



TRAFFIC IMPACT STUDY

CRAINVIEW GARDENS
7685 Quarterfield Road
Anne Arundel County, Maryland

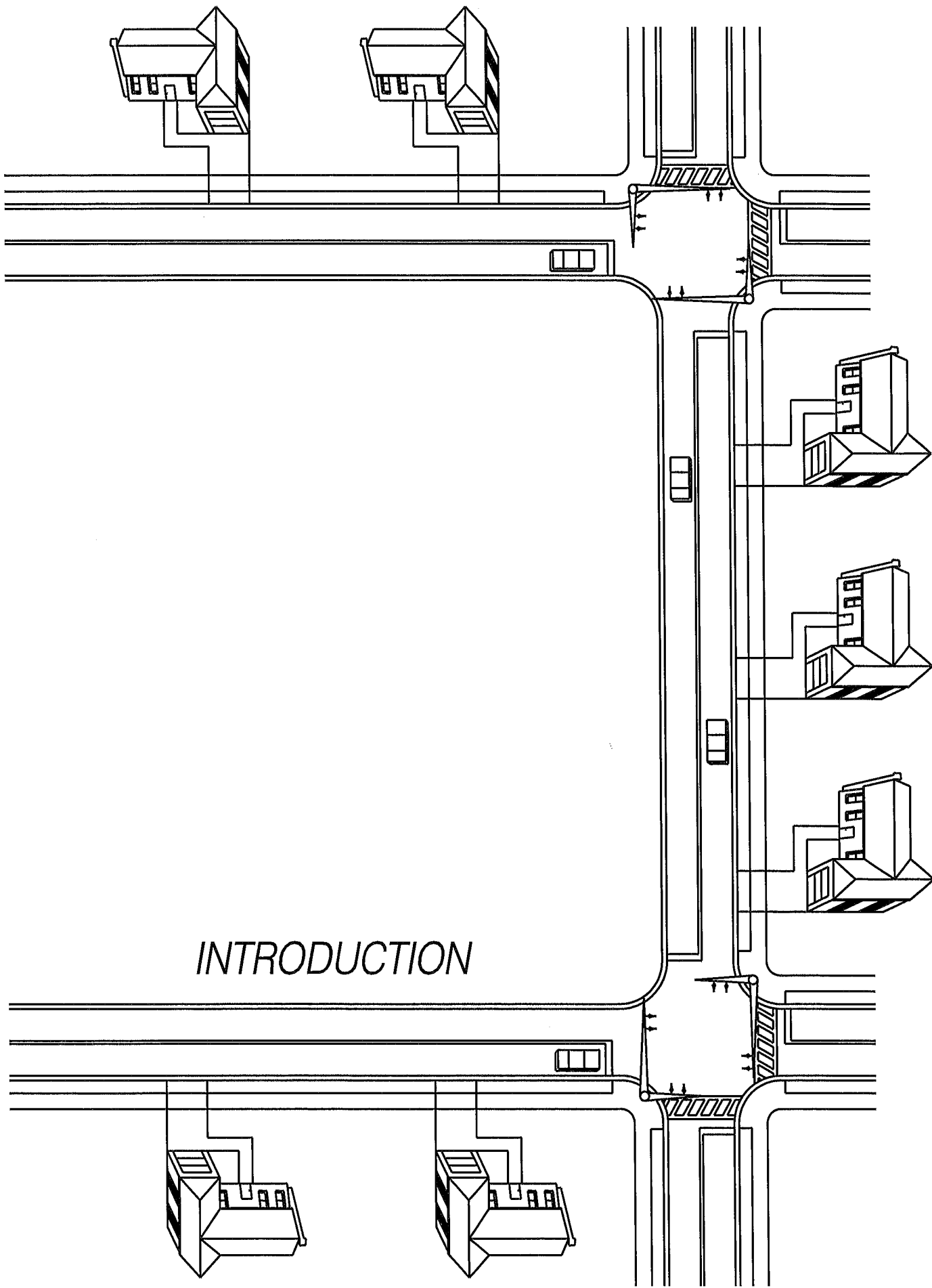
February, 2022

Prepared For:
7685 Quarterfield, LLC

Prepared By:
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INTRODUCTION

INTRODUCTION

Traffic Concepts, Inc. has been asked to prepare a traffic impact study to analyze the vehicle impact of the proposed Crainview Gardens to be located at 7685 Quarterfield Road in Glen Burnie. The proposed development will create a single retail building consisting of a total of 5,460 gross square feet. The user of this retail space is unknown at this time, however, since the building will contain a drive-thru and in order to create a worst-case traffic scenario, we have assumed one unit within the building could be used as a coffee/donut shop with drive-thru (924 gross square feet). The remainder of the building (4,536 gross square feet) will be considered as a strip retail plaza. The development will create a full movement access to MD 174. See Exhibit 1 for site location.

As indicated in the approved scoping letter (a copy can be found in Appendix V), the following intersections and road section were determined to be key, and will be analyzed during the Weekday AM and PM peak periods.

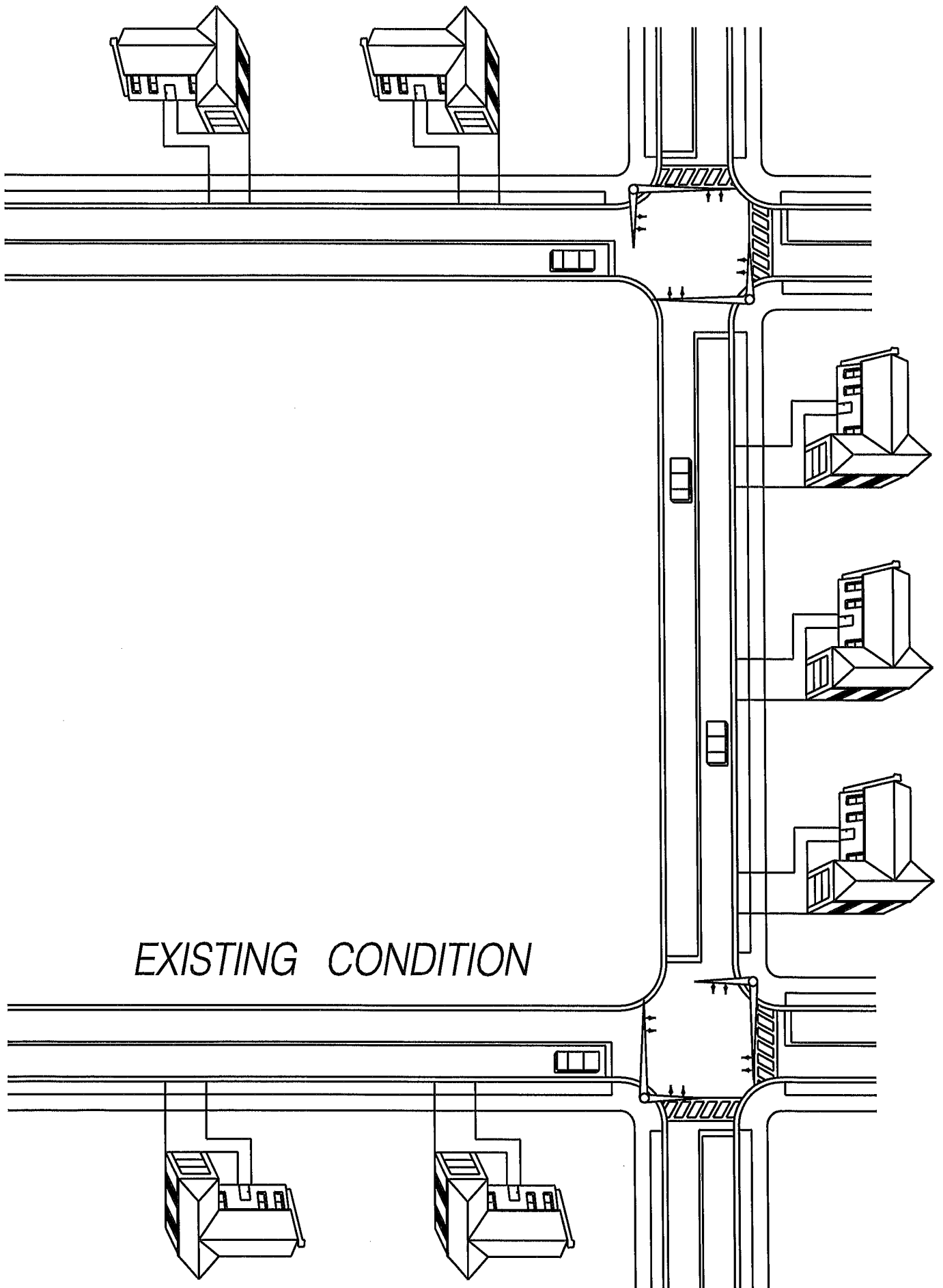
Key Intersections

- MD 174 @ George Clauss Blvd/I-97 SB Ramp
- MD 174 @ I-97 NB Ramp
- MD 174 @ Pamela Road/Landmark Drive
- MD 174 @ Old Stage Road
- MD 174 @ Site Access
- MD 174 @ MD 100 Eastbound Ramp
- MD 174 @ MD 100 Westbound Ramp

Road Section

- MD 174 between MD 100 Westbound Ramp and I-97 Southbound Ramp

The study will analyze the key intersections under existing, background and future conditions utilizing the Critical Lane Analysis. The key road section will be analyzed using the Highway Capacity Manual and the Anne Arundel County Road Rating Method under existing, background and future traffic conditions. The results of the intersection capacity analyses are provided in the Conclusions section of the study.



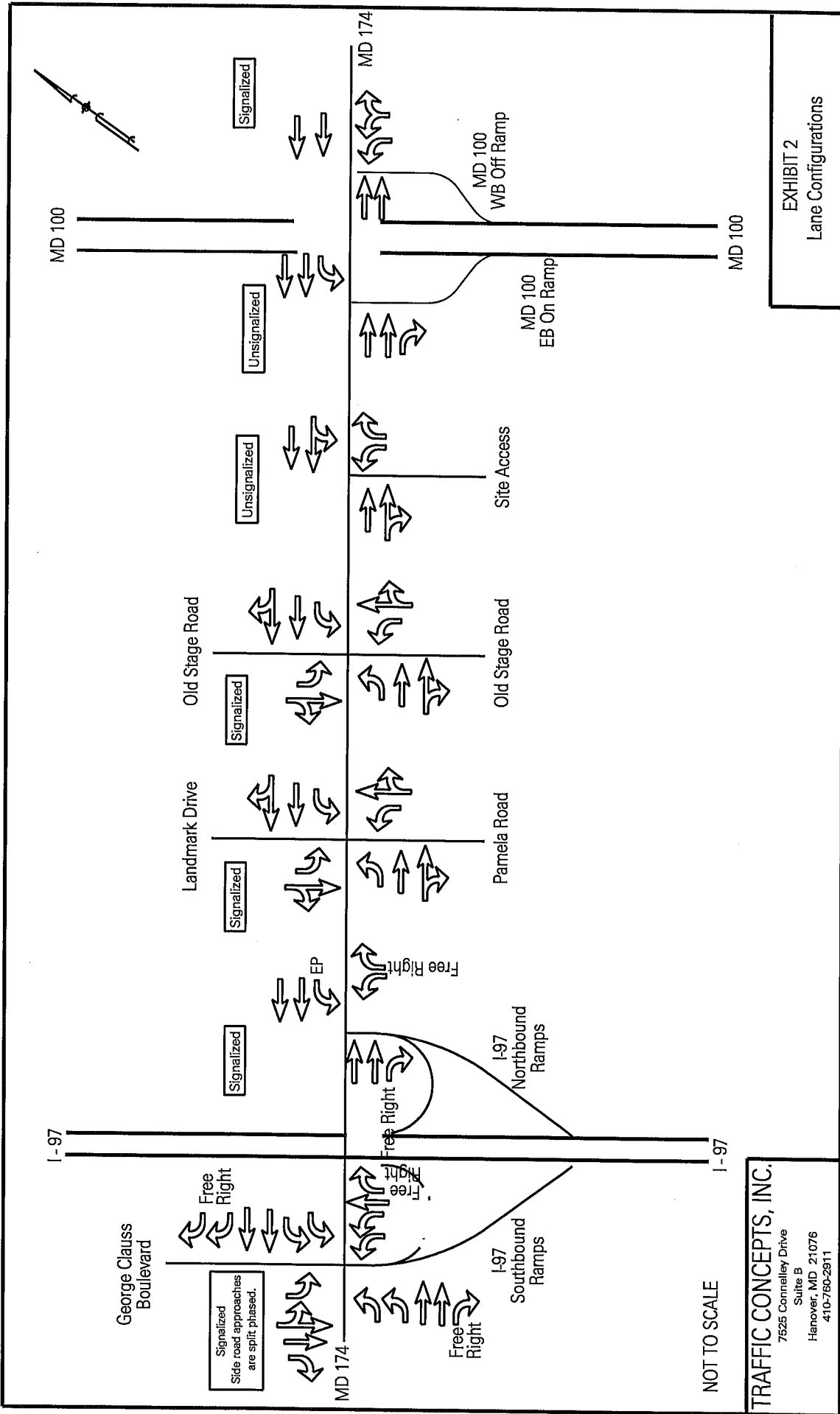
EXISTING CONDITION

EXISTING CONDITION

The lane configurations at the key intersections are shown on Exhibit 2. Detailed intersection configuration sketches can be found in the appendix section of this report.

Peak hour turning movement counts were performed at the key intersections. Since these intersections have been counted after September 9, 2021, the traffic counts are allowed per Green Notice OPZ-21-06. The counts have been verified for accuracy based on review of historical data. Please note that the traffic volumes may not balance between intersections due to mid-block generators as well as possible differences in peak hours and/or dates the counts were performed. Peak hour volumes were determined and are displayed on Exhibit 3. Details of the traffic count data and a copy of the AACPS website can be found in Appendix IV of this study.

Using the existing traffic volumes, a critical lane analysis was conducted at the key intersections with the results shown in the Conclusions section of this study. Details of the calculations can be found in Appendix I.

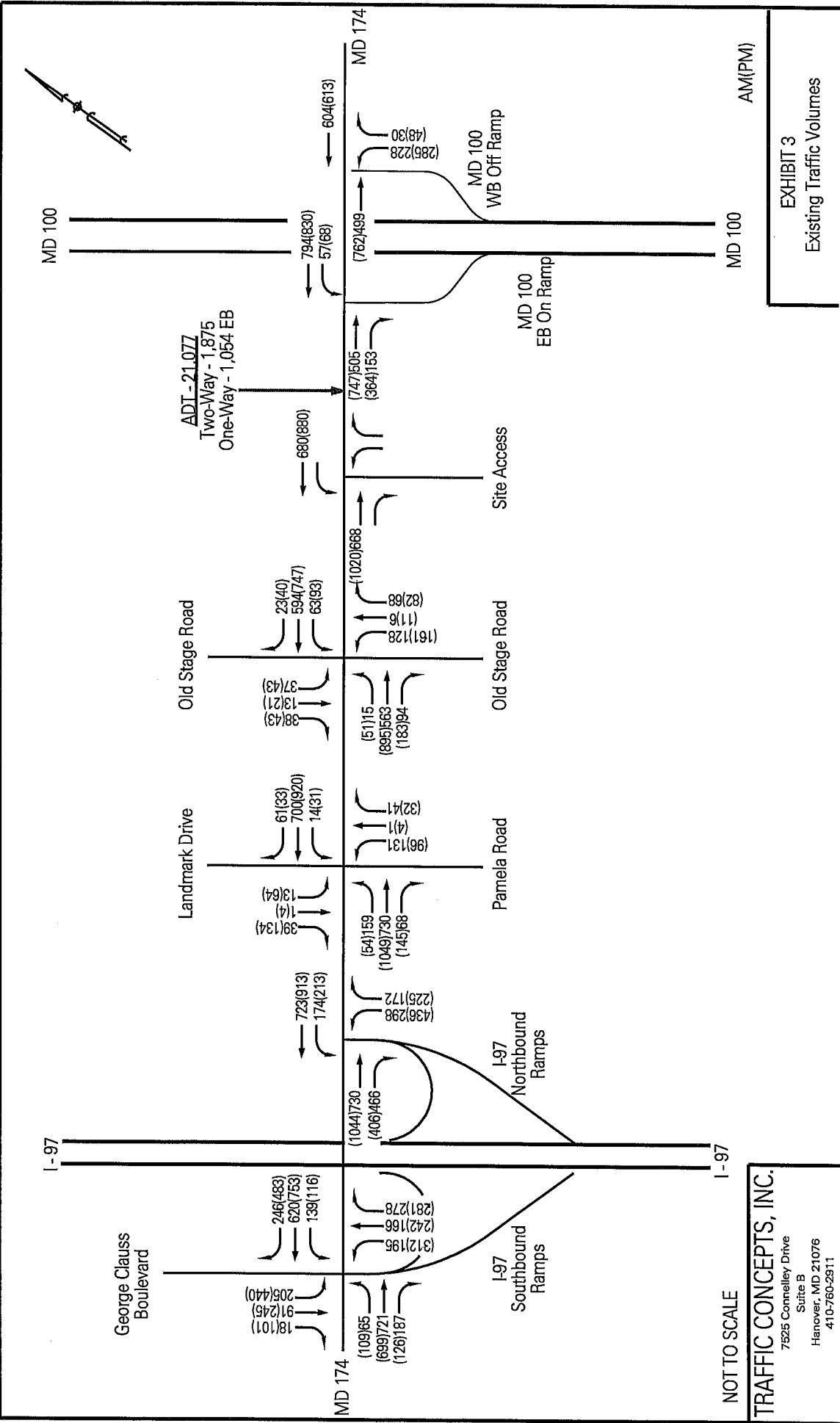


NOT TO SCALE

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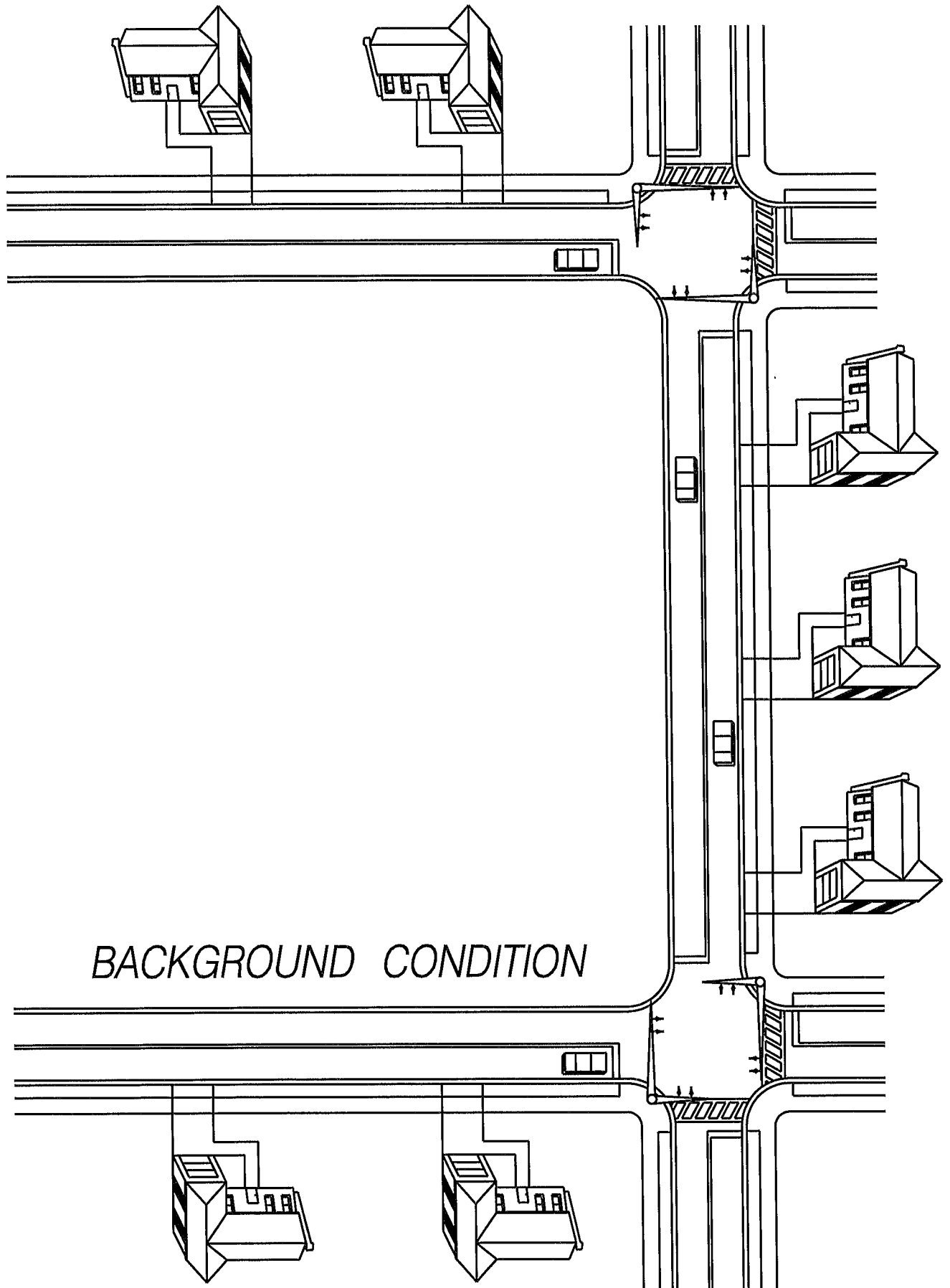
EXHIBIT 2
Lane Configurations



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EXHIBIT 3
Existing Traffic Volumes

NOT TO SCALE



BACKGROUND CONDITION

BACKGROUND CONDITION

This stage of our analysis will evaluate the impact of previously approved, but not yet built, developments on the study network. As indicated in the scoping letter (a copy can be found in Appendix V), there are twenty (20) such developments. Locations of these developments are shown on Exhibit 4. Using the Institute of Transportation Engineers', Trip Generation Manual, generation rates were determined for each development. In many cases, the trip generation rates are taken from the approved TIS for that project. If this is the case, the trip generation manual edition in place at that time would have been utilized to determine trip generation rates. The background developments and the trip generation for each are listed on the following pages.

We have distributed the traffic generated by each background development through the study area based on location of work centers and major access routes. Exhibit 5 shows the combined impact from the developments. Details of each individual development can be found in Appendix II of this report.

We combined the existing traffic volumes with the background traffic volumes to arrive at the total background traffic volumes as shown on Exhibit 6. Using these volumes, a critical lane analysis was conducted at the key intersections with the results shown in the Conclusions section of this study. Details of the calculations can be found in Appendix I.

BACKGROUND DEVELOPMENTS

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
1. Hogan Realty Investors, LLC C2014-0055 <u>ITE Land Use Code 230</u>					
Per thu	0.10	0.50	0.46	0.23	7.12
46 thu	5	23	21	11	327
Less 11 built	- 1	- 5	- 5	- 3	- 78
35 remaining	4	18	16	8	249
2. Monroe Landing (Watts Property) 24 sfu			BUILT OUT		
3. Kaplans Purchase 38 sfu			BUILT OUT		
4. Garrison Manor 9 sfu			BUILT OUT		
6. Clarks Crossing 26 sfu			BUILT OUT		
7. Thompson Farms - Ameristar 8 sfu			BUILT OUT		
5. Nanny Property S2015-003 <u>ITE Land Use Code 210</u>					
Per sfu	0.42	1.26	0.83	0.49	12.63
10 sfu	4	13	8	5	126
8. Wolfepack Property S2012-012					
Phase 1: <u>ITE Land Use Code 230</u>					
Per thu	0.11	0.56	0.51	0.25	7.63
27 thu	3	15	14	7	206
TOTAL BACKGROUNDS					
5 & 8 (RESIDENTIAL)	7	28	22	12	332

BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
8. Wolfepack Property					
S2012-012					
<u>Fast-Food Restaurant w/ Drive-Thru</u>					
<u>ITE Land Use Code 934</u>					
Per ksf	23.16	22.26	16.98	15.67	496.12
3,630 gsf	84	81	62	57	1801
Less passby per ITE	- 41	- 40	- 31	- 29	N/A
New Trips	43	41	31	28	1801
 <u>ITE Land Use Code 912</u>					
Per ksf	6.89	5.19	12.15	12.15	148.15
2,800 gsf	19	15	34	34	415
Less passby per ITE	- 0	- 0	- 16	- 16	N/A
New Trips	19	15	18	18	415
 Phase 2:					
<u>(Public Storage)</u>					
<u>ITE Land Use Code 151</u>					
54,420 net rentable sf	2	3	5	4	90
12. Severn Crossroads (7836 Telegraph Road)					
<u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
8,000 gsf	26	29	22	18	355
 <u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
6,000 gsf	20	21	17	13	266
 <u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
6,000 gsf	20	21	17	13	266
TOTAL BACKGROUNDS					
8 (RETAIL) & 12 (RETAIL)	130	130	110	94	3193

* In order to create a worse-case scenario, we have used AM and PM peak hour of the generator rates.

