FIT-UP SUBJECT TO INTERIOR ALTERATION PERMIT
- TYPICAL ACCESSIBLE PARKING STALLS - TYPE A: 3400x5500 & TYPE B: 2400x5500, WITH 1500mm ACCESS AISLE. PAINTED PARKING STRIPING PER TOWN OF WHITCHURCH-STOUFFVILLE STANDARDS.
- 150mm WIDE CURB TYPICAL
- 1800mm MIN. WDE SIDEWALK TYPICAL U.N.O
- RESERVED
- PROPOSED AMENITY AREA - REFER TO LANDSCAPE DWGS
- FIRE DEPARTMENT CONNECTION / SIAMASE
- PROPOSED LOCATION OF PAD MOUNTED TRANSFORMER REFER TO ELECTRICAL DRAWINGS
- 1.8m HIGH BLACK VINYL CHAIN LINK FENCING OR APPROVED EQUAL ALONG DEVELOPMENT LIMIT BOUNDARY
- CONCRETE APRON
- LANDSCAPE AREA - SEE LANDSCAPE DWGS.
- PEDESTRIAN RAIL SET INTO RETAINING WALL WHERE GRADE CHANGE GREATER THAN 600mm. PROVIDE CONCRETE-FILLED STEEL BOLLARD AT END OF RETAINING WALL - SEE CIVIL DWGS.
- EXTERIOR STEEL STAIRS WITH TUBE STEEL GUARDRAIL
- TRUCK LOADING DOCK
- LOADING SPACE - L.S. (3.5m x 9m)
- FIRE ACCESS ROUTE W/ 12M TURNING RADIUS (---)
- PROPOSED ELECTRICAL ROOM
- PROPOSED MECHANICAL/SPRINKLER ROOM
- CURB RADI AT ENTRANCES WITHIN MUNICIPAL SIDEWALK LIMITS TO CONFORM TO OPSD 350.010. - SEE CIVIL DWGS.
- DEPRESSED CURB. SEE DETAIL 1/A105
- HATCHED AREA DENOTES HEAVY DUTY ASPHALT. TYPICAL FOR ALL AREAS REQUIRING FIRE TRUCK OR TRACTOR TRUCK ACCESS.
- RETAINING WALL - REFER TO CIVIL DRAWINGS
- ROAD CURB AND SIDEWALK TO BE CONTINUOUS THROUGH THE DRIVEWAY. DRIVEWAY GRADE TO BE COMPATIBLE WITH EXIST. SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED FOR AT EACH ENTRANCE.
- PHASE SEPARATION LINES
- PROPOSED STOP SIGN LOCATION - REFER TO TRAFFIC CONSULTANT DRAWINGS
- RESERVED
- CONCRETE LANDING PAD
- BARRIER-FREE RAMP
- PAINTED STRIPES FOR PEDESTRIAN ACCESS
- PAINTED CONCRETE FILLED BOLLARDS
- ACCESSIBLE PARKING SIGNAGE
- DRIVE-IN DOOR
- SNOW STORAGE ON SITE AT 2% TOTAL SITE AREA
- TYPICAL VAN PARKING STALL - 3353x8230mm, PAINTED PARKING STRIPING PER CITY STANDARDS
- TYPICAL TRAILER PARKING STALL - 3658x16764mm, PAINTED PARKING STRIPING PER CITY STANDARDS
- EXTERIOR GARBAGE ENCLOSURE
- GARBAGE COMPACTOR
- CAS-T-IN-PLACE CONCRETE RETAINING WALL AT RAMP - REFER TO STRUCTURAL DRAWINGS
- GUARDRAIL AT RETAINING WALL
- FIRE ROUTE SIGNAGE INSTALLED PER TOWN OF WHITCHURCH-STOUFFVILLE STANDARDS., SPACED MAX. 30m
- OPEN BIKE RACK -LONG TERM
- OPEN BIKE RACK -SHORT TERM
- DETECTIBLE TACTILE WARNING SURFACE
- CATEGORY 2 - MEANDER BELT
- CATEGORY 3 - 30M BUFFER
- STAKED WETLAND TRCA 2020
- STAKED WETLAND 30M BUFFER TRCA 2020
- STAKED DRIPLINE TRCA 2020
- STAKED DRIPLINE 30M BUFFER TRCA 2020
- WOODLAND BUFFER 30M
- EXISTING HOUSE TO REMAIN
- DRIVEWAY AND PARKING LOT - GRAVEL SURFACE - REFER TO CIVIL
- NEW SEPTIC SYSTEM
- TEMPORARY CUL-DE-SAC FOR PHASE 1

