DAVID PLUMMER & ASSOCIATES
TRANSPORTATION • CIVIL • STRUCTURAL • ENVIRONMENTAL

1750 PONCE DE LEON BOULEVARD, CORAL GABLES, FLORIDA 33134
305 447-0900 • FAX: 305 444-4986 • EMAIL: DPA@DPLUMMER.COM

May 29, 2019

Mr. German Hoyos
Project Manager
Fortune International Group
1300 Brickell Avenue
Miami, FL 33131
Phone: (305) 679-5881
E-mail: GHoyos@fortuneintlgroup.com

RE: Old Cutler Road Site Trip Generation Analysis- *#14191*

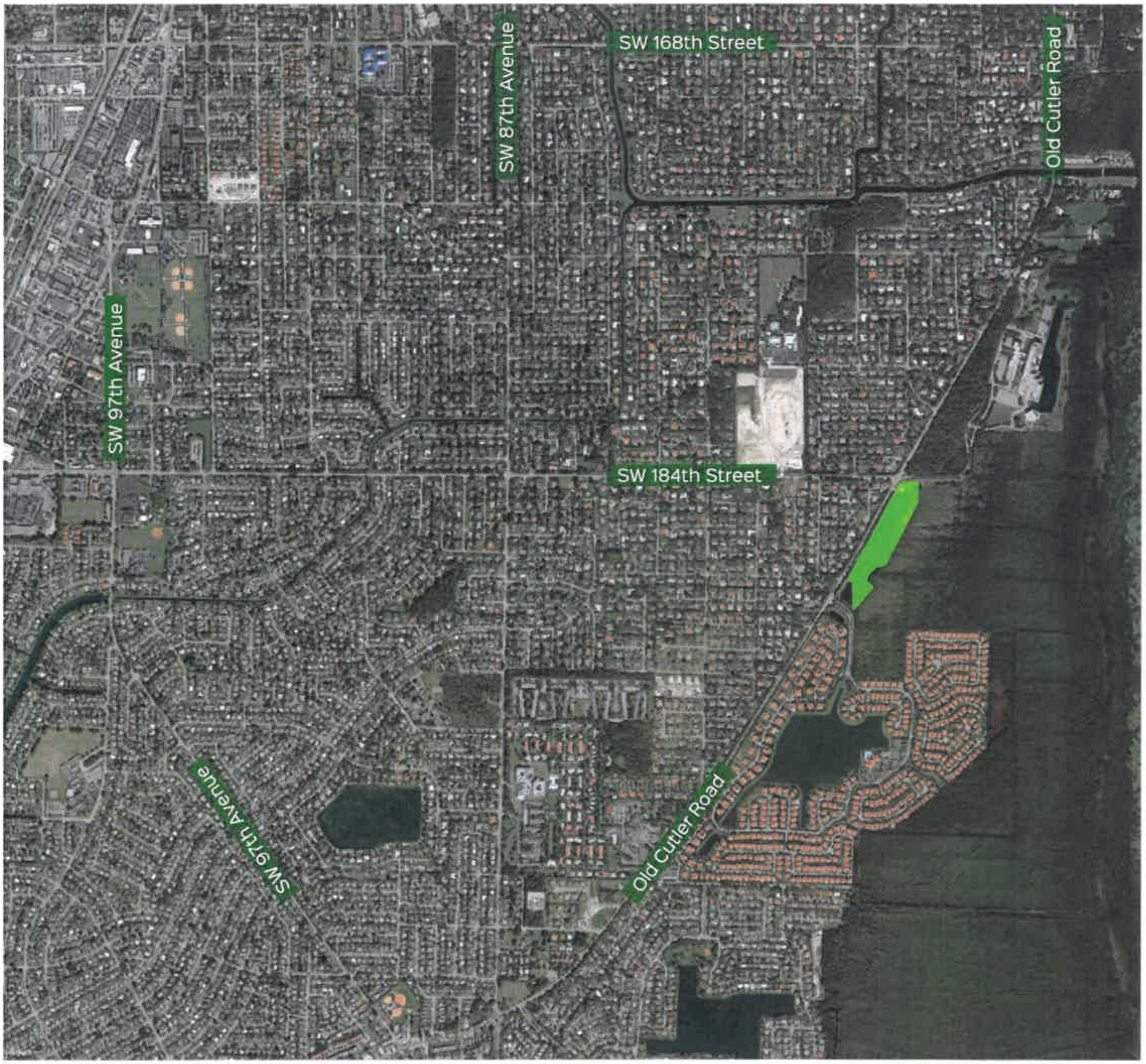
Dear German,

David Plummer & Associates prepared a traffic study for the Old Cutler Road Site project located on the southeast corner of Old Cutler Road and SW 184th Street in the Town of Cutler Bay, FL (See Exhibit 1). The study was consistent with the methodology previously discussed with and approved by the Town of Cutler Bay and Miami-Dade County. The study was reviewed and the findings accepted by Cutler Bay and their traffic consultant. At the time, the project proposed 30 single family homes, and access consisted of a full access two-way driveway accessing Old Cutler Road south of SW 184th Street, and a two-way right-in/right-out only driveway accessing SW 184th Street east of Old Cutler Road. The applicant is re-submitting a request for approval with a revised plan proposing 29 single family dwelling units. Access will be limited to the full access two-way driveway accessing Old Cutler Road south of SW 184th Street. The proposed site plan is included in ***Attachment A***. The purpose of this letter is to address the traffic impacts associated with the proposed changes in the site plan.

The analysis undertaken in the traffic study was performed for the following analysis scenarios:

- ***Existing year:*** based on traffic counts taken at study roadways and intersections adjusted to reflect peak hour conditions.
- ***Future Background Traffic - Project build-out year without project trips***: A background growth rate was used for all roadway segments and intersections. In addition, traffic associated with the following approved committed developments was used:

OLD CUTLER ROAD SITE
Traffic Study



Project Location

EXHIBIT 1
LOCATION MAP

NORTH
MAP NOT TO SCALE

- *Shops of Cutler Bay*:
  54,817 Square Feet Supermarket