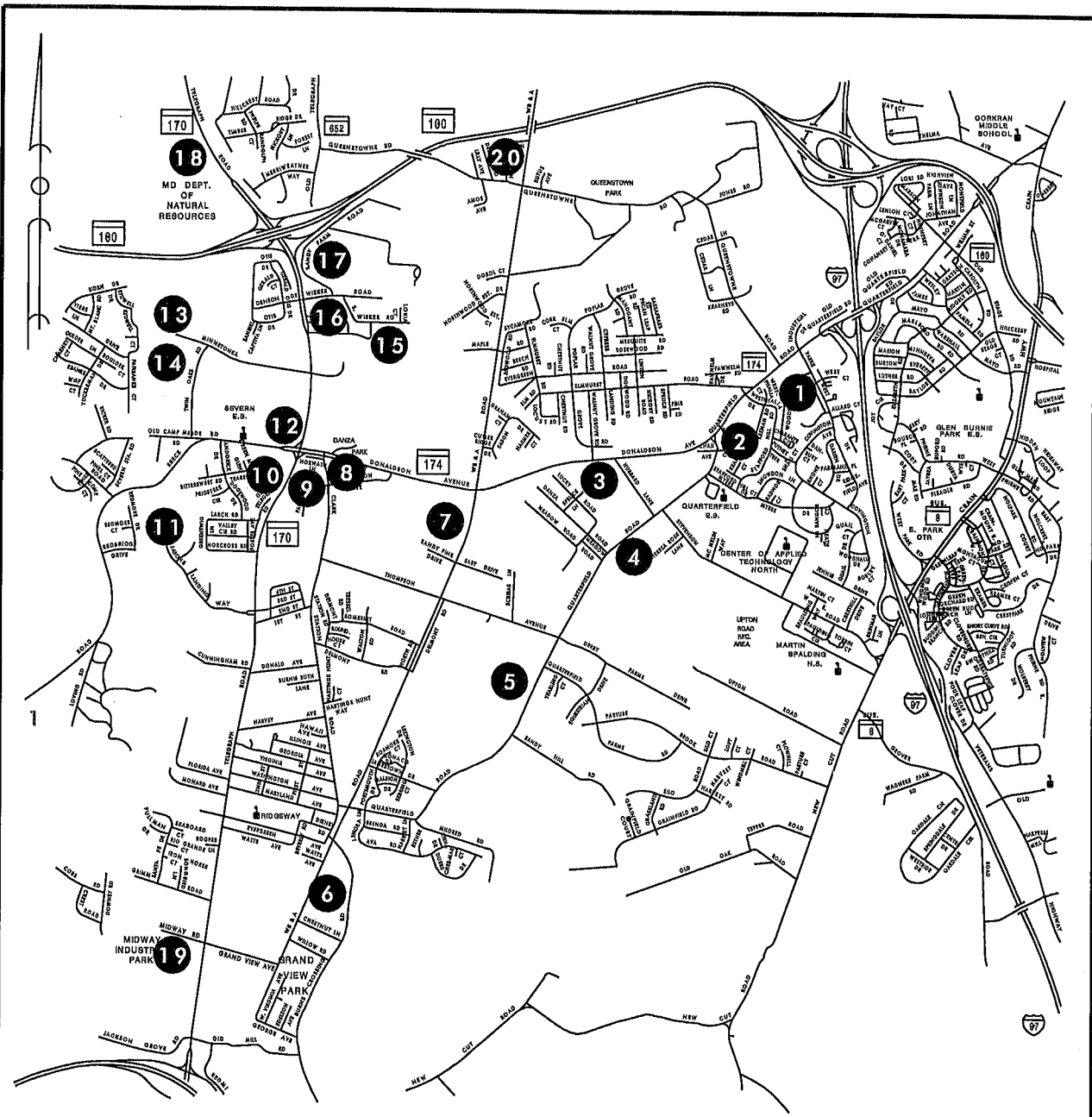
BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
9. Advance Auto 6,889 gsf			BUILT OUT		
10. 7860 Telegraph Road C2016-0022 <u>ITE Land Use Code 151</u> Per ksf	0.08	0.06	0.13	0.13	2.50
127,400 gsf	10	8	17	16	319
11. Stephen's Knoll <u>ITE Land Use Code 210</u> 18 sfu			BUILT OUT		
12. Severn Crossroads (7836 Telegraph Road) S2014-018 <u>ITE Land Use Code 230</u> Per thu	0.10	0.49	0.45	0.22	7.02
51 thu	5	25	23	12	358
13. The Villas at Severn Crest <u>ITE Land Use Code 220</u> 46 thu	5	18	19	11	307
<u>ITE Land Use Code 254</u> 20 beds	2	2	2	3	52
14. Prusak Property <u>ITE Land Use Code 210</u> Per sfu	0.30	0.91	0.78	0.46	11.99
19 sfu	6	17	15	9	228
17. Sandy Farms S2015-033 <u>ITE Land Use Code 160</u> 109,455 gsf	7	5	3	7	108
19. Hi-Tech Color C2016-0055 <u>ITE Land Use Code 150</u> Per ksf	0.24	0.06	0.08	0.24	3.56
37,500 gsf	9	2	3	9	134

BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
20. 796 Queenstown Road					
<u>ITE Land Use Code 252</u>					
192 units	12	25	27	21	580
TOTAL BACKGROUNDS					
13,14,17,19 & 20	41	69	69	60	1409
15. Willow Creek					
12 sfu			BUILT OUT		
16. Crestwood					
117 thu			BUILT OUT		
18. Buckingham					
Proj#P2007-0161			DOES NOT AFFECT KEY INTERSECTIONS		
<u>ITE Land Use Code 720</u>					
Medical Office					
Per ksf	1.89	0.50	1.00	2.57	36.13
53,500 gsf	101	27	54	137	1933
Less 26,750 occupied	- 50	- 13	- 27	- 69	- 966
26,750 gsf remaining	51	14	27	68	967
<u>ITE Land Use Code 710</u>					
General Office					
Per ksf	1.43	0.20	0.25	1.22	10.81
225,000 gsf	322	44	56	274	2431
<u>ITE Land Use Code 826</u>					
Specialty Retail					
Per ksf *	3.28	3.56	2.81	2.21	44.32
11,800 gsf	39	42	33	26	523
TOTAL BACKGROUND 18	412	100	116	368	3921

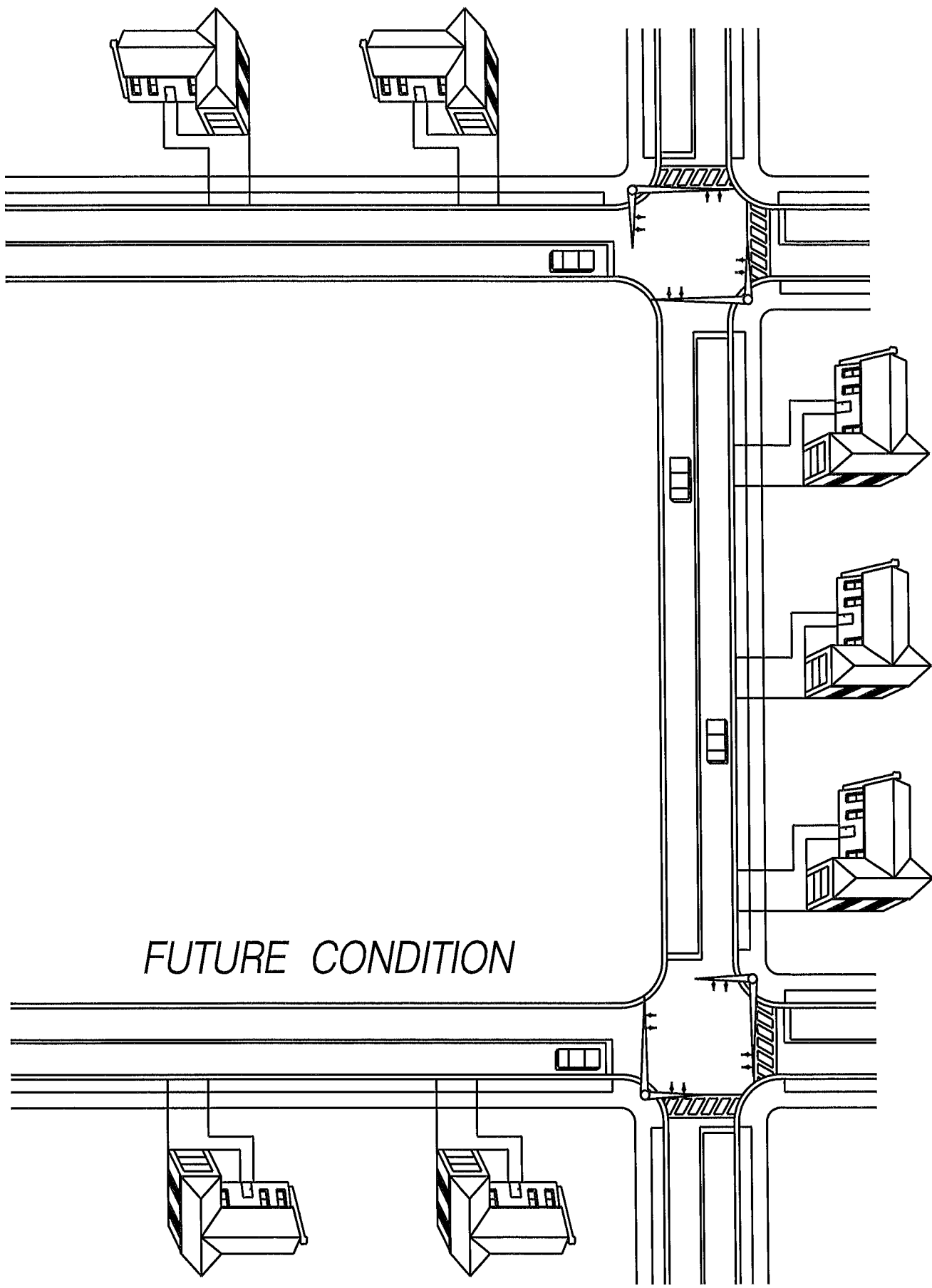
* In order to create a worse-case scenario, we have used AM and PM peak hour of the generator rates.



- | | |
|--------------------------------|-------------------------|
| 1. Hogan Realty Investors, LLC | 16. Crestwood |
| 2. Monroe Landing | 17. Sandy Farms |
| 3. Kaplans Purchase | 18. Buckingham |
| 4. Garrison Manor | 19. Hi-Tech Color |
| 5. Nanny Property | 20. 796 Queenstown Road |
| 6. Clarks Crossing | |
| 7. Thompson Farms | |
| 8. Wolfpack, LLC | |
| 9. Advance Auto | |
| 10. 7860 Telegraph Road | |
| 11. Stephen's Knoll | |
| 12. Severn Crossroads | |
| 13. The Villas at Severn Crest | |
| 14. Prusak Property | |
| 15. Willow Creek | |

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EXHIBIT 4
 Background Development Locations



FUTURE CONDITION

FUTURE CONDITION

We will, at this time, determine the vehicle impact the proposed development will have on the key intersections and the resulting levels of service. As mentioned previously, the proposed development will create a single retail building consisting of a total of 5,460 gross square feet. The user of this retail space is unknown at this time, however, since the building will contain a drive-thru and in order to create a worst-case traffic scenario, we have assumed one unit within the building could be used as a coffee/donut shop with drive-thru (924 gross square feet). The remainder of the building (4,536 gross square feet) will be considered as a strip retail plaza. We have consulted the Institute of Transportation Engineers', Trip Generation Manual, 11th Edition to determine trip generation rates for this development. The results are as follows:

	AM		PM		ADT
	IN	OUT	IN	OUT	
<u>Strip Retail Plaza</u>					
ITE Land Use Code 822					
4,536 gsf	6	5	15	15	421
<u>No User Identified – Assumed:</u>					
<u>Coffee/Donut Shop w/ Drive-Thru</u>					
ITE Land Use Code 937					
924 gsf	40	39	18	18	491
Total Trips	46	44	33	33	912

Based on housing concentration and our knowledge of the study area a distribution pattern was established as shown on Exhibit 7. By adding the site-generated trips to total background traffic volumes, we obtain total future traffic volumes. (See Exhibit 8).

Using these volumes, a critical lane analysis was performed at each key intersection with the results shown in the Conclusions section of this study. Details of the calculations can be found in Appendix I.

Strip Retail Plaza (<40k) (822)

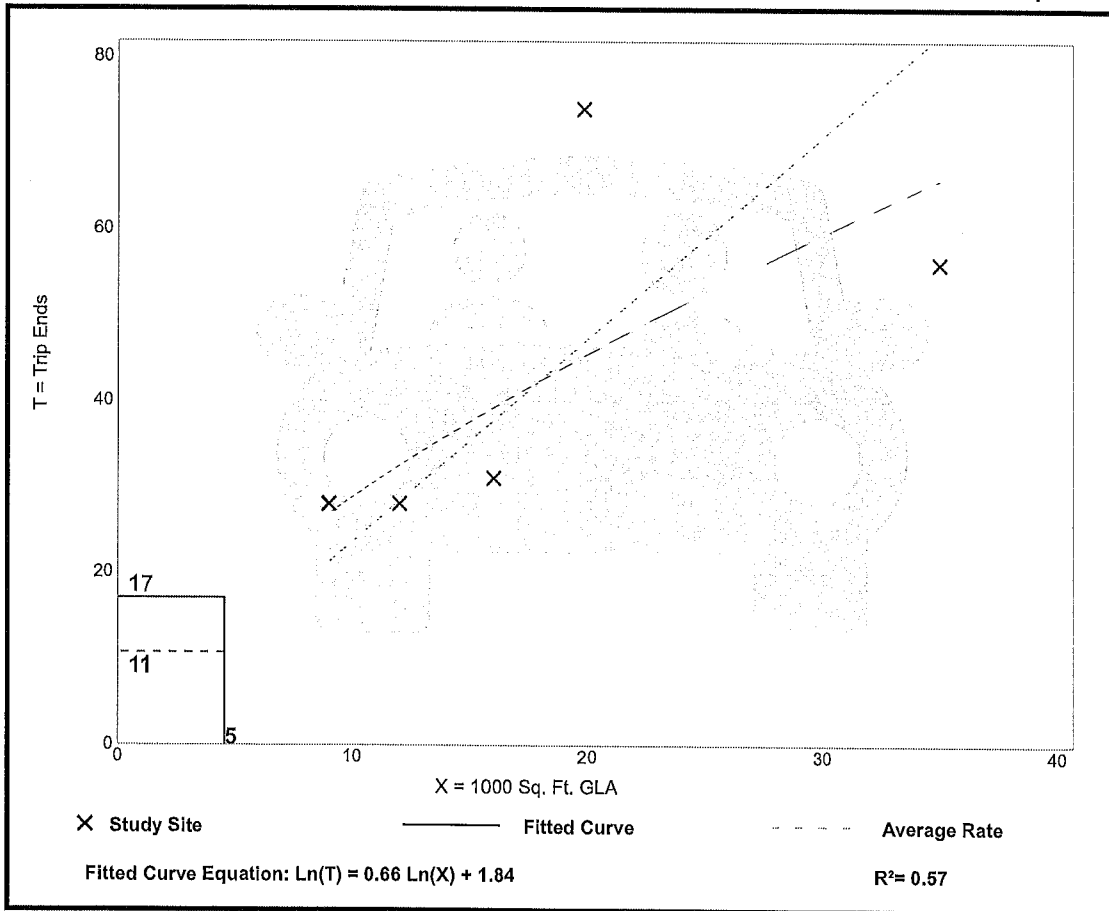
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



Trip Gen Manual, 11th Edition

● Institute of Transportation Engineers

IN-6 OUT-5

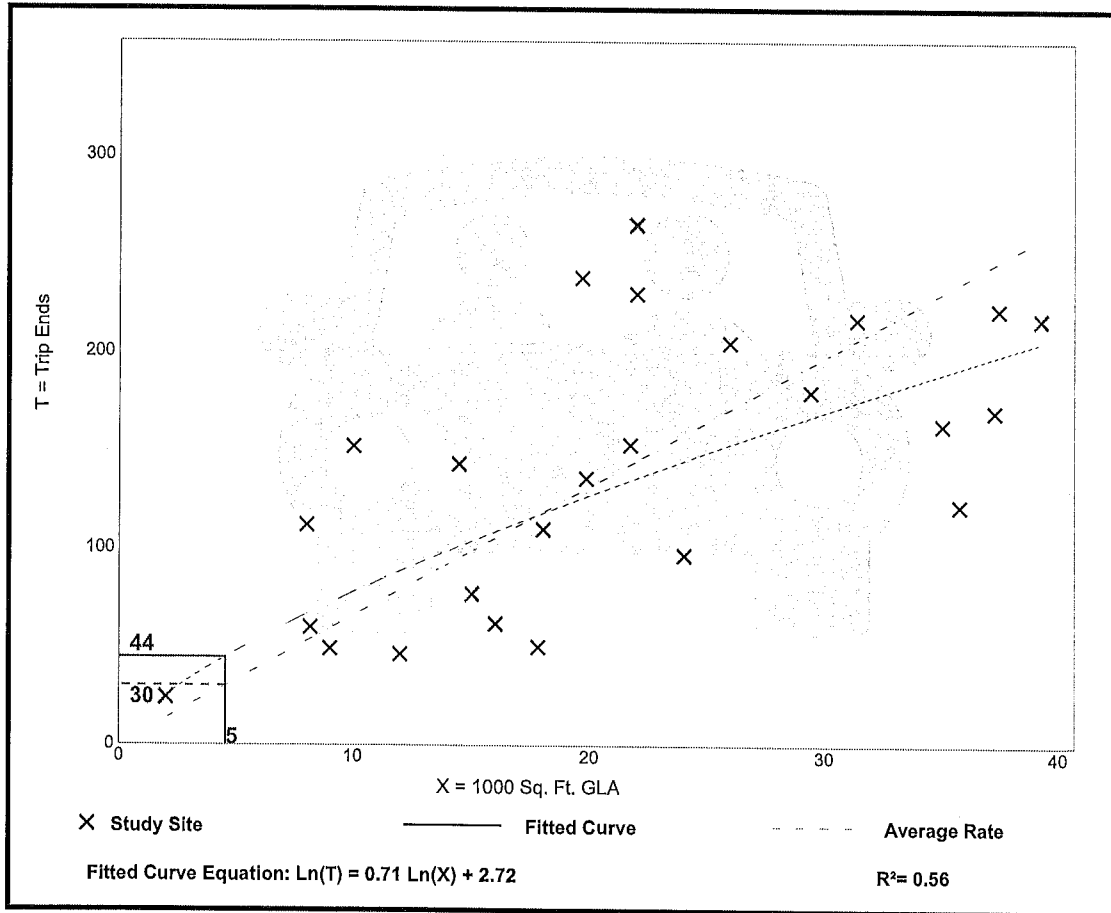
Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
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: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

IN-15 OUT-15

Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

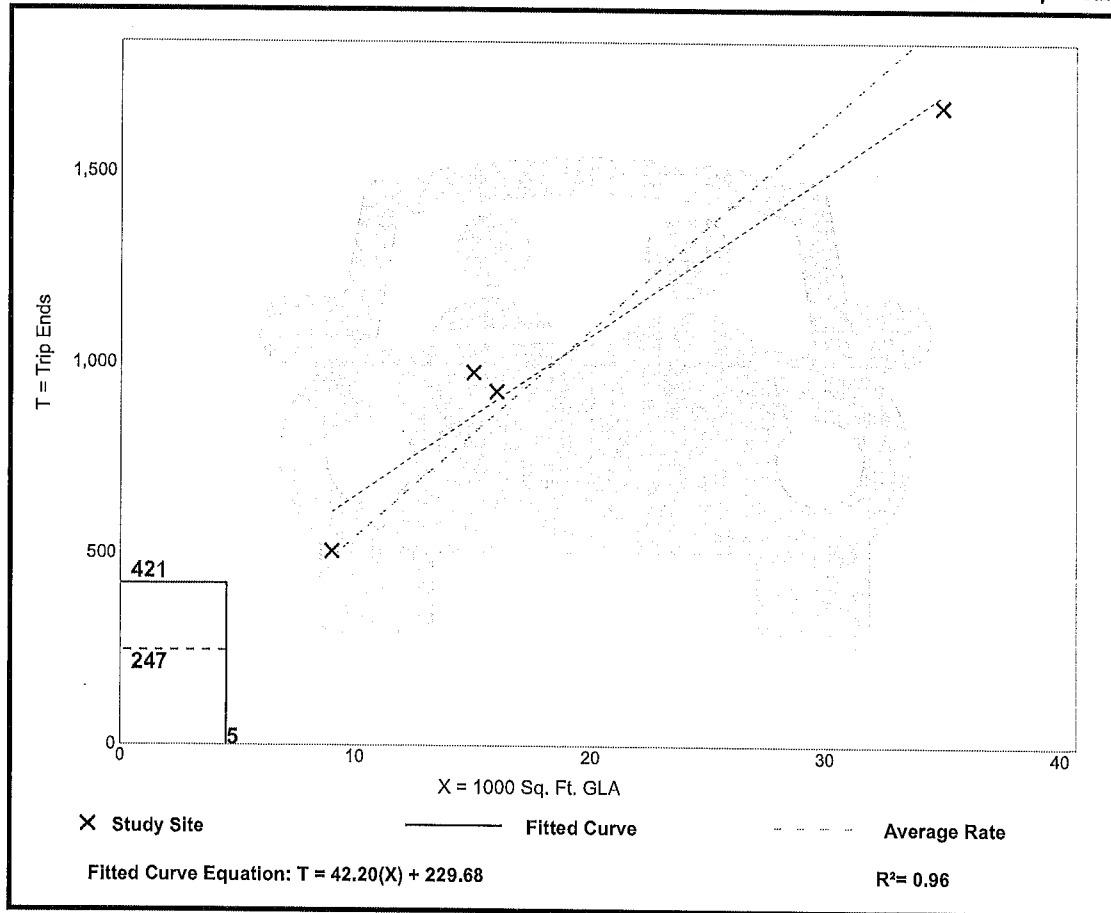
Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation

Caution – Small Sample Size



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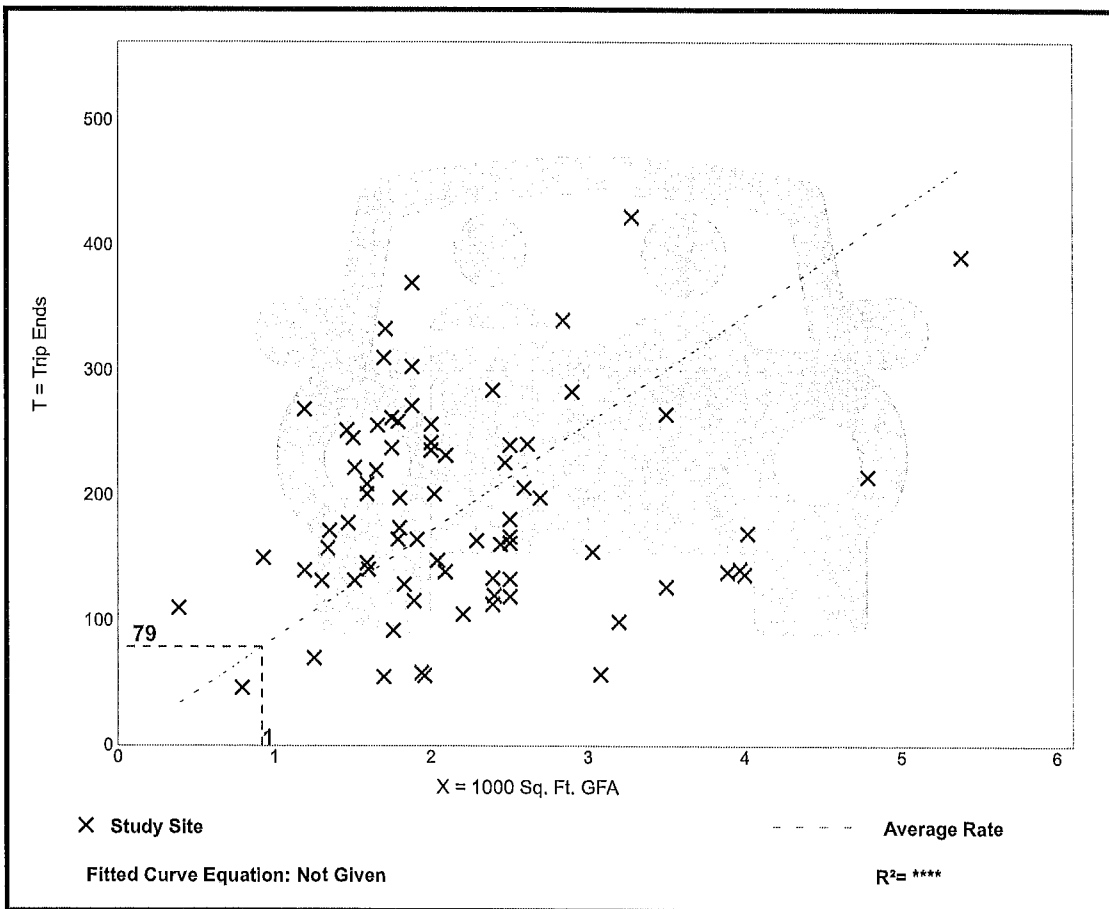
Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
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: 78
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
85.88	18.51 - 282.05	44.92

Data Plot and Equation



IN-40 007-39

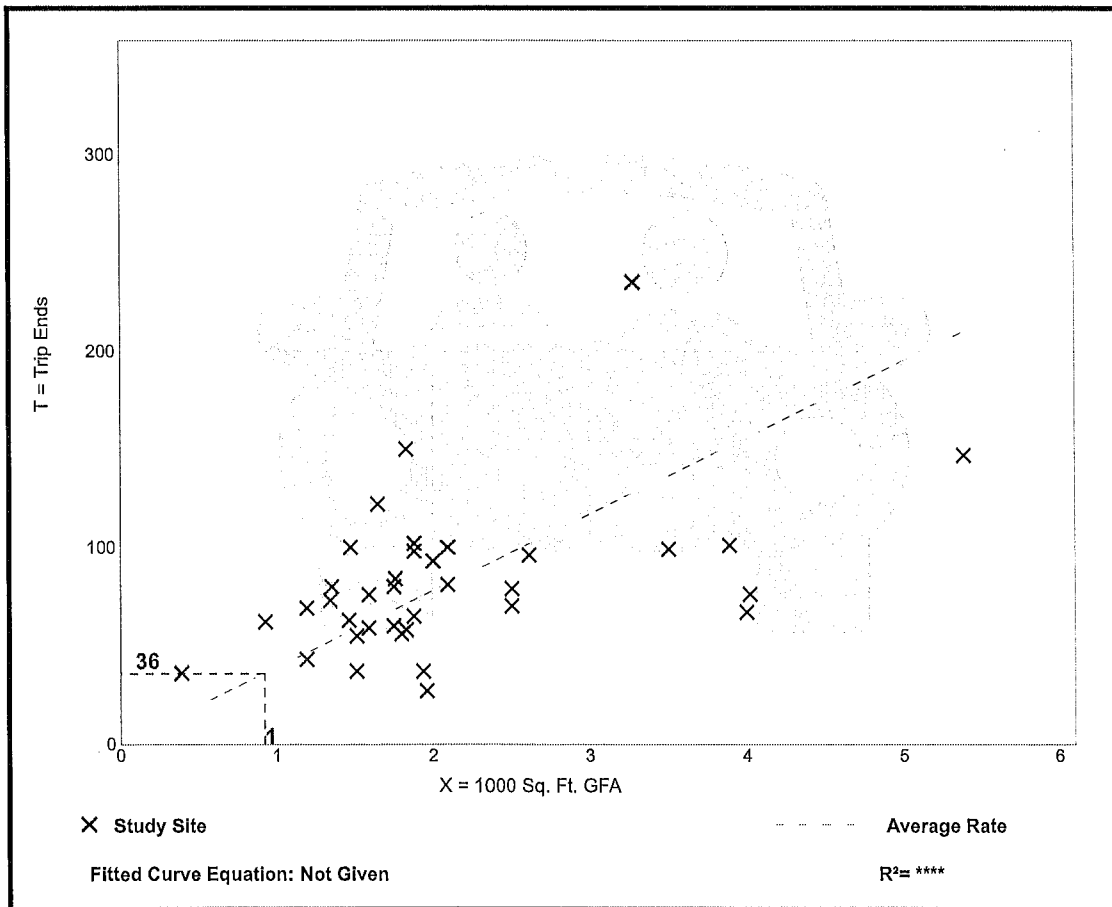
Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
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: 36
 Avg. 1000 Sq. Ft. GFA: 2
 Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
38.99	13.78 - 92.31	17.79

Data Plot and Equation



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IN-18 007-18

Coffee/Donut Shop with Drive-Through Window (937)

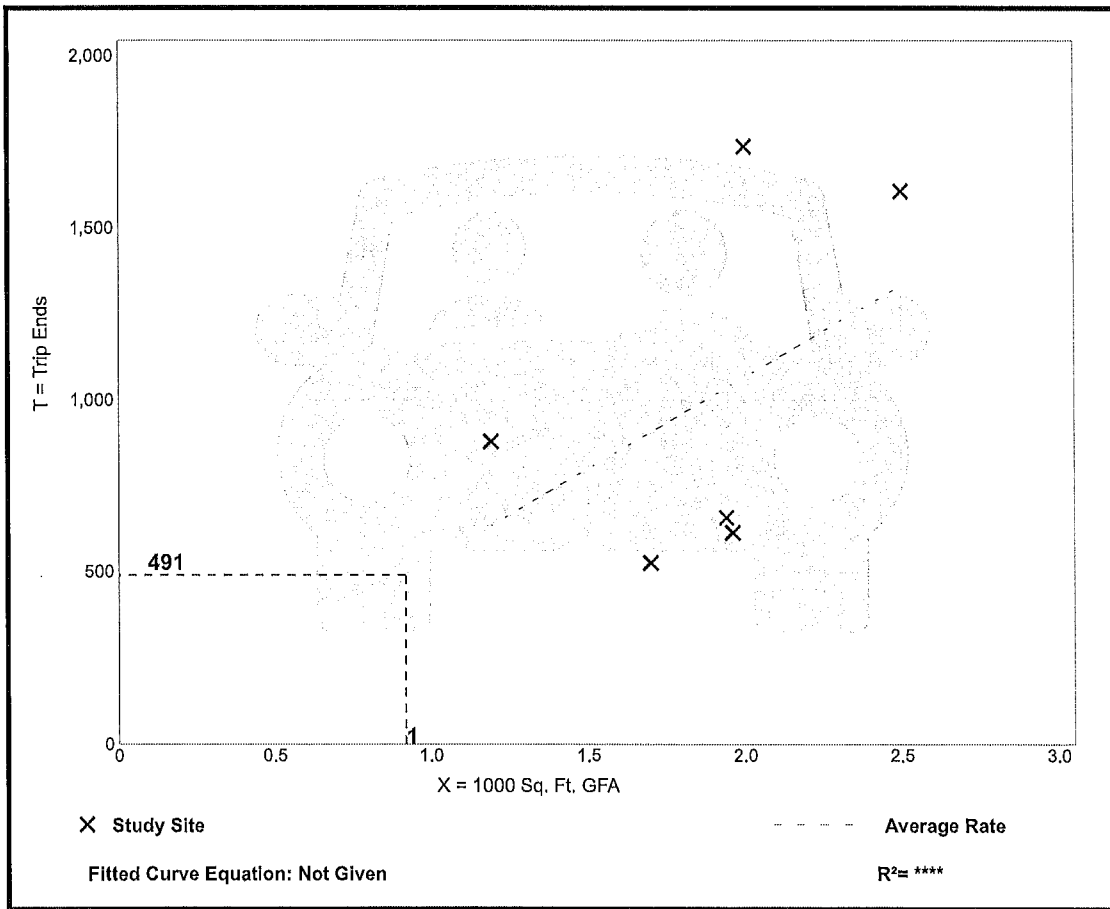
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
533.57	309.41 - 869.00	243.65

