RC SPENCER ASSOCIATES INC.
Consulting Engineers

28 October 2026
File No.: 25-1838

Seiko Homes
851 North Talbot Road
Windsor, ON N9G 1M8

Attention: **Hessan Habib**

Re: **670 & 690 North Talbot Road, Windsor, Ontario**
Supplementary Memo

Dear Mr. Habib:

As provided in **Appendix A–A**, a Traffic Impact Brief was completed in May 2025 for a proposed residential development located at 670 and 690 North Talbot Road, in Windsor, Ontario. The original site plan proposed 73 townhouse units; however, as the proposed development proceeded towards implementation, the site plan was amended, and the density was decreased. The updated site plan is provided in **Appendix B–B**; it now proposes three single family detached homes and 63 townhouse units.

TRIP GENERATION ESTIMATES

Tables 1 and 2 compare the trip generation and distribution estimates from the original study to what may be expected with the revised site plan. After the May 2025 report was complete, the Institute of Transportation Engineers (ITE) released the 12th Edition of the Trip Generation Manual; however, to be consistent (and conservative) in preparing the estimates, the 11th Edition references were utilized in this memo. The calculations for the new estimates are found in **Appendix C–C**, along with their respective ITE Trip Generation Manual (***11th Edition***) references.

Table 1: Original Site Plan: Trip Generation and Distribution

Total Trips *(73 Townhouse Units)*			
	Trips Entering	**Trips Exiting**	**Total**
AM Peak Hour	9	26	35
PM Peak Hour	25	17	42

Table 2: Current Site Plan: Trip Generation and Distribution

Total Trips *(3 Single Family Detached Homes and 63 Townhouse Units)*			
	Trips Entering	**Trips Exiting**	**Total**
AM Peak Hour	9	23	32
PM Peak Hour	16	23	39

It is observed that the amended land uses will generate less traffic when compared to the estimates from the original report; total site generated traffic in the AM peak hour decreased from 35 peak hour trips to 32 peak hour trips, while total site generated traffic in the PM peak hour decreased from 42 peak hour trips to 39 peak hour trips. In effect, the proposed development is expected to add approximately one new vehicle trip every one or two minutes to the area road network.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the theoretical decrease in site generated traffic, the level of service results are expected to be better than those reported in the May 2025 Traffic Impact Brief. Therefore, all conclusions / recommendations stated in the original 2025 report remain valid; the area intersection levels of service will remain satisfactory, and no geometric improvements are recommended to accommodate the site-generated trips.

Therefore, upon review of the updated trip generation and technical results, it is the engineers' opinion that the conclusions stated in the original May 2025 report remain valid; the proposed development will have a nominal impact on area traffic operations, and no geometric and / or traffic control improvements are required to accommodate the subject development proposal.

All of which is respectfully submitted,

RC Spencer Associates Inc.

Aaron D. Blata, M.Eng., P.Eng., PTOE, RSP1
Consulting Engineer, Road Safety Professional &
Professional Traffic Operations Engineer
Associate / Leamington Office Manager

Richard C. Spencer, M.A.Sc., P.Eng., PE
Consulting Engineer &
Fellow ITE Member
President / Windsor Office Manager





Appendix A – A

670 & 690
NORTH TALBOT ROAD
WINDSOR, ON
TRAFFIC IMPACT BRIEF
MAY 2025

670 & 690 NORTH TALBOT ROAD WINDSOR, ON

TRAFFIC IMPACT BRIEF

Prepared by:

RC SPENCER ASSOCIATES INC.
Consulting Engineers
Windsor: 800 University Avenue W. - Windsor ON N9A 5R9
Leamington: 18 Talbot Street W. - Leamington ON N8H 1M4
Chatham-Kent: 49 Raleigh Street - Chatham ON N7M 2M6

File No.: 25-1776 May 2025

670 & 690 NORTH TALBOT ROAD, WINDSOR, ON

TRAFFIC IMPACT BRIEF (MAY 2025)

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Appendix A: Traffic Data Collection

- Silverdale Drive at Northwood Lakes Drive

Appendix B: ITE Trip Generation Manual – 11th Edition References

- Single Family Detached Housing – AM / PM Peak Hour
- Proposed Site Development Trip Generation and Distribution

Appendix C: Detailed Synchro Results

- Silverdale Drive at Northwood Lakes Drive

INTRODUCTION AND BACKGROUND

A residential development is proposed for vacant lands on the west end of Silverdale Drive, in Windsor, Ontario. The area plan is illustrated on **Figure 1**. Silverdale Drive is an east / west local roadway that intersects with the north / south local roadway, Northwood Lakes Drive. Silverdale Drive is approximately 1.0km long, commencing at a north / south collector roadway (Sixth Concession Road) and terminating at a cul-de-sac to the west. North Talbot Road is an east / west minor arterial road that runs through Windsor, Ontario, and is one of the primary means of access to and from commercial / residential areas within the city; it provides access to and from Howard Avenue, providing access to Dougall Parkway, which is approximately 400m to the north, and to Highway 3, which is approximately 1.5km to the south. North Talbot Road is a 6.0km long east / west local street commencing at Howard Avenue (County Road 9) and terminating at Concession Road 9 to the east.

The proposed concept plan is illustrated on **Figure 2** and consists of 73 townhouse units. To be conservative and to assess the "worst-case" scenario, it was assumed that the proposed residential development will be built out immediately. A single cul-de-sac and two residential driveways at the end of Silverdale Drive are proposed to service the development.

The purpose of this brief is to examine the potential impact of the proposed development on area traffic operations, particularly at the intersection of Silverdale Drive at Northwood Lakes.

TRAFFIC DATA COLLECTION

As provided in **Appendix A**, turning movement counts were obtained by RC Spencer Associates Inc. on 6 May 2025 for the intersection of Silverdale Drive at Northwood Lakes Drive.

METHODOLOGY

The collected turning movements counts provided the basis for industry-standard traffic operations analysis; the software package utilized for the analysis (Synchro 12) calculates various parameters of intersection performance, such as level of service (LOS), intersection capacity utilization (ICU), control delay, and queue lengths on individual approaches. The modelling is based on the methodology outlined in the Highway Capacity Manual (HCM) – 7th Edition.

Unsignalized level of service results are reported based on the following industry standard:

Level of Service	Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

TRIP GENERATION AND DISTRIBUTION

As referenced in **Appendix B**, trip generation for the proposed development was estimated from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). The dataset's average rate was used instead of the fitted curve equation because the value of the independent variable is in the lower range of the dataset.

ITE Land Use Code 215 – Single Family Attached Housing is the most appropriate code for the proposed 73 townhouse units. This land use code provides trip generation rates of 0.48 trips per dwelling unit in the AM peak hour, with 25% entering and 75% exiting, and 0.57 trips per dwelling unit in the PM peak hour, with 59% entering and 41% exiting.

The total trips generated by the proposed residential uses are estimated to be 9 entering / 26 exiting during the AM peak hour and 25 entering / 17 exiting during the PM peak hour. Site generated traffic was distributed to and from Silverdale Drive and Northwood Lakes Drive based on the north / south and east / west flow of traffic, as taken from the collected turning movement counts. Most traffic is destined to / from North Talbot Road to the south, with a minority destined to / from Sixth Concession Road.

CAPACITY AND LEVEL OF SERVICE ANALYSIS

Figure 3 illustrates the "Site Generated Traffic", "Existing Traffic", and "Existing + Site Generated Traffic" scenarios for the respective weekday peak hours. Detailed Synchro 12 analysis was carried out with respect to the "Existing Traffic", and "Existing + Site Generated Traffic" AM and PM peak hour scenarios; the resulting Synchro simulation reports are provided in **Appendix C**, and the following sections summarize the findings:

Silverdale Drive at Northwood Lakes Drive

The existing four-way intersection of Silverdale Drive and Northwood Lakes Drive is stop-controlled on all approaches. All approaches are comprised of shared approach lanes. According to **Table 1**, this intersection is operating at a good level of service; even with the addition of site generated traffic, the levels of service do not change.

Table 1: Level of Service by Approach – Silverdale Drive and Northwood Lakes Drive

Scenario	Silverdale Drive at Northwood Lakes Drive							
	AM Peak Hour				PM Peak Hour			
	E/B	W/B	N/B	S/B	E/B	W/B	N/B	S/B
Existing Traffic	A	A	A	A	A	A	A	A
Existing + Site Generated Traffic	A	A	A	A	A	A	A	A

Modified Cul-de-sac at Silverdale Drive

The existing cul-de-sac at Silverdale Drive is to be removed and modified, as proposed in the site plan; the street will be extended to accommodate the proposed residential driveways more easily. Currently, Silverdale Drive is approximately 8.5m in width. Since the proposed design extends Silverdale Drive and terminates at the cul-de-sac, there should be little to no conflicting traffic on-street during the peak hours. All site generated traffic destined to and from the site will utilize the existing intersection of Silverdale Drive at Northwood Lakes Drive (which exhibited excellent levels of service), so the proposed site access was not modelled.

CONCLUSIONS AND RECOMMENDATIONS

A residential development is proposed for vacant lands on the west end of Silverdale Drive, in Windsor, Ontario. The development proposal consists of 73 townhouse units. A single cul-de-sac and two residential driveways (at the west end of Silverdale Drive) are proposed to service the development.