  18,800 Square Feet Specialty Retail
  2,000 Square Feet High Turnover Restaurant
  9,000 Square Feet (2) Drive-In Banks
- *Mater Academy*: 1,200 students; and,
- *Palmer Trinity School*: 1,150 students.

- ***Future Traffic - Project build-out year with project trips***: Trips associated with the proposed 30 single family dwelling units was added to future traffic conditions without project to obtain total traffic.

The traffic study established trip generation for the original project using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 9th Edition. This manual provides gross trip generation rates and/or equations by land use type. These rates and equations estimate vehicle trip ends at a free-standing site's driveways. The trip generation is summarized in Exhibit 2.

Exhibit 2
Original Project Trip Generation Summary

ITE Land Use Designation[1]	Size/Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Single Family (Land Use 210)	30 DU	347	8	23	31	23	13	36
			$T = 0.70(x) + 9.74$			$Ln(T) = 0.90Ln(x) + 0.51$		
			25% In	75% Out		63% In	37% Out	
Net External Trips		**347**	**8**	**23**	**31**	**23**	**13**	**36**

[1] Based on ITE Trip Generation Manual, Ninth Edition

Since the original study was submitted to and accepted by Cutler Bay, ITE has released Trip Generation Manual, 10th Edition providing significantly expanded and enhanced data. Trip generation for the proposed 29 dwelling units was estimated using rates and/or equations published in ITE's *Trip Generation Manual*, 10th Edition. Worksheets are also provided in Attachement B. The trip generation is provided in Exhibit 3.

Exhibit 3
Proposed Project Trip Generation Summary

Proposed ITE Land Use Designation[1]	Size/Units	Daily Vehicle Trips	AM Peak Hour Vehicle			PM Peak Hour Vehicle		
			In	Out	Total	In	Out	Total
Single Family (Land Use 210)	29 DU	333	6	19	25	20	11	31
			T = 0.71(x) + 4.80			Ln (T) = 0.96 Ln (x) + 0.20		
			25% In	75% Out		63% In	37% Out	
Net External Trips		**333**	**6**	**19**	**25**	**20**	**11**	**31**

[1]Based on ITE Trip Generation Manual, 10th Edition

The results of the trip generation analysis indicate that the new proposed development represents a decrease in daily, am peak hour, and pm peak hour trips.