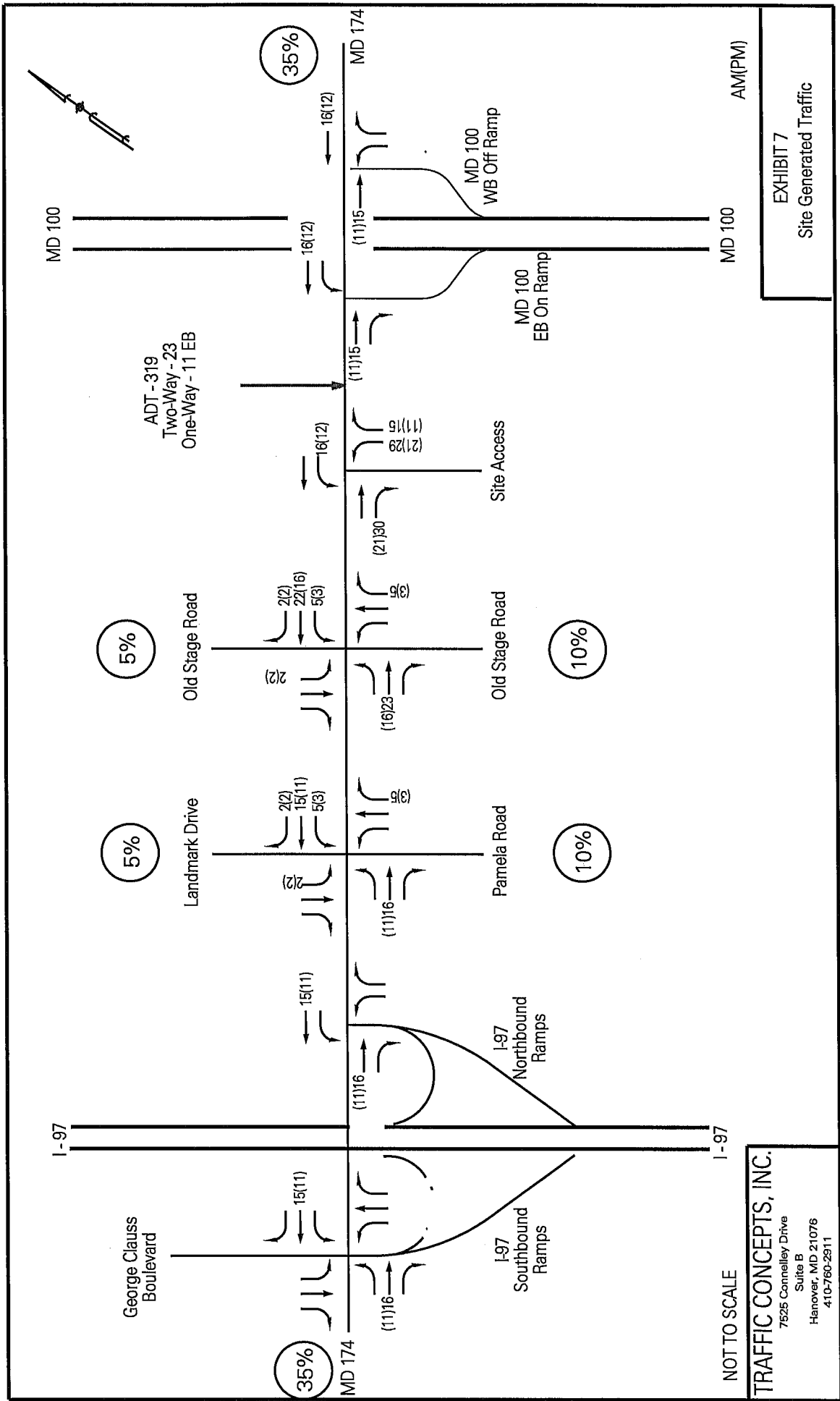
Data Plot and Equation

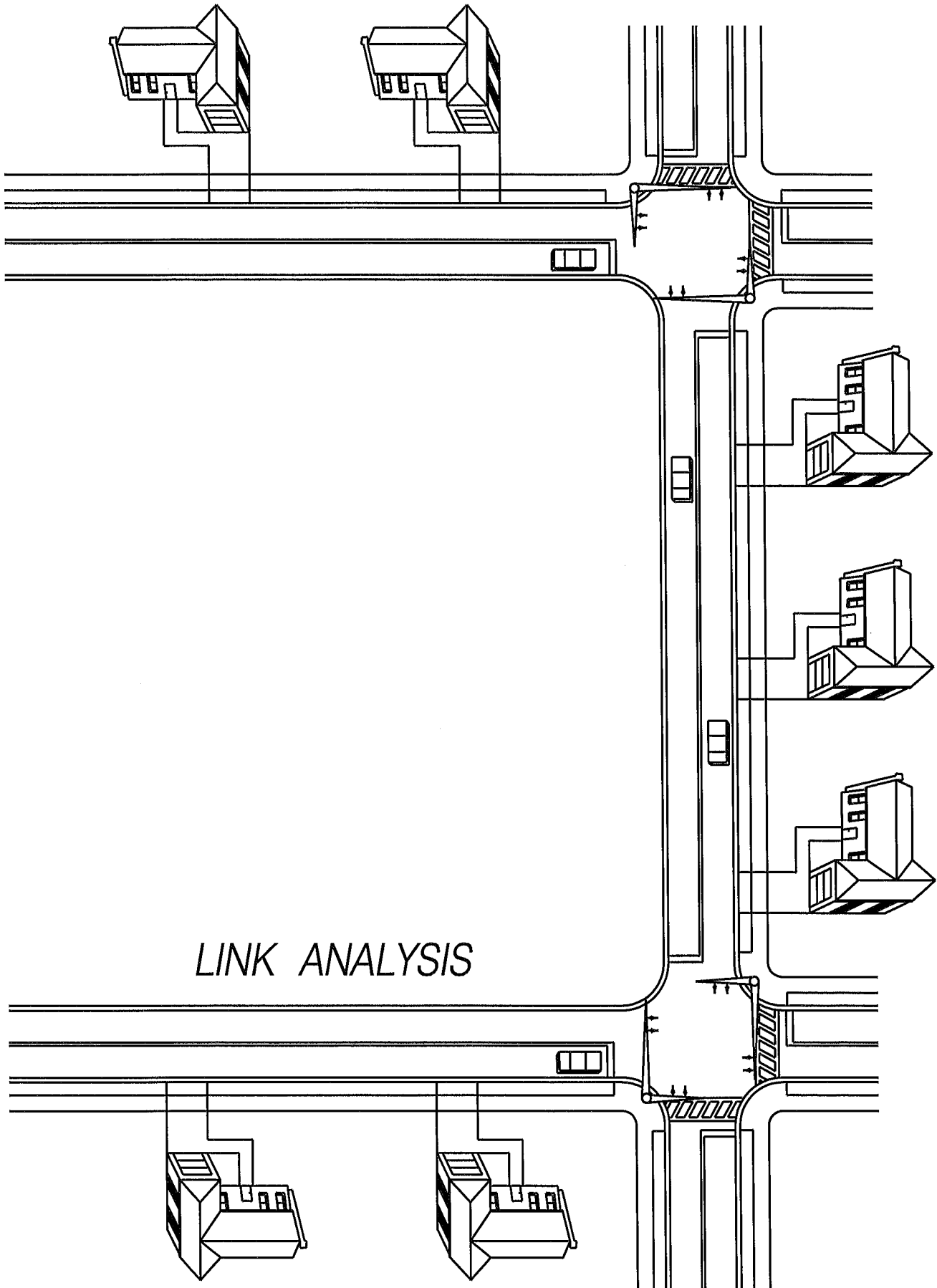


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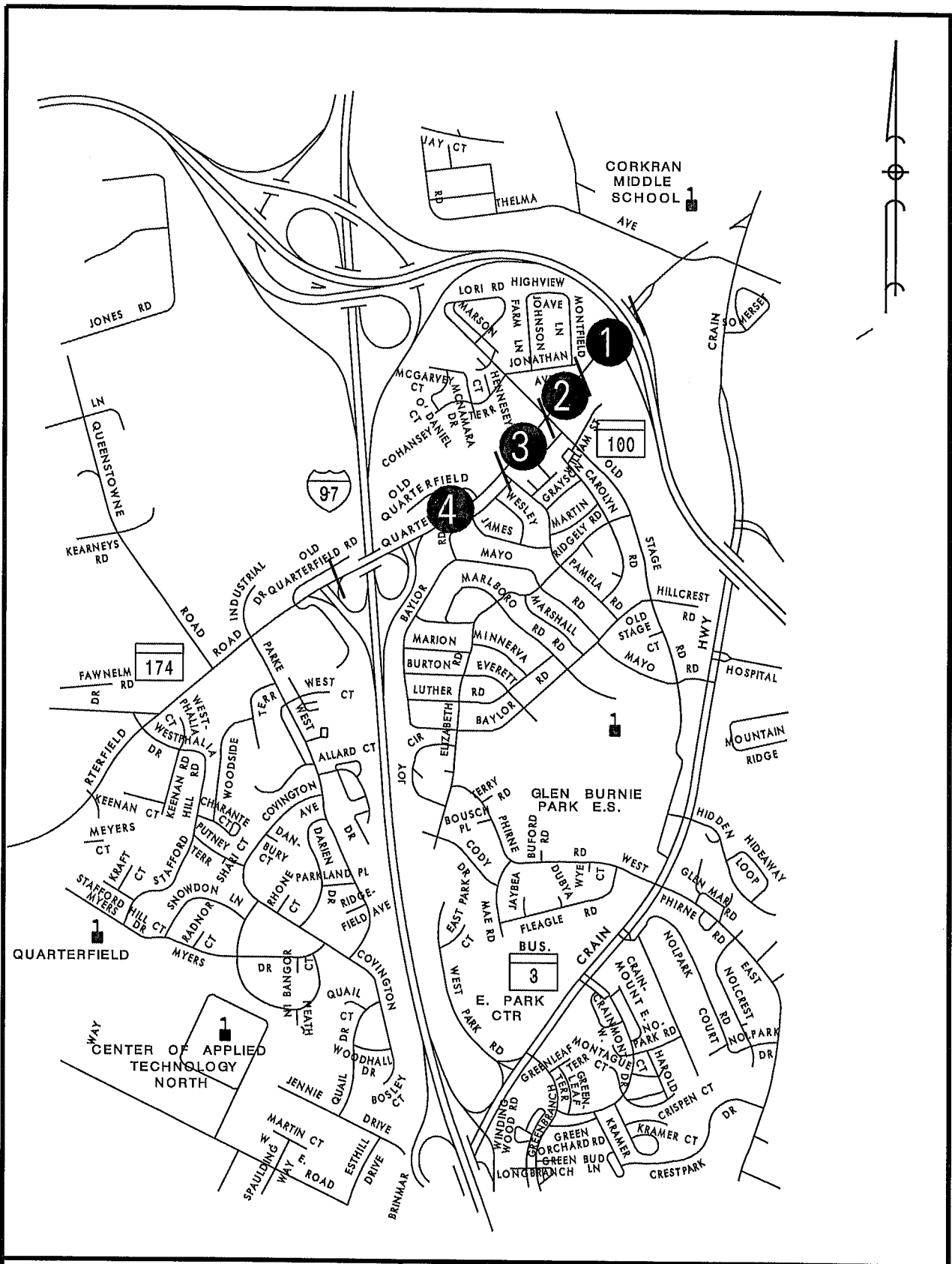
LINK ANALYSIS

LINK ANALYSIS

As per Anne Arundel County Adequate Public Facilities Law, the road link between key intersections must be shown to operate at acceptable levels of service. The following road section will be analyzed:

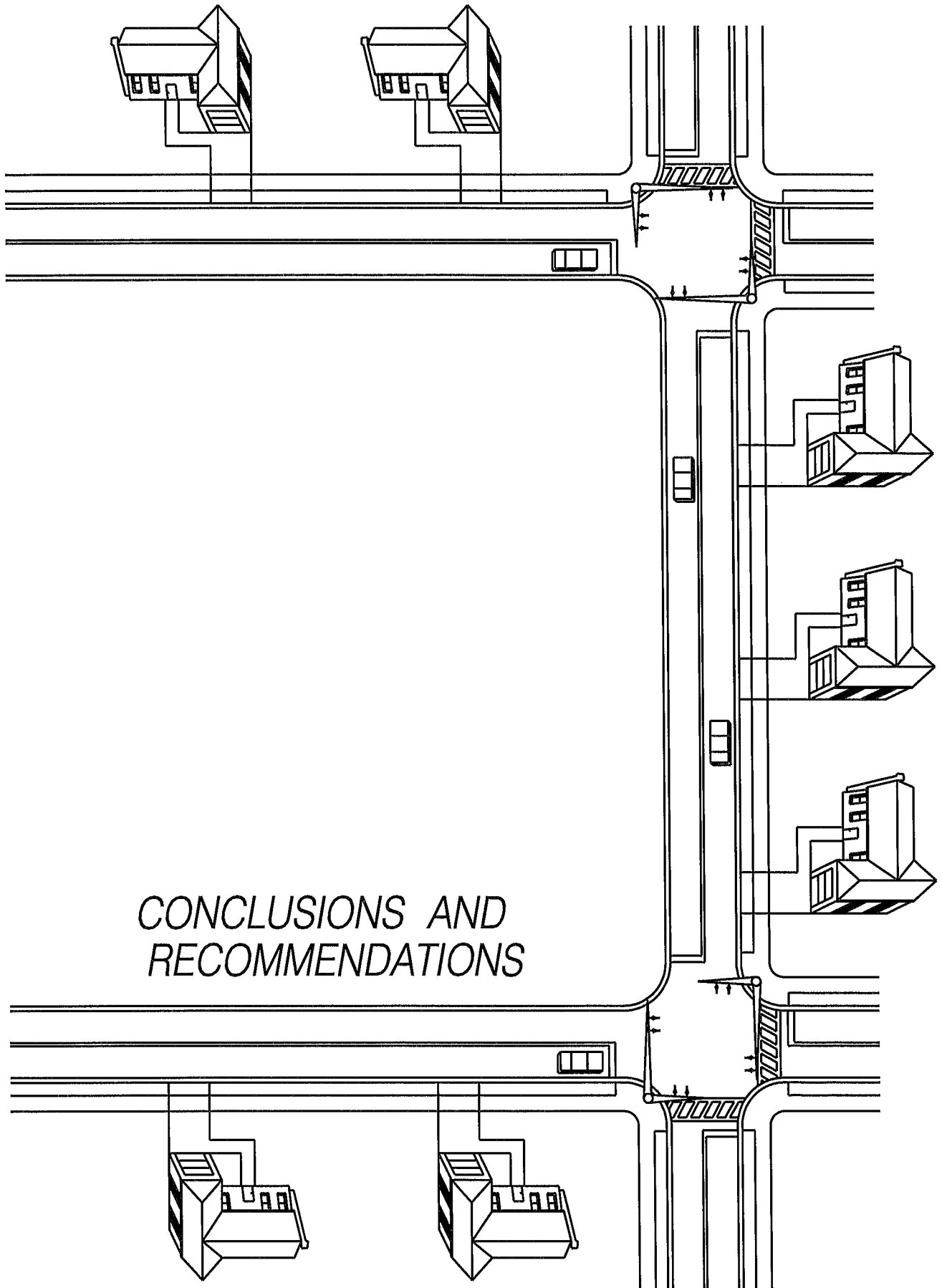
- MD 174 between MD 100 Westbound Ramp and I-97 Southbound Ramp will be analyzed using the Highway Capacity Manual, Multi-Lane Method. In addition, at the request of Anne Arundel County personnel, this road link will also be analyzed using the Anne Arundel County Road Rating System.

The results of the link analyses are shown in the Conclusions section of the study. Details of the calculations can be found in Appendix III of this report. Exhibit 9 shows the location of each road section.



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EXHIBIT 9
Road Rating Sections



*CONCLUSIONS AND
RECOMMENDATIONS*

CONCLUSIONS

The results of the analyses are shown on the charts below along with the impact of the proposed development on each intersection.

CRITICAL LANE ANALYSIS

INTERSECTION	EXISTING CONDITION CLV(LOS)	BACKGROUND CONDITION CLV(LOS)	FUTURE CONDITION CLV(LOS)	COUNTY STANDARDS MET	MITIGATION REQUIRED	CRITICAL TRIPS ADDED BY THE PROPOSED DEVELOPMENT
MD 174 @ George Clauss Blvd/I-97 SB Ramp AM PEAK PM PEAK	764(A) 996(A)	786(A) 1013(B)	795(A) 1019(B)	YES YES		+9 TRIPS +6 TRIPS
MD 174 @ I-97 NB Ramp AM PEAK PM PEAK	873(A) 1223(C)	890(A) 1240(C)	899(A) 1246(C)	YES YES		+9 TRIPS +6 TRIPS
MD 174 @ Pamela Rd/Landmark Drive AM PEAK PM PEAK	749(A) 922(A)	760(A) 933(A)	769(A) 942(A)	YES YES		+9 TRIPS +9 TRIPS
MD 174 @ Old Stage Road AM PEAK PM PEAK	603(A) 911(A)	619(A) 922(A)	637(A) 934(A)	YES YES		+18 TRIPS +12 TRIPS
MD 174 @ MD 100 Eastbound Ramp AM PEAK PM PEAK	335(A) 479(A)	351(A) 490(A)	359(A) 496(A)	YES YES		+8 TRIPS +6 TRIPS
MD 174 @ MD 100 Westbound Ramps AM PEAK PM PEAK	487(A) 619(A)	498(A) 631(A)	507(A) 637(A)	YES YES		+9 TRIPS +6 TRIPS
MD 174 @ Site Access AM PEAK PM PEAK	N/A N/A	N/A N/A	445(A) 617(A)	YES YES		N/A N/A

CLV – Critical Lane Volume; LOS – Level of Service

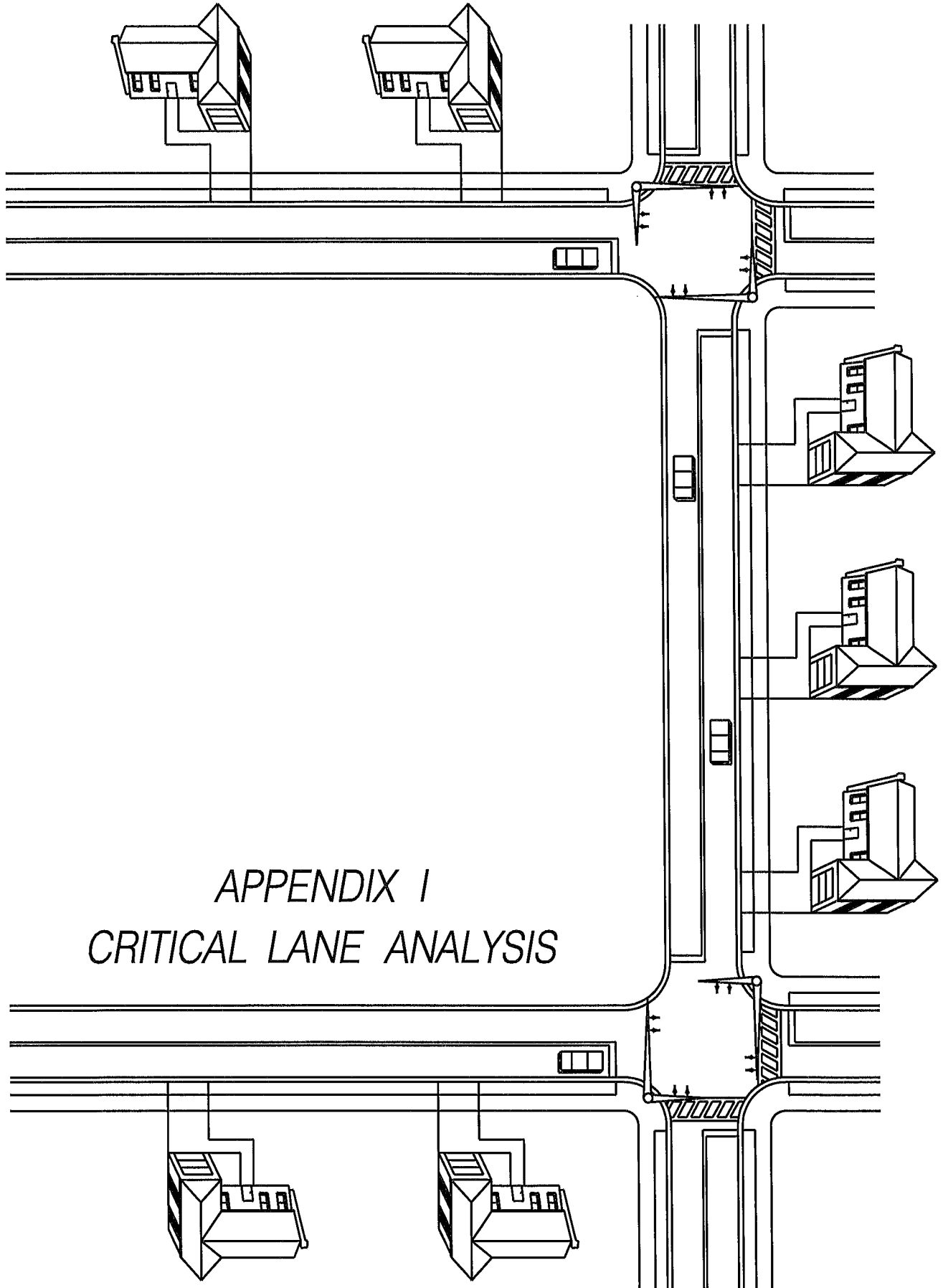
ROAD RATING

ROAD LINK	EXISTING CONDITION ROAD RATING	BACKGROUND CONDITION ROAD RATING	FUTURE CONDITION ROAD RATING	COUNTY STANDARDS MET	MITIGATION REQUIRED	DECREASE IN ROAD RATING DUE TO THE PROPOSED DEVELOPMENT
MD 170 – Section 1 From MD 100 Jonathan Avenue	86	86	86	YES		NONE
MD 170 – Section 2 From Jonathan Avenue to Old Stage Road	78	78	78	YES		NONE
MD 170 – Section 3 From Old Stage Road to Pamela Road	89	89	89	YES		NONE
MD 170 – Section 4 From Pamela Road to George Clauss Boulevard	87	87	87	YES		NONE

MULTI-LANE METHOD

ROAD LINK	EXISTING CONDITION LEVEL OF SERVICE	BACKGROUND CONDITION LEVEL OF SERVICE	FUTURE CONDITION LEVEL OF SERVICE	COUNTY STANDARDS MET	MITIGATION REQUIRED	INCREASE IN LEVEL OF SERVICE DUE TO THE PROPOSED DEVELOPMENT
Eastbound MD 174 between MD 100 Westbound Ramp and I-97 Southbound Ramp AM PEAK PM PEAK	C C	C C	C C	YES YES		NO CHANGE IN LEVEL OF SERVICE
Westbound MD 174 between MD 100 Westbound Ramp and I-97 Southbound Ramp AM PEAK PM PEAK	B C	B C	B C	YES YES		NO CHANGE IN LEVEL OF SERVICE

As shown in the charts above, the key intersections and road sections will continue to operate at satisfactory levels of service under future conditions. Therefore, we respectfully request that your office approve this development from a traffic impact standpoint.



*APPENDIX I
CRITICAL LANE ANALYSIS*

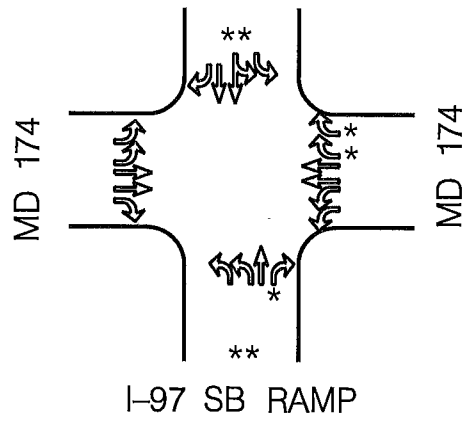
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LANE CONFIGURATION

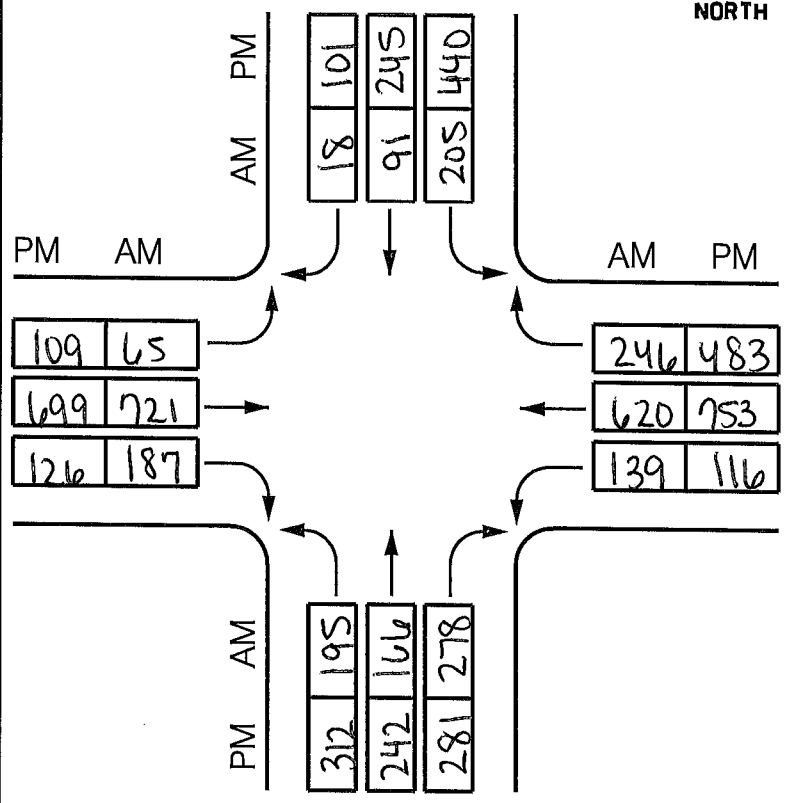
- * FREE RIGHT
- ** SPLIT PHASED



GEORGE CLAUSS BLVD



TRAFFIC VOLUMES



	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	166*	
	SB	118*	
	EB	480*	A 764
	WB	380	
PM	NB	242*	
	SB	274*	
	EB	454	A 996
	WB	480*	

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING

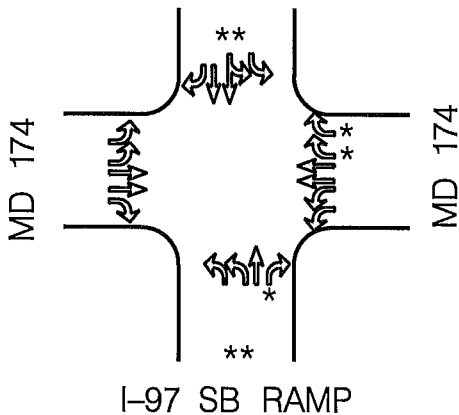
TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION

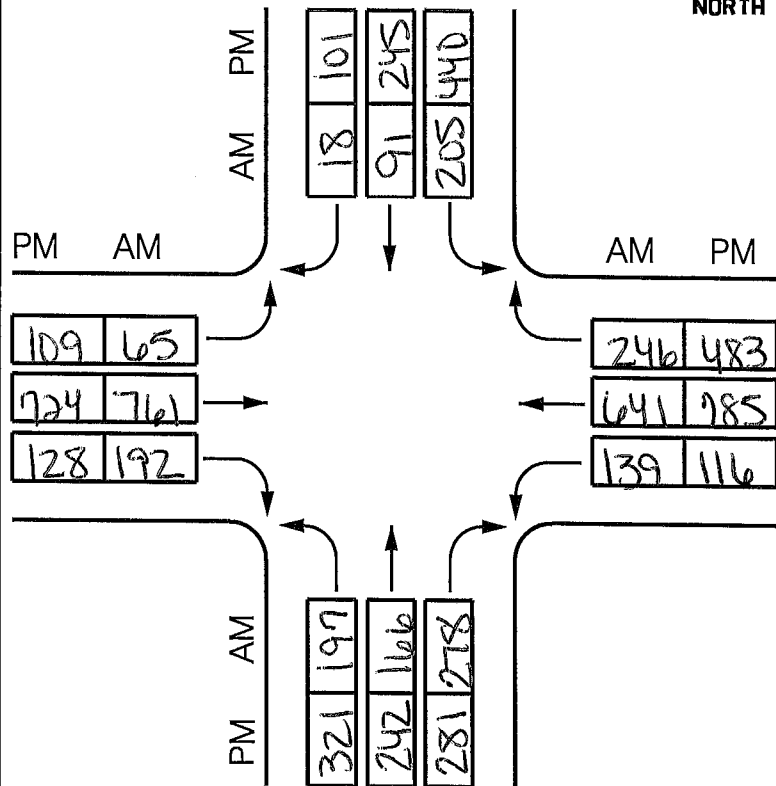
- * FREE RIGHT
- ** SPLIT PHASED



GEORGE CLAUSS BLVD



TRAFFIC VOLUMES



	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $166 * 1.0$	166 *	
	SB $(205 + 91) * 1.4$	118 *	
	EB $761 * 1.55 + 139 * 1.6$	502 ^v	A
	WB $641 * 1.55 + 65 * 1.6$	392	784
PM	NB $242 * 1.0$	242 *	
	SB $(440 + 245) * 1.4$	274 *	
	EB $724 * 1.55 + 116 * 1.6$	468	B
	WB $785 * 1.55 + 109 * 1.6$	497	1013

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

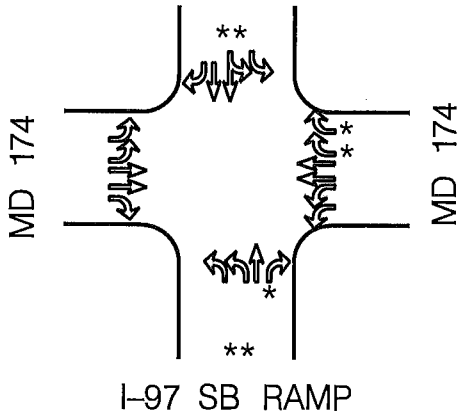
LANE CONFIGURATION

* FREE RIGHT

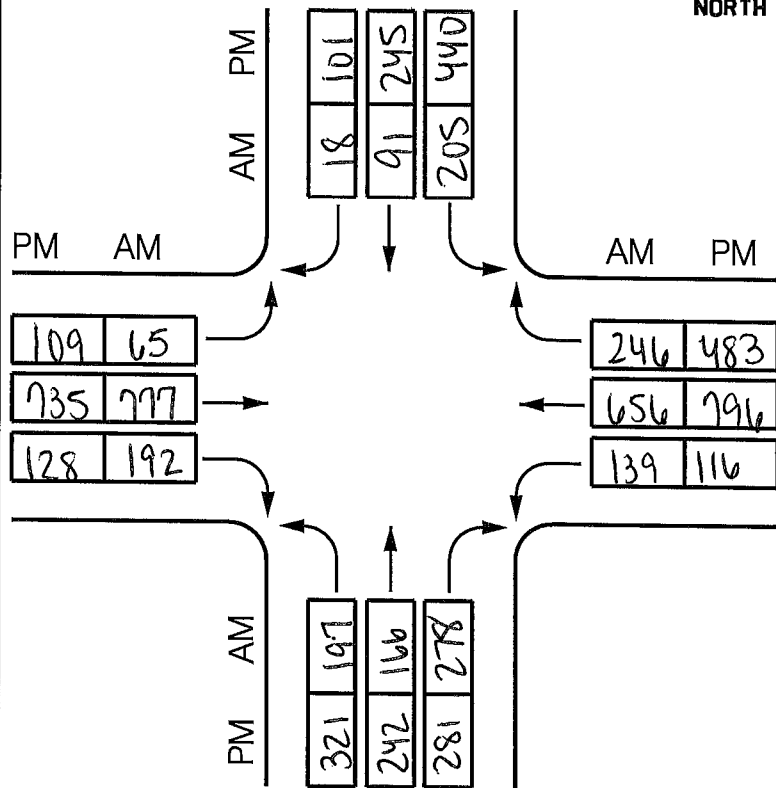
** SPLIT PHASED



GEORGE CLAUSS BLVD



TRAFFIC VOLUMES



	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	166 *	
	SB	118 *	
	EB	511 †	A
	WB	400	
			795
PM	NB	242 *	
	SB	274 *	
	EB	474	B
	WB	503 †	
			1019

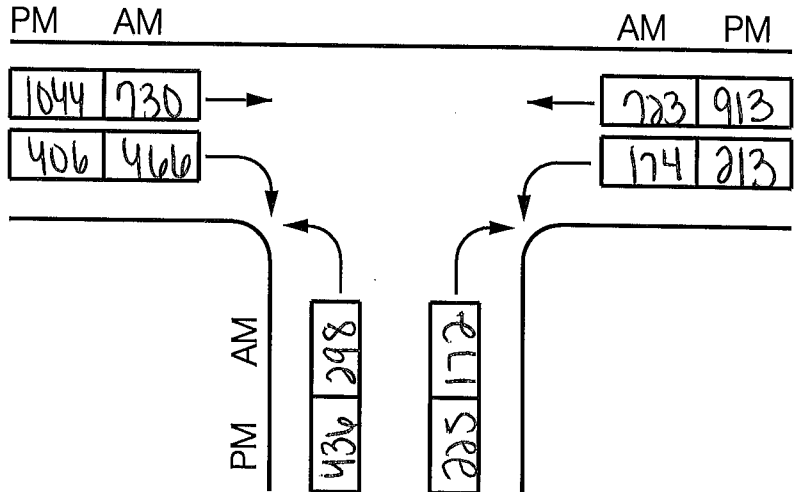
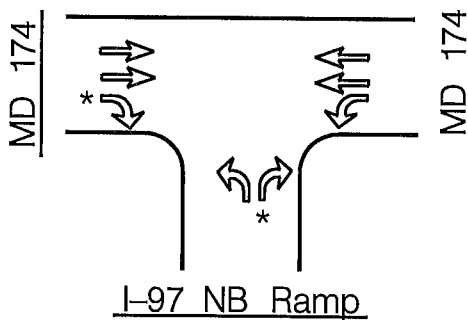
CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE



LANE CONFIGURATION

* FREE RIGHT



TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	298	
	SB	—	
	EB	730 * .55 + 174 * 1.0	A
	WB	723 * .55	873
PM	NB	436	
	SB	—	
	EB	1044 * .55 + 213 * 1.0	C
	WB	913 * .55	1223

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING



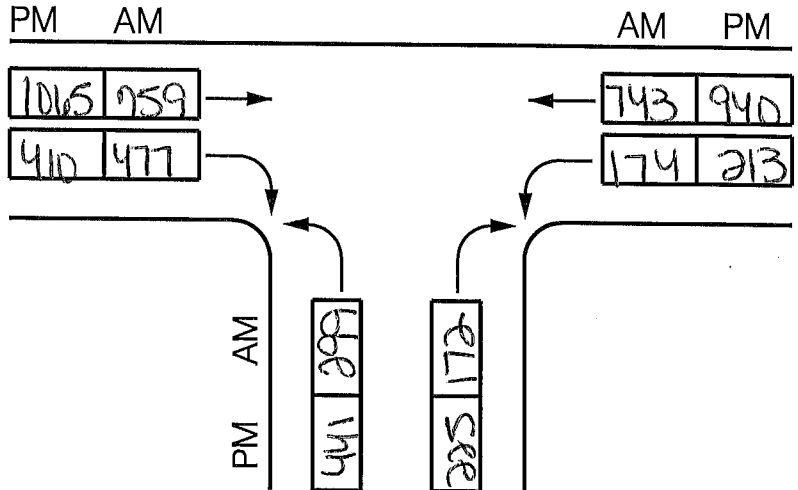
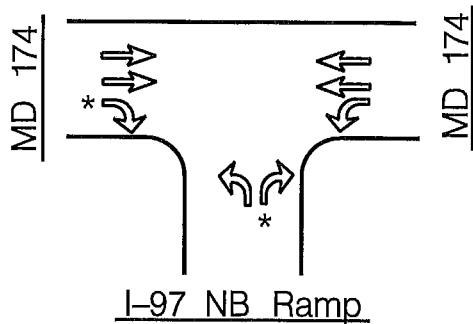
NORTH

LANE CONFIGURATION

* FREE RIGHT



NORTH



TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB 299 * 1.0	299 *	A 890
	SB _____	_____	
	EB 759 * .55 + 174 * 1.0	591 *	
	WB 743 * .55	409	
PM	NB 441 * 1.0	441 *	C 1240
	SB _____	_____	
	EB 1065 * .55 + 213 * 1.0	799 *	
	WB 940 * .55	517	

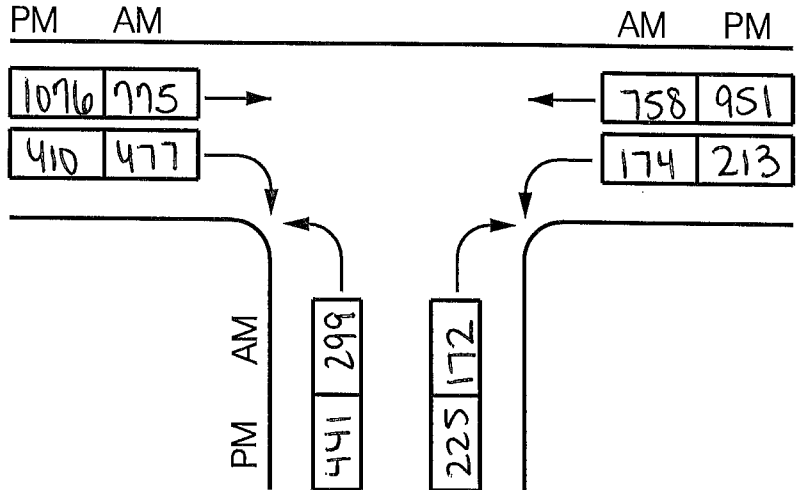
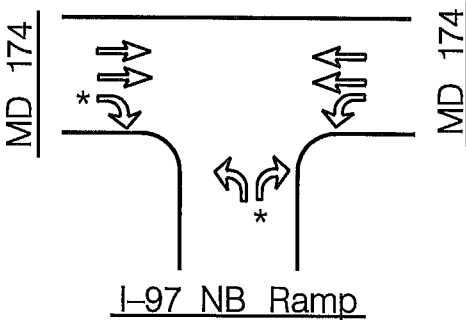
CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: BACKGROUND



LANE CONFIGURATION

* FREE RIGHT



TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	299	A
	SB	—	
	EB	775 * .55 + 174 * 1.0	600
	WB	758 * .55	417
PM	NB	441	C
	SB	—	
	EB	1076 * .55 + 213 * 1.0	805
	WB	951 * .55	523

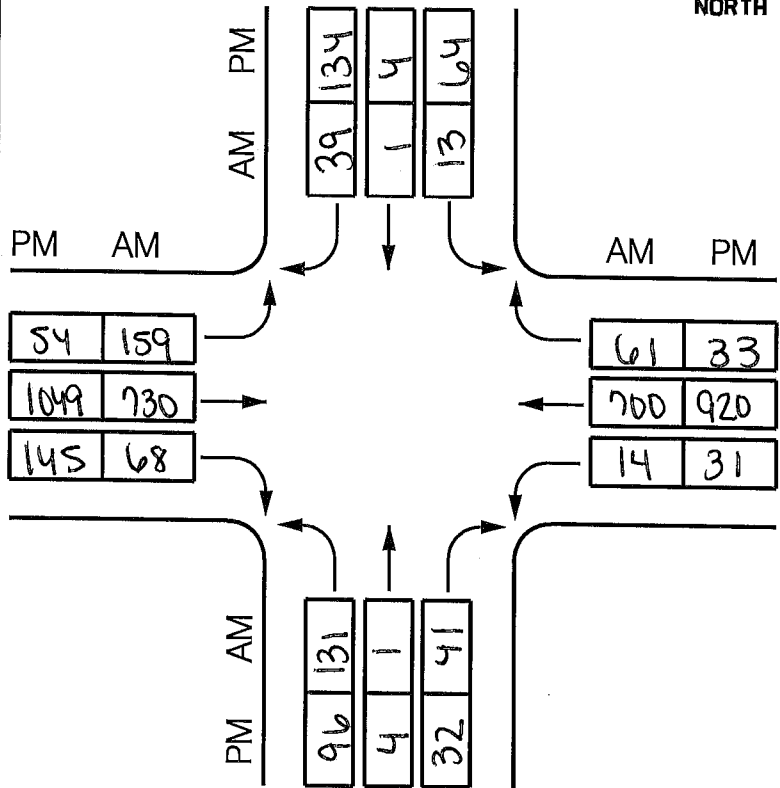
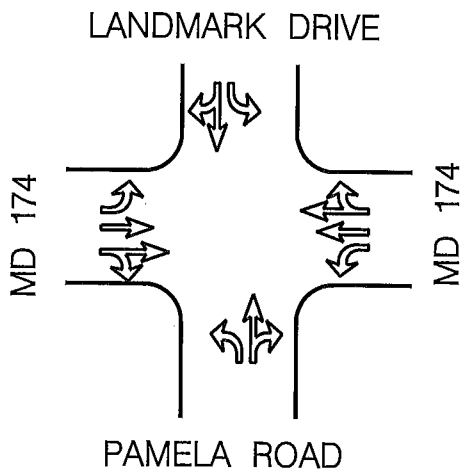
CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

TRAFFIC VOLUMES



LANE CONFIGURATION



	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(1 + 4) * 1.0 + 13 * 1.0$	55	
	SB $(1 + 39) * 1.0 + 131 * 1.0$	171*	
	EB $(730 + 68) * 0.55 + 14 * 1.0$	453	A
	WB $(700 + 61) * 0.55 + 159 * 1.0$	578*	749
PM	NB $(4 + 32) * 1.0 + 64 * 1.0$	100	
	SB $(4 + 134) * 1.0 + 96 * 1.0$	234*	
	EB $(1049 + 145) * 0.55 + 31 * 1.0$	688*	A
	WB $(920 + 33) * 0.55 + 54 * 1.0$	578	922

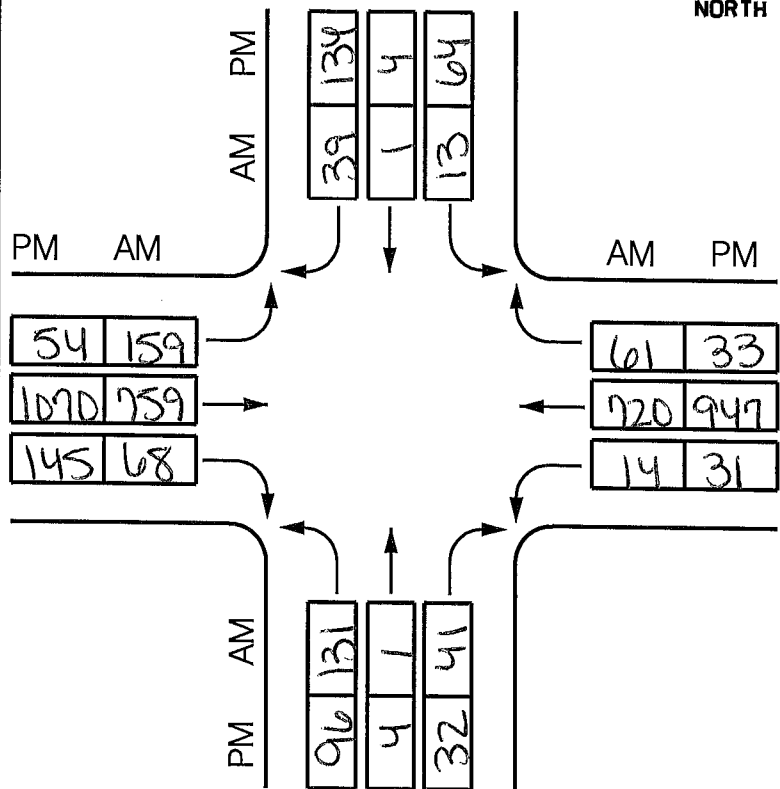
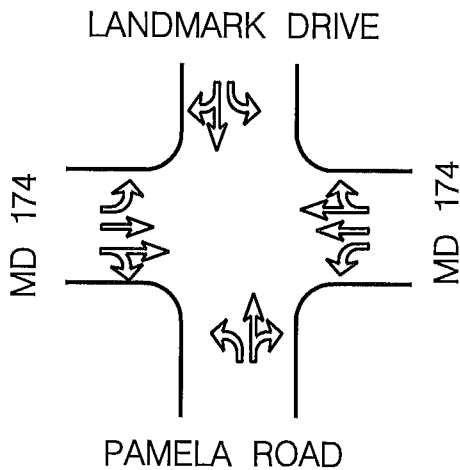
CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC VOLUMES



LANE CONFIGURATION



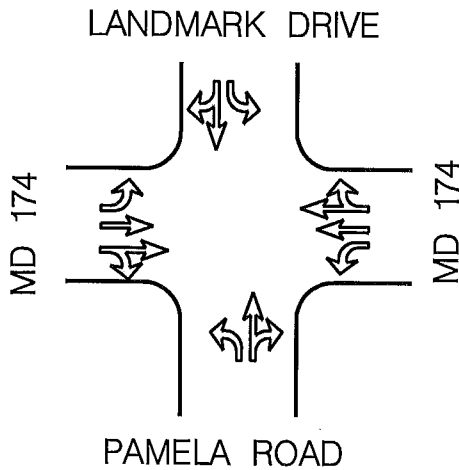
	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB (1+41) * 1.0 + 13 * 1.0	55	
	SB (1+39) * 1.0 + 131 * 1.0	171*	
	EB (759+68) * .55 + 14 * 1.0	469	A
	WB (720+61) * .55 + 159 * 1.0	589*	760
PM	NB (4+32) * 1.0 + 64 * 1.0	100	
	SB (4+134) * 1.0 + 96 * 1.0	234*	
	EB (1070+145) * .55 + 31 * 1.0	699*	A
	WB (947+33) * .55 + 54 * 1.0	593	933

CRITICAL LANE ANALYSIS

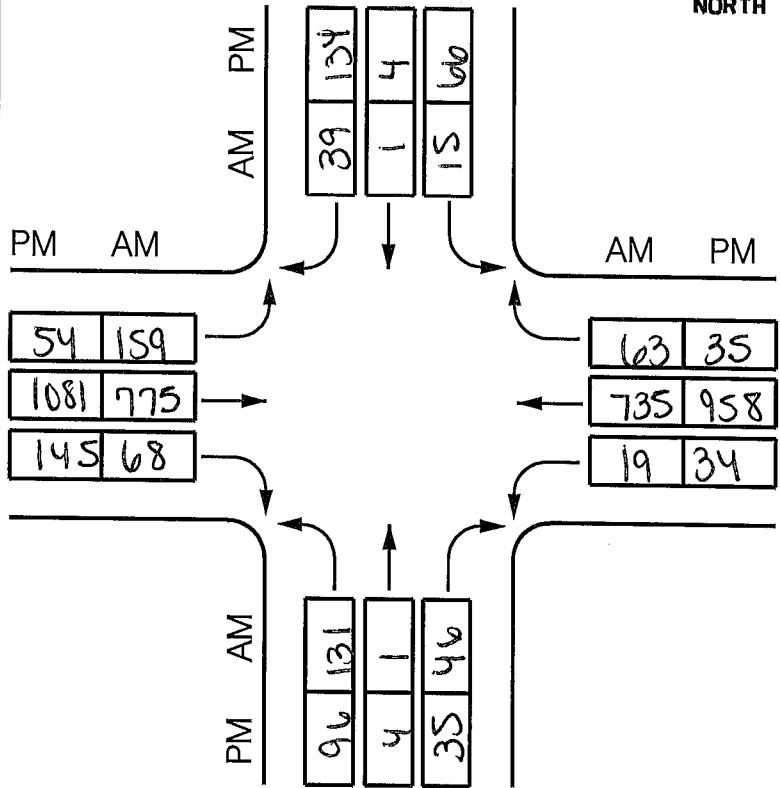
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



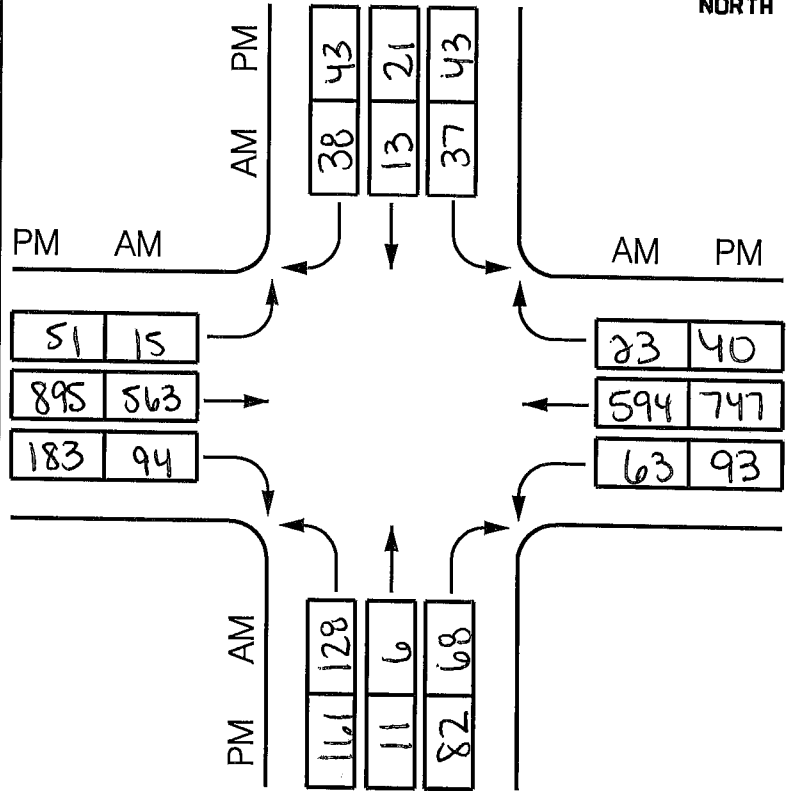
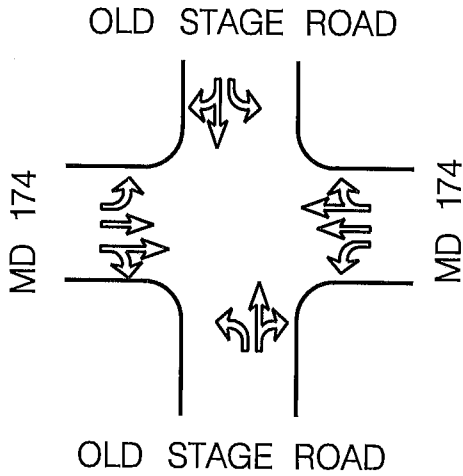
	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(1 + 46) * 1.0 + 15 * 1.0$	62	
	SB $(1 + 39) * 1.0 + 131 * 1.0$	171 [*]	
	EB $(775 + 68) * .55 + 19 * 1.0$	483	A
	WB $(735 + 63) * .55 + 159 * 1.0$	598 [*]	769
PM	NB $(4 + 35) * 1.0 + 66 * 1.0$	105	
	SB $(4 + 134) * 1.0 + 96 * 1.0$	234 [*]	
	EB $(1081 + 145) * .55 + 34 * 1.0$	708 [*]	A
	WB $(958 + 35) * .55 + 54 * 1.0$	600	942

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE



LANE CONFIGURATION



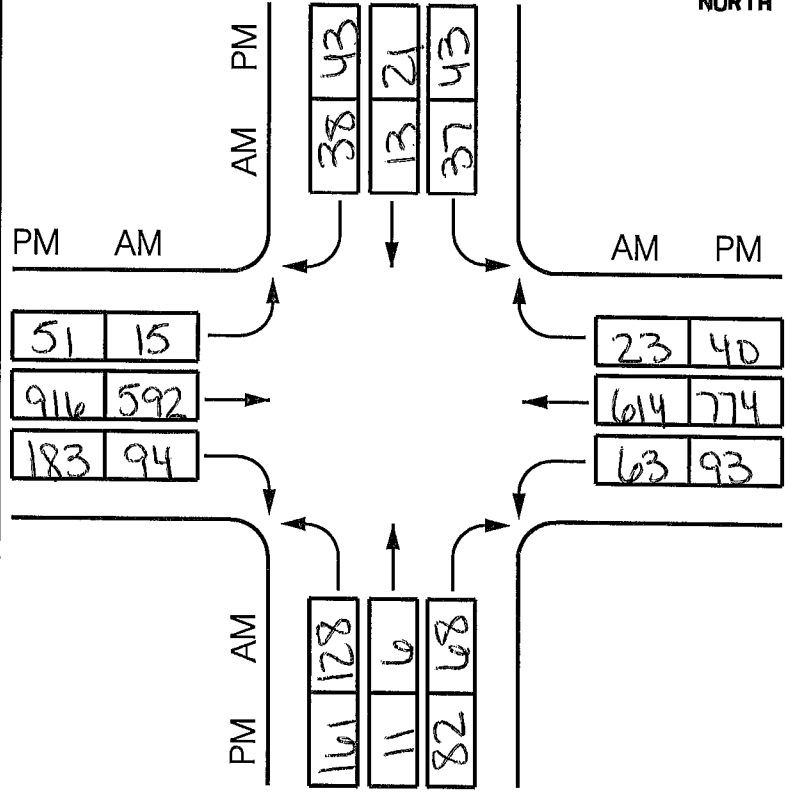
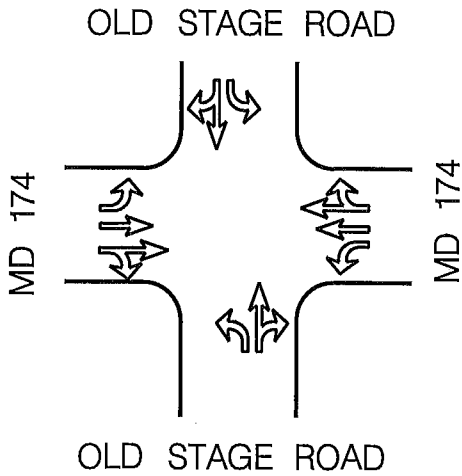
TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(6+68) * 1.0 + 37 * 1.0$	111	
	SB $(13+38) * 1.0 + 128 * 1.0$	179 ^v	
	EB $(563+94) * 0.55 + 63 * 1.0$	424 ^v	A
	WB $(594+23) * 0.55 + 15 * 1.0$	354	603
PM	NB $(11+82) * 1.0 + 43 * 1.0$	136	
	SB $(21+43) * 1.0 + 161 * 1.0$	225 ^v	
	EB $(895+183) * 0.55 + 93 * 1.0$	686 ^v	A
	WB $(747+40) * 0.55 + 51 * 1.0$	484	911

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING



LANE CONFIGURATION



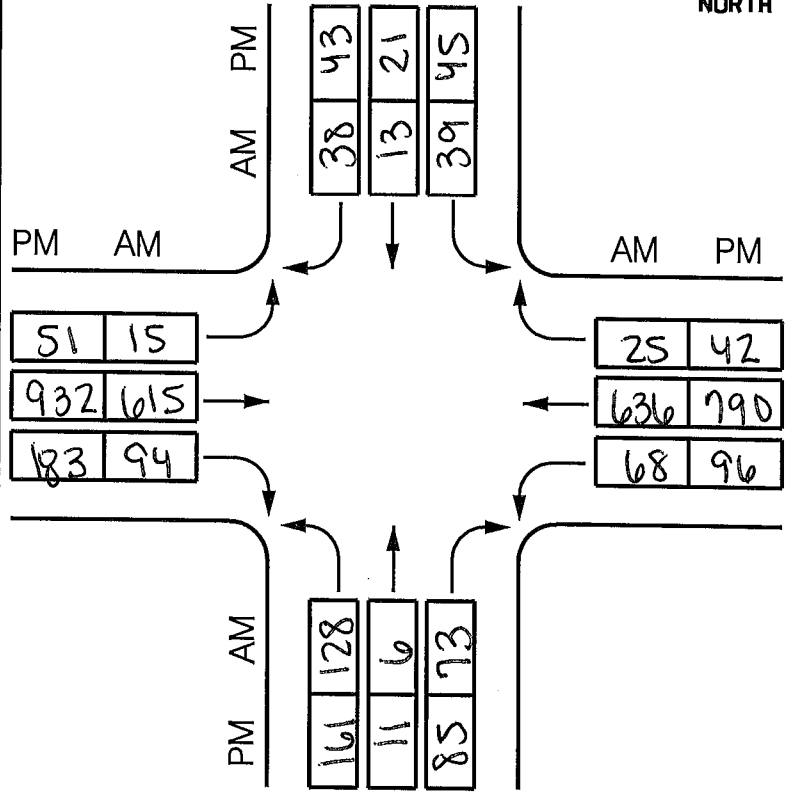
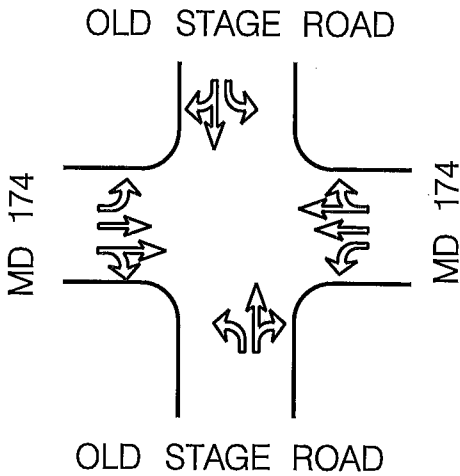
TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(6 + 68) * 1.0 + 37 * 1.0$	111	
	SB $(13 + 38) * 1.0 + 128 * 1.0$	179 ^v	
	EB $(592 + 94) * .55 + 63 * 1.0$	440 ^v	A
	WB $(614 + 23) * .55 + 15 * 1.0$	365	619
PM	NB $(11 + 82) * 1.0 + 43 * 1.0$	136	
	SB $(21 + 43) * 1.0 + 161 * 1.0$	225 ^v	
	EB $(916 + 183) * .55 + 93 * 1.0$	697 ^v	A
	WB $(774 + 40) * .55 + 51 * 1.0$	499	922

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: BACKGROUND



LANE CONFIGURATION



TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(6 + 73) * 1.0 + 39 * 1.0$	118	A 637
	SB $(13 + 38) * 1.0 + 128 * 1.0$	179*	
	EB $(615 + 94) * .55 + 68 * 1.0$	458*	
	WB $(636 + 25) * .55 + 15 * 1.0$	379	
PM	NB $(11 + 85) * 1.0 + 45 * 1.0$	141	A 934
	SB $(21 + 43) * 1.0 + 161 * 1.0$	225*	
	EB $(932 + 183) * .55 + 96 * 1.0$	709*	
	WB $(790 + 48) * .55 + 51 * 1.0$	509	

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

TRAFFIC CONCEPTS, Inc.

