

January 8, 2025

Highglen Homes Limited 10148 Warden Avenue Markham, ON L6C 1N3

Attention: Mr. John Perciasepe

**Re:** Traffic Opinion Letter

Proposed Residential Development Finch Avenue & Nature Haven Crescent City of Pickering, Durham Region

#### 1.0 Introduction

CGE Transportation Consulting is pleased to provide this traffic opinion letter in support of eight (8) single family residential lots, located at the northeast corner of Finch Avenue and Nature Haven Crescent (east intersection), in the City of Pickering.

Due to the small scale of the proposed development (8 residential lots), we have prepared a traffic opinion letter instead of a full comprehensive transportation study. The traffic opinion letter will analyze the existing traffic conditions at the key intersection and comment on whether the proposed development has any impacts to the surrounding road network.

The subject site is located to the immediate east of a small residential subdivision that has 38 single family lots. The proposed eight houses will add to this community and make up for a total of 46 lots.

All of these houses in this subdivision access Finch Avenue via Nature Haven Crescent at two intersections. Both intersections are unsignalized.

Finch Avenue is an Arterial-C road west of Altona Road and Arterial Road B east of Altona Road. It has two east-west travel lanes in the vicinity of the study area. It is under the jurisdictional control of the City of Pickering and has a speed limit of 50 km/hour. Nature Haven Crescent is a two-lane local road with 40 km/hour speed limit and is also under the City of Pickering jurisdictional control.

The subject site location is illustrated in Figure 1. The site plan is shown in Appendix A. large day light triangles are provided on both sides of Nature Haven Crescent, looking at Finch Avenue.

Figure 1 Site Location



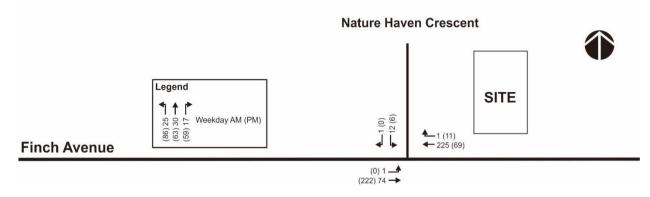
#### 2.0 EXISTING TRAFFIC VOLUMES

Traffic data was undertaken by Accu-Traffic on Thursday November 14, 2019 from 7-9am and 4-6pm. The date and time were chosen to reflect the residential nature of the development.

As expected, the subject site is a minor traffic generator with negligible number of vehicles travelling through the site accesses during the weekday peak hours.

The peak hour traffic volumes are shown in Figure 2. The raw data for the turning movement counts are shown in Appendix B.

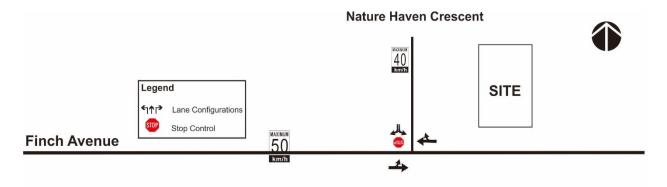
Figure 2 Existing Peak Hour Traffic Volumes



There is one outbound lane and one inbound lane on Nature Haven Crescent. It meets Finch Avenue at an unsignalized T-intersection. This section of Finch Avenue is flat horizontally and vertically and there are adequate sight line distances in both eastbound and westbound direction on Finch Avenue.

The existing lane configuration and traffic control is shown in Figure 3.

Figure 3 Existing Lane Configuration & Traffic Control



#### 3.0 OPERATION ANALYSIS

Intersection capacity analyses contained in this study were undertaken using the Synchro software (Version 8.0), which is based on the methodologies and procedures outlined in the Highway Capacity Manual (HCM) 2000 published by the Transportation Research Board.

Table 1 summarizes the analysis results for the proposed site access, detailed Synchro calculations are provided in Appendix C.