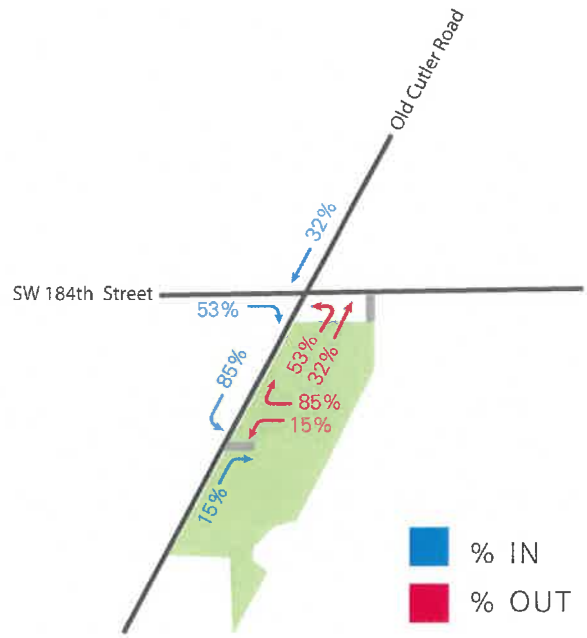
The elimination of the driveway accessing SW 184th Street would impact the Old Cutler Road/SW 184th Street intersections and the Old Cutler Road Driveway. The revised project trip distribution and assignment are graphically portrayed in Exhibit 4. Intersection capacity analysis was performed for these two intersections using Synchro. Worksheets are provided in Attachment C. The results are summarized in Exhibit 5.

Exhibit 5
Intersection Capacity Analysis Summary

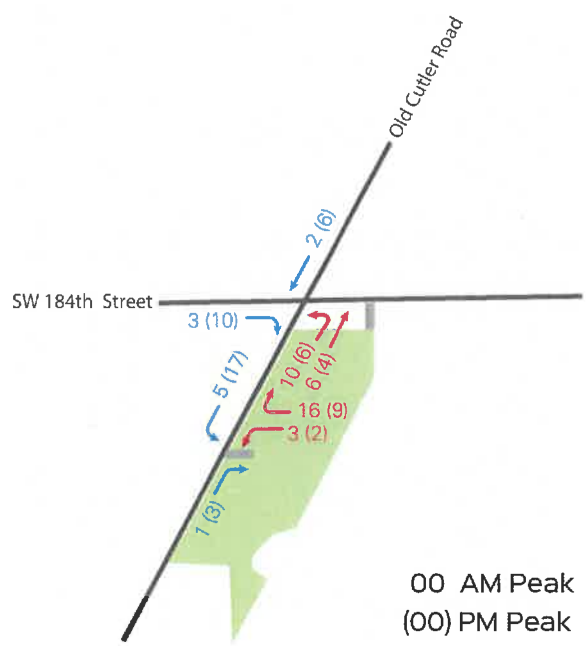
Intersection	Trafic Control	AM Peak LOS	PM Peak LOS
Old Cutler Road /SW 184th Street	Signal	C	D
Old Cutler Road /Project Driveway	Signal	C	C

Results of intersection analysis for future conditions with project show that the overall level of service for both intersections will continue to operate within the LOS standards adopted by the Town of Cutler Bay.

OLD CUTLER ROAD SITE
Traffic Study



Proposed Trip Distribution



Proposed Trip Assignment

Project Location

EXHIBIT 4
Project Trip Distribution & Assignment

NORTH
MAP NOT TO SCALE

In conclusion, the revised development plan is projected to generate less daily, am peak hour and pm peak hour vehicle trips than the previous plan reflected in the traffic study. Furthermore, intersections will continue to operate at the same levels of service as projected and continue to meet adopted level of service standards. Therefore, the conclusions in the traffic study previously submitted to and approved by the Town of Cutler Bay are still valid for the revised plan.