TRAFFIC VOLUMES



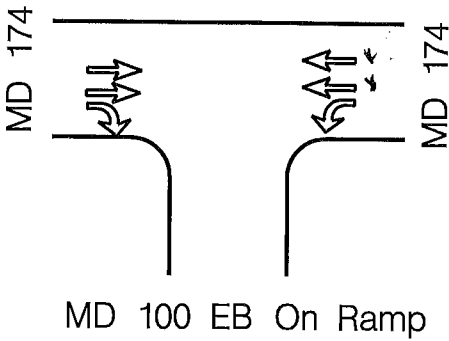
NORTH

LANE CONFIGURATION

4 Free-flow



NORTH



PM AM

747	505	→
364	153	↘

AM PM

←	794	830
↙	57	68

TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE	
AM	NB	—	A 335	
	SB	—		
	EB	$505 * .55 + 57 * 1.0$		335*
	WB	—		
PM	NB	—	A 479	
	SB	—		
	EB	$747 * .55 + 68 * 1.0$		479*
	WB	—		

CRITICAL LANE ANALYSIS

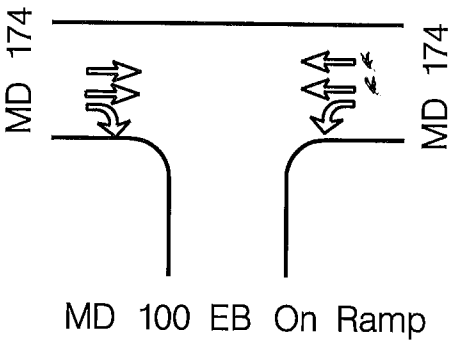
Prepared By: C. ATKINSON

Condition: EXISTING

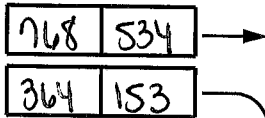


LANE CONFIGURATION

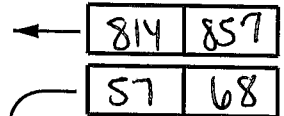
Free flow



PM AM



AM PM



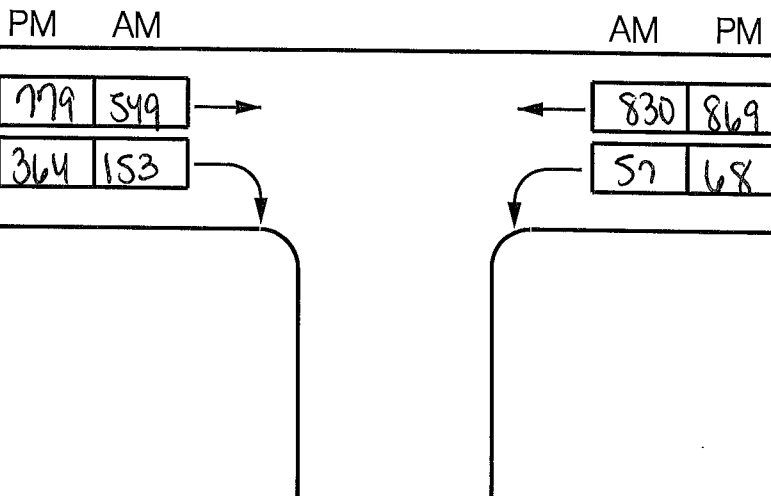
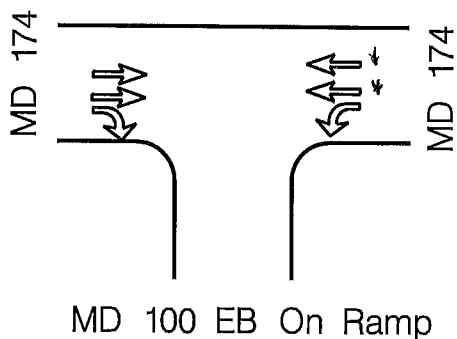
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	—	—	
	SB	—	—	
	EB	534 * 1.55 + 57 * 1.0	351 ^v	A 351
	WB	—	—	
PM	NB	—	—	
	SB	—	—	
	EB	768 * 1.55 + 68 * 1.0	490 ^v	A 490
	WB	—	—	

CRITICAL LANE ANALYSIS



LANE CONFIGURATION

Free flow



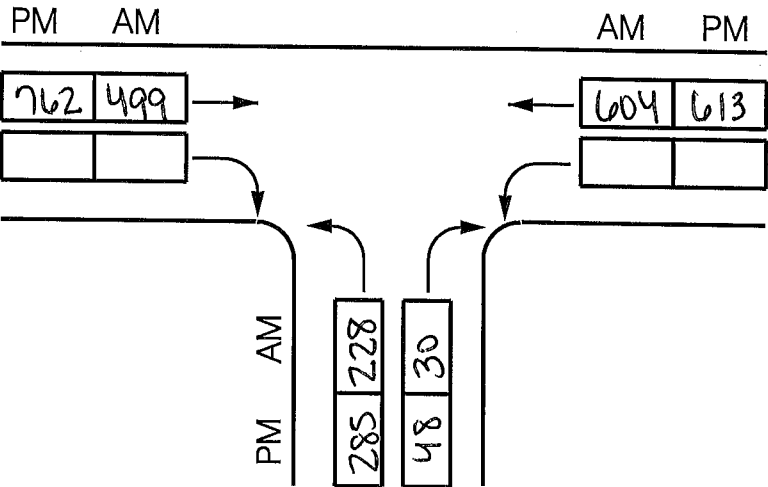
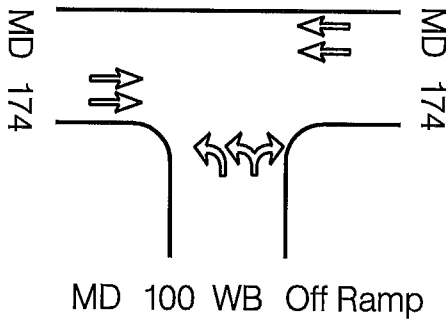
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	—	—	A 359
	SB	—	—	
	EB	549 * .55 + 57 * 1.0	359 ⁺	
	WB	—	—	
PM	NB	—	—	A 496
	SB	—	—	
	EB	779 * .55 + 68 * 1.0	496 ⁺	
	WB	—	—	

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE



LANE CONFIGURATION



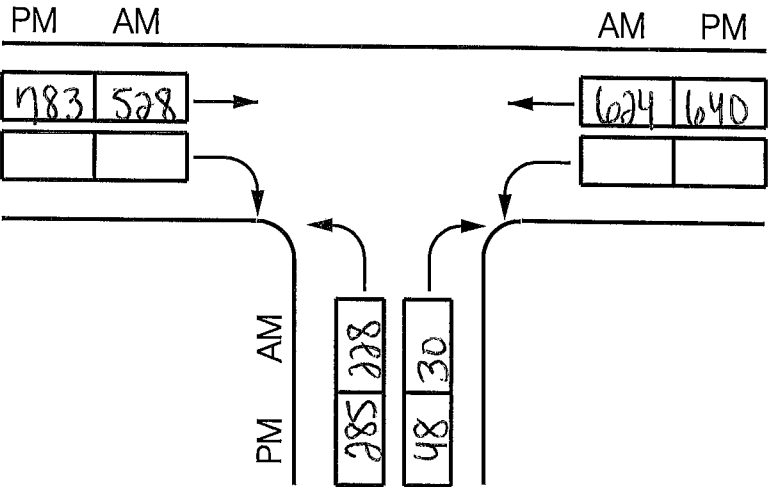
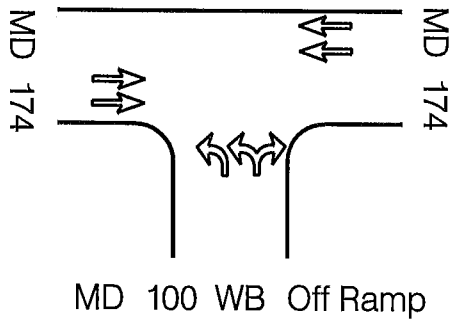
TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =		CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB (228 + 30) * .6	155*	A 487
	SB —	—	
	EB 499 * .55	274	
	WB 604 * .55	332*	
PM	NB (285 + 48) * .6	200*	A 619
	SB —	—	
	EB 762 * .55	419*	
	WB 613 * .55	337	

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING



LANE CONFIGURATION

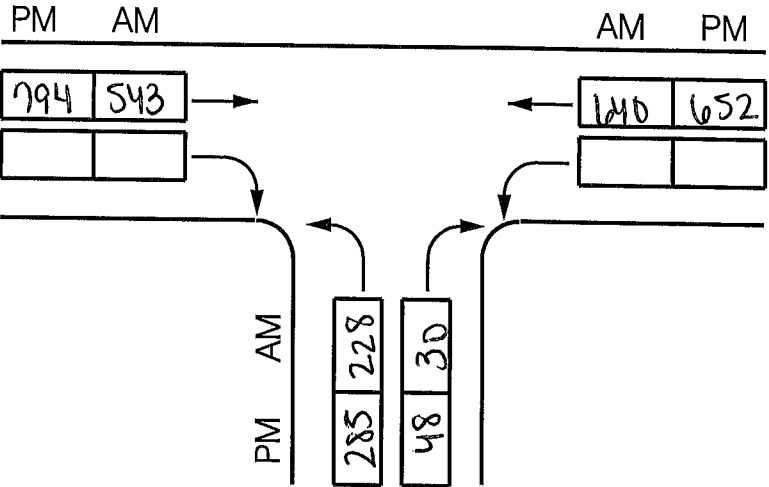
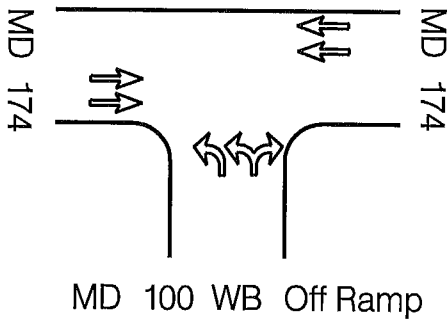


		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	$(288 + 30) * 1.6$	155 ^v	A 498
	SB	—	—	
	EB	$528 * 1.55$	290	
	WB	$624 * 1.55$	343 ^v	
PM	NB	$(288 + 48) * 1.6$	200 [*]	A 631
	SB	—	—	
	EB	$783 * 1.55$	431 ^v	
	WB	$640 * 1.55$	352	

CRITICAL LANE ANALYSIS



LANE CONFIGURATION



	TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB $(228 + 30) * 1.6$	155 [*]	A 507
	SB —	—	
	EB 543 * .55	299	
	WB 640 * .55	352 [†]	
PM	NB $(285 + 48) * 1.6$	200 [†]	A 637
	SB —	—	
	EB 794 * .55	437 [†]	
	WB 652 * .55	359	

CRITICAL LANE ANALYSIS

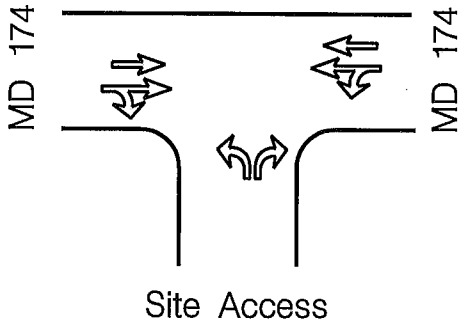


NORTH

LANE CONFIGURATION

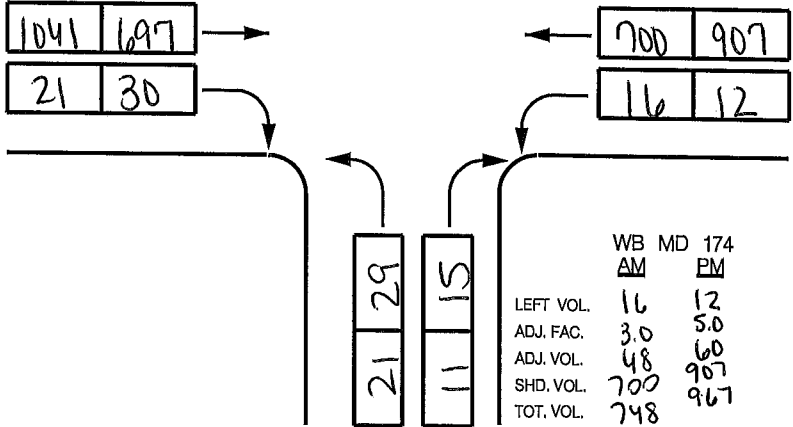


NORTH



PM AM

AM PM

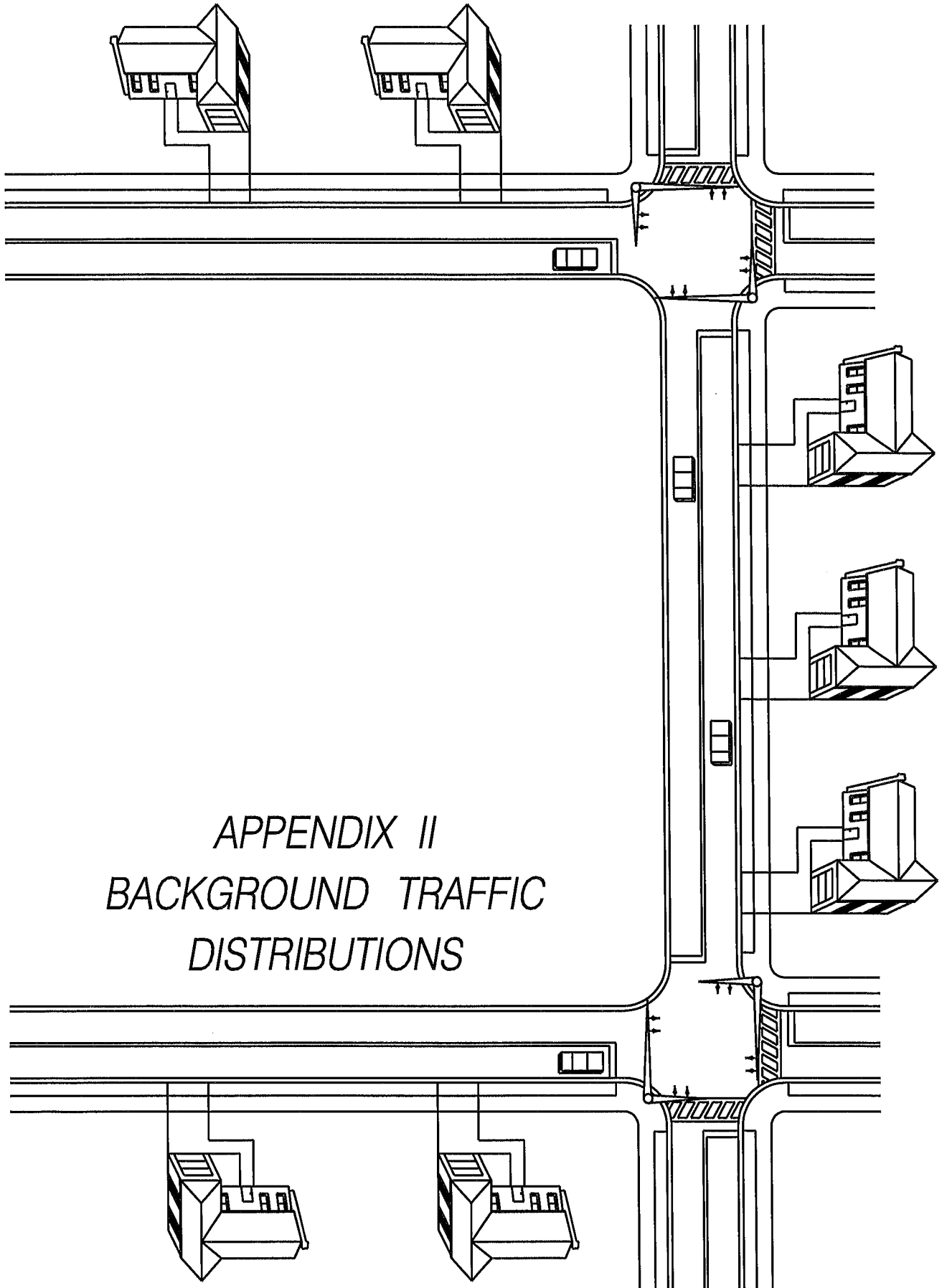


	WB MD 174 AM	MD 174 PM
LEFT VOL.	16	12
ADJ. FAC.	3.0	5.0
ADJ. VOL.	48	60
SHD. VOL.	700	907
TOT. VOL.	748	967

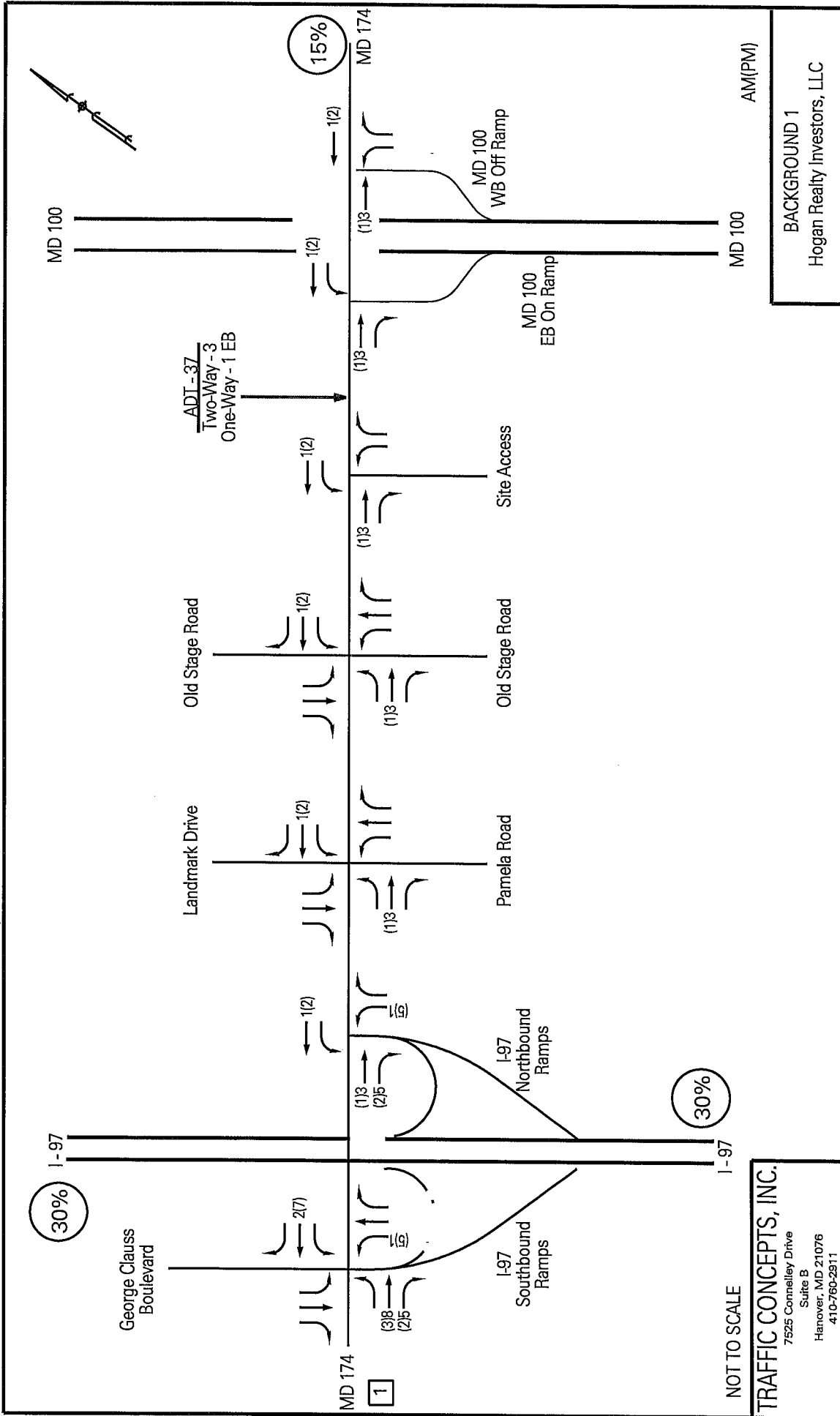
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	29 * 1.0	29 ^v	
	SB	—	—	
	EB	(697 + 30) * 0.55 + 16 * 1.0	416 ^v	A
	WB	748 * 0.55	411	445
PM	NB	21 * 1.0	21 ^v	
	SB	—	—	
	EB	(1041 + 21) * 0.55 + 12 * 1.0	596 ^v	A
	WB	967 * 0.55	532	617

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE



*APPENDIX II
BACKGROUND TRAFFIC
DISTRIBUTIONS*



BACKGROUND 1
Hogan Realty Investors, LLC

NOT TO SCALE
TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, MD 21076
410-760-2911

Detailed Average Rate Trip Calculations
 For 46 Dwelling Units of Residential Condominium / Townhouse(230) - [E]

Project: Hogan Realty Investors, LLC
 Phase:

Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	7.12	0.00	1.00	327
7-9 AM Peak Hour Enter	0.10	0.00	1.00	5
7-9 AM Peak Hour Exit	0.50	0.00	1.00	23
7-9 AM Peak Hour Total	0.60	0.00	1.00	28
4-6 PM Peak Hour Enter	0.46	0.00	1.00	21
4-6 PM Peak Hour Exit	0.23	0.00	1.00	11
4-6 PM Peak Hour Total	0.69	0.00	1.00	32
AM Pk Hr, Generator, Enter	0.11	0.00	1.00	5
AM Pk Hr, Generator, Exit	0.47	0.00	1.00	22
AM Pk Hr, Generator, Total	0.58	0.00	1.00	27
PM Pk Hr, Generator, Enter	0.72	0.00	1.00	33
PM Pk Hr, Generator, Exit	0.40	0.00	1.00	19
PM Pk Hr, Generator, Total	1.12	0.00	1.00	52
Saturday 2-Way Volume	12.92	0.00	1.00	594
Saturday Peak Hour Enter	0.66	0.00	1.00	30
Saturday Peak Hour Exit	0.56	0.00	1.00	26
Saturday Peak Hour Total	1.22	0.00	1.00	56
Sunday 2-Way Volume	10.90	0.00	1.00	501
Sunday Peak Hour Enter	0.65	0.00	1.00	30
Sunday Peak Hour Exit	0.67	0.00	1.00	31
Sunday Peak Hour Total	1.32	0.00	1.00	61

The above rates were calculated from these equations:

24-Hr. 2-Way Volume: $LN(T) = .87LN(X) + 2.46, R^2 = 0.8$
 7-9 AM Peak Hr. Total: $LN(T) = .8LN(X) + .26$
 $R^2 = 0.76, 0.17 \text{ Enter}, 0.83 \text{ Exit}$
 4-6 PM Peak Hr. Total: $LN(T) = .82LN(X) + .32$
 $R^2 = 0.8, 0.67 \text{ Enter}, 0.33 \text{ Exit}$
 AM Gen Pk Hr. Total: $LN(T) = .82LN(X) + .15$
 $R^2 = 0.8, 0.19 \text{ Enter}, 0.81 \text{ Exit}$
 PM Gen Pk Hr. Total: $T = .34(X) + 35.87$
 $R^2 = 0.82, 0.64 \text{ Enter}, 0.36 \text{ Exit}$
 Sat. 2-Way Volume: $T = 3.62(X) + 427.93, R^2 = 0.84$
 Sat. Pk Hr. Total: $T = .29(X) + 42.63$
 $R^2 = 0.84, 0.54 \text{ Enter}, 0.46 \text{ Exit}$
 Sun. 2-Way Volume: $T = 3.13(X) + 357.26, R^2 = 0.88$
 Sun. Pk Hr. Total: $T = .23(X) + 50.01$
 $R^2 = 0.78, 0.49 \text{ Enter}, 0.51 \text{ Exit}$

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

Detailed Average Rate Trip Calculations
For 10 Dwelling Units of Single Family Detached Housing(210) - [E]

Project: Nanny Property
Phase:

Open Date:
Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	12.63	0.00	1.00	126
7-9 AM Peak Hour Enter	0.42	0.00	1.00	4
7-9 AM Peak Hour Exit	1.26	0.00	1.00	13
7-9 AM Peak Hour Total	1.67	0.00	1.00	17
4-6 PM Peak Hour Enter	0.83	0.00	1.00	8
4-6 PM Peak Hour Exit	0.49	0.00	1.00	5
4-6 PM Peak Hour Total	1.32	0.00	1.00	13
AM Pk Hr, Generator, Enter	0.50	0.00	1.00	5
AM Pk Hr, Generator, Exit	1.41	0.00	1.00	14
AM Pk Hr, Generator, Total	1.91	0.00	1.00	19
PM Pk Hr, Generator, Enter	0.90	0.00	1.00	9
PM Pk Hr, Generator, Exit	0.51	0.00	1.00	5
PM Pk Hr, Generator, Total	1.41	0.00	1.00	14
Saturday 2-Way Volume	11.93	0.00	1.00	119
Saturday Peak Hour Enter	0.95	0.00	1.00	10
Saturday Peak Hour Exit	0.81	0.00	1.00	8
Saturday Peak Hour Total	1.77	0.00	1.00	18
Sunday 2-Way Volume	8.57	0.00	1.00	86
Sunday Peak Hour Enter	0.59	0.00	1.00	6
Sunday Peak Hour Exit	0.52	0.00	1.00	5
Sunday Peak Hour Total	1.11	0.00	1.00	11

The above rates were calculated from these equations:

24-Hr. 2-Way Volume: $LN(T) = .92LN(X) + 2.72, R^2 = 0.95$
7-9 AM Peak Hr. Total: $T = .7(X) + 9.74$
 $R^2 = 0.89, 0.25$ Enter, 0.75 Exit
4-6 PM Peak Hr. Total: $LN(T) = .9LN(X) + .51$
 $R^2 = 0.91, 0.63$ Enter, 0.37 Exit
AM Gen Pk Hr. Total: $T = .7(X) + 12.12$
 $R^2 = 0.89, 0.26$ Enter, 0.74 Exit
PM Gen Pk Hr. Total: $LN(T) = .88LN(X) + .62$
 $R^2 = 0.91, 0.64$ Enter, 0.36 Exit
Sat. 2-Way Volume: $LN(T) = .93LN(X) + 2.64, R^2 = 0.92$
Sat. Pk Hr. Total: $T = .89(X) + 8.77$
 $R^2 = 0.91, 0.54$ Enter, 0.46 Exit
Sun. 2-Way Volume: $T = 8.63(X) + -.63, R^2 = 0.93$
Sun. Pk Hr. Total: $LN(T) = .91LN(X) + .31$
 $R^2 = 0.88, 0.53$ Enter, 0.47 Exit

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

Detailed Average Rate Trip Calculations
For 27 Dwelling Units of Residential Condominium / Townhouse(230) -- [E]

Project: Wolfepack, LLC Property
Phase:

Open Date:
Analysis Date:

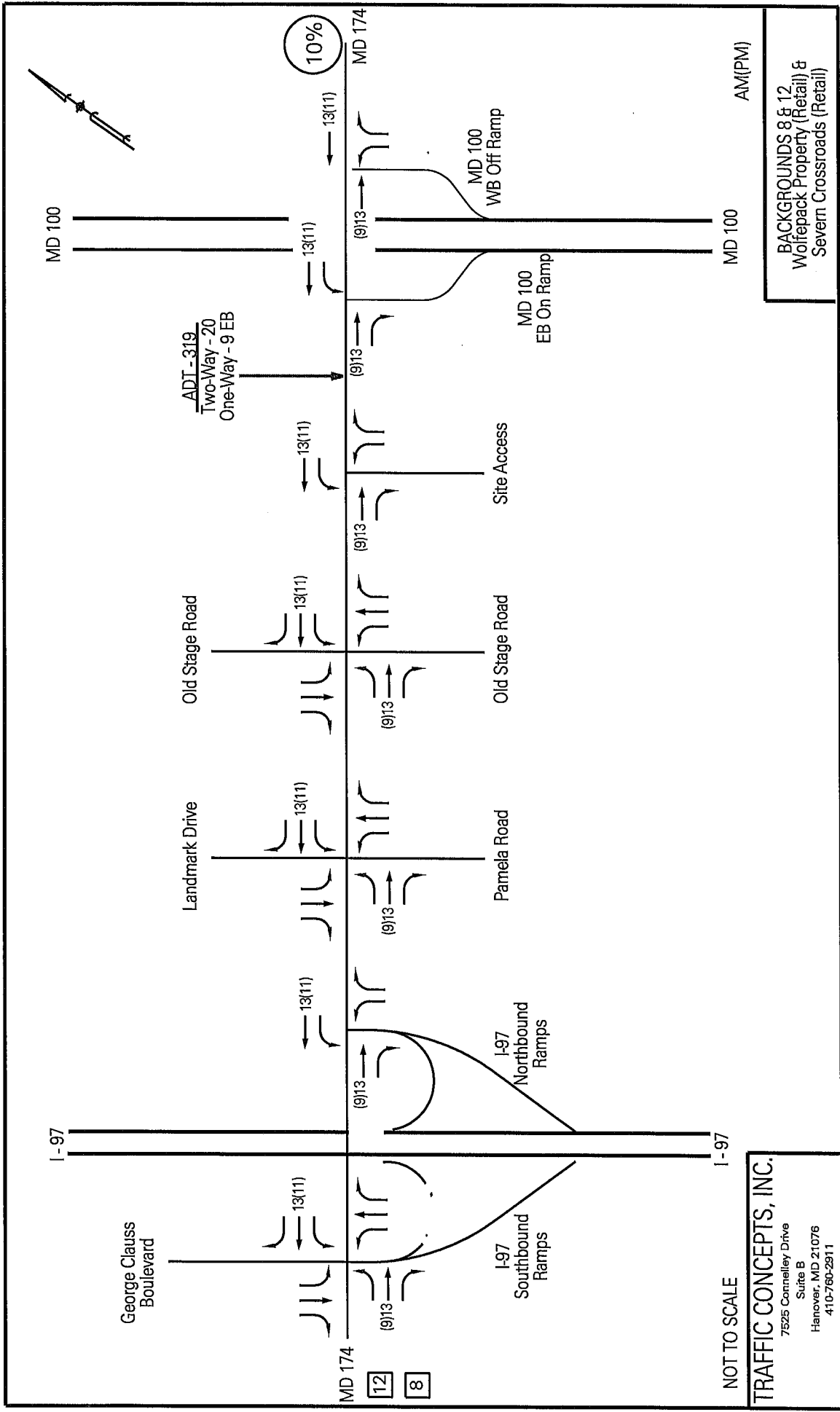
Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	7.63	0.00	1.00	206
7-9 AM Peak Hour Enter	0.11	0.00	1.00	3
7-9 AM Peak Hour Exit	0.56	0.00	1.00	15
7-9 AM Peak Hour Total	0.67	0.00	1.00	18
4-6 PM Peak Hour Enter	0.51	0.00	1.00	14
4-6 PM Peak Hour Exit	0.25	0.00	1.00	7
4-6 PM Peak Hour Total	0.76	0.00	1.00	21
AM Pk Hr, Generator, Enter	0.12	0.00	1.00	3
AM Pk Hr, Generator, Exit	0.52	0.00	1.00	14
AM Pk Hr, Generator, Total	0.64	0.00	1.00	17
PM Pk Hr, Generator, Enter	1.07	0.00	1.00	29
PM Pk Hr, Generator, Exit	0.60	0.00	1.00	16
PM Pk Hr, Generator, Total	1.67	0.00	1.00	45
Saturday 2-Way Volume	19.47	0.00	1.00	526
Saturday Peak Hour Enter	1.01	0.00	1.00	27
Saturday Peak Hour Exit	0.86	0.00	1.00	23
Saturday Peak Hour Total	1.87	0.00	1.00	50
Sunday 2-Way Volume	16.35	0.00	1.00	442
Sunday Peak Hour Enter	1.02	0.00	1.00	28
Sunday Peak Hour Exit	1.06	0.00	1.00	28
Sunday Peak Hour Total	2.08	0.00	1.00	56

The above rates were calculated from these equations:

24-Hr. 2-Way Volume: $LN(T) = .87LN(X) + 2.46, R^2 = 0.8$
 7-9 AM Peak Hr. Total: $LN(T) = .8LN(X) + .26$
 $R^2 = 0.76, 0.17$ Enter, 0.83 Exit
 4-6 PM Peak Hr. Total: $LN(T) = .82LN(X) + .32$
 $R^2 = 0.8, 0.67$ Enter, 0.33 Exit
 AM Gen Pk Hr. Total: $LN(T) = .82LN(X) + .15$
 $R^2 = 0.8, 0.19$ Enter, 0.81 Exit
 PM Gen Pk Hr. Total: $T = .34(X) + 35.87$
 $R^2 = 0.82, 0.64$ Enter, 0.36 Exit
 Sat. 2-Way Volume: $T = 3.62(X) + 427.93, R^2 = 0.84$
 Sat. Pk Hr. Total: $T = .29(X) + 42.63$
 $R^2 = 0.84, 0.54$ Enter, 0.46 Exit
 Sun. 2-Way Volume: $T = 3.13(X) + 357.26, R^2 = 0.88$
 Sun. Pk Hr. Total: $T = .23(X) + 50.01$
 $R^2 = 0.78, 0.49$ Enter, 0.51 Exit

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012



NOT TO SCALE
TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 410-760-2911

BACKGROUNDS 8 & 12
 Wolfpack Property (Retail) &
 Severn Crossroads (Retail)

Detailed Average Rate Trip Calculations
 For 3,630 Th.Sq.Ft. GFA of Fast-Food Restaurant with Drive-Thru(934) - [R]

Project: Wolfepack, LLC Property
 Phase:

Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	496.12	242.52	1.00	1801
7-9 AM Peak Hour Enter	23.16	0.00	1.00	84
7-9 AM Peak Hour Exit	22.26	0.00	1.00	81
7-9 AM Peak Hour Total	45.42	28.63	1.00	165
4-6 PM Peak Hour Enter	16.98	0.00	1.00	62
4-6 PM Peak Hour Exit	15.67	0.00	1.00	57
4-6 PM Peak Hour Total	32.65	19.73	1.00	119
AM Pk Hr, Generator, Enter	27.34	0.00	1.00	99
AM Pk Hr, Generator, Exit	26.27	0.00	1.00	96
AM Pk Hr, Generator, Total	53.61	26.27	1.00	195
PM Pk Hr, Generator, Enter	24.60	0.00	1.00	89
PM Pk Hr, Generator, Exit	22.70	0.00	1.00	83
PM Pk Hr, Generator, Total	47.30	25.52	1.00	172
Saturday 2-Way Volume	722.03	295.62	1.00	2621
Saturday Peak Hour Enter	30.09	0.00	1.00	109
Saturday Peak Hour Exit	28.91	0.00	1.00	105
Saturday Peak Hour Total	59.00	22.89	1.00	214
Sunday 2-Way Volume	542.72	206.86	1.00	1970
Sunday Peak Hour Enter	34.92	0.00	1.00	127
Sunday Peak Hour Exit	37.82	0.00	1.00	137
Sunday Peak Hour Total	72.74	11.95	1.00	264

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Pass-By Trips
 For 3.630 Th.Sq.Ft. GFA of Fast-Food Restaurant with Drive-Thru(934) - [R]

Project: Wolfepack, LLC Property
 Phase:

Open Date:
 Analysis Date:

Description:

	Driveway Volume	Pass-By Trips	Volume Added to Adjacent Streets
Average Weekday			
7-9 AM Peak Hour Enter	84	41	43
7-9 AM Peak Hour Exit	81	40	41
7-9 AM Peak Hour Total	165	81	84
4-6 PM Peak Hour Enter	62	31	31
4-6 PM Peak Hour Exit	57	29	28
4-6 PM Peak Hour Total	119	60	59
Saturday			
Saturday Peak Hour Enter	109	0	109
Saturday Peak Hour Exit	105	0	105
Saturday Peak Hour Total	214	0	214

Pass-By Trips were calculated on the basis of the following:

Weekday A.M. Peak Period Average Pass-By Trip Percentage = 49
 Weekday P.M. Peak Period Average Pass-By Trip Percentage = 50
 Saturday Midday Pk. Pd. Average Pass-By Trip Percentage = 0

Number of Pass-By Studies: 6 for Weekday AM PK PD and 18 for PM PK PD.

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations
For 2,800 Th.Sq.Ft. GFA of Drive-in Bank(912) - [R]

Project: Wolfepack, LLC Property
Phase:

Open Date:
Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	148.15	97.36	1.00	415
7-9 AM Peak Hour Enter	6.89	0.00	1.00	19
7-9 AM Peak Hour Exit	5.19	0.00	1.00	15
7-9 AM Peak Hour Total	12.08	6.88	1.00	34
4-6 PM Peak Hour Enter	12.15	0.00	1.00	34
4-6 PM Peak Hour Exit	12.15	0.00	1.00	34
4-6 PM Peak Hour Total	24.30	16.24	1.00	68
AM Pk Hr, Generator, Enter	9.31	0.00	1.00	26
AM Pk Hr, Generator, Exit	8.26	0.00	1.00	23
AM Pk Hr, Generator, Total	17.57	10.68	1.00	49
PM Pk Hr, Generator, Enter	13.61	0.00	1.00	38
PM Pk Hr, Generator, Exit	13.08	0.00	1.00	37
PM Pk Hr, Generator, Total	26.69	14.58	1.00	75
Saturday 2-Way Volume	86.32	36.65	1.00	242
Saturday Peak Hour Enter	13.42	0.00	1.00	38
Saturday Peak Hour Exit	12.89	0.00	1.00	36
Saturday Peak Hour Total	26.31	15.79	1.00	74
Sunday 2-Way Volume	31.90	15.45	1.00	89
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	4.78	2.17	1.00	13

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Summary of Pass-By Trips
For 2,800 Th.Sq.Ft. GFA of Drive-In Bank(912) - [R]

Project: Wolfepack, LLC Property
Phase:

Open Date:
Analysis Date:

Description:

	Driveway Volume	Pass-By Trips	Volume Added to Adjacent Streets
Average Weekday			
7-9 AM Peak Hour Enter	19	0	19
7-9 AM Peak Hour Exit	15	0	15
7-9 AM Peak Hour Total	34	0	34
4-6 PM Peak Hour Enter	34	16	18
4-6 PM Peak Hour Exit	34	16	18
4-6 PM Peak Hour Total	68	32	36
Saturday			
Saturday Peak Hour Enter	38	0	38
Saturday Peak Hour Exit	36	0	36
Saturday Peak Hour Total	74	0	74

Pass-By Trips were calculated on the basis of the following:

Weekday P.M. Peak Period Average Pass-By Trip Percentage = 47
Saturday Midday Pk. Pd. Average Pass-By Trip Percentage = 0

Number of Pass-By Studies: 6

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Mini-Warehouse (151)

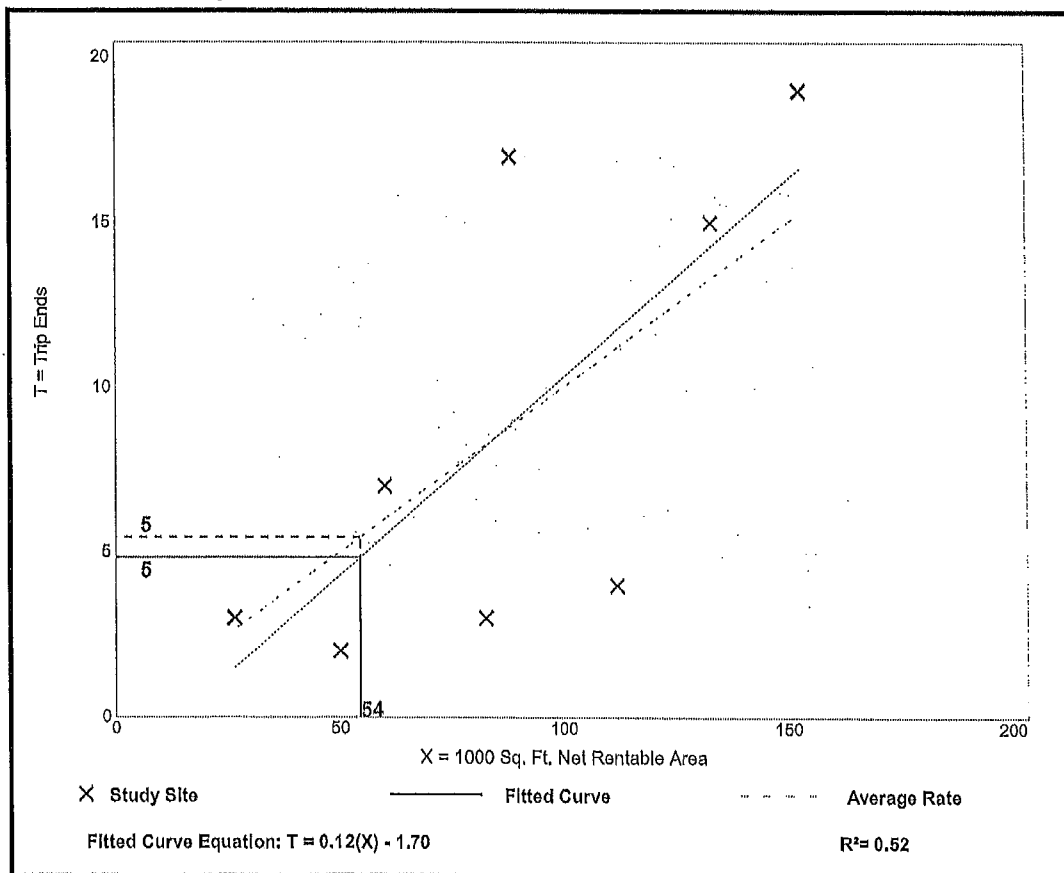
Vehicle Trip Ends vs: 1000 Sq. Ft. Net Rentable Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 8
 Avg. 1000 Sq. Ft. Net Rentable Area: 88
 Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. Net Rentable Area

Average Rate	Range of Rates	Standard Deviation
0.10	0.04 - 0.19	0.06

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

IN-2 OUT-3

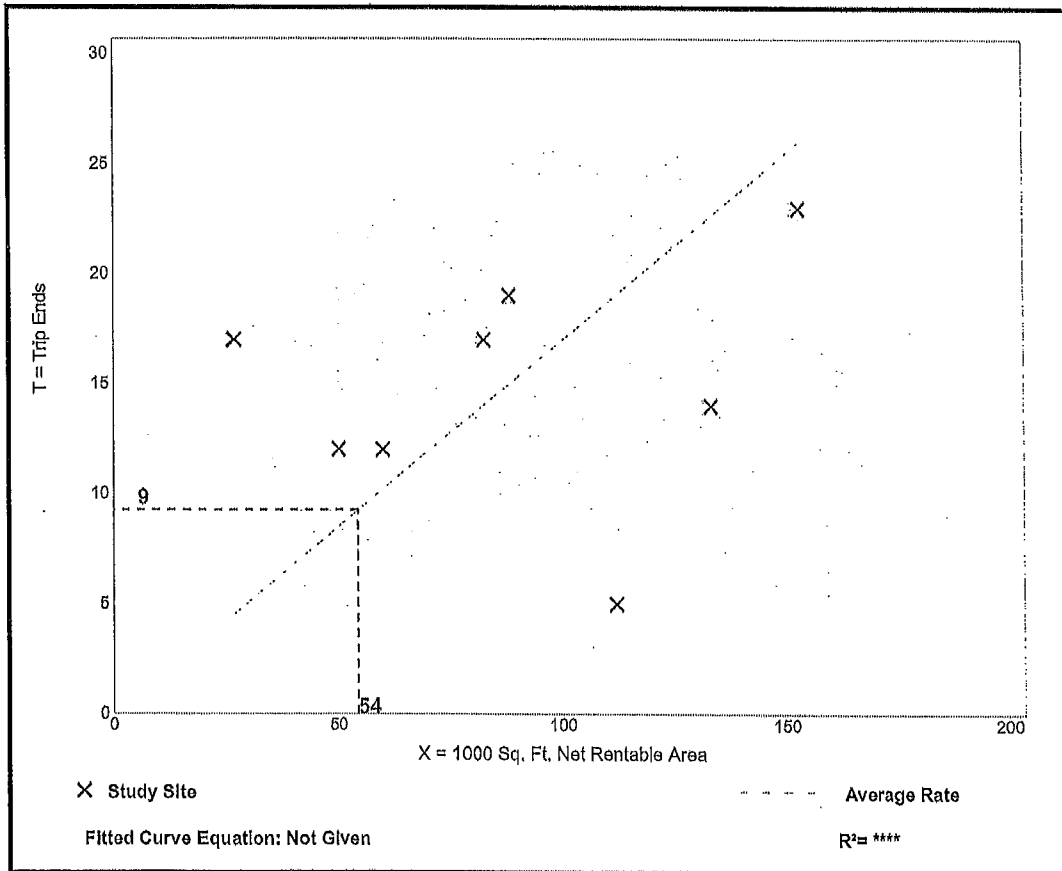
Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. Net Rentable Area
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: 8
Avg. 1000 Sq. Ft. Net Rentable Area: 88
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. Net Rentable Area

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.64	0.12

Data Plot and Equation



IN-5 007-4

Mini-Warehouse (151)

Vehicle Trip Ends vs: 1000 Sq. Ft. Net Rentable Area
On a: Weekday

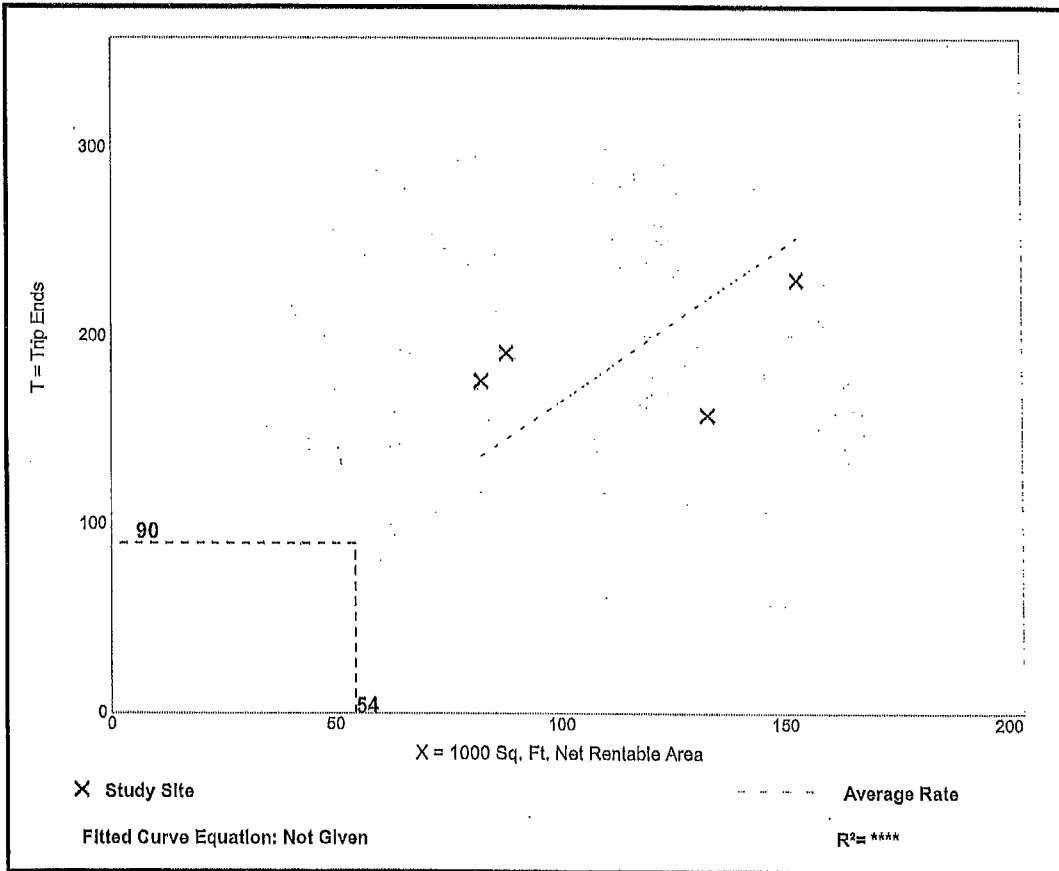
Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. Net Rentable Area: 114
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. Net Rentable Area

Average Rate	Range of Rates	Standard Deviation
1.65	1.19 - 2.17	0.47

Data Plot and Equation

Caution - Small Sample Size



90

Detailed Average Rate Trip Calculations
 For 8.0 Th.Sq.Ft. GFA of Specialty Retail Center(826) - (R)

Project: Kelly Commercial
 Phase:

Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	44.32	13.52	1.00	355
7-9 AM Peak Hour Enter	0.00	0.00	1.00	0
7-9 AM Peak Hour Exit	0.00	0.00	1.00	0
7-9 AM Peak Hour Total	0.00	0.00	1.00	0
4-6 PM Peak Hour Enter	1.19	0.00	1.00	10
4-6 PM Peak Hour Exit	1.52	0.00	1.00	12
4-6 PM Peak Hour Total	2.71	1.03	1.00	22
AM Pk Hr, Generator, Enter	3.28	0.00	1.00	26
AM Pk Hr, Generator, Exit	3.56	0.00	1.00	29
AM Pk Hr, Generator, Total	6.84	3.55	1.00	55
PM Pk Hr, Generator, Enter	2.81	0.00	1.00	22
PM Pk Hr, Generator, Exit	2.21	0.00	1.00	18
PM Pk Hr, Generator, Total	5.02	2.31	1.00	40
Saturday 2-Way Volume	42.04	13.97	1.00	336
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.00	0.00	1.00	0
Sunday 2-Way Volume	20.43	10.27	1.00	163
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.00	0.00	1.00	0

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations
 For 6.0 Th.Sq.Ft. GFA of Specialty Retail Center(826) - [R]

Project: Kelly Commercial
 Phase:

Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	44.32	15.52	1.00	266
7-9 AM Peak Hour Enter	0.00	0.00	1.00	0
7-9 AM Peak Hour Exit	0.00	0.00	1.00	0
7-9 AM Peak Hour Total	0.00	0.00	1.00	0
4-6 PM Peak Hour Enter	1.19	0.00	1.00	7
4-6 PM Peak Hour Exit	1.52	0.00	1.00	9
4-6 PM Peak Hour Total	2.71	1.83	1.00	16
AM Pk Hr, Generator, Enter	3.28	0.00	1.00	20
AM Pk Hr, Generator, Exit	3.56	0.00	1.00	21
AM Pk Hr, Generator, Total	6.84	3.55	1.00	41
PM Pk Hr, Generator, Enter	2.81	0.00	1.00	17
PM Pk Hr, Generator, Exit	2.21	0.00	1.00	13
PM Pk Hr, Generator, Total	5.02	2.31	1.00	30
Saturday 2-Way Volume	42.04	13.97	1.00	252
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.00	0.00	1.00	0
Sunday 2-Way Volume	20.43	10.27	1.00	123
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.00	0.00	1.00	0

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC

Detailed Average Rate Trip Calculations
For 6.0 Th.Sq.Ft. GFA of Specialty Retail Center(826) - (R)

Project: Kelly Commercial
Phase:

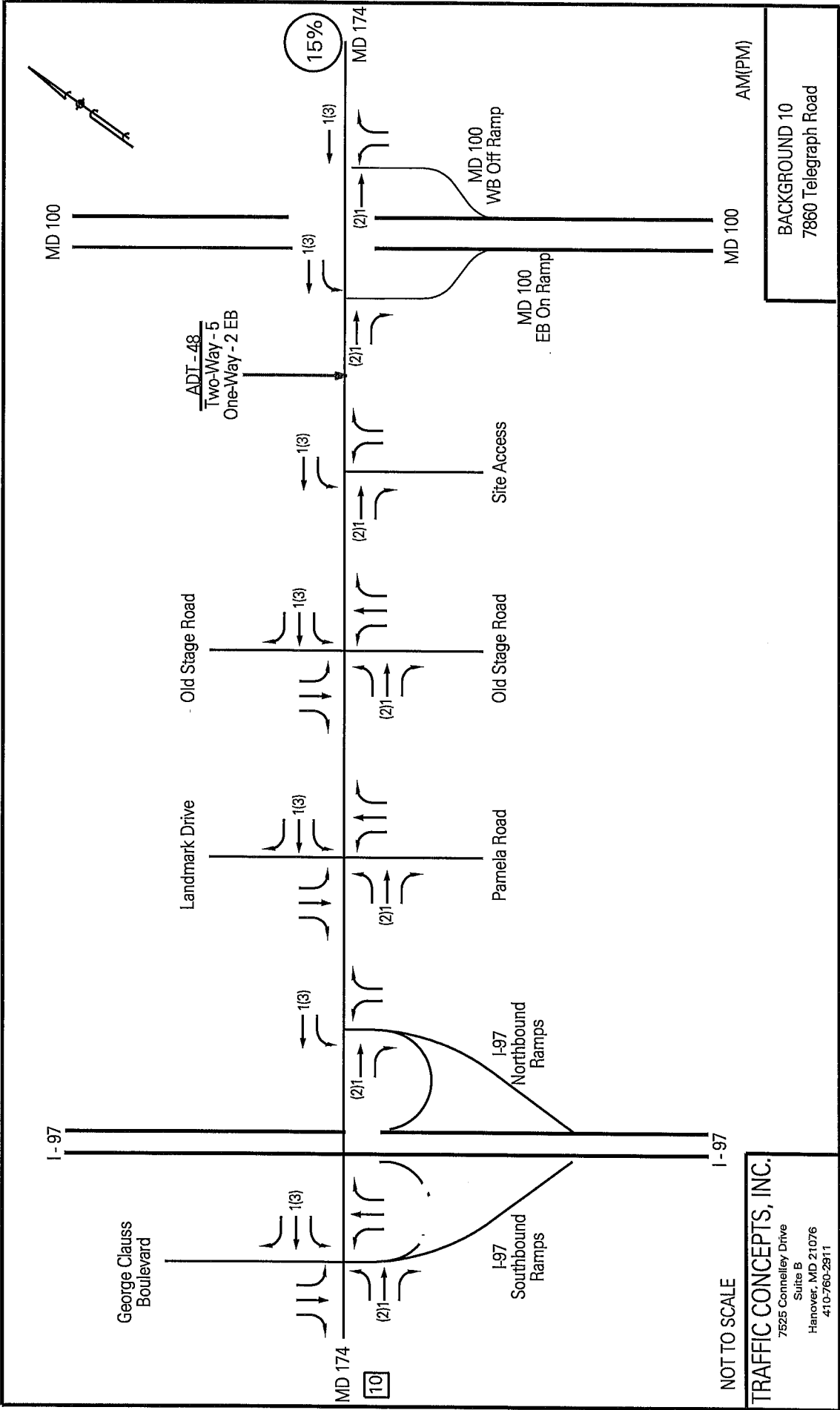
Open Date:
Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	44.32	15.52	1.00	266
7-9 AM Peak Hour Enter	0.00	0.00	1.00	0
7-9 AM Peak Hour Exit	0.00	0.00	1.00	0
7-9 AM Peak Hour Total	0.00	0.00	1.00	0
4-6 PM Peak Hour Enter	1.19	0.00	1.00	7
4-6 PM Peak Hour Exit	1.52	0.00	1.00	9
4-6 PM Peak Hour Total	2.71	1.83	1.00	16
AM Pk Hr, Generator, Enter	3.28	0.00	1.00	20
AM Pk Hr, Generator, Exit	3.56	0.00	1.00	21
AM Pk Hr, Generator, Total	6.84	3.55	1.00	41
PM Pk Hr, Generator, Enter	2.81	0.00	1.00	17
PM Pk Hr, Generator, Exit	2.21	0.00	1.00	13
PM Pk Hr, Generator, Total	5.02	2.31	1.00	30
Saturday 2-Way Volume	42.04	13.97	1.00	252
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.00	0.00	1.00	0
Sunday 2-Way Volume	20.43	10.27	1.00	123
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.00	0.00	1.00	0