Using recently obtained turning movement counts and applying the best available trip generation and distribution data and methodologies, an analysis was completed to quantify and qualify the potential impact of the proposed development on area traffic operations. Upon completion of the analysis, it was concluded that:

- The all-way stop-controlled intersection of Silverdale Drive at Northwood Lakes Drive is expected to operate favourably, and the proposed cul-de-sac at Silverdale Drive is expected to satisfactorily accommodate the residential development.

Therefore, based on the results of the technical work, it is the engineers' opinion that the proposed development will not adversely impact area traffic operations. Geometric / traffic control improvements are not required to accommodate the subject development proposal.

All of which is respectfully submitted,

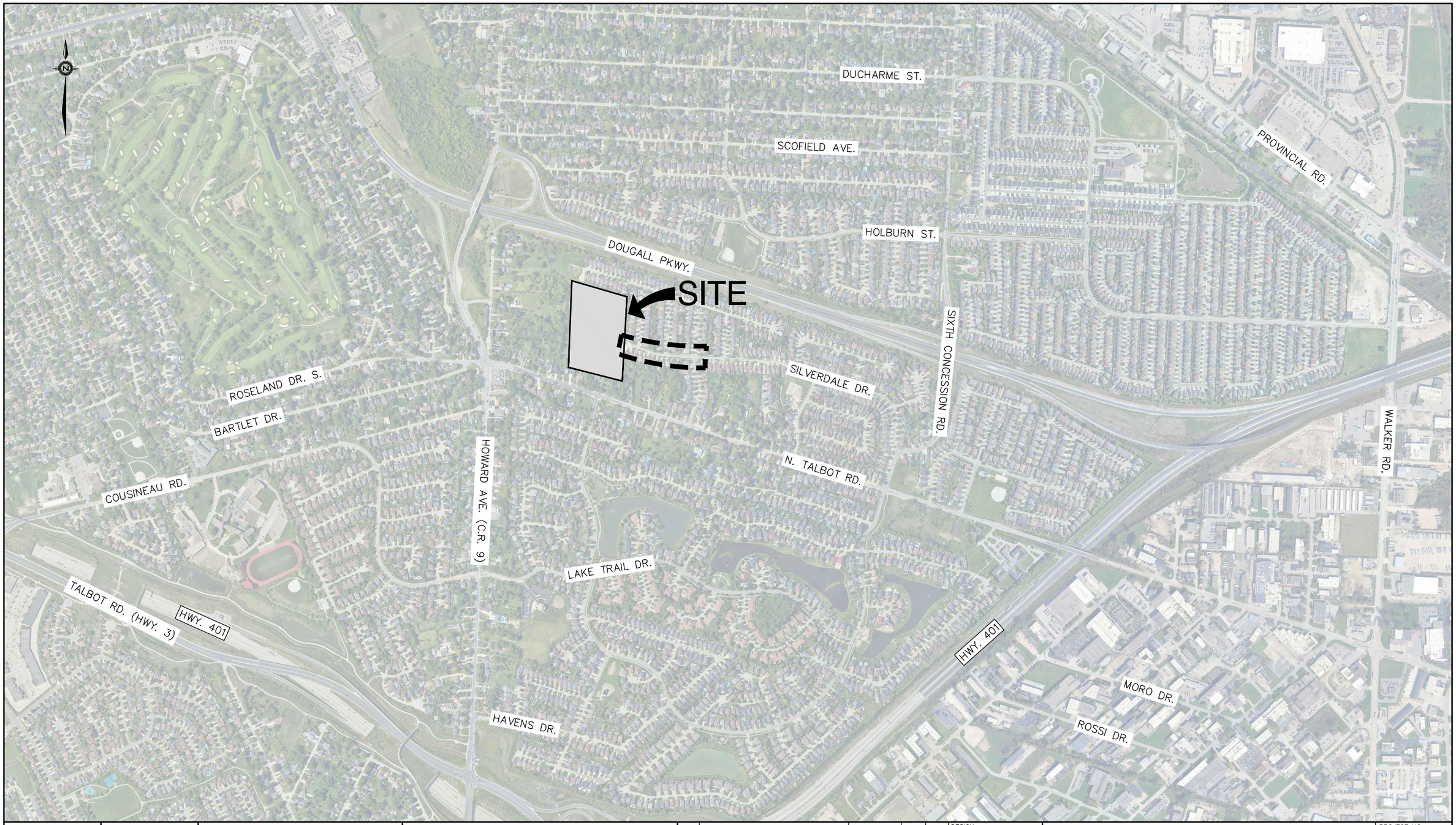
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Professional Engineers Ontario

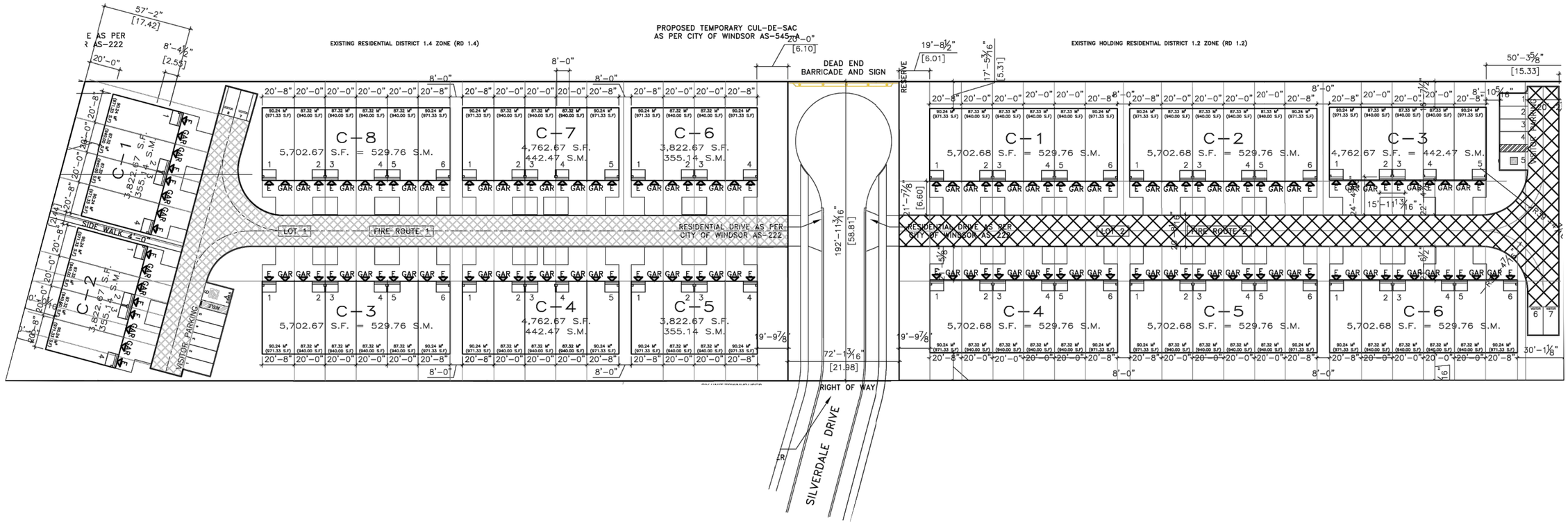
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DESIGN K.R.
CHECKED A.D.B.
DRAWN K.R.
CHECKED A.D.B.
DATE MAY 2025
SCALE N.T.S.

670 & 690 NORTH TALBOT RD., WINDSOR – BRIEF

AREA PLAN

PROJECT NO. 25–1776
FIGURE NO. 1
OF 3



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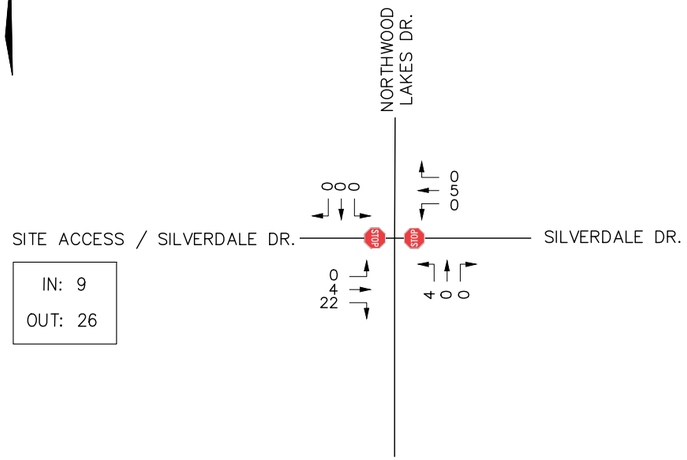
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CHECKED A.D.B.
DRAWN K.R.
CHECKED A.D.B.
DATE MAY 2025
SCALE N.T.S.