SITE LEGEND

- NEW HEAVY DUTY PAVEMENT (HATCHED)
- SNOW STORAGE AREA
- NEW LANDSCAPED AREA (HATCHED)
- FIRE ACCESS ROUTE WITH 12.5M TURNING RADIUS
- TRUCK LOADING DOCK DOOR
- KNOCK OUT PANEL
- MAN DOOR ENTRY
- DRIVE-IN DOOR
- FIRE DEPT CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- 1500mm WIDE DEPRESSED CURB FOR ACCESSIBLE PARKING AND PEDESTRIAN ACCESS - REFER TO DETAIL 4/A1.2
- PROPOSED CATCHBASIN
- D.C.
- DENOTES MANHOLE
- EXISTING HYDRO POLE
- STOP
- NEW STOP SIGN
- GAS METER & PRESSURE REGULATING STATION BY GAS COMPANY
- PAINTED CARPOOL PARKING SPACE SYMBOL
- POLE MOUNTED LIGHT FIXTURE - REFER TO ELECTRICAL DRAWINGS
- WALL MOUNTED LIGHT FIXTURE - REFER TO ELECTRICAL DRAWINGS
- EV PARKING STALL
- FIRE ROUTE SIGNAGE
- PHASE 1 & 2 BORDER LINE
- PHASE 2 - OUT OF SCOPE