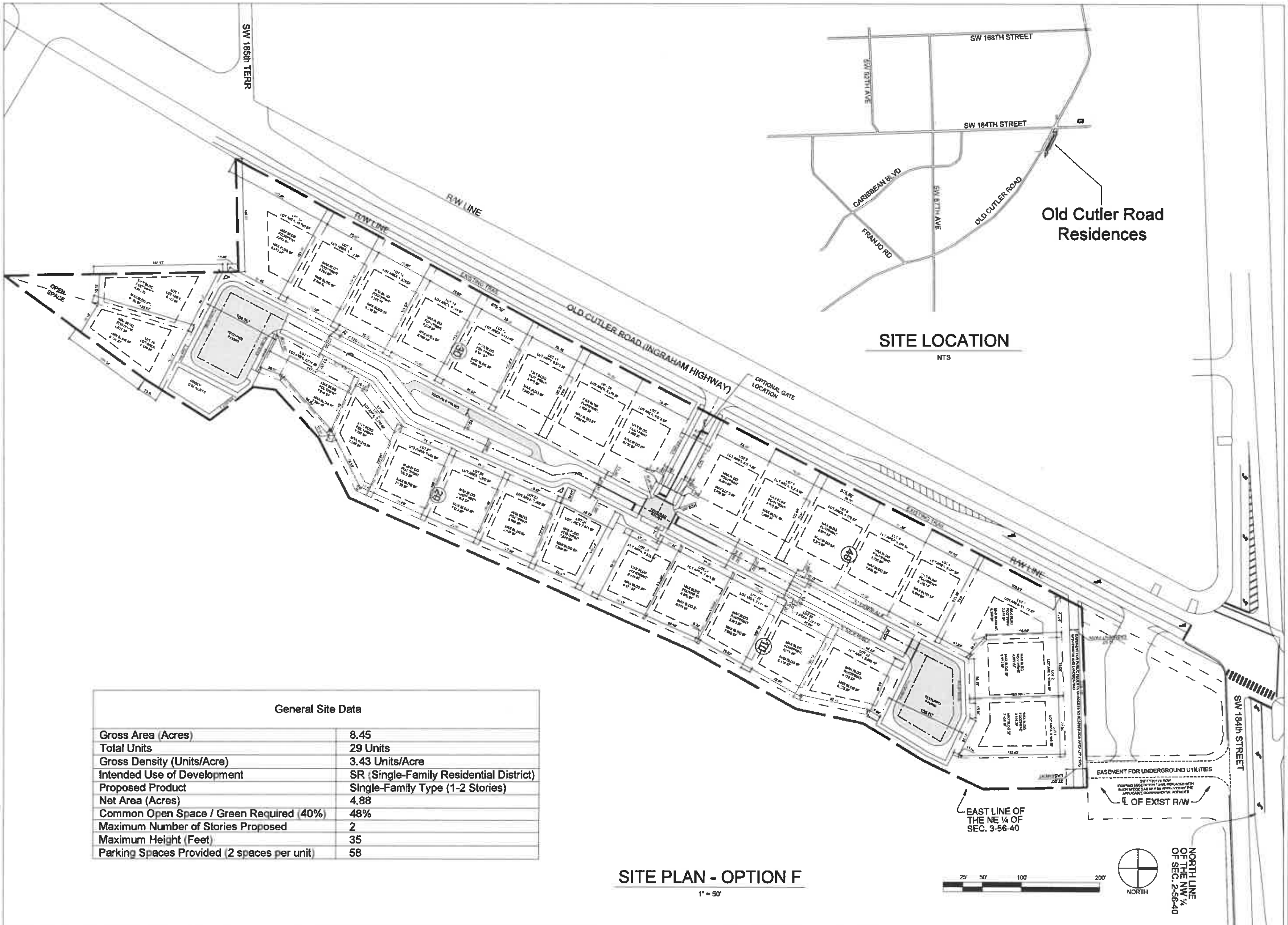
We stand ready to provide any support needed for this project. Should you have any questions or comments, please call me at (305) 447-0900.

Sincerely,

Juan Espinosa, PE

ATTACHMENT A

Site Plan



General Site Data

Gross Area (Acres)	8.45
Total Units	29 Units
Gross Density (Units/Acre)	3.43 Units/Acre
Intended Use of Development	SR (Single-Family Residential District)
Proposed Product	Single-Family Type (1-2 Stories)
Net Area (Acres)	4.88
Common Open Space / Green Required (40%)	48%
Maximum Number of Stories Proposed	2
Maximum Height (Feet)	35
Parking Spaces Provided (2 spaces per unit)	58

SITE PLAN - OPTION F

1" = 50'

DOVER, KOHL & PARTNERS
town planning

CHAEL, COOPER & ASSOCIATES P.A.
architecture

1571 Sunset Drive
Coral Gables, FL 33143
(305) 666-0446
doverkohl.com

REVISIONS:

Old Cutler Road Residences

Cutler Bay, Florida

OWNER:
Fortune International Group

SEAL:

DATE: May 23, 2019

SP-1

SHEET NO:

ATTACHMENT B

Trip Generation

Single-Family Detached Housing
(210)