670 & 690 NORTH TALBOT RD., WINDSOR – BRIEF

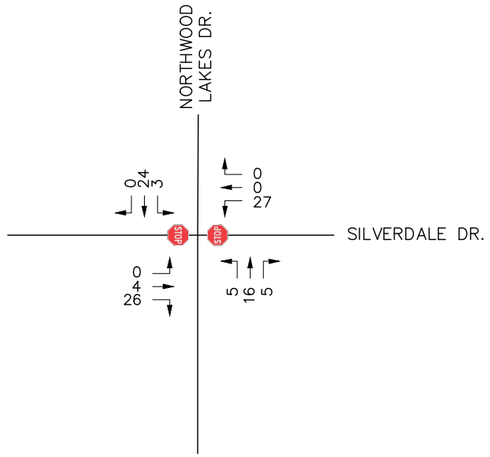
SITE PLAN

PROJECT NO. 25–1776
FIGURE NO. 2
OF 3

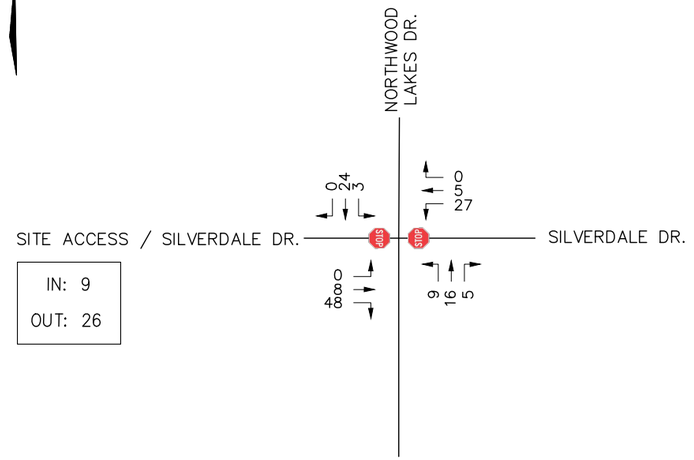
SITE GENERATED TRAFFIC (AM PEAK HOUR)



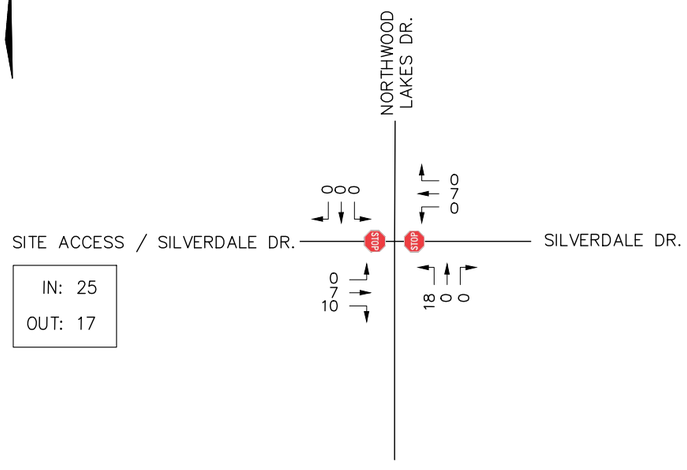
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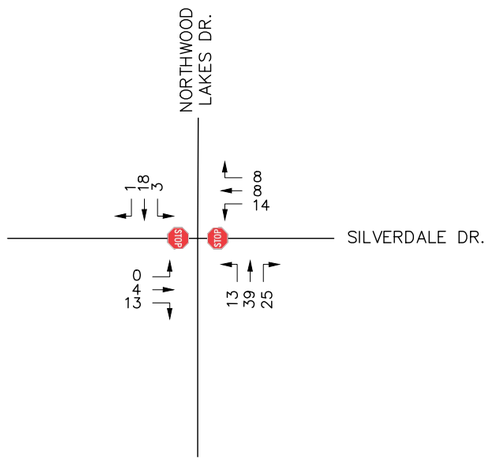
EXISTING + SITE GEN. TRAFFIC (AM PEAK HOUR)



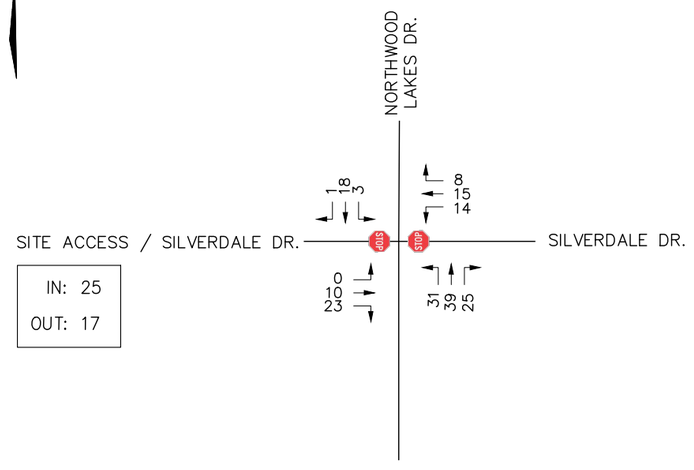
SITE GENERATED TRAFFIC (PM PEAK HOUR)



EXISTING TRAFFIC (PM PEAK HOUR)



EXISTING + SITE GEN. TRAFFIC (PM PEAK HOUR)



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670 & 690 NORTH TALBOT RD., WINDSOR – BRIEF

SITE GENERATED TURNING MOVEMENTS (AM/PM PEAK HOUR)

PROJECT NO. 25–1776
FIGURE NO. 3
OF 3

Appendix A

TRAFFIC DATA COLLECTION

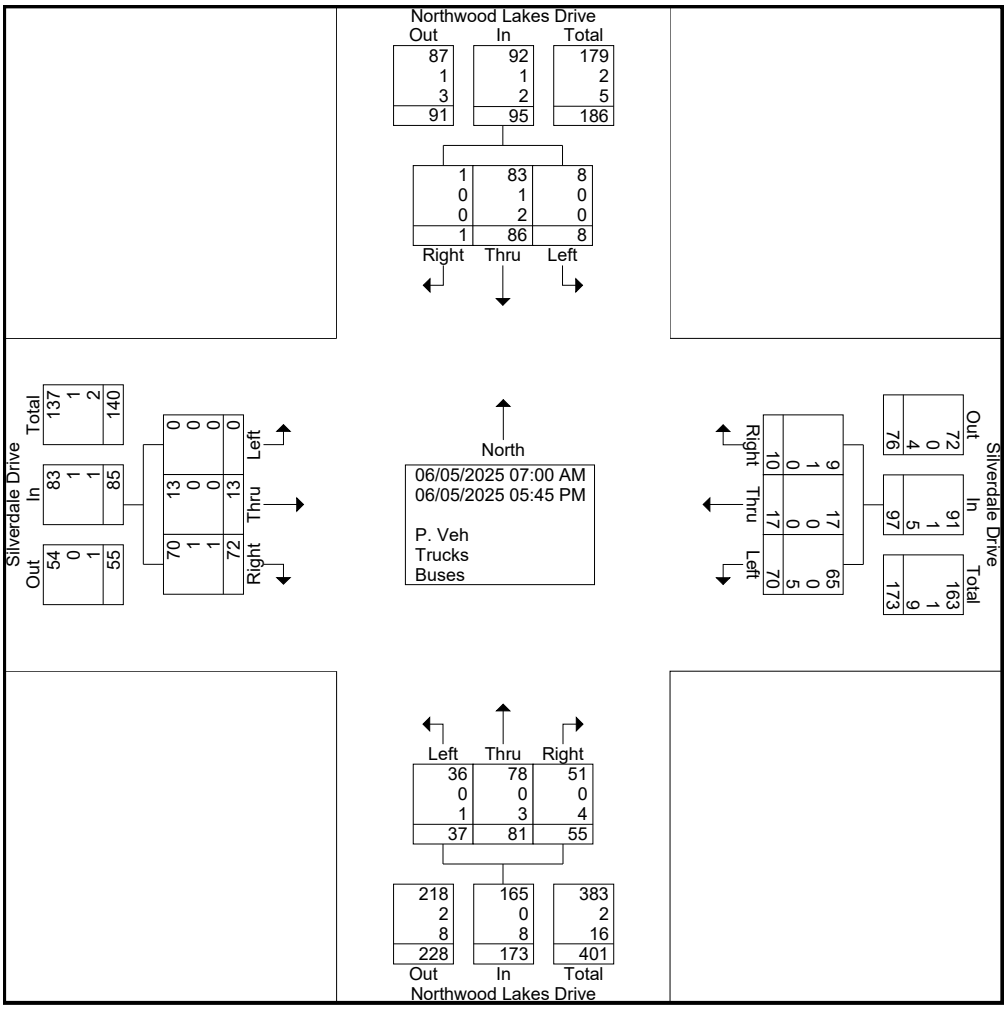
Silverdale Drive at Northwood Lakes Drive

Date: 6 May 2025
Counted By: N. Murray / A. Blata
Weather Conditions: Overcast
Silverdale Dr. at Northwood Lakes Dr.