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC



NOT TO SCALE

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 410-760-2811

Detailed Average Rate Trip Calculations
 For 127,400 Th.Sq.Ft. GFA of Mini-Warehouse(151) - [R]

Project: 7860 Telegraph Road
 Phase:

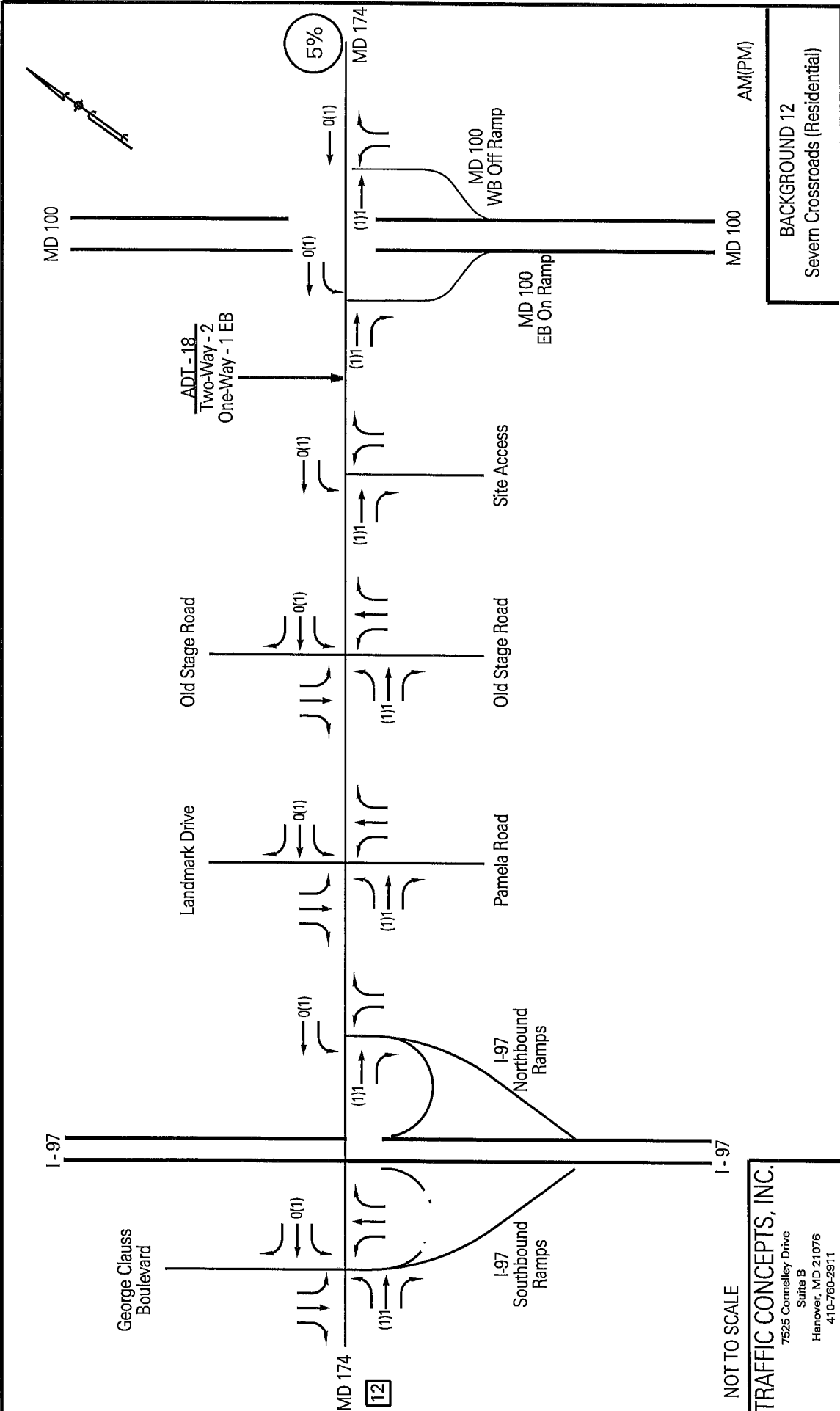
Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	2.50	1.78	1.00	319
7-9 AM Peak Hour Enter	0.08	0.00	1.00	10
7-9 AM Peak Hour Exit	0.06	0.00	1.00	8
7-9 AM Peak Hour Total	0.14	0.38	1.00	18
4-6 PM Peak Hour Enter	0.13	0.00	1.00	17
4-6 PM Peak Hour Exit	0.13	0.00	1.00	16
4-6 PM Peak Hour Total	0.26	0.52	1.00	33
AM Pk Hr, Generator, Enter	0.13	0.00	1.00	17
AM Pk Hr, Generator, Exit	0.15	0.00	1.00	19
AM Pk Hr, Generator, Total	0.28	0.54	1.00	36
PM Pk Hr, Generator, Enter	0.15	0.00	1.00	19
PM Pk Hr, Generator, Exit	0.14	0.00	1.00	18
PM Pk Hr, Generator, Total	0.29	0.54	1.00	37
Saturday 2-Way Volume	2.33	1.69	1.00	297
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.40	0.64	1.00	51
Sunday 2-Way Volume	1.78	1.46	1.00	227
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.30	0.55	1.00	38

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

TRIP GENERATION 2013, TRAFFICWARE, LLC



NOT TO SCALE

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 410-760-2911

Detailed Average Rate Trip Calculations
 For 51 Dwelling Units of Residential Condominium / Townhouse(230) - [E]

Project: Kelly Commercial
 Phase:

Open Date:
 Analysis Date:

Description:

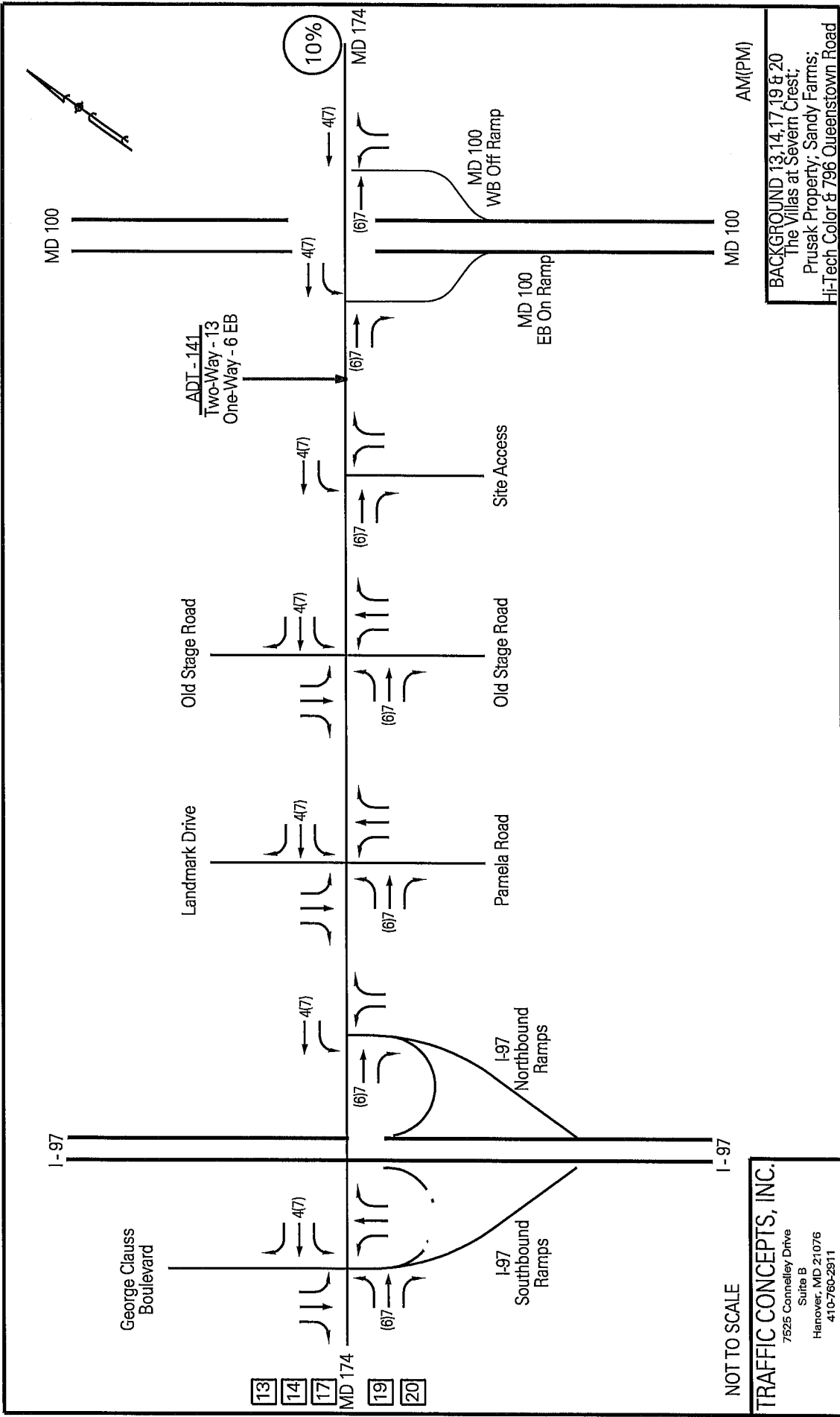
	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	7.02	0.00	1.00	
7-9 AM Peak Hour Enter	0.10	0.00	1.00	358
7-9 AM Peak Hour Exit	0.49	0.00	1.00	5
7-9 AM Peak Hour Total	0.59	0.00	1.00	25
4-6 PM Peak Hour Enter	0.45	0.00	1.00	30
4-6 PM Peak Hour Exit	0.22	0.00	1.00	23
4-6 PM Peak Hour Total	0.68	0.00	1.00	12
AM Pk Hr, Generator, Enter	0.11	0.00	1.00	35
AM Pk Hr, Generator, Exit	0.46	0.00	1.00	6
AM Pk Hr, Generator, Total	0.57	0.00	1.00	23
PM Pk Hr, Generator, Enter	0.67	0.00	1.00	29
PM Pk Hr, Generator, Exit	0.38	0.00	1.00	34
PM Pk Hr, Generator, Total	1.04	0.00	1.00	19
Saturday 2-Way Volume	12.01	0.00	1.00	53
Saturday Peak Hour Enter	0.61	0.00	1.00	613
Saturday Peak Hour Exit	0.52	0.00	1.00	31
Saturday Peak Hour Total	1.13	0.00	1.00	26
Sunday 2-Way Volume	10.14	0.00	1.00	57
Sunday Peak Hour Enter	0.59	0.00	1.00	517
Sunday Peak Hour Exit	0.62	0.00	1.00	30
Sunday Peak Hour Total	1.21	0.00	1.00	32
				62

The above rates were calculated from these equations:

24-Hr. 2-Way Volume: $LN(T) = .87LN(X) + 2.46, R^2 = 0.8$
 7-9 AM Peak Hr. Total: $LN(T) = .8LN(X) + .26$
 $R^2 = 0.76, 0.17$ Enter, 0.83 Exit
 4-6 PM Peak Hr. Total: $LN(T) = .82LN(X) + .32$
 $R^2 = 0.8, 0.67$ Enter, 0.33 Exit
 AM Gen Pk Hr. Total: $LN(T) = .82LN(X) + .15$
 $R^2 = 0.8, 0.19$ Enter, 0.81 Exit
 PM Gen Pk Hr. Total: $T = .34(X) + 35.87$
 $R^2 = 0.82, 0.64$ Enter, 0.36 Exit
 Sat. 2-Way Volume: $T = 3.62(X) + 427.93, R^2 = 0.84$
 Sat. Pk Hr. Total: $T = .29(X) + 42.63$
 $R^2 = 0.84, 0.54$ Enter, 0.46 Exit
 Sun. 2-Way Volume: $T = 3.13(X) + 357.26, R^2 = 0.88$
 Sun. Pk Hr. Total: $T = .23(X) + 50.01$
 $R^2 = 0.78, 0.49$ Enter, 0.51 Exit

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

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13 14 17 19 20

NOT TO SCALE

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, MD 21076
 410-760-2911

BACKGROUND 13, 14, 17, 19 & 20
 The Villas at Severn Crest;
 Prusak Property; Sandy Farms;
 Hi-Tech Color & 796 Queenstown Road

AM(PM)

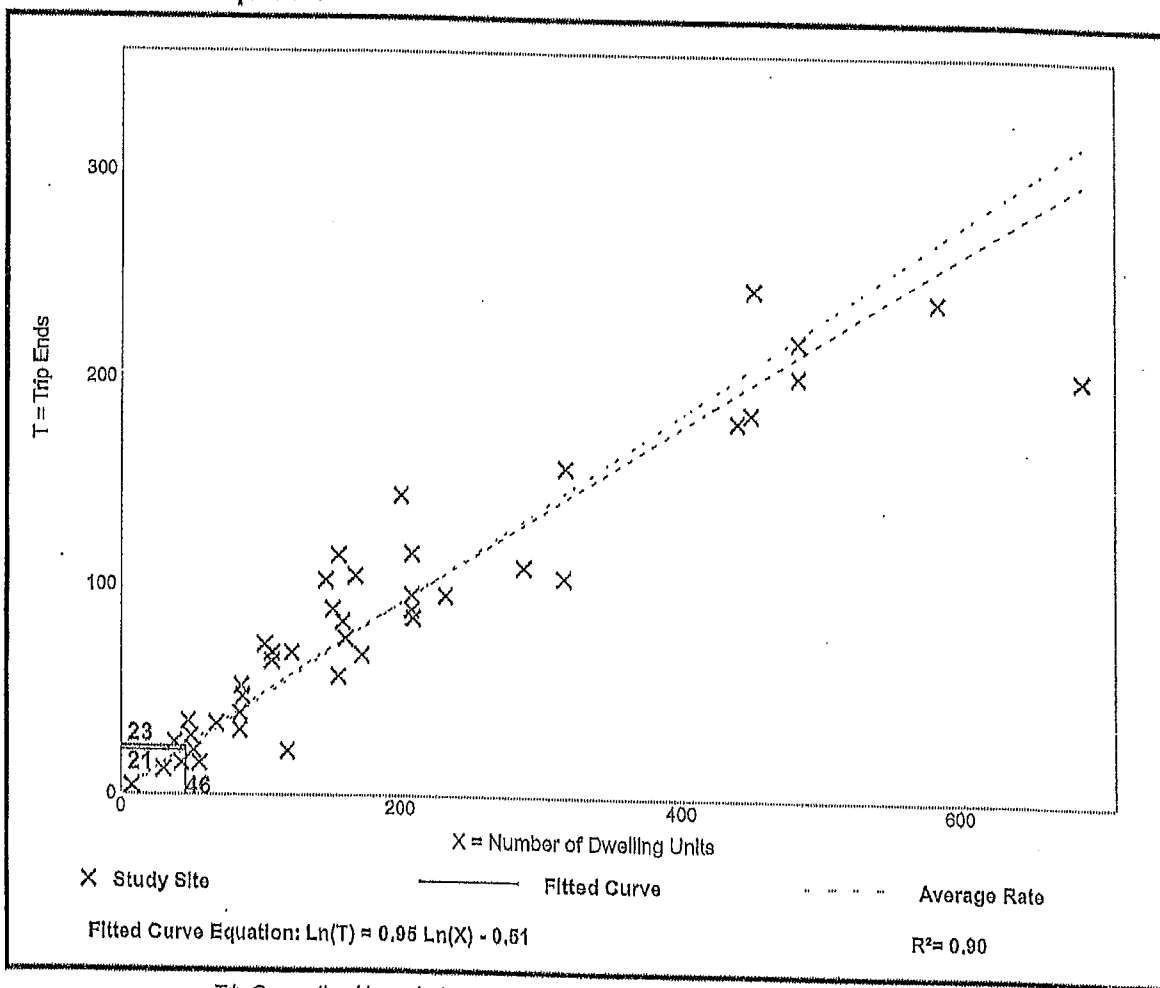
Village Severn Crest Multifamily Housing (Low-Rise) (220)

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: 42
 Avg. Num. of Dwelling Units: 199
 Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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IN-5 007-18

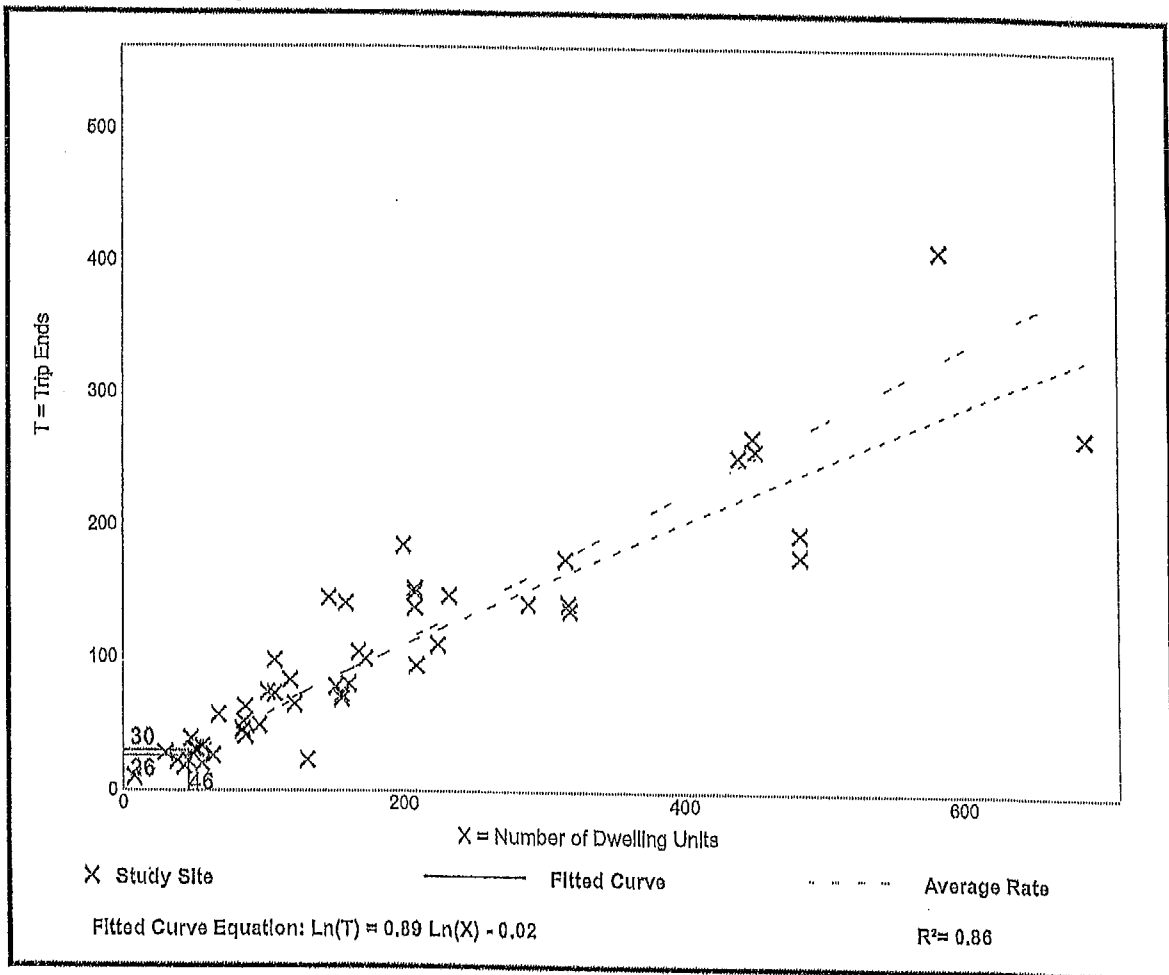
Villas @ Seven Crest Multifamily Housing (Low-Rise) (220)

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: 50
 Avg. Num. of Dwelling Units: 187
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



(N-19) 07-11

Villas @ Severn Crest Multifamily Housing (Low-Rise) (220)

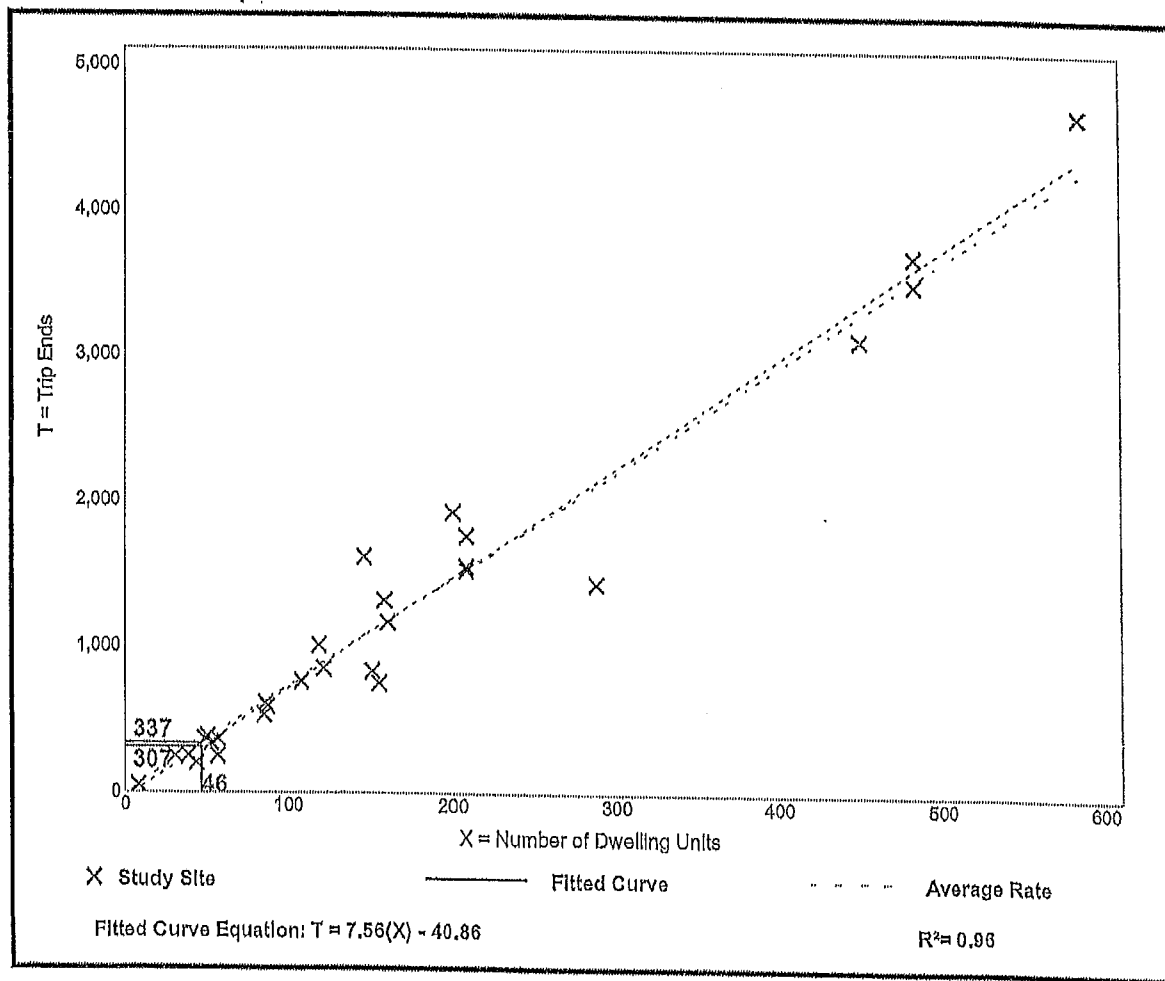
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Devlation
7.32	4.46 - 10.97	1.31

Data Plot and Equation



307

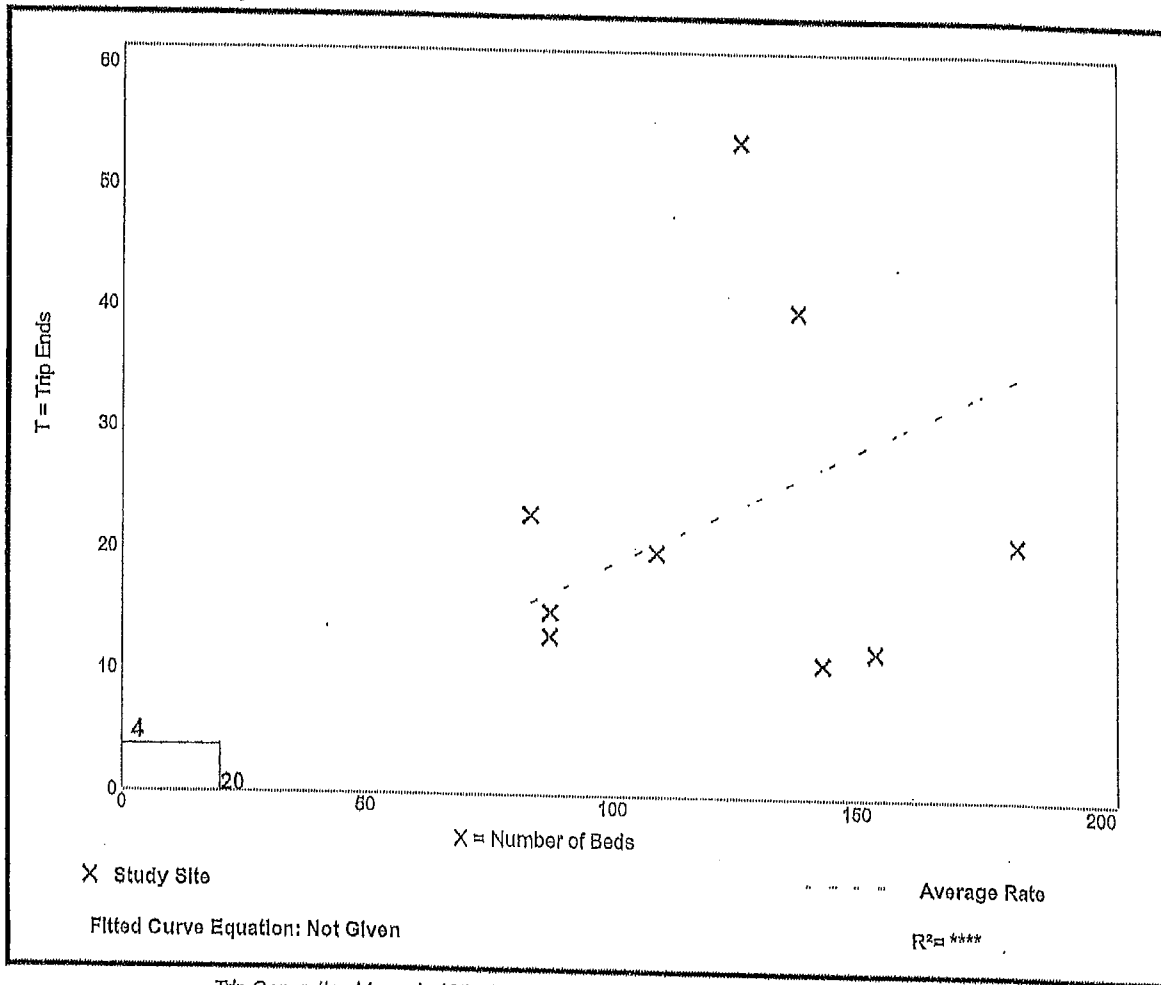
Villas @ Severn Crest Assisted Living (254)