Table 1 Intersection Analysis Summary

Intersection	Movements	Weekday AN	l Peak Hour	Weekday PM Peak Hor			
intersection	Movements	LOS (v/c)	Delay (s)	LOS (v/c)	Delay (s)		
Finch Avenue & Nature Haven Crescent (Stop Control T-intersection)	EBLT SBLR	A (<0.01) B (0.02)	0.1 10.5	- B (0.01)	10.4		

The Finch Avenue and Nature Haven Crescent intersection operates with excellent delays and sufficient capacity (v/c ratio of 0.02 or better). The queen for southbound movement is less than one vehicle.

#### 3.1 SITE TRIP GENERATION

The projection of new additional traffic volumes generated by the development proposal is estimated based on the *Trip Generation Manual*, 11<sup>th</sup> Edition, published by the Institute of Transportation Engineers (ITE) for "Single Family Detached Housing" (LUC 210).

Table 2 summarizes the total site trip generation for the proposed development.

Table 2 Site Trip Generation

Land Use			eekday <i>A</i> eak Hou		Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Residential	Trips	2	5	7	6	3	9
(8 units)	Rates	0.25	0.63	0.88	0.75	0.38	1.13

Based on the foregoing, the development proposal is anticipated to generate 7 two-way trips during the weekday morning peak hour and 9 two-way trips during the afternoon peak hour.

There is ample capacity at the Finch Avenue and Nature Haven Crescent intersection to accommodate these trips. The trip generation graph is shown in Appendix D.

#### 3.2 AUTOTURN ANALYSIS

Garbage and fire truck maneuvering diagram was prepared using the AutoTURN software for the individual residential lot and is provided in Appendix E.

MSUTAC truck template is used to indicate the garbage and fire truck. The snow plow truck is much smaller than the garbage truck and can therefore access the development as well.

#### 3.3 SIGHT LINE DISTANCES

The posted speed on Finch Avenue is 50 km/hour and the design speed is assumed to be 60 km/hour to be conservative. As per the June 2017 TAC Guideline Chapter 9, Page 68, Table 9.9.4 Design Intersection Sight Distance – Case B1, Left Turn From Stop, The stopping sight distance for this design speed is 85 meters. The intersection sight distance for passenger cars exiting the access and make left turns is 130 meters.

Design Speed	Stopping Sight	Intersection Sight Dista	nce for Passenger Cars
(km/h)	Distance (m)	Calculated (m)	Design (m)
20	20	41.7	45
30.	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210

Table 9.9.4: Design Intersection Sight Distance - Case B1, Left Turn From Stop

Finch Avenue is flat both horizontally and vertically for this section of the roadway. There are no obstructions in both directions, therefore adequate sight distances are available in both eastbound and westbound direction.

#### 4.0 CONCLUSIONS

The key findings are summarized below:

- The traffic generated from the proposed development is minor and will not cause significant impact to the surround road network.
- Six residential lots have driveways via Nature Haven Crescent while two lots connects to Finch Avenue directly.
- The proposed development will generate 7 two-way trips in the morning and 9 two-way trips in the afternoon peak hour.
- It is determined that a standard municipal garbage truck can access the proposed residential units for curbside pick up.
- The existing traffic operations at the Finch Avenue and Nature Haven Crescent intersection is excellent with no queuing issues in all movements during the weekday peak analysis periods.
- There are adequate sight distances in both eastbound and westbound approaches along Finch Avenue.

• Fire truck, garbage truck and snow plow truck can access the proposed development in a cab forward manner.

Yours truly,

#### **CGE TRANSPORTATION CONSULTING**

Casey Ge, P.Eng.

President

Appendix A: Site Plan

Appendix B: Turning Movement Counts (Raw Data)

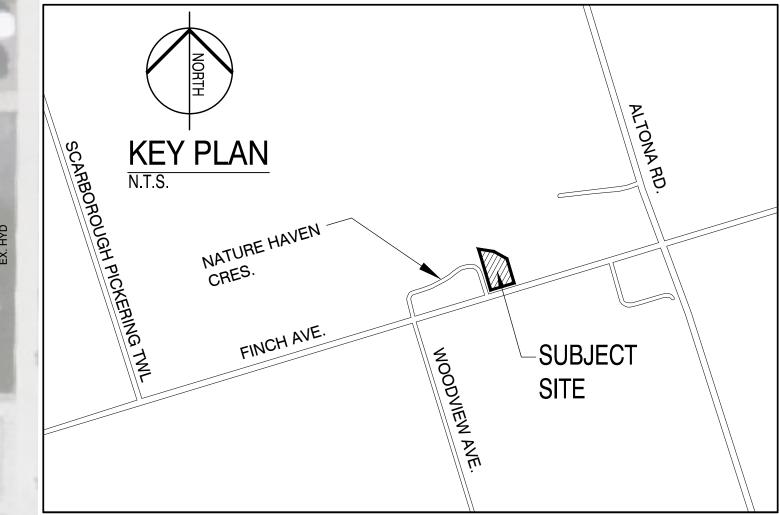
Appendix C: Synchro Outputs Appendix D: Trip Generation Graph