SITE STATISTICS TABLE

DTT22-0016-00 - 12131 WOODBINE AVE			
Zoning Category		EBP-G	
Proposed Use		WAREHOUSE / INDUSTRIAL / OFFICE	
GROSS SITE AREA		300,386.00 m ²	30.04 HA
UNDEVELOPABLE AREA		119,402.13 m ²	
DEVELOPABLE AREA		180,983.87 m ²	
S.W.M		22,255.90 m ²	
TOTAL PROPOSED BUILDING AREA		79,816.00m ²	
Regulations (Town of Richmond Hill Zoning By-law #150-80)			
Zone Requirements		PROPOSED	REQUIRED
Min. Lot Frontage (m)		315.32 m	30.00 m
Min. Setback from Street (m)		17.18 m	10.00 m
Min. Interior Side Yard Building Setback (m)		18.79 m	6.00 m
Min. Exterior Side Yard Building Setback (m)		48.40 m	10.00 m
Min. Rear Yard Building Setback (m)		58.03 m	10.00 m
Proposed R.O.W		23.00 m	N/A
Max. Lot Coverage (%)		23.51%	35.00%
Max. Floor Area Ratio (%)		23.51%	N/A
Maximum Building Height (m)		14.00 m	20.00 m
Landscape Buffer (Front Yard)		4.50 m	4.50 m
Min. 10% Landscaping Coverage (sqm)		30,038.60 m ²	30,038.60 m ²
Landscaping		10.00%	10.00%
PARKING SPACE DIMENSIONS			
Parking Stall Dimensions		2.75m X 5.5m	
Accessible Parking Stalls (with 1.5m access aisle)		TYPE A - 3.4 X 5.5m	TYPE B - 2.4 X 5.5m
Loading Space Dimensions		SMALL: 3.6 X 9.0m LARGE: 3.6 X 15.0m	
PHASE 1 DEVELOPMENT			
PROPOSED BUILDING AREA		GFA	FSI
FLEX INDUSTRIAL BUILDING 1		2,861.00m ²	0.95%
INDUSTRIAL BUILDING 2		12,530.00m ²	4.17%
INDUSTRIAL BUILDING 3		15,007.00m ²	5.00%
TOTAL PROPOSED BUILDING AREA		30,398.00m ²	10.12%
PARKING REQUIREMENT (Accessible Parking By Law No. _____)			
FLEX INDUSTRIAL BUILDING 1		PROPOSED	REQUIRED
WAREHOUSE USE <2000 GFA (1/100 SM)		20	20
WAREHOUSE USE >2000 GFA (0.6/100 SM)		40	5
OFFICE USE (6%) (1/20 SM)		8	8
TOTAL # OF PARKING SPACES		68	33
EV Parking Stalls (10% of total)		3	3
Total No. Barrier Free Parking Spaces (25-100 spaces = 4% of total required parking)		2 (Development between 25-100) (1 Type A + 1 Type B)	2 (Development between 25-100) (1 Type A + 1 Type B)
Total No. Bicycle Parking Spaces (2 + 0.25/1000sm GFA)		4	3
Total No. Loading Spaces (1 small loading space per unit)		7	7
Total No. Van Parking		14	N/A
INDUSTRIAL BUILDING 2		PROPOSED	REQUIRED
WAREHOUSE USE <2000 GFA (1/100 SM)		20	20
WAREHOUSE USE >2000 GFA (0.6/100 SM)		65	60
OFFICE USE (6%) (1/20 SM)		32	32
TOTAL # OF PARKING SPACES		117	113
EV Parking Stalls (10% of total)		11	11
Total No. Barrier Free Parking Spaces (101-200 spaces = 1 space + 3% of total parking required)		6 (Development between 101-200) (3 Type A + 3 Type B)	5 (Development between 101-200) (2 Type A + 3 Type B)
Total No. Bicycle Parking Spaces (2 + 0.25/1000sm GFA)		6	6
Total No. Loading Spaces (> 9000sm of GFA)		40	6
INDUSTRIAL BUILDING 3		PROPOSED	REQUIRED
WAREHOUSE USE <2000 GFA (1/100 SM)		20	20
WAREHOUSE USE >2000 GFA (0.6/100 SM)		124	75
OFFICE USE (6%) (1/20 SM)		39	39
TOTAL # OF PARKING SPACES		163	133
EV Parking Stalls (10% of total)		13	13
Total No. Barrier Free Parking Spaces (101-200 spaces = 1 space + 3% of total parking required)		6 (Development between 101-200) (3 Type A + 3 Type B)	5 (Development between 101-200) (2 Type A + 3 Type B)
Total No. Bicycle Parking Spaces (2 + 0.25/1000sm GFA)		6	6
Total No. Loading Spaces (> 9000sm of GFA)		32	7
FUTURE DEVELOPMENT SUBJECT TO REZONING			
PROPOSED BUILDING AREA		GFA	FSI
INDUSTRIAL BUILDING 4		34,370.00m ²	11.44%
PARKING REQUIREMENT (Accessible Parking By Law No. _____)			
INDUSTRIAL BUILDING 4		PROPOSED	REQUIRED
WAREHOUSE USE <2000 GFA (1/100 SM)		20	20
WAREHOUSE USE >2000 GFA (0.6/100 SM)		274	185
OFFICE USE (6%) (1/20 SM)		87	87
TOTAL # OF PARKING SPACES		381	292
EV Parking Stalls (10% of total)		29	29
Total No. Barrier Free Parking Spaces (201-1000 spaces = 2 + 2% of total required parking)		8 (Development between 201-1000) (4 Type A + 4 Type B)	8 (Development between 201-1000) (4 Type A + 4 Type B)
Total No. Bicycle Parking Spaces (2 + 0.25/1000sm GFA)		12	11
Total No. Loading Spaces (> 9000sm of GFA)		65	9
Total No. Trailer Parking		61	N/A

WARE MALCOMB

ARCHITECTURE PLANNING INTERIORS CIVIL ENGINEERING SURVEYING BUILDING MANAGEMENT 6322 Highway 7, Suite 300 Vaughan, Ontario L4V 0P1, Canada P: 905.709.2222