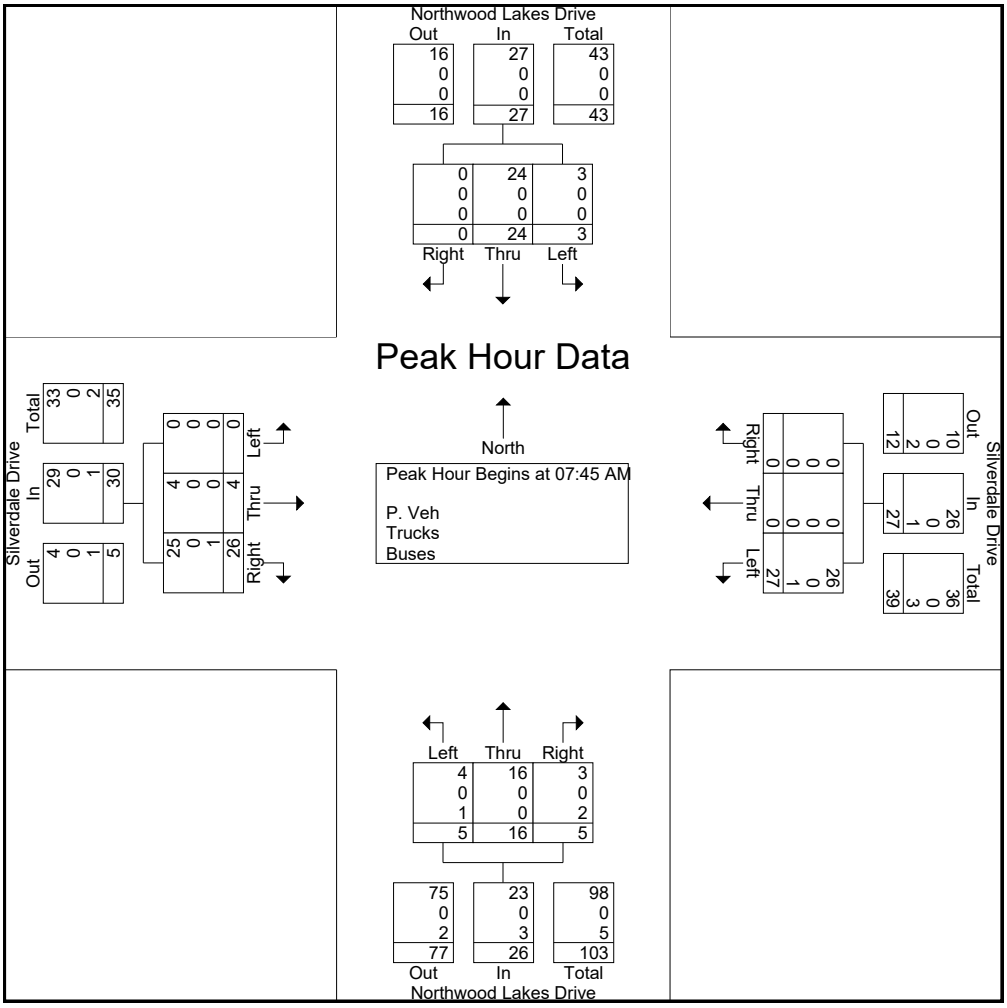
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Groups Printed- P. Veh - Trucks - Buses

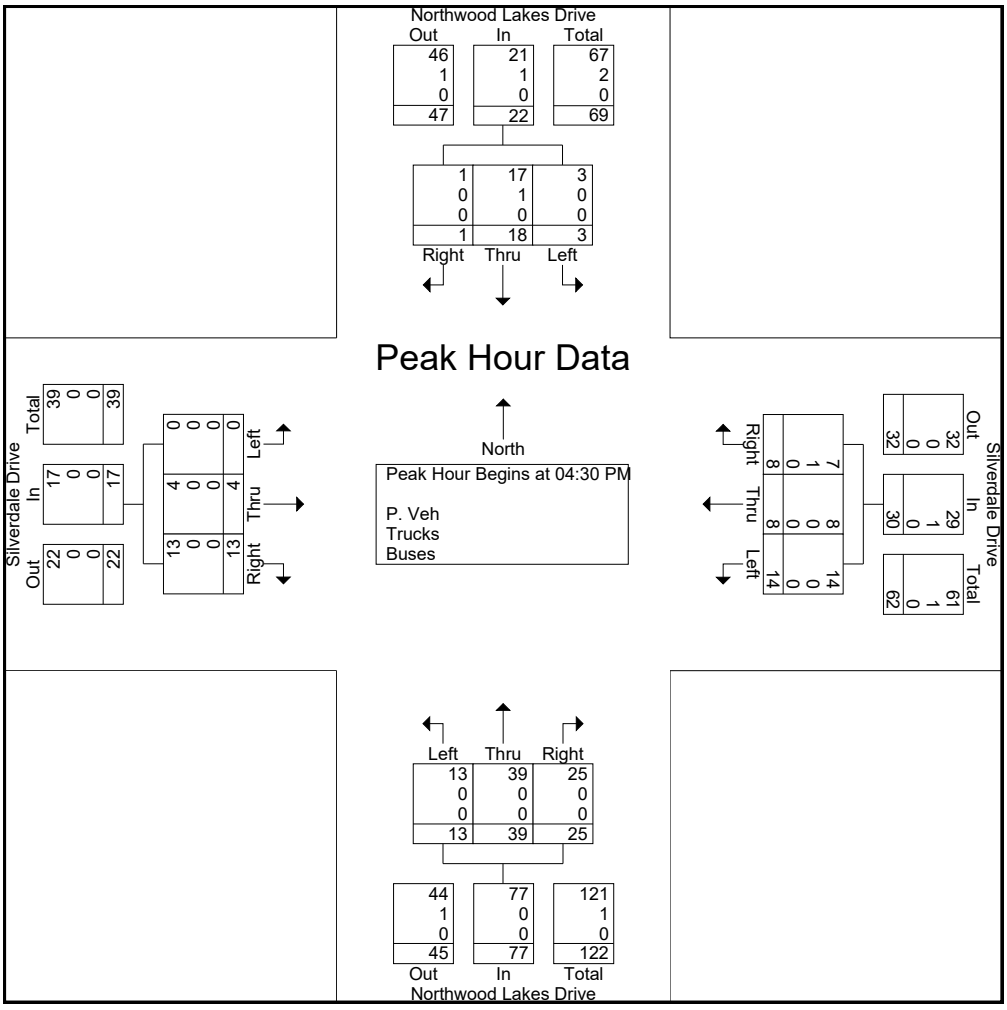
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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	1	5	(0)	6	3	0	0	(0)	3	0	0	3	(0)	3	0	4	0	(1)	4	1	16	17
07:15 AM	0	1	4	(0)	5	3	1	0	(0)	4	1	1	0	(0)	2	0	7	0	(0)	7	0	18	18
07:30 AM	0	0	8	(0)	8	3	0	0	(0)	3	1	2	0	(0)	3	1	11	0	(0)	12	0	26	26
07:45 AM	0	0	4	(0)	4	5	0	0	(0)	5	2	2	1	(0)	5	3	5	0	(0)	8	0	22	22
Total	0	2	21	(0)	23	14	1	0	(0)	15	4	5	4	(0)	13	4	27	0	(1)	31	1	82	83
08:00 AM	0	1	9	(2)	10	8	0	0	(1)	8	1	3	1	(0)	5	0	10	0	(1)	10	4	33	37
08:15 AM	0	1	5	(0)	6	10	0	0	(0)	10	1	6	1	(0)	8	0	2	0	(0)	2	0	26	26
08:30 AM	0	2	8	(4)	10	4	0	0	(2)	4	1	5	2	(0)	8	0	7	0	(1)	7	7	29	36
08:45 AM	0	0	3	(2)	3	8	1	0	(0)	9	2	2	3	(2)	7	0	2	0	(1)	2	5	21	26
Total	0	4	25	(8)	29	30	1	0	(3)	31	5	16	7	(2)	28	0	21	0	(3)	21	16	109	125
*** BREAK ***																							
04:00 PM	0	0	5	(0)	5	2	1	0	(1)	3	2	8	2	(0)	12	0	8	0	(1)	8	2	28	30
04:15 PM	0	0	5	(0)	5	3	1	0	(0)	4	6	5	6	(0)	17	0	3	0	(0)	3	0	29	29
04:30 PM	0	3	1	(0)	4	5	2	2	(0)	9	3	15	10	(0)	28	0	8	0	(0)	8	0	49	49
04:45 PM	0	1	3	(3)	4	3	1	0	(4)	4	4	12	7	(0)	23	0	2	0	(1)	2	8	33	41
Total	0	4	14	(3)	18	13	5	2	(5)	20	15	40	25	(0)	80	0	21	0	(2)	21	10	139	149
05:00 PM	0	0	7	(3)	7	3	2	1	(1)	6	3	3	4	(1)	10	0	4	0	(1)	4	6	27	33
05:15 PM	0	0	2	(1)	2	3	3	5	(2)	11	3	9	4	(1)	16	3	4	1	(0)	8	4	37	41
05:30 PM	0	0	1	(3)	1	6	4	1	(2)	11	5	4	4	(0)	13	1	7	0	(1)	8	6	33	39
05:45 PM	0	3	2	(0)	5	1	1	1	(3)	3	2	4	7	(2)	13	0	2	0	(0)	2	5	23	28
Total	0	3	12	(7)	15	13	10	8	(8)	31	13	20	19	(4)	52	4	17	1	(2)	22	21	120	141
Grand Total	0	13	72	(18)	85	70	17	10	(16)	97	37	81	55	(6)	173	8	86	1	(8)	95	48	450	498
Apprch %	0	15.3	84.7			72.2	17.5	10.3			21.4	46.8	31.8			8.4	90.5	1.1					
Total %	0	2.9	16		18.9	15.6	3.8	2.2		21.6	8.2	18	12.2		38.4	1.8	19.1	0.2		21.1	9.6	90.4	
P. Veh	0	13	70		101	65	17	9		107	36	78	51		171	8	83	1		100	0	0	479
% P. Veh	0	100	97.2	100	98.1	92.9	100	90	100	94.7	97.3	96.3	92.7	100	95.5	100	96.5	100	100	97.1	0	0	96.2
Trucks	0	0	1		1	0	0	1		1	0	0	0		0	0	1	0		1	0	0	3
% Trucks	0	0	1.4	0	1	0	0	10	0	0.9	0	0	0	0	0	0	1.2	0	0	1	0	0	0.6
Buses	0	0	1		1	5	0	0		5	1	3	4		8	0	2	0		2	0	0	16
% Buses	0	0	1.4	0	1	7.1	0	0	0	4.4	2.7	3.7	7.3	0	4.5	0	2.3	0	0	1.9	0	0	3.2