Appendix E: AutoTURN Diagram – MSUTAC

# **Appendix A**

**Site Plan** 





ROAD I	<i>WIDENING</i>	•					515	.18	
BLOCK	. 1						24.	97	
NET LO	T AREA (I	MINUS ROAD	WIDENING &	& BLOCK 1 A	AREA)		4581	1.16	
TOTAL	AREA :						5121.	31m2	
RESIDEN	NTIAL ZONE:					BASED ON "S	3-7 ZONE"		
TOTAL	UNITS			8 SINGLE DETACHED					
(MAX U.I	P.H. 0.46379	ha / 8 = 17.2	5)						
LOT No.	MODEL TYPE	LOT AREA (m²)	LOT FRONTAGE (m)	BUILDING HEIGHT (m) 9.0m MAX.	UNIT G.F.A. (m²)	COVERAGE W/ PORCH (m²) 38% MAX.	COVERAGE PERCENTAGE %	LANDSCAPE AREA (m²)	LANDSCAP PERCENTAGI %
1	MODEL-A	488.78	15.20	9.00	0.000	185.72	38.00	0.000	0.00
2	MODEL-A	488.78	15.20	9.00	0.000	185.72	38.00	0.000	0.00
3	MODEL-C	488.16	15.69	9.00	0.000	185.50	38.00	0.000	0.00
4	MODEL-A	456.32	15.20	9.00	0.000	173.40	38.00	0.000	0.00
5	MODEL-B	711.63	15.05	9.00	0.000	270.41	38.00	0.000	0.00
6	MODEL-D	570.96	15.05	9.00	0.000	216.96	38.00	0.000	0.00
7	MODEL-D	539.49	15.05	9.00	0.00	205.00	38.00	0.000	0.00
8	MODEL-B	837.28	15.09	9.00	0.000	318.16	38.00	0.000	0.00
TC	OTAL:	3204.63 m2	91.39 m	9.00 m	0.00 m2	1217.71 m2	38.0 m2	0.00 m2	0.0 m2

# **PRELIMINARY**

16 SPACES

16 SPACES

NOTES:

**BENCHMARK** 

ELEVATIONS ARE GEODETIC AND REFERRED TO CITY OF PICKERING B.M. NO. 1-090, ELEVATION = 140.969 M

LEGAL SURVEY INFORMATION AND LOT DIMENSIONS SHOWN ON THIS PLAN ARE TAKEN FROM A PLAN PREPARED BY: ERTL SURVEYORS ONTARIO LAND SURVEYORS WWW.ES-OLS.COM 1234 REID STREET, UNIT 10, RICHMOND HILL L4B 1C1 TELEPHONE (905) 731-7834 FAX (905)731-7852 EMAIL INFO@ES-OLS.COM DATED: FEB. 23 2018 WHICH MAY NOT BE FINAL AND ARE NOT GUARANTEED. THE FINAL REGISTERED PLAN OF SUBDIVISION SHALL BE REFERRED TO FOR CONFIRMATION

32 SPACES

32 SPACES

OF THE DATA.