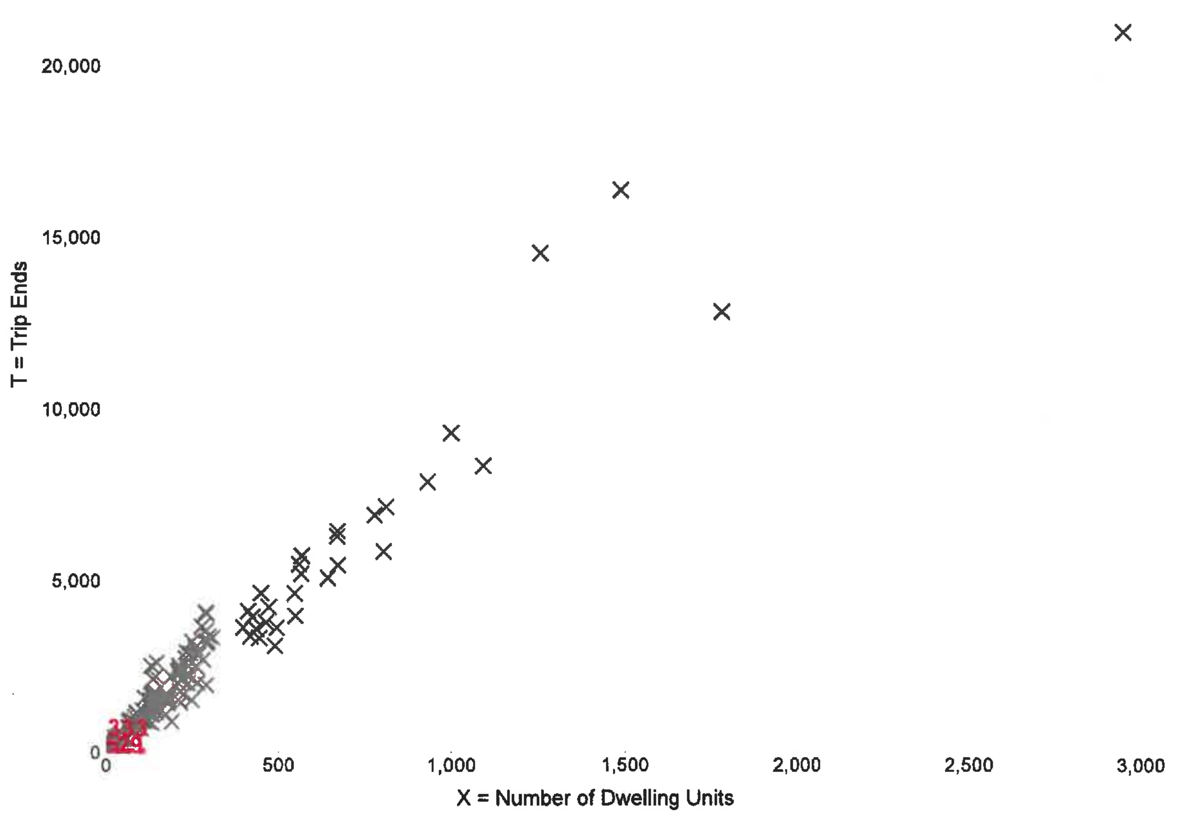
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