Northwood Lakes Drive
Out In Total
87 92 179
1 1 2
3 2 5
91 95 186
1 83 8
0 1 0
0 2 0
1 86 8
Right Thru Left
Silverdale Drive
Total
137 1 2 140
In
83 1 1 85
Out
54 0 1 55
0 0 0 0 Left
13 0 0 13 Thru
70 1 1 72 Right
North
06/05/2025 07:00 AM
06/05/2025 05:45 PM
P. Veh
Trucks
Buses
9 1 0 10 Right
17 0 0 17 Thru
65 0 0 5 70 Left
Out
72 0 4 76
In
91 1 5 97
Total
163 1 9 173
Silverdale Drive
Left Thru Right
36 78 51
0 0 0
1 3 4
37 81 55
218 165 383
2 0 2
8 8 16
228 173 401
Out In Total
Northwood Lakes Drive

	Silverdale Drive E/B				Silverdale Drive W/B				Northwood Lakes Drive N/B				Northwood Lakes Drive S/B				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	4	4	5	0	0	5	**2**	2	1	5	**3**	5	0	8	22
08:00 AM	0	1	**9**	**10**	8	0	0	8	1	3	1	5	0	**10**	0	**10**	**33**
08:15 AM	0	1	5	6	**10**	0	0	**10**	1	**6**	1	**8**	0	2	0	2	26
08:30 AM	0	**2**	8	10	4	0	0	4	1	5	**2**	8	0	7	0	7	29
Total Volume	0	4	26	30	27	0	0	27	5	16	5	26	3	24	0	27	110
% App. Total	0	13.3	86.7		100	0	0		19.2	61.5	19.2		11.1	88.9	0		
PHF	.000	.500	.722	.750	.675	.000	.000	.675	.625	.667	.625	.813	.250	.600	.000	.675	.833
P. Veh	0	4	25	29	26	0	0	26	4	16	3	23	3	24	0	27	105
% P. Veh	0	100	96.2	96.7	96.3	0	0	96.3	80.0	100	60.0	88.5	100	100	0	100	95.5
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	1	1	1	0	0	1	1	0	2	3	0	0	0	0	5
% Buses	0	0	3.8	3.3	3.7	0	0	3.7	20.0	0	40.0	11.5	0	0	0	0	4.5



	Silverdale Drive E/B				Silverdale Drive W/B				Northwood Lakes Drive N/B				Northwood Lakes Drive S/B				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**3**	1	4	**5**	2	2	9	3	**15**	**10**	**28**	0	**8**	0	**8**	**49**
04:45 PM	0	1	3	4	3	1	0	4	**4**	12	7	23	0	2	0	2	33
05:00 PM	0	0	**7**	**7**	3	2	1	6	3	3	4	10	0	4	0	4	27
05:15 PM	0	0	2	2	3	**3**	**5**	**11**	3	9	4	16	**3**	4	**1**	8	37
Total Volume	0	4	13	17	14	8	8	30	13	39	25	77	3	18	1	22	146
% App. Total	0	23.5	76.5		46.7	26.7	26.7		16.9	50.6	32.5		13.6	81.8	4.5		
PHF	.000	.333	.464	.607	.700	.667	.400	.682	.813	.650	.625	.688	.250	.563	.250	.688	.745
P. Veh	0	4	13	17	14	8	7	29	13	39	25	77	3	17	1	21	144
% P. Veh	0	100	100	100	100	100	87.5	96.7	100	100	100	100	100	94.4	100	95.5	98.6
Trucks	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
% Trucks	0	0	0	0	0	0	12.5	3.3	0	0	0	0	0	5.6	0	4.5	1.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Appendix B

ITE TRIP GENERATION MANUAL – 11TH EDITION REFERENCES

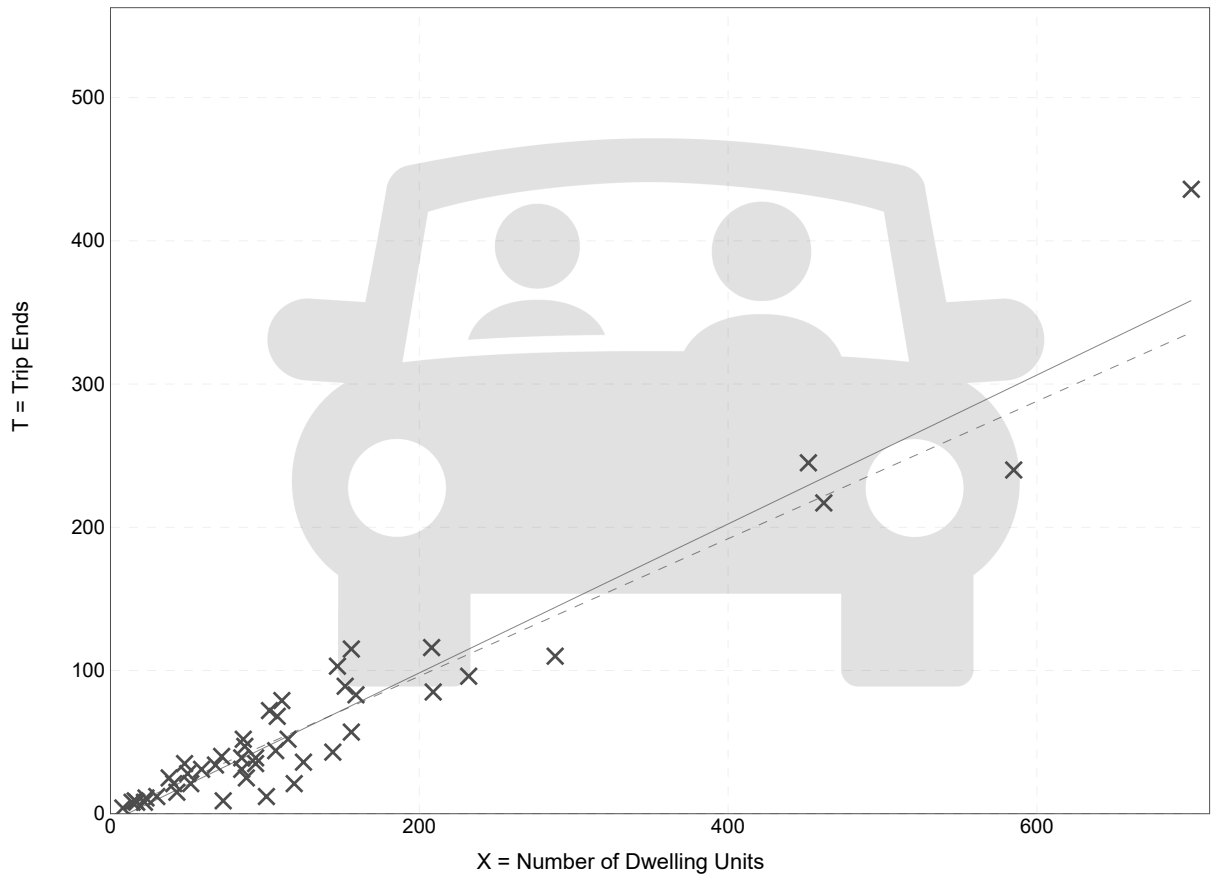
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 46
Avg. Num. of Dwelling Units: 135
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Fitted Curve Equation: T = 0.52(X) - 5.70