### 230 Finch Ave-Nature Haven Cres.

**GROSS SITE AREA:** 5121.31 m<sup>2</sup>/ 1.265 Ac/ 0.512 Ha



Approx. 2786.67 m2  $\pm = 54.4\%$  (GROSS SITE AREA) Approx. 1614.87 m2  $\pm = 31.5\%$  (GROSS SITE AREA) Approx.  $450.55 \text{ m2} \pm = 8.8\%$  (GROSS SITE AREA)

Approx.  $269.22 \text{ m2} \pm = 5.3\%$  (GROSS SITE AREA)

VAUGHAN ONT. L4K 3P3 TEL: 905 660-3377 FAX: 905 660-3713 EMAIL: info@jardindesign.ca

> The undersigned has reviewed and takes responsibility for th design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer

Page 1 Jan. 07, 2025 REVISED SIGHT TRIANGLE SIZE TO 5m x 10m & ISSUED TO CLIENT FOR REVIEW/RE-SUBMISSION.

Page 2 OCT. 09, 2024 REVISED AS PER SPA 2nd SUBMISSION COMMENTS & ISSUED TO CLIENT FOR REVIEW/RE-SUBMISSION.

REVISED AS PER SPA 2nd SUBMISSION COMMENTS & ISSUED TO CLIENT FOR REVIEW/RE-SUBMISSION.

MAR. 26, 2024 REVISED GARAGE WIDTH TO 5.8m AS PER COMMENTS & ISSUED TO CLIENT FOR REVIEW.

AUG. 23, 2023 REVISED FLIPPED LOT 1 DRIVEWAY AS PER COMMENTS & ISSUED TO CLIENT FOR REVIEW. JULY 20, 2023 REVISED AS PER CLIENTS COMMENTS & ISSUED T

MAR. 30, 2023 REVISED AS PER CITY COMMENTS & ISSUED TO CLIENT FOR REVIEW. SEPT. 21, 2021 REV. LOT CONFIGURATION & ISSUED TO CLIENT FOR REVIEW.

MAY 04, 2021 ADDED ADDITIONAL AREA STATS & ISSUED TO CLIENT FOR REVIEW.

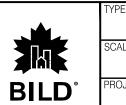
DEC. 18, 2020 ISSUED TO CLIENT FOR REVIEW.



SIGNATURE REGISTRATION INFORMATION jardin design group inc.