× **Study Site** ———— **Fitted Curve** **Average Rate**

Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.71 **R^2= 0.95**

Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

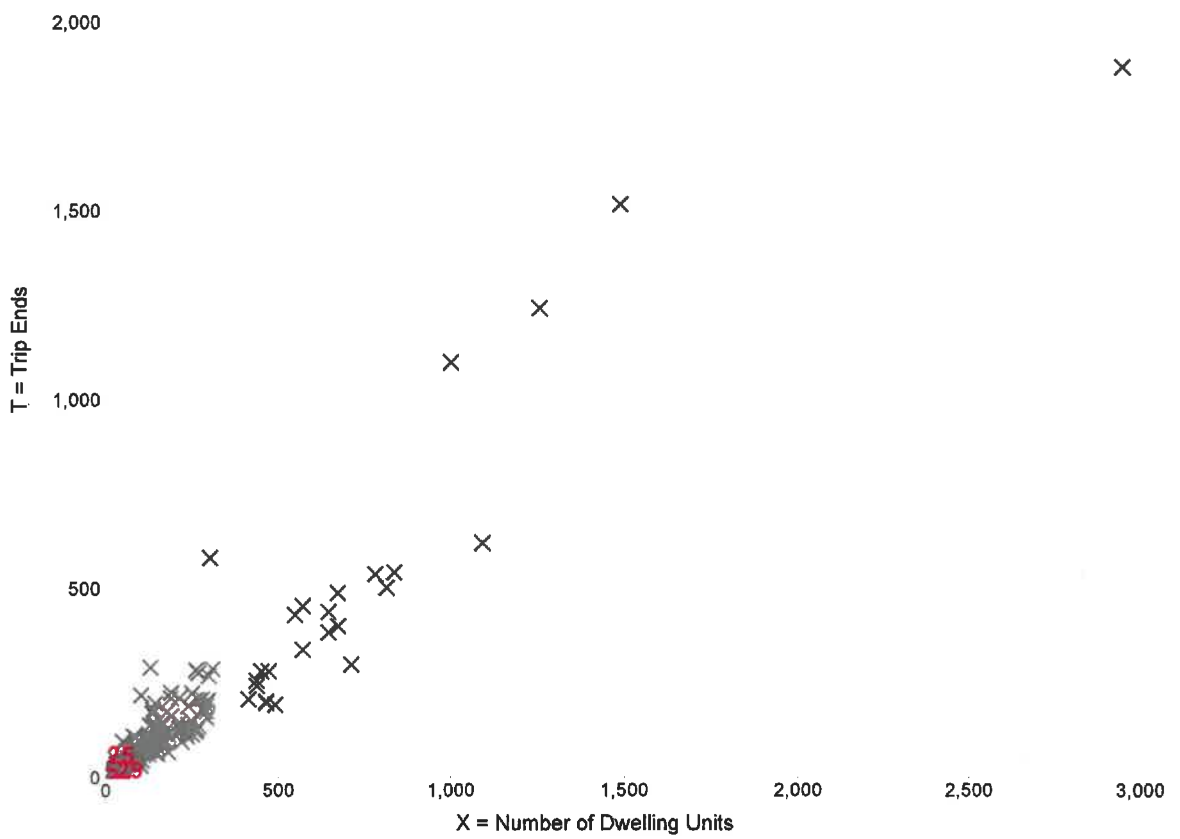
Single-Family Detached Housing
(210)

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: 173
Avg. Num. of Dwelling Units: 219
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



× **Study Site** ——— **Fitted Curve** **Average Rate**

Fitted Curve Equation: $T = 0.71(X) + 4.80$ **$R^2 = 0.89$**

Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

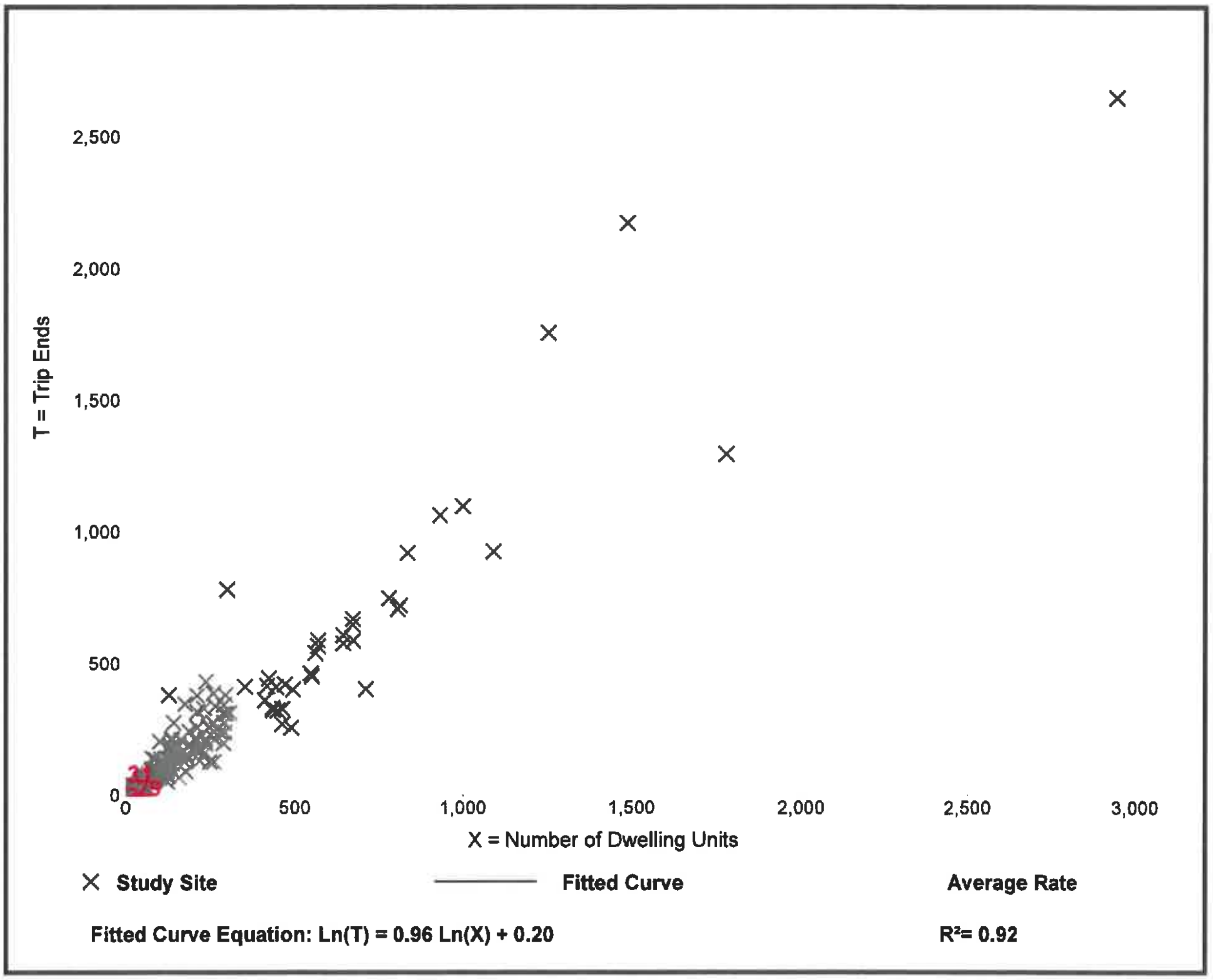
Single-Family Detached Housing
(210)