R^2= 0.92

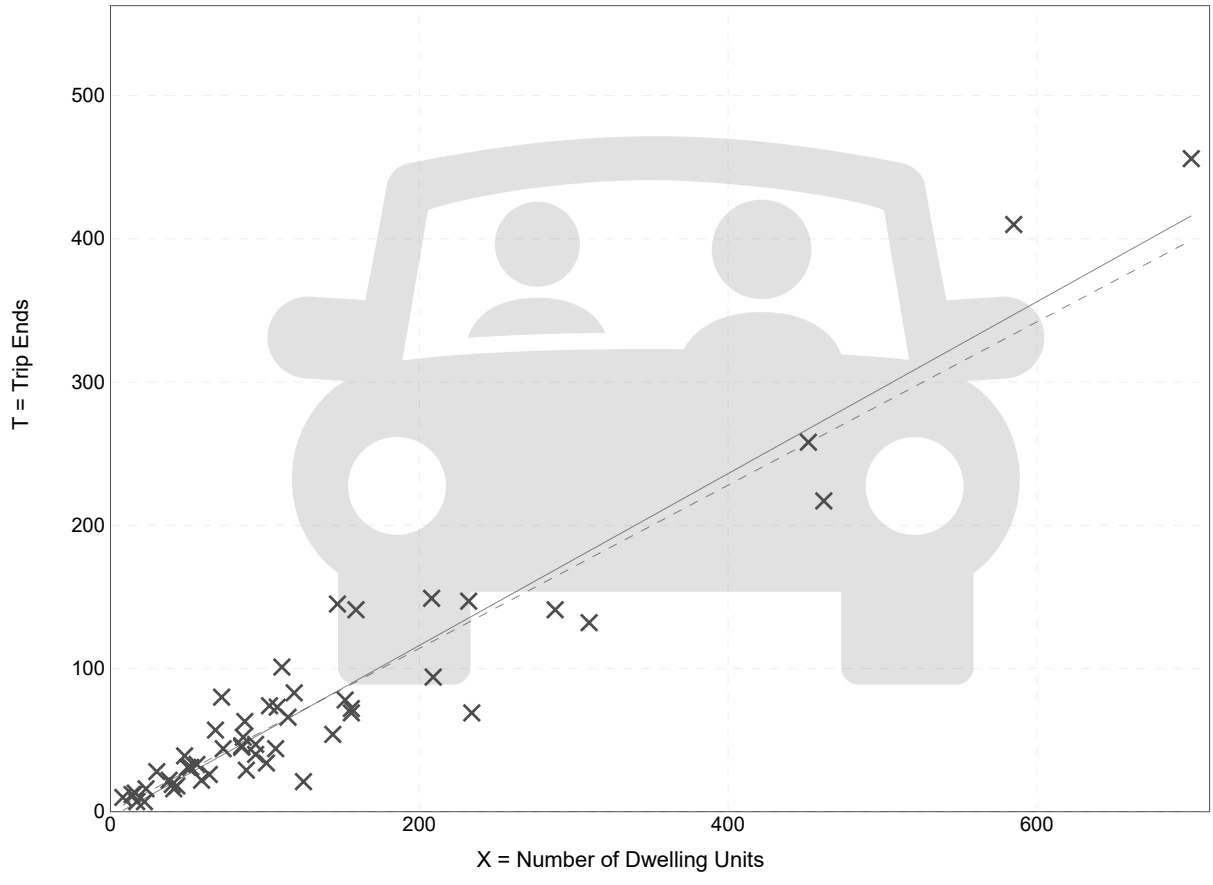
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. Num. of Dwelling Units:	136
Directional Distribution:	59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) - 3.93

R^2= 0.91

Proposed Site Development Trip Generation and Distribution

Project: 670-690 North Talbot Road Residential Development

Site: Windsor, Ontario

Assumed Land Use (1): Single-Family Attached Housing - ITE No. 215

Average Vehicle Trip Ends vs.: Dwelling Units

ITE Trip Generation Data collected on a: Weekday

AM Peak Hour:	0.48	= Average Rate	25	% Entering
			75	% Exiting
PM Peak Hour:	0.57	= Average Rate	59	% Entering
			41	% Exiting

Assumed Land Use (1): Single-Family Attached Housing - ITE No. 215				
	Dwelling Units	**Trips Generated**	**Trips Entering**	**Trips Exiting**
AM Peak	73	35	9	26
PM Peak	73	42	25	17

Total Trips		
	Trips Entering	**Trips Exiting**
AM Peak	9	26
PM Peak	25	17

Appendix C

DETAILED SYNCHRO RESULTS

Silverdale Drive at Northwood Lakes Drive

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	26	27	0	0	5	16	5	3	24	0
Future Vol, veh/h	0	4	26	27	0	0	5	16	5	3	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	2	2	20	2	40	2	2	2
Mvmt Flow	0	4	28	29	0	0	5	17	5	3	26	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	61	66	26	66	64	20	26	0	0	23	0	0
Stage 1	33	33	-	31	31	-	-	-	-	-	-	-
Stage 2	28	34	-	35	33	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.24	7.14	6.52	6.22	4.3	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.336	3.536	4.018	3.318	2.38	-	-	2.218	-	-
Pot Cap-1 Maneuver	934	824	1044	923	827	1058	1479	-	-	1592	-	-
Stage 1	984	868	-	980	869	-	-	-	-	-	-	-
Stage 2	989	867	-	976	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	929	820	1044	888	822	1058	1479	-	-	1592	-	-
Mov Cap-2 Maneuver	929	820	-	888	822	-	-	-	-	-	-	-
Stage 1	982	866	-	977	866	-	-	-	-	-	-	-
Stage 2	985	864	-	943	866	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.69	9.19	1.43	0.81
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	330	-	-	1007	888	200	-	-
HCM Lane V/C Ratio	0.004	-	-	0.032	0.033	0.002	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.7	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	13	14	8	8	13	39	25	3	18	1
Future Vol, veh/h	0	4	13	14	8	8	13	39	25	3	18	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	13	2	2	2	2	6	2
Mvmt Flow	0	4	14	15	9	9	14	42	27	3	20	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	102	124	20	112	111	56	21	0	0	70	0	0
Stage 1	27	27	-	84	84	-	-	-	-	-	-	-
Stage 2	75	98	-	28	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.33	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.417	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	879	766	1058	865	779	980	1595	-	-	1531	-	-
Stage 1	991	873	-	924	825	-	-	-	-	-	-	-
Stage 2	934	814	-	989	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	852	757	1058	839	770	980	1595	-	-	1531	-	-
Mov Cap-2 Maneuver	852	757	-	839	770	-	-	-	-	-	-	-
Stage 1	989	871	-	915	817	-	-	-	-	-	-	-
Stage 2	908	807	-	969	871	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.79	9.4	1.23	1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	282	-	-	967	851	243	-	-
HCM Lane V/C Ratio	0.009	-	-	0.019	0.038	0.002	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.8	9.4	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	8	48	27	5	0	9	16	5	3	24	0
Future Vol, veh/h	0	8	48	27	5	0	9	16	5	3	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	2	2	20	2	40	2	2	2
Mvmt Flow	0	9	52	29	5	0	10	17	5	3	26	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	72	75	26	77	72	20	26	0	0	23	0	0
Stage 1	33	33	-	40	40	-	-	-	-	-	-	-
Stage 2	40	42	-	37	33	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.24	7.14	6.52	6.22	4.3	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.336	3.536	4.018	3.318	2.38	-	-	2.218	-	-
Pot Cap-1 Maneuver	919	815	1044	908	818	1058	1479	-	-	1592	-	-
Stage 1	984	868	-	970	862	-	-	-	-	-	-	-
Stage 2	975	860	-	973	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	808	1044	846	811	1058	1479	-	-	1592	-	-
Mov Cap-2 Maneuver	905	808	-	846	811	-	-	-	-	-	-	-
Stage 1	982	866	-	964	856	-	-	-	-	-	-	-
Stage 2	963	854	-	914	866	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.82	9.47	2.24	0.81
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	515	-	-	1002	840	200	-	-
HCM Lane V/C Ratio	0.007	-	-	0.061	0.041	0.002	-	-
HCM Control Delay (s/veh)	7.5	0	-	8.8	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	10	23	14	15	8	31	39	25	3	18	1
Future Vol, veh/h	0	10	23	14	15	8	31	39	25	3	18	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	13	2	2	2	2	6	2
Mvmt Flow	0	11	25	15	16	9	34	42	27	3	20	1