# CONTEXT SITE PLAN

230 Finch Ave-Nature Haven Cres. (PICKERING)



1:250 20-34 A-01

NOT TO BE USED FOR CONSTRUCTION

**LEGEND** 

CATCH BASIN

STREET LIGHT HYDRANT

TRANSFORMER CABLE TV PEDESTAL BELL PEDESTAL

ENTRANCE DOOR LOCATION GARAGE DOOR LOCATION

COMMUNITY MAILBOX ENGINEERED FILL LOT VALVE AND CHAMBER SANITARY MANHOLE

STORM MANHOLE

SUMP PUMP PROPOSED BERM SWALE DIRECTION HYDRO METER GAS METER

PROPERTY BOUNDRY

-X CHAINLINK FENCE

T/WALL

AIR-CONDITIONING UNIT PROPOSED GRADE EXISTING GRADE

PROPOSED SWALE GRADE ESTABLISHED GRADE DOWNSPOUT LOCATION

MUNICIPAL ADDRESS FINISHED FLOOR ELEVATION

WOOD PRIVACY FENCE / SCREEN SNOW STORAGE AREA

TOP OF FOUNDATION WALL

FIN. BASEMENT FLOOR SLAB UNDERSIDE FOOTING ELEVATION

PRECAST CONCRETE UNIT PAVERS

PRECAST CONCRETE PATIO SLABS

STORM CONNECTION SANITARY CONNECTION WATER CONNECTION HYDRO CONNECTION DOUBLE CATCH BASIN

### **Appendix B**

**Turning Movement Counts (Raw Data)** 



#### Accu-Traffic Inc. **Morning Peak Diagram Specified Period One Hour Peak** From: 7:00:00 From: 7:30:00 To: 9:00:00 To: 8:30:00 Weather conditions: Municipality: Pickering Site #: 1918600001 Intersection: Finch Ave & Nature Haven Crescen **Person counted:** TFR File #: Person prepared: Count date: 14-Nov-19 Person checked: \*\* Non-Signalized Intersection \*\* Major Road: Finch Ave runs W/E North Leg Total: 15 Heavys 0 1 1 Heavys 1 East Leg Total: 312 0 Trucks 0 East Entering: North Entering: 13 0 Trucks 0 226 North Peds: Cars 1 11 12 Cars 1 East Peds: X Totals 2 Peds Cross: Totals 1 12 Peds Cross: Nature Haven Crescent Totals Trucks Heavys Totals Heavys Trucks Cars Cars 1 226 223 2 225 222 Finch Ave 222 3 Heavys Trucks Cars Totals Finch Ave 0 1 6 0 68 74 Cars Trucks Heavys Totals 7 69 79 0 86 X Peds Cross: West Peds: West Entering: 75 West Leg Total: 301 **Comments**



#### Accu-Traffic Inc. **Specified Period Afternoon Peak Diagram One Hour Peak** From: 16:00:00 From: 16:45:00 To: 18:00:00 To: 17:45:00 Weather conditions: Municipality: Pickering 1918600001 Site #: Intersection: Finch Ave & Nature Haven Crescen **Person counted:** TFR File #: Person prepared: Count date: 14-Nov-19 Person checked: \*\* Non-Signalized Intersection \*\* Major Road: Finch Ave runs W/E North Leg Total: 17 Heavys 0 0 0 Heavys 0 East Leg Total: 308 0 North Entering: 6 Trucks 0 0 Trucks 0 East Entering: 80 North Peds: Cars 0 6 6 Cars 11 East Peds: X Totals 11 Peds Cross: Totals 0 6 Peds Cross: Nature Haven Crescent Totals Trucks Heavys Totals Heavys Trucks Cars Cars 1 69 0 68 0 11 0 69 Finch Ave 0 Heavys Trucks Cars Totals Finch Ave 0 0 0 222 222 Cars Trucks Heavys Totals 222 228 0 0 228 X Peds Cross: 2 West Peds:

West Entering: 222 West Leg Total: 291

#### **Comments**



### Accu-Traffic Inc.

### **Total Count Diagram**

Municipality: Pickering

Site #: 1918600001

Intersection: Finch Ave & Nature Haven Crescen

TFR File #:

Count date: 14-Nov-19 Weather conditions:

Person counted: Person prepared: Person checked:

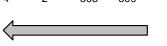
#### \*\* Non-Signalized Intersection \*\*

North Leg Total: 55 Heavys 0 1 Trucks 0 0 North Entering: 26 North Peds: Cars 2 23 Peds Cross: Totals 2 24

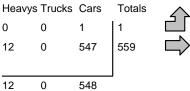


Trucks 0 Cars 28 Totals 29 East Leg Total: 1118 East Entering: 535 East Peds: X Peds Cross:









West Leg Total: 1069

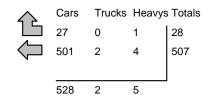


Nature Haven Crescent

1

0

25



Cars

0



Trucks Heavys Totals

583

13

570 X Peds Cross: West Peds: West Entering: 560

#### **Comments**



# Accu-Traffic Inc. Traffic Count Summary

Municipality: Pickering Intersection: Finch Ave & Nature Haven Cresce Count Date: 14-Nov-19 **North Approach Totals South Approach Totals** North/South Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Thru Right Thru Right Total Left Total 7:00:00 0 0 0 0 0 0 7:00:00 0 0 0 0 0 8:00:00 5 0 1 6 0 6 8:00:00 0 0 0 0 0 9 9:00:00 0 0 9 1 9 9:00:00 0 0 0 0 0 0 0 0 0 0 0 0 0 16:00:00 0 0 16:00:00 0 5 0 0 0 17:00:00 4 0 5 0 17:00:00 0 0 1 6 0 0 6 18:00:00 0 0 18:00:00 0 Totals: 26 S Totals: 0 26 0 **East Approach Totals** West Approach Totals East/West Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand **Ending** Peds **Ending** Peds Approaches Right Left Thru Right Left Thru Total Total 7:00:00 0 0 0 0 7:00:00 0 0 0 0 0 195 196 0 261 64 0 8:00:00 1 8:00:00 1 0 65 9:00:00 0 173 2 175 0 261 9:00:00 0 86 0 86 3 16:00:00 0 0 0 0 0 0 16:00:00 0 0 0 0 0 17:00:00 0 73 11 84 0 285 17:00:00 0 201 0 201 2 208 18:00:00 66 14 80 288 18:00:00 208 Totals: 0 507 535 1095 W Totals: 560 5 **Calculated Values for Traffic Crossing Major Street** Hours Ending: 9:00 16:00 17:00 18:00 0:00 0:00 7:00 8:00 Crossing Values: 12