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: 190
Avg. Num. of Dwelling Units: 242
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

ATTACHMENT C

Synchro

HCM 2010 Signalized Intersection Summary
2: SW 184th Street & Old Cuttler Road

AM PEAK HOUR
05/21/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	141	43	5	4	1	124	478	112	5	359	396
Future Volume (veh/h)	200	141	43	5	4	1	124	478	112	5	359	396
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1937	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	225	158	48	6	4	0	139	537	126	6	403	445
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	243	74	122	329	291	381	1082	254	509	581	642
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.00	0.03	0.74	0.74	0.01	0.72	0.72
Sat Flow, veh/h	1407	1372	417	1171	1863	1647	1774	1454	341	1774	808	893
Grp Volume(v), veh/h	225	0	206	6	4	0	139	0	663	6	0	848
Grp Sat Flow(s),veh/h/ln	1407	0	1789	1171	1863	1647	1774	0	1796	1774	0	1701
Q Serve(g_s), s	28.3	0.0	19.3	0.9	0.3	0.0	3.6	0.0	27.0	0.2	0.0	50.2
Cycle Q Clear(g_c), s	28.6	0.0	19.3	20.1	0.3	0.0	3.6	0.0	27.0	0.2	0.0	50.2
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.19	1.00		0.52
Lane Grp Cap(c), veh/h	286	0	316	122	329	291	381	0	1336	509	0	1223
V/C Ratio(X)	0.79	0.00	0.65	0.05	0.01	0.00	0.37	0.00	0.50	0.01	0.00	0.69
Avail Cap(c_a), veh/h	327	0	368	155	383	338	413	0	1336	585	0	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.9	0.0	68.9	78.3	61.1	0.0	15.2	0.0	9.4	8.2	0.0	14.1
Incr Delay (d2), s/veh	11.2	0.0	3.6	0.2	0.0	0.0	0.2	0.0	1.3	0.0	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.5	0.0	15.0	0.5	0.3	0.0	4.6	0.0	19.8	0.1	0.0	32.5
LnGrp Delay(d),s/veh	84.1	0.0	72.6	78.5	61.1	0.0	15.4	0.0	10.7	8.2	0.0	17.4
LnGrp LOS	F		E	E	E		B		B	A		B
Approach Vol, veh/h		431			10			802			854	
Approach Delay, s/veh		78.6			71.5			11.5			17.3	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	134.5		36.8	4.3	138.9		36.8
Change Period (Y+Rc), s	3.0	5.0		5.0	3.0	5.0		5.0
Max Green Setting (Gmax), s	9.0	121.0		37.0	9.0	121.0		37.0
Max Q Clear Time (g_c+I1), s	5.6	52.2		22.1	2.2	29.0		30.6
Green Ext Time (p_c), s	0.1	2.7		0.0	0.0	1.7		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: SW 184th Street & Old Cuttler Road