12131 WOODBINE AVE
12131 WOODBINE AVE
GORMLEY, ONTARIO

OVERALL SITE PLAN

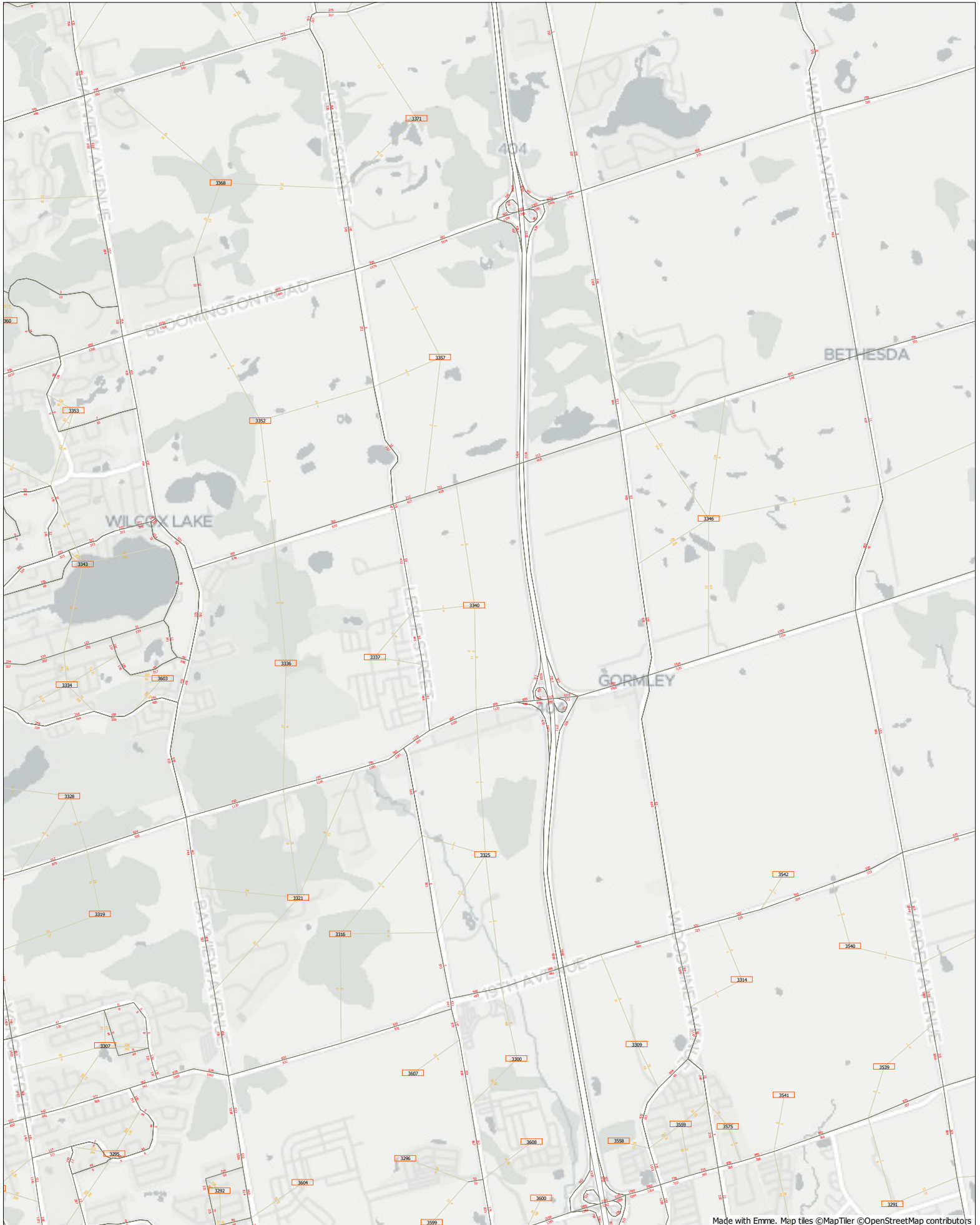
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APPENDIX G