## **Appendix C**

**Synchro Outputs** 

	۶	<b>→</b>	<b>←</b>	*	-	4
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		र्स	1→		W	
Volume (veh/h)	1	74	225	1	12	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	80	245	1	13	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	246				328	245
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	246				328	245
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1320				666	794
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	82	246	14			
Volume Left	1	0	13			
Volume Right	0	1	1			
cSH	1320	1700	674			
Volume to Capacity	0.00	0.14	0.02			
Queue Length 95th (m)	0.0	0.0	0.5			
Control Delay (s)	0.1	0.0	10.5			
Lane LOS	A	0.0	В			
Approach Delay (s)	0.1	0.0	10.5			
Approach LOS			В			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utiliz	ation		21.9%	IC	U Level c	f Service
Analysis Period (min)			15	10	2 201010	
raidiyolo i oliod (iliili)			10			

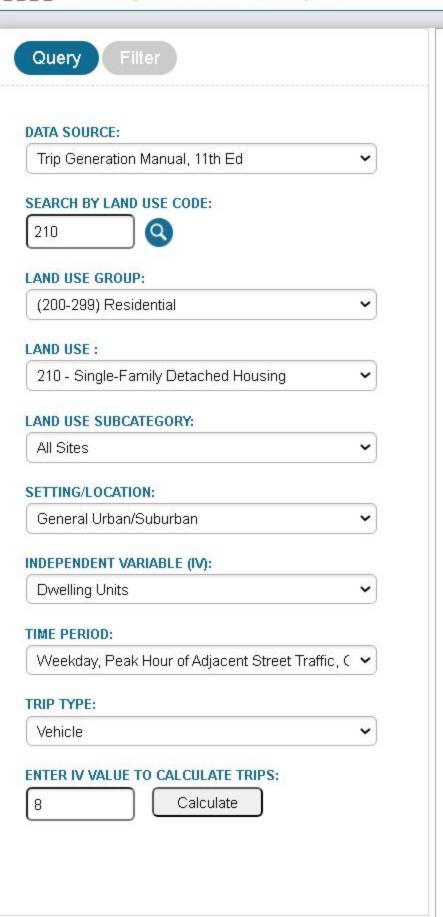
	٠	<b>→</b>	<b>←</b>	*	1	1
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	1>		W	
Volume (veh/h)	0	222	69	11	6	0
Sign Control		Free	Free		Stop	-
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	241	75	12	7	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	87				322	81
vC1, stage 1 conf vol					<b></b>	
vC2, stage 2 conf vol						
vCu, unblocked vol	87				322	81
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)	•••				<b>U.</b> 1	0.2
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1509				671	979
					011	070
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	241	87	7			
Volume Left	0	0	7			
Volume Right	0	12	0			
cSH	1509	1700	671			
Volume to Capacity	0.00	0.05	0.01			
Queue Length 95th (m)	0.0	0.0	0.2			
Control Delay (s)	0.0	0.0	10.4			
Lane LOS			В			
Approach Delay (s)	0.0	0.0	10.4			
Approach LOS			В			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utiliza	ation		21.7%	IC	U Level c	of Service
Analysis Period (min)			15			