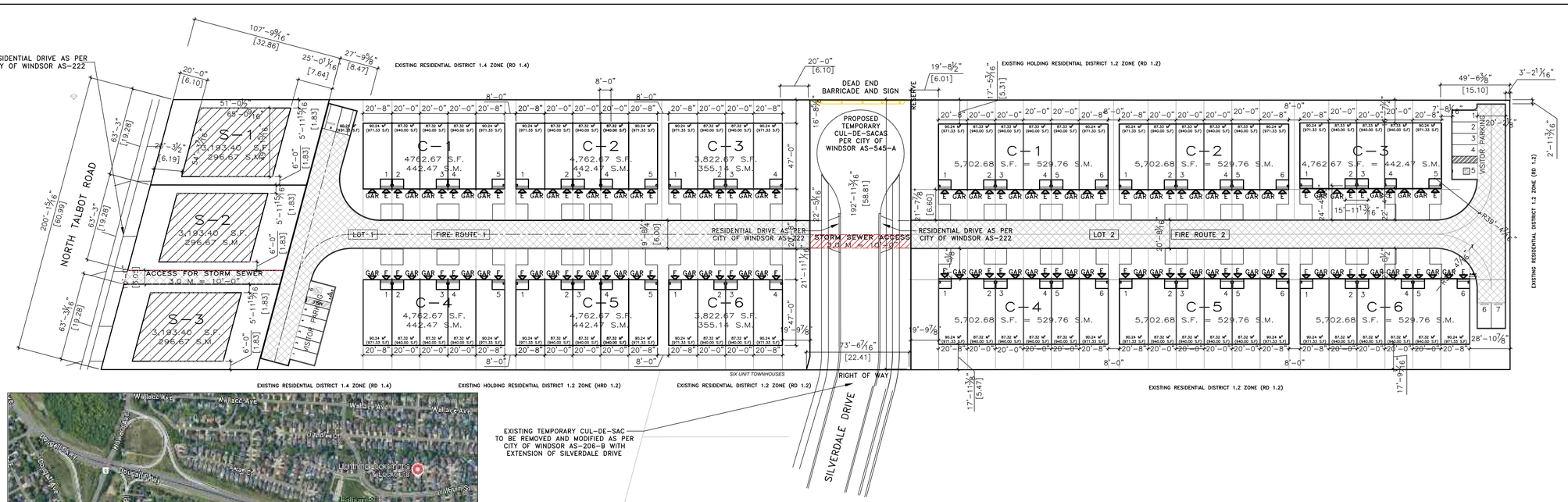
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	145	164	20	155	151	56	21	0	0	70	0	0
Stage 1	27	27	-	123	123	-	-	-	-	-	-	-
Stage 2	118	137	-	32	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.33	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.417	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	824	729	1058	812	741	980	1595	-	-	1531	-	-
Stage 1	991	873	-	881	794	-	-	-	-	-	-	-
Stage 2	887	783	-	985	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	780	711	1058	762	723	980	1595	-	-	1531	-	-
Mov Cap-2 Maneuver	780	711	-	762	723	-	-	-	-	-	-	-
Stage 1	989	871	-	861	776	-	-	-	-	-	-	-
Stage 2	841	766	-	948	871	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.06	9.85	2.38	1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	545	-	-	922	783	243	-	-
HCM Lane V/C Ratio	0.021	-	-	0.039	0.051	0.002	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.1	9.8	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Appendix B – B

UPDATED SITE PLAN



EXISTING SITE TOTAL LOT AREA = 189,731.77 S.F. = 17,626.66 S.M.
= 4.355 ACRES = 1.762 HECTARE


Wallace Ave
Dougall Ave
Howard Rd
Lunch Locations Locations
Hallam St
Bellaire Dr
Bellaire Ct
Dougall Plaza
Tecumseh Rd E
Rexdale Blvd
Rexdale Dr
Howard Rd
Bellaire Blvd
Bellaire Ct
Bellaire Dr
Tecumseh Rd E
Howard Rd
Howard Ave
Howard Ave
Tecumseh Rd E
Tecumseh Rd E
Tecumseh Rd E

Appendix C – C

ITE TRIP GENERATION MANUAL – 11TH EDITION REFERENCES

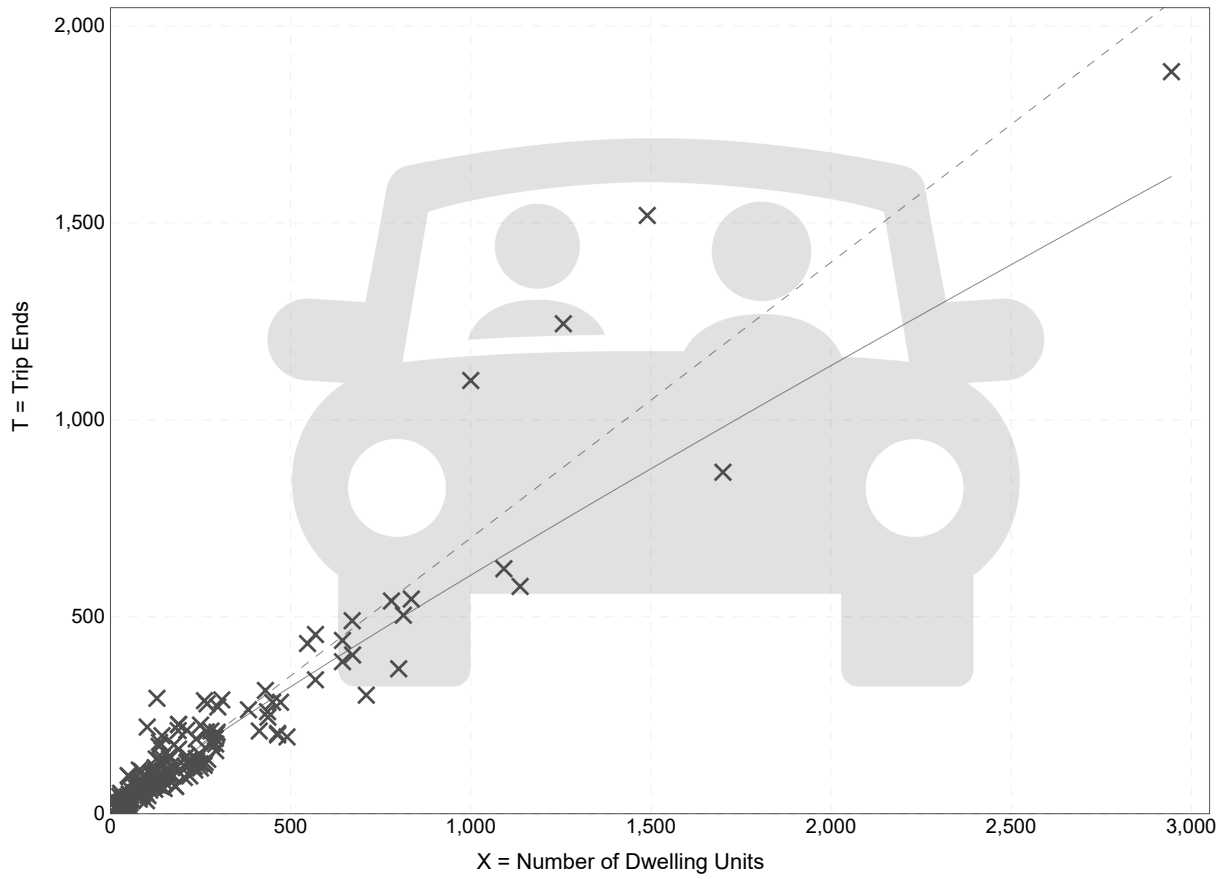
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	192
Avg. Num. of Dwelling Units:	226
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.91 Ln(X) + 0.12 **R^2= 0.90**

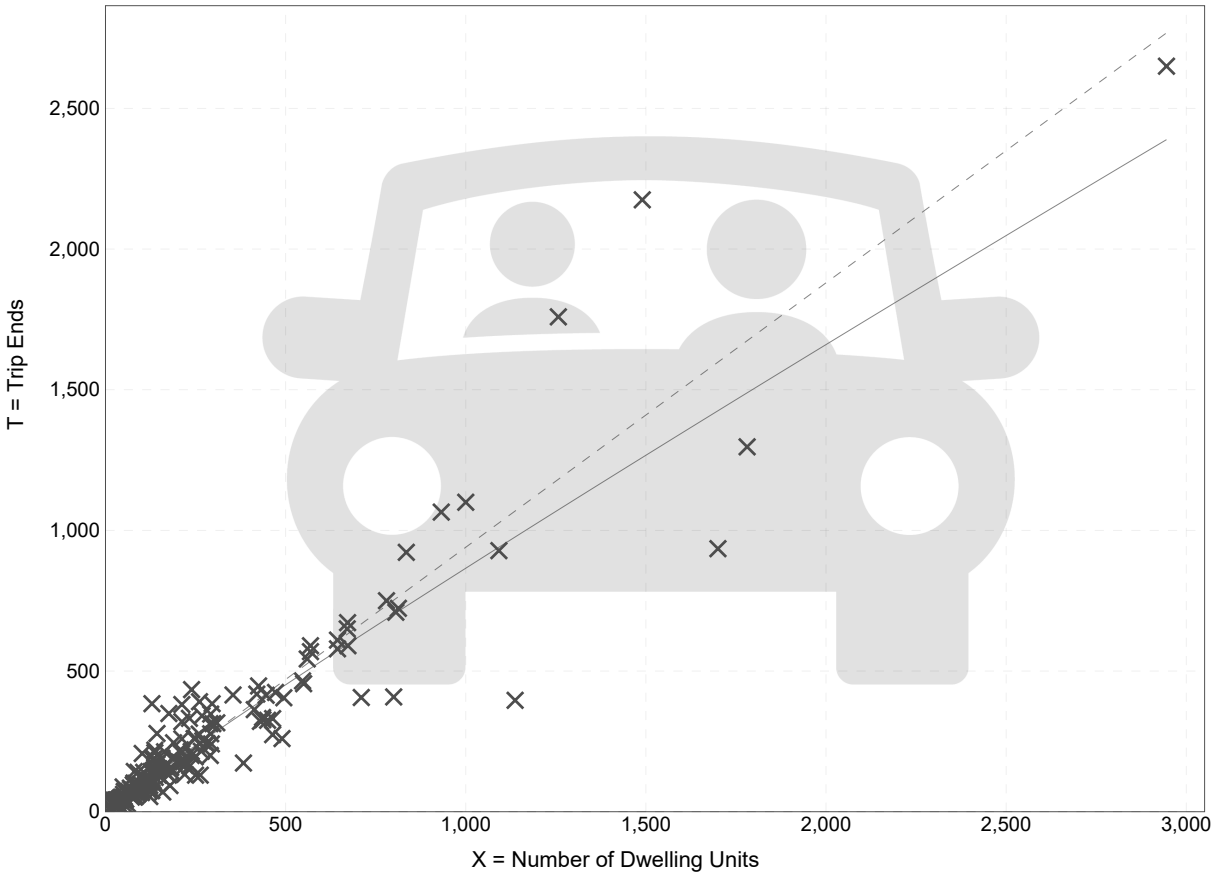
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	208
Avg. Num. of Dwelling Units:	248
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.94 Ln(X) + 0.27