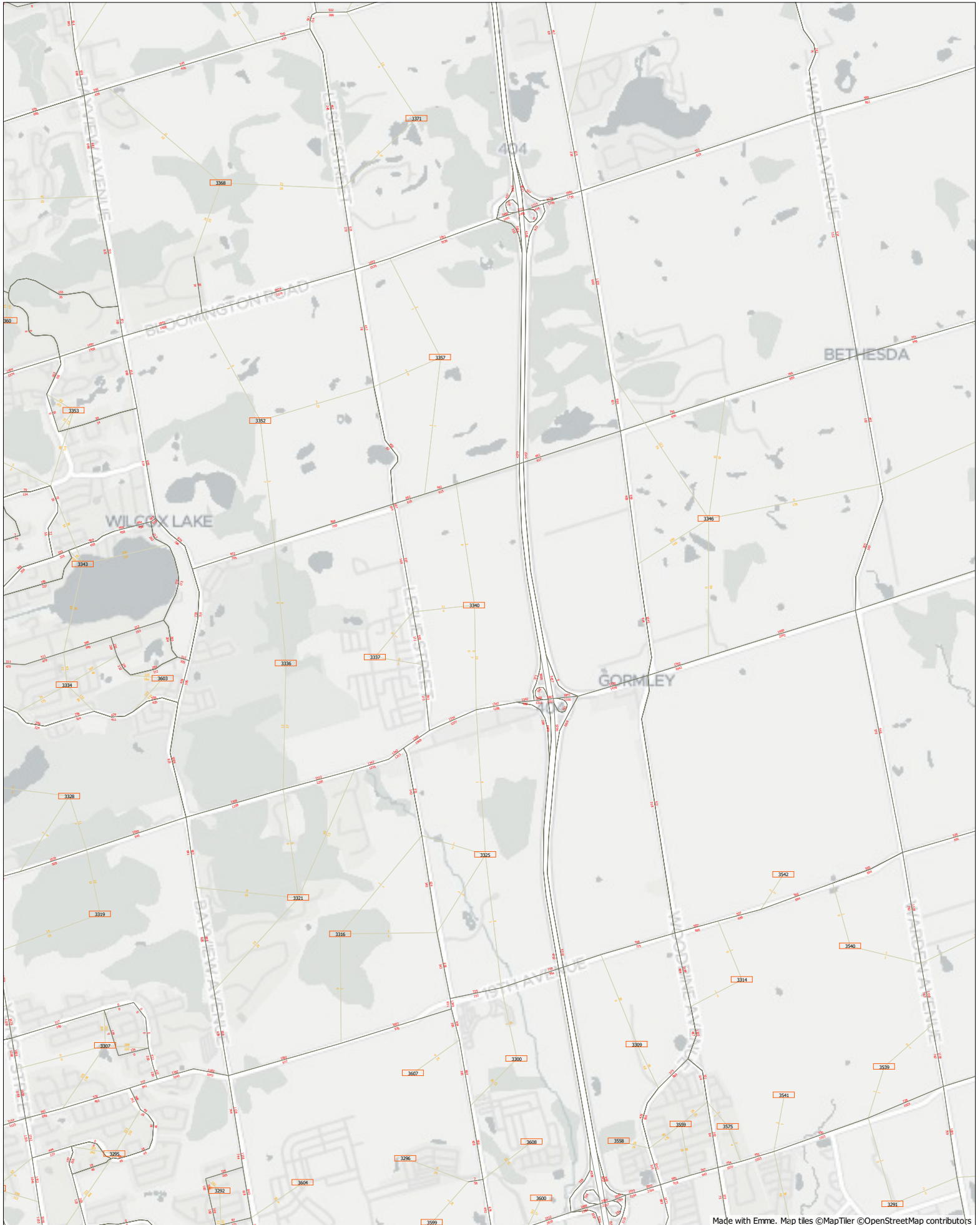
TRAFFIC GROWTH RATES

2016 AM Pkhr Auto Link Volumes



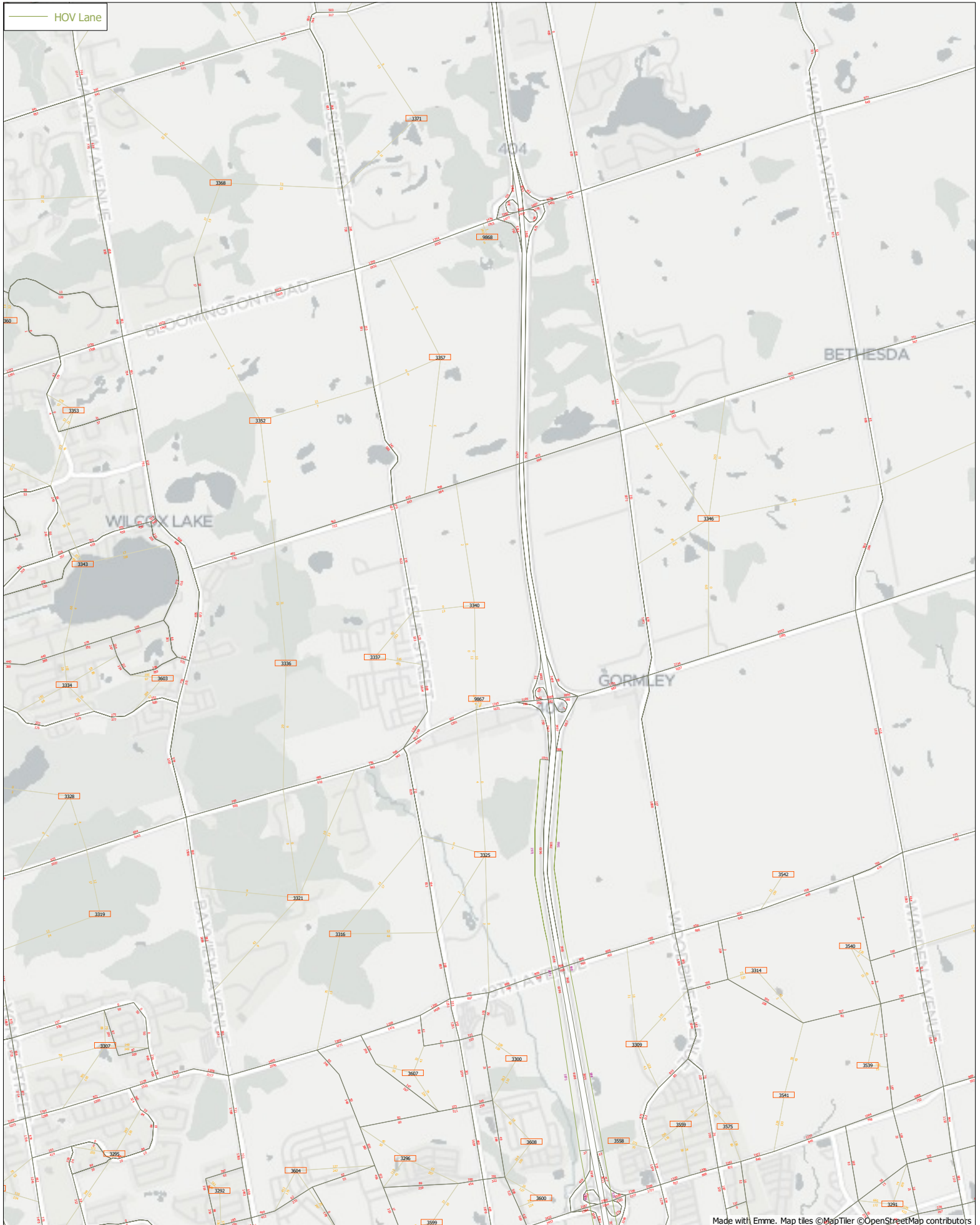
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2016 PM Pkhr Auto Link Volumes



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2036 PM Pkhr Auto Link Volumes