PM PEAK HOUR
05/21/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	12	96	36	71	5	57	499	9	3	906	229
Future Volume (veh/h)	207	12	96	36	71	5	57	499	9	3	906	229
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1937	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	220	13	102	38	76	0	61	531	10	3	964	244
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	32	249	177	326	288	167	1377	26	605	1054	267
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.02	0.76	0.76	0.00	0.74	0.74
Sat Flow, veh/h	1317	182	1425	1270	1863	1647	1774	1821	34	1774	1432	362
Grp Volume(v), veh/h	220	0	115	38	76	0	61	0	541	3	0	1208
Grp Sat Flow(s),veh/h/ln	1317	0	1606	1270	1863	1647	1774	0	1856	1774	0	1795
Q Serve(g_s), s	28.0	0.0	12.7	5.5	7.0	0.0	1.6	0.0	20.1	0.1	0.0	108.8
Cycle Q Clear(g_c), s	35.0	0.0	12.7	18.2	7.0	0.0	1.6	0.0	20.1	0.1	0.0	108.8
Prop In Lane	1.00		0.89	1.00		1.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	220	0	281	177	326	288	167	0	1403	605	0	1321
V/C Ratio(X)	1.00	0.00	0.41	0.21	0.23	0.00	0.36	0.00	0.39	0.00	0.00	0.91
Avail Cap(c_a), veh/h	220	0	281	177	326	288	186	0	1403	660	0	1321
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	88.3	0.0	73.3	81.4	71.0	0.0	40.9	0.0	8.4	7.4	0.0	21.3
Incr Delay (d2), s/veh	60.3	0.0	1.2	0.7	0.4	0.0	0.5	0.0	0.8	0.0	0.0	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.4	0.0	9.7	3.5	6.6	0.0	3.9	0.0	15.9	0.1	0.0	69.9
LnGrp Delay(d),s/veh	148.6	0.0	74.5	82.1	71.4	0.0	41.4	0.0	9.2	7.4	0.0	32.7
LnGrp LOS	F		E	F	E		D		A	A		C
Approach Vol, veh/h		335			114			602			1211	
Approach Delay, s/veh		123.2			75.0			12.5			32.6	
Approach LOS		F			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	152.2		40.0	3.8	156.2		40.0
Change Period (Y+Rc), s	3.0	5.0		5.0	3.0	5.0		5.0
Max Green Setting (Gmax), s	7.0	145.0		35.0	7.0	145.0		35.0
Max Q Clear Time (g_c+I1), s	3.6	110.8		20.2	2.1	22.1		37.0
Green Ext Time (p_c), s	0.0	4.8		0.4	0.0	1.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

HCM 2010 TWSC
30: Old Cuttler Road & Project Driveway

AM PEAK HOUR
05/21/2019

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	16	864	1	5	435
Future Vol, veh/h	3	16	864	1	5	435
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	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	17	939	1	5	473

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1423	940	0	0	940	0
Stage 1	940	-	-	-	-	-
Stage 2	483	-	-	-	-	-
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	150	320	-	-	729	-
Stage 1	380	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	149	320	-	-	729	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	149	320	729	-
HCM Lane V/C Ratio	-	-	0.022	0.054	0.007	-
HCM Control Delay (s)	-	-	29.7	16.9	10	0
HCM Lane LOS	-	-	D	C	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2	0	-

HCM 2010 TWSC
30: Old Cuttler Road & Project Driveway

PM PEAK HOUR
05/21/2019

Intersection						
Int Delay, s/veh	0.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	9	455	3	17	919
Future Vol, veh/h	2	9	455	3	17	919
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	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	10	495	3	18	999

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1532	497	0	0	498	0
Stage 1	497	-	-	-	-	-
Stage 2	1035	-	-	-	-	-
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	128	573	-	-	1066	-
Stage 1	611	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	123	573	-	-	1066	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	342	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	123	573	1066	-
HCM Lane V/C Ratio	-	-	0.018	0.017	0.017	-
HCM Control Delay (s)	-	-	34.8	11.4	8.4	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0.1	-