R^2= 0.92

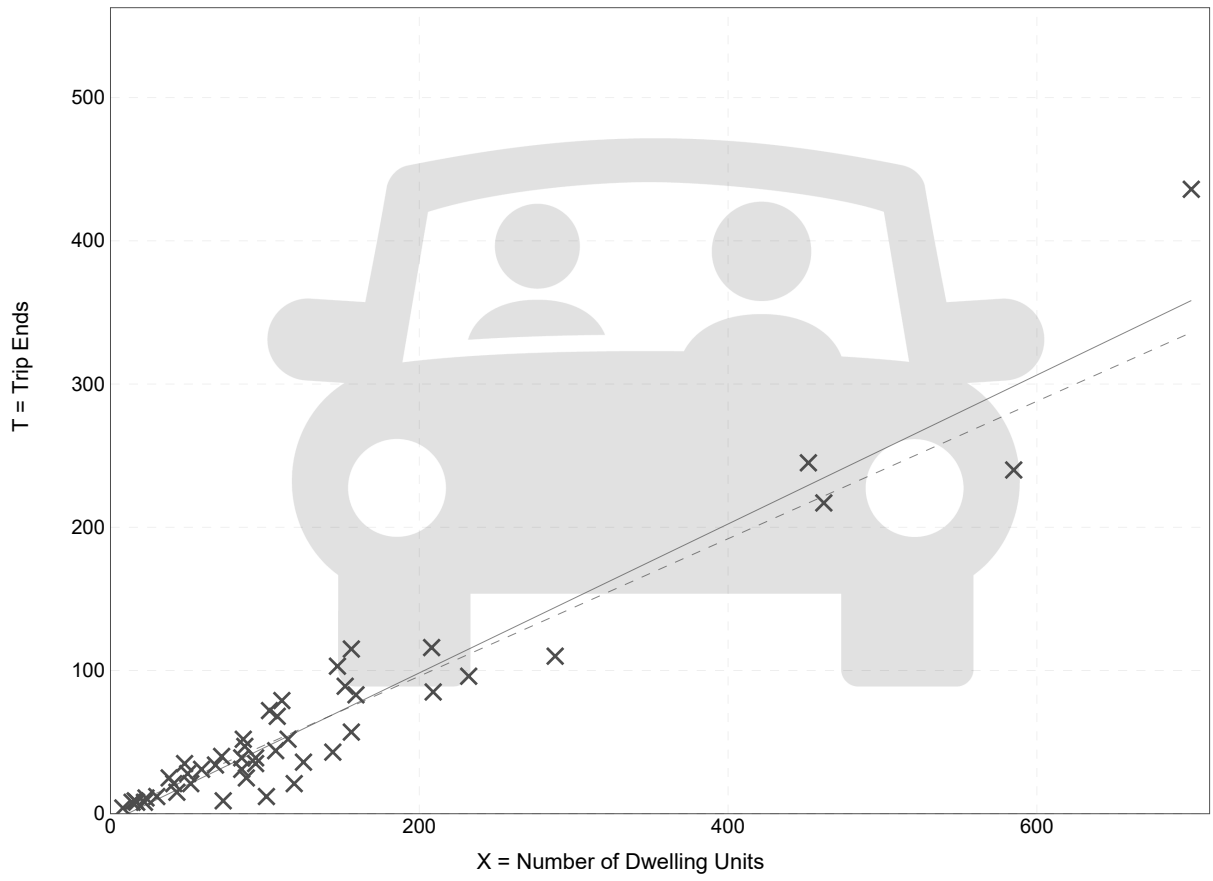
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 46
Avg. Num. of Dwelling Units: 135
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Fitted Curve Equation: T = 0.52(X) - 5.70

R^2= 0.92

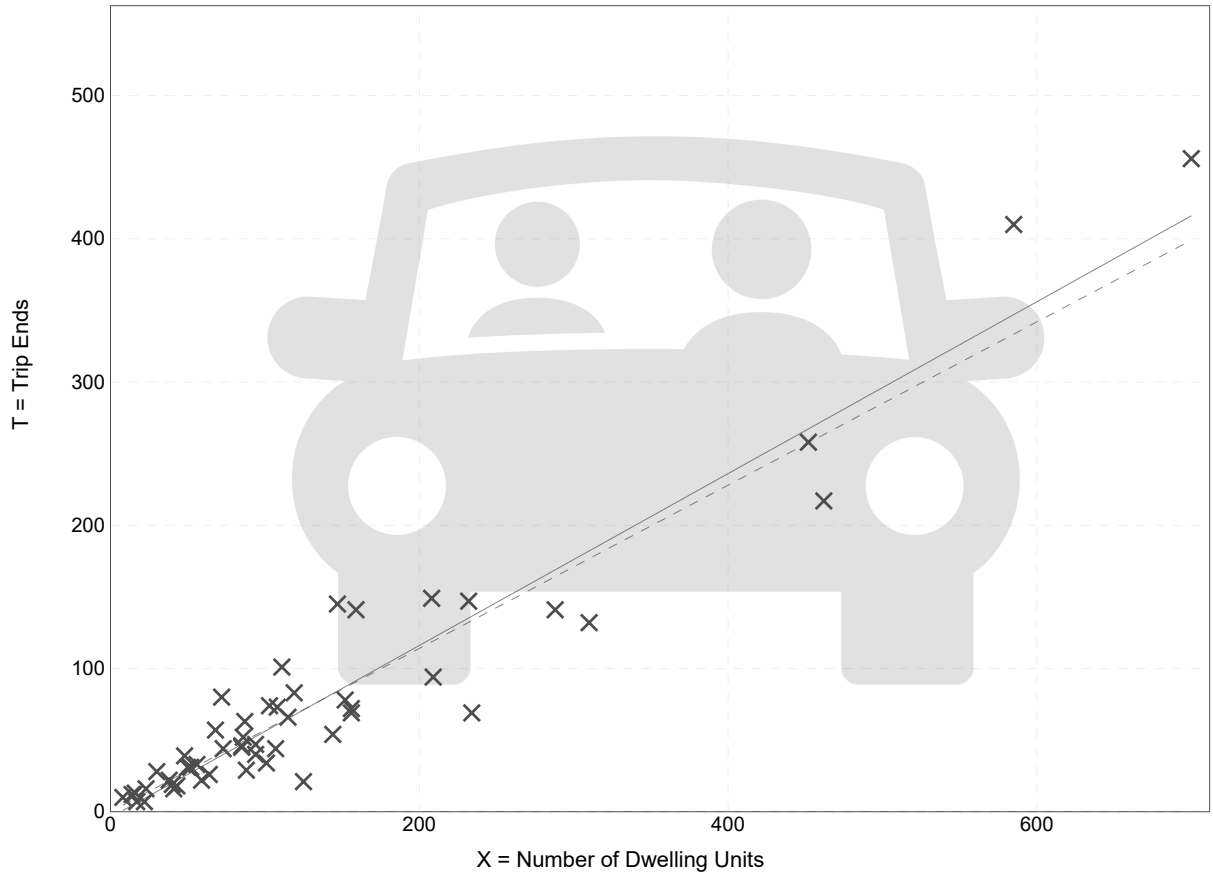
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. Num. of Dwelling Units:	136
Directional Distribution:	59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) - 3.93

R^2= 0.91

Proposed Site Development Trip Generation and Distribution

Project: 670-690 North Talbot Road Residential Development

Site: Windsor, Ontario

Assumed Land Use (1): Single-Family Detached Housing - ITE No. 210

Average Vehicle Trip Ends vs.: Dwelling Units

ITE Trip Generation Data collected on a: Weekday

AM Peak Hour:	0.70	= Average Rate	25	% Entering
			75	% Exiting
PM Peak Hour:	0.94	= Average Rate	63	% Entering
			37	% Exiting

Assumed Land Use (1): Single-Family Detached Housing - ITE No. 210				
	Dwelling Units	**Trips Generated**	**Trips Entering**	**Trips Exiting**
AM Peak	3	2	1	1
PM Peak	3	3	2	1

Assumed Land Use (2): Single-Family Attached Housing - ITE No. 215

Average Vehicle Trip Ends vs.: Dwelling Units

ITE Trip Generation Data collected on a: Weekday

AM Peak Hour:	0.48	= Average Rate	25	% Entering
			75	% Exiting
PM Peak Hour:	0.57	= Average Rate	59	% Entering
			41	% Exiting

Assumed Land Use (2): Single-Family Attached Housing - ITE No. 215				
	Dwelling Units	**Trips Generated**	**Trips Entering**	**Trips Exiting**
AM Peak	63	30	8	22
PM Peak	63	36	21	15

Total Trips		
	Trips Entering	**Trips Exiting**
AM Peak	9	23
PM Peak	23	16