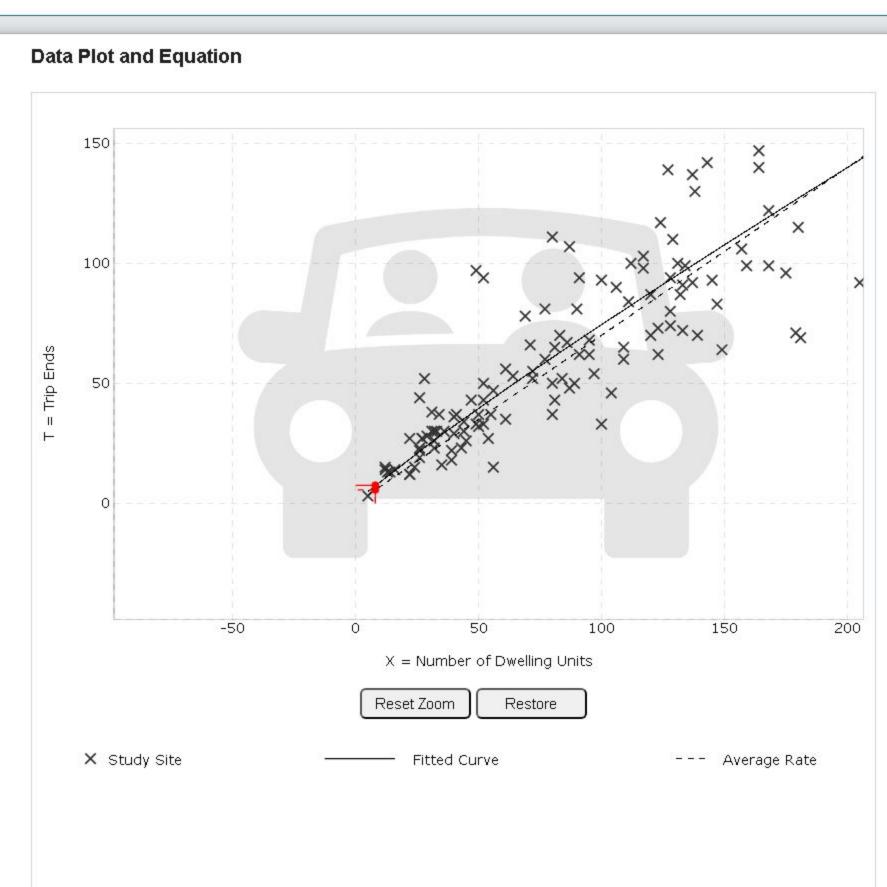
### **Appendix D**

**Trip Generation Graph** 



# Graph Look Up





Use the mouse wheel to Zoom Out or Zoom In.

Hover the mouse pointer on data points to view X and T values.

#### **DATA STATISTICS**

#### Land Use:

Single-Family Detached Housing (210) Click

Description and Data Plots

#### Independent Variable:

**Dwelling Units** 

#### Time Period:

Weekday

Peak Hour of Adjacent Street Traffic

One Hour Between 7 and 9 a.m.

#### Setting/Location:

General Urban/Suburban

#### Trip Type:

Vehicle.

#### **Number of Studies:**

192

#### Avg. Num. of Dwelling Units:

226

#### Average Rate:

0.70

#### Range of Rates:

0.27 - 2.27

#### Standard Deviation:

0.24

#### Fitted Curve Equation:

Ln(T) = 0.91 Ln(X) + 0.12

#### R<sup>2</sup>:

0.90

#### **Directional Distribution:**

25% entering, 75% exiting

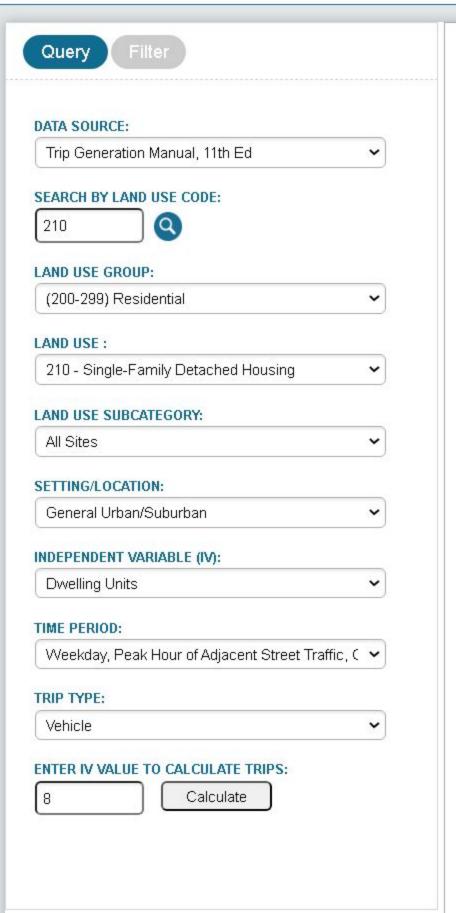
#### Calculated Trip Ends:

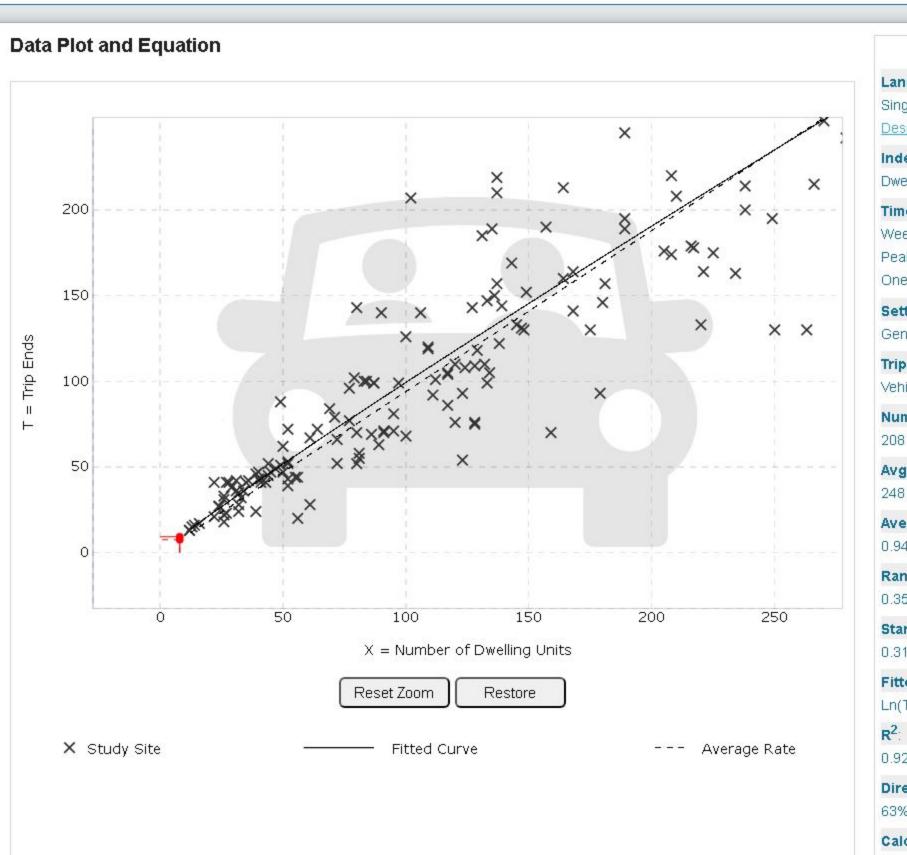
Average Rate: 6 (Total), 1 (Entry), 5 (Exit)

Fitted Curve: 7 (Total), 2 (Entry), 5 (Exit)



# Graph Look Up





Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

### **DATA STATISTICS**

#### Land Use:

Single-Family Detached Housing (210) Click

Description and Data Plots

#### Independent Variable:

**Dwelling Units** 

#### Time Period:

Weekday

Peak Hour of Adjacent Street Traffic

One Hour Between 4 and 6 p.m.

#### Setting/Location:

General Urban/Suburban

#### Trip Type:

Vehicle

#### Number of Studies:

#### Avg. Num. of Dwelling Units:

248

#### Average Rate:

0.94

#### Range of Rates:

0.35 - 2.98

#### Standard Deviation:

0.31

#### Fitted Curve Equation:

Ln(T) = 0.94 Ln(X) + 0.27

R2

0.92

#### **Directional Distribution:**

63% entering, 37% exiting

#### Calculated Trip Ends:

Average Rate: 8 (Total), 5 (Entry), 3 (Exit)

Fitted Curve: 9 (Total), 6 (Entry), 3 (Exit)

## **Appendix E**

**AutoTURN Diagram** 