Vehicle Trip Ends vs: Beds
 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: 9
 Avg. Num. of Beds: 123
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.19	0.08 - 0.43	0.12

Data Plot and Equation



IN-2 OUT-2

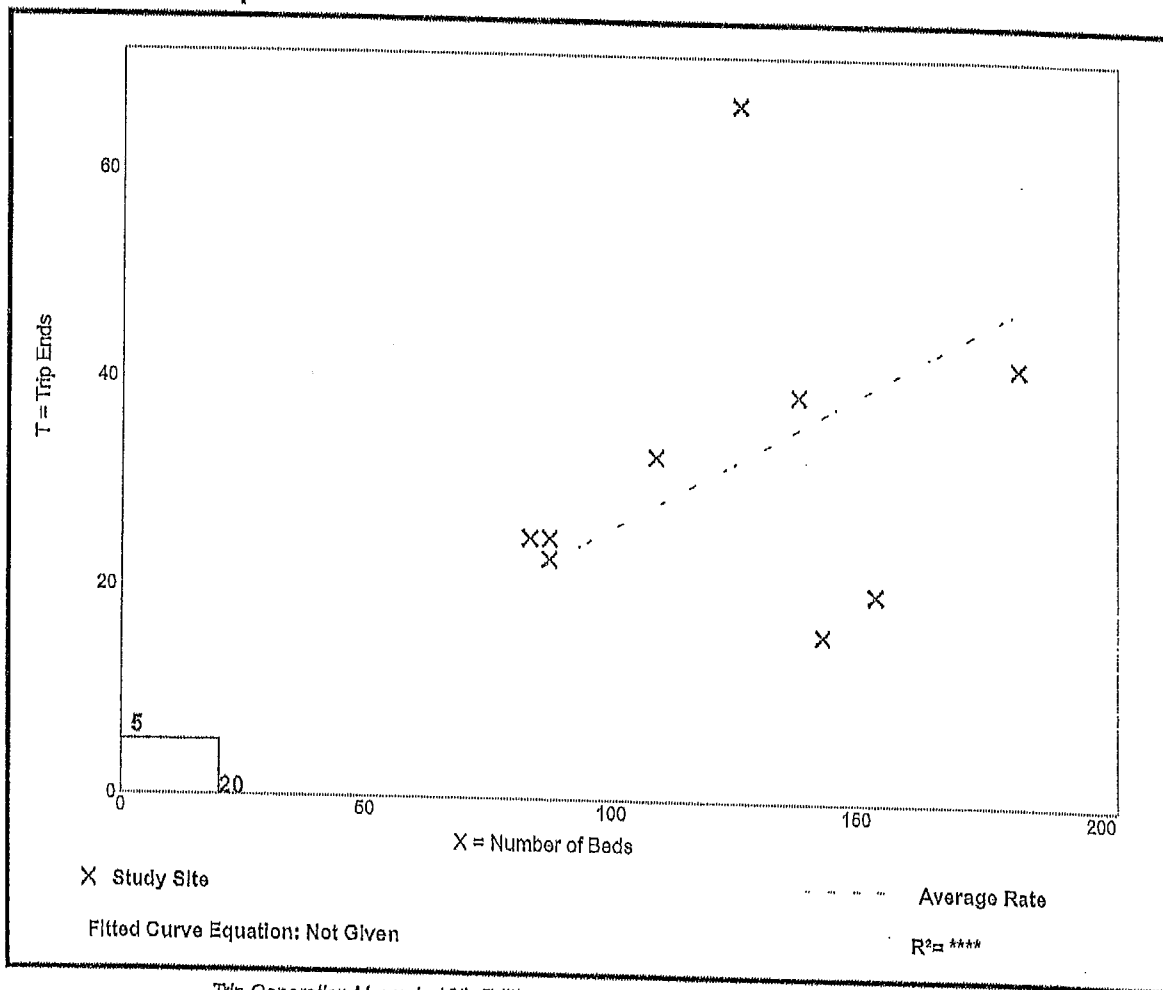
Villas @ Severn Crest Assisted Living (254)

Vehicle Trip Ends vs: Beds
 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: 9
 Avg. Num. of Beds: 123
 Directional Distribution: 38% entering, 62% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.26	0.11 - 0.53	0.13

Data Plot and Equation



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IN-2 OUT-3

Villas @ Severn Crest Assisted Living (254)

Vehicle Trip Ends vs: Beds
On a: Weekday

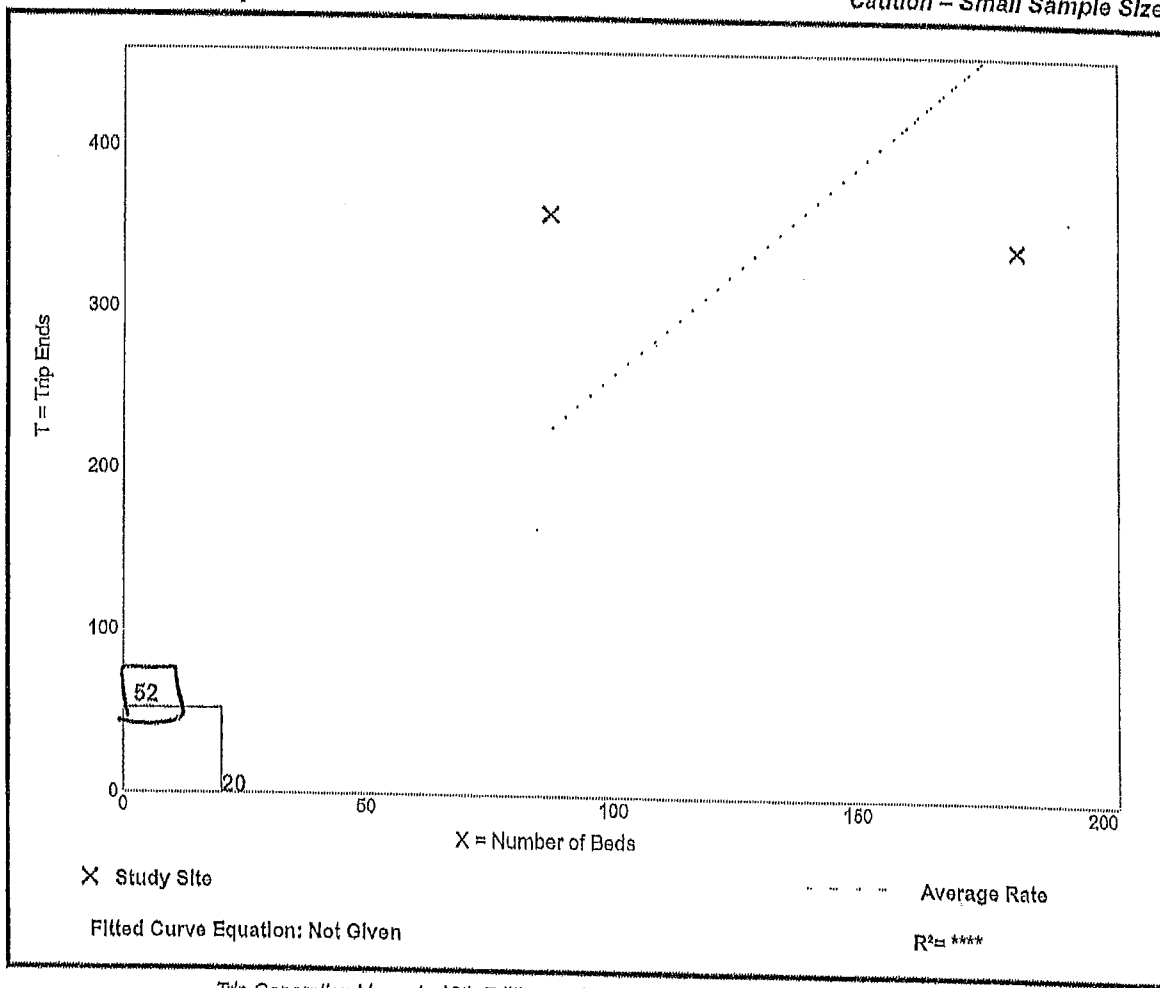
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Beds: 135
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
2.60	1.86 - 4.14	*

Data Plot and Equation

Caution - Small Sample Size



Detailed Average Rate Trip Calculations
For 19 Dwelling Units of Single Family Detached Housing(210) - [E]

Project: Prusak Property
Phase:

Open Date:
Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	11.99	0.00	1.00	228
7-9 AM Peak Hour Enter	0.30	0.00	1.00	6
7-9 AM Peak Hour Exit	0.91	0.00	1.00	17
7-9 AM Peak Hour Total	1.21	0.00	1.00	23
4-6 PM Peak Hour Enter	0.78	0.00	1.00	15
4-6 PM Peak Hour Exit	0.46	0.00	1.00	9
4-6 PM Peak Hour Total	1.24	0.00	1.00	24
AM Pk Hr, Generator, Enter	0.35	0.00	1.00	7
AM Pk Hr, Generator, Exit	0.99	0.00	1.00	18
AM Pk Hr, Generator, Total	1.34	0.00	1.00	25
PM Pk Hr, Generator, Enter	0.84	0.00	1.00	16
PM Pk Hr, Generator, Exit	0.47	0.00	1.00	9
PM Pk Hr, Generator, Total	1.31	0.00	1.00	25
Saturday 2-Way Volume	11.40	0.00	1.00	217
Saturday Peak Hour Enter	0.73	0.00	1.00	14
Saturday Peak Hour Exit	0.62	0.00	1.00	12
Saturday Peak Hour Total	1.35	0.00	1.00	26
Sunday 2-Way Volume	8.60	0.00	1.00	163
Sunday Peak Hour Enter	0.55	0.00	1.00	11
Sunday Peak Hour Exit	0.49	0.00	1.00	9
Sunday Peak Hour Total	1.05	0.00	1.00	20

The above rates were calculated from these equations:

24-Hr. 2-Way Volume:	$LN(T) = .92LN(X) + 2.72, R^2 = 0.95$
7-9 AM Peak Hr. Total:	$T = .7(X) + 9.74$ $R^2 = 0.89, 0.25$ Enter, 0.75 Exit
4-6 PM Peak Hr. Total:	$LN(T) = .9LN(X) + .51$ $R^2 = 0.91, 0.63$ Enter, 0.37 Exit
AM Gen Pk Hr. Total:	$T = .7(X) + 12.12$ $R^2 = 0.89, 0.26$ Enter, 0.74 Exit
PM Gen Pk Hr. Total:	$LN(T) = .88LN(X) + .62$ $R^2 = 0.91, 0.64$ Enter, 0.36 Exit
Sat. 2-Way Volume:	$LN(T) = .93LN(X) + 2.64, R^2 = 0.92$
Sat. Pk Hr. Total:	$T = .89(X) + 8.77$ $R^2 = 0.91, 0.54$ Enter, 0.46 Exit
Sun. 2-Way Volume:	$T = 8.63(X) + -.63, R^2 = 0.93$
Sun. Pk Hr. Total:	$LN(T) = .91LN(X) + .31$ $R^2 = 0.88, 0.53$ Enter, 0.47 Exit

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

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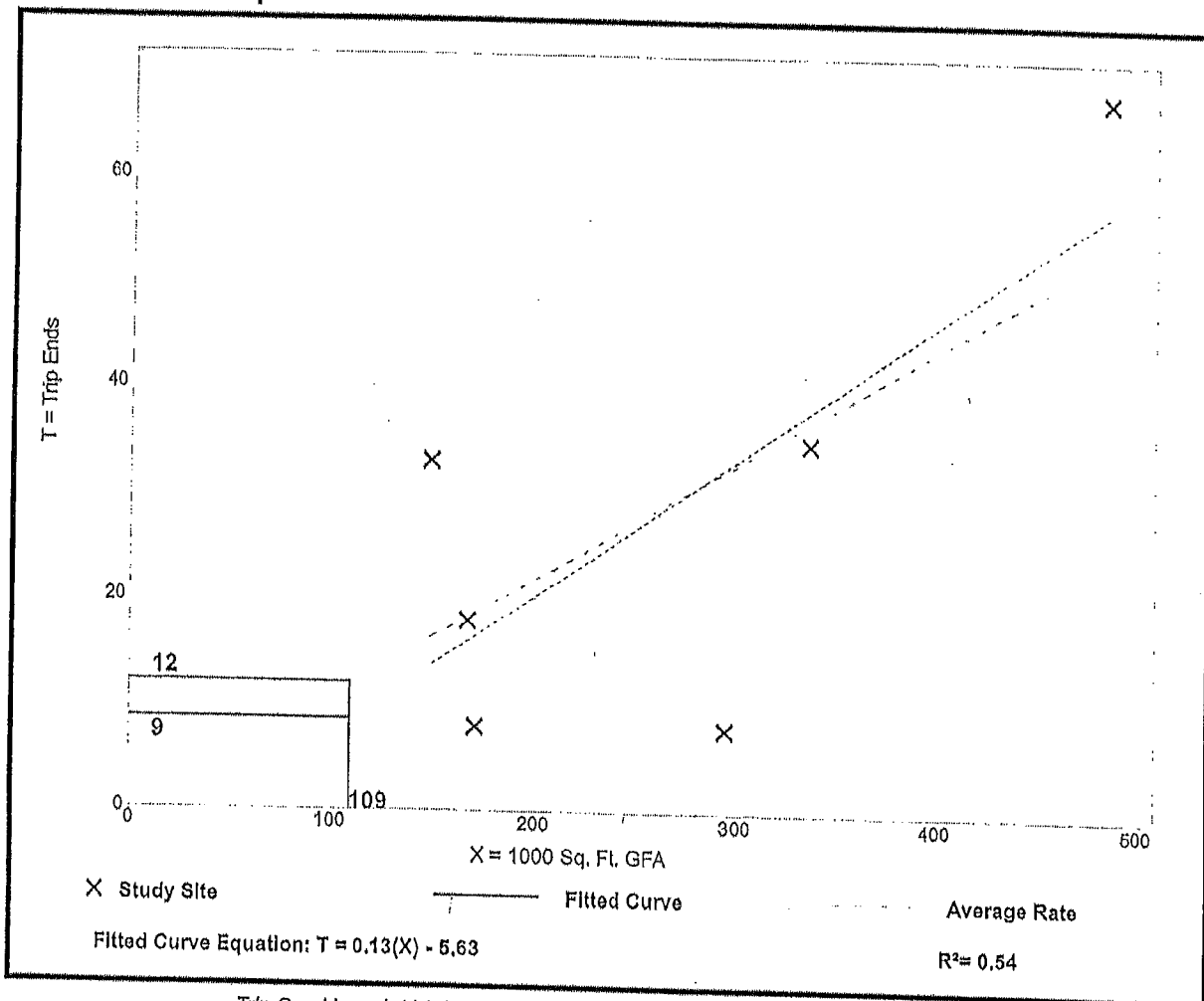
Sandy Farms Data Center (160)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA - 109,455 gsf
 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: 6
 Avg. 1000 Sq. Ft. GFA: 267
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.11	0.03 - 0.22	0.06

Data Plot and Equation



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IN-7 OUT-5

Sandy Farms

Data Center

(160)

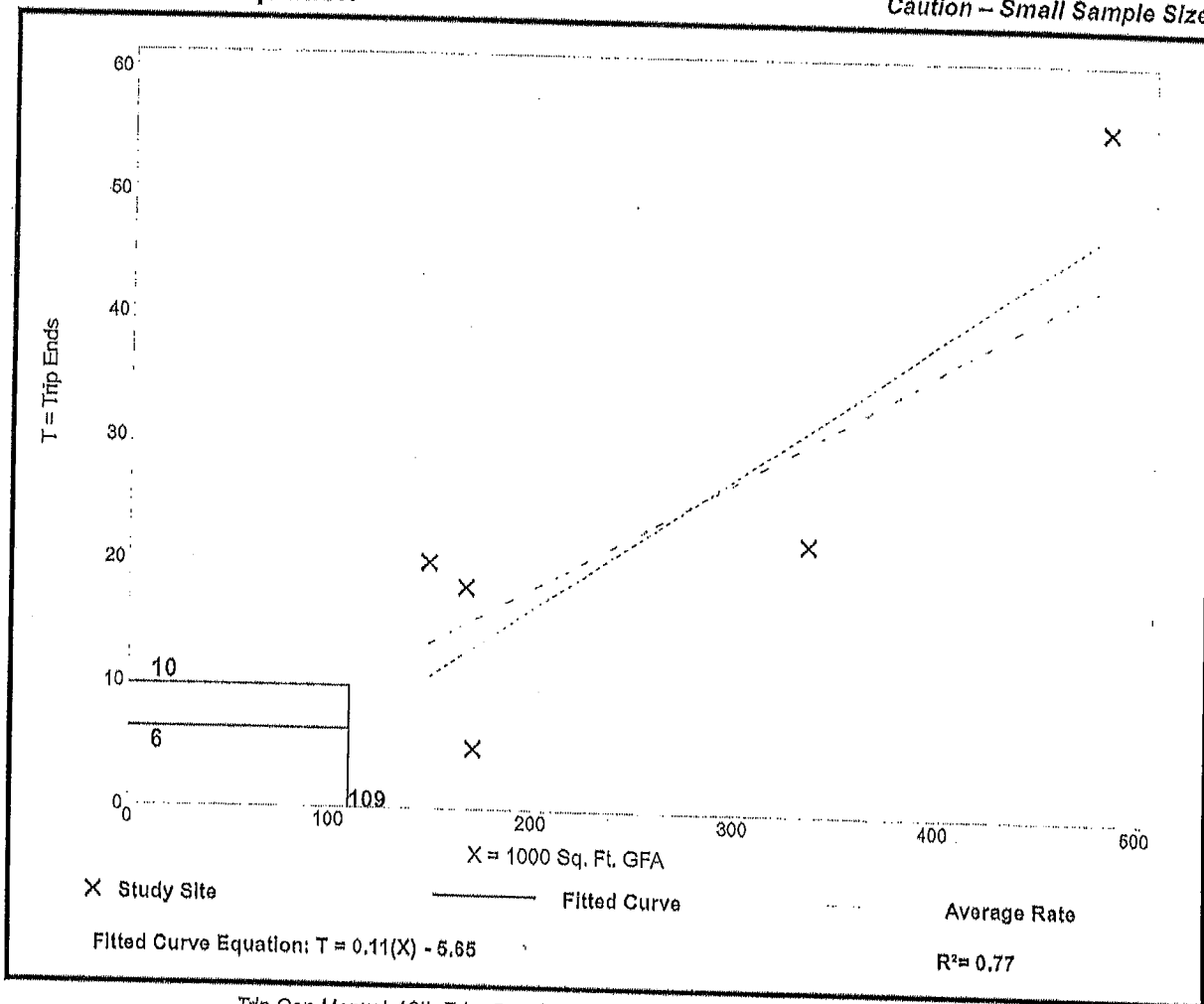
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA - 109,455 gsf
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 5
 Avg. 1000 Sq. Ft. GFA: 262
 Directional Distribution: 30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.03 - 0.13	0.04

Data Plot and Equation

Caution - Small Sample Size



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IN-3 007-7

Sandy Farms Data Center (160)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA - 109,455 gsf
On a: Weekday

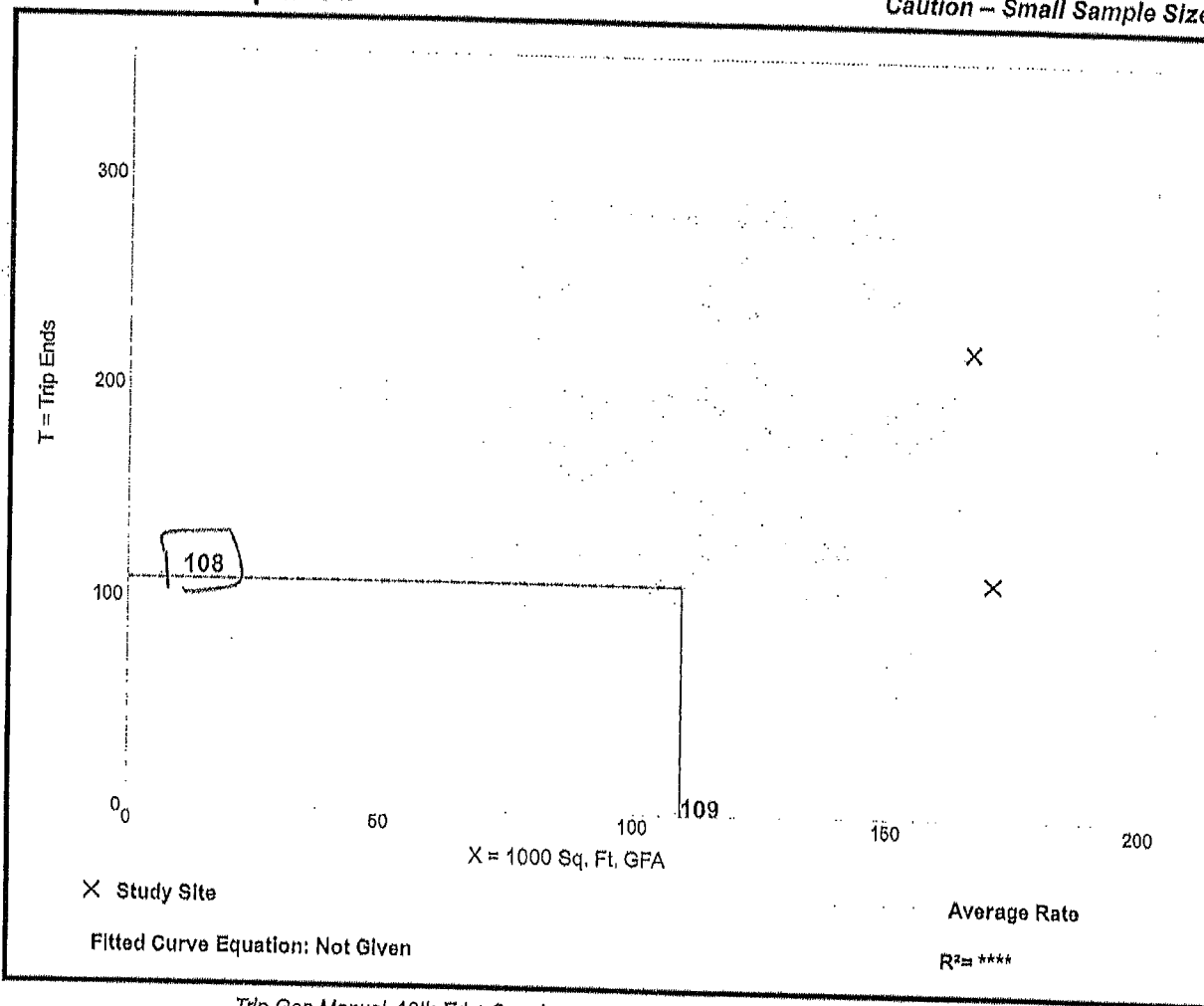
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. 1000 Sq. Ft. GFA: 169
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.99	0.65 - 1.32	*

Data Plot and Equation

Caution - Small Sample Size



Detailed Average Rate Trip Calculations
 For 37,500 Th.Sq.Ft. GFA of Warehousing(150) - [R]

Project: Hi-Tech Color
 Phase:

Open Date:
 Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	3.56	3.58	1.00	134
7-9 AM Peak Hour Enter	0.24	0.00	1.00	9
7-9 AM Peak Hour Exit	0.06	0.00	1.00	2
7-9 AM Peak Hour Total	0.30	0.63	1.00	11
4-6 PM Peak Hour Enter	0.08	0.00	1.00	3
4-6 PM Peak Hour Exit	0.24	0.00	1.00	9
4-6 PM Peak Hour Total	0.32	0.67	1.00	12
AM Pk Hr, Generator, Enter	0.27	0.00	1.00	10
AM Pk Hr, Generator, Exit	0.15	0.00	1.00	6
AM Pk Hr, Generator, Total	0.42	0.74	1.00	16
PM Pk Hr, Generator, Enter	0.09	0.00	1.00	3
PM Pk Hr, Generator, Exit	0.36	0.00	1.00	14
PM Pk Hr, Generator, Total	0.45	0.76	1.00	17
Saturday 2-Way Volume	1.23	2.12	1.00	46
Saturday Peak Hour Enter	0.08	0.00	1.00	3
Saturday Peak Hour Exit	0.05	0.00	1.00	2
Saturday Peak Hour Total	0.13	0.40	1.00	5
Sunday 2-Way Volume	0.78	1.74	1.00	29
Sunday Peak Hour Enter	0.04	0.00	1.00	2
Sunday Peak Hour Exit	0.03	0.00	1.00	1
Sunday Peak Hour Total	0.07	0.29	1.00	3

Note: A zero indicates no data available.
 Source: Institute of Transportation Engineers
 Trip Generation Manual, 9th Edition, 2012

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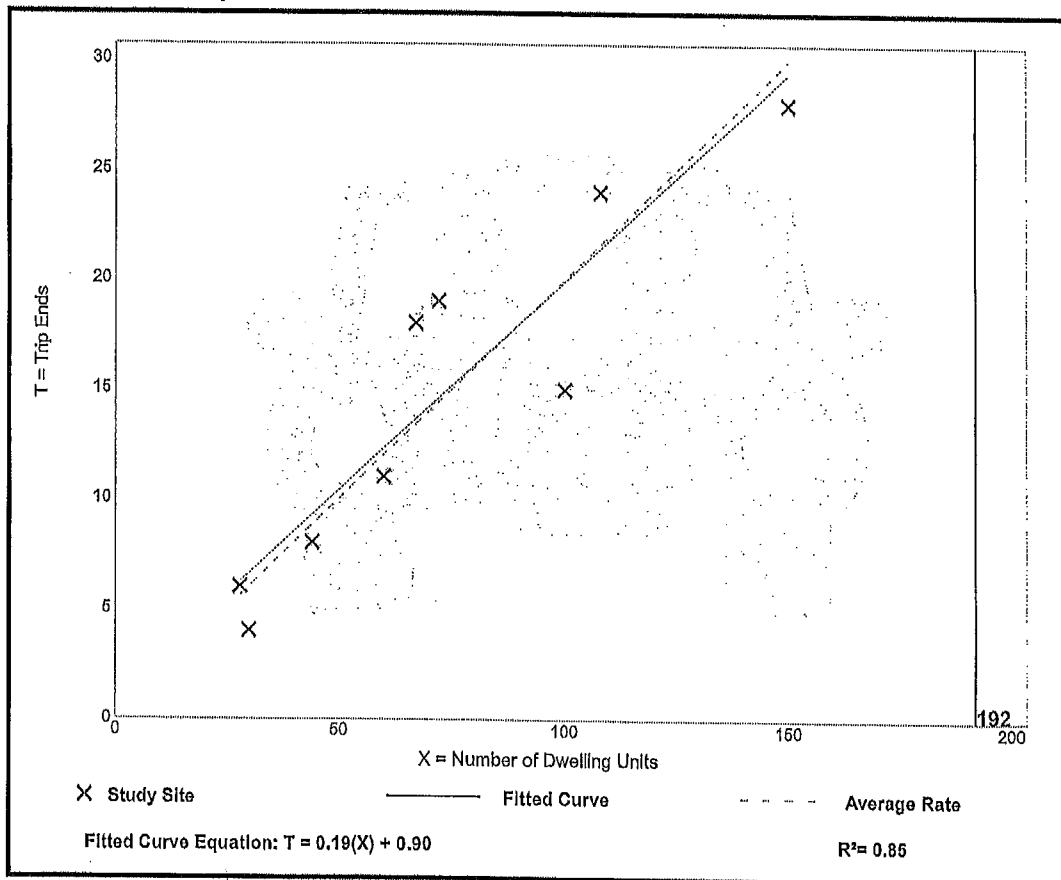
Senior Adult Housing - Multifamily (252)

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: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.13 - 0.27	0.04

Data Plot and Equation



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IN.12 OUT.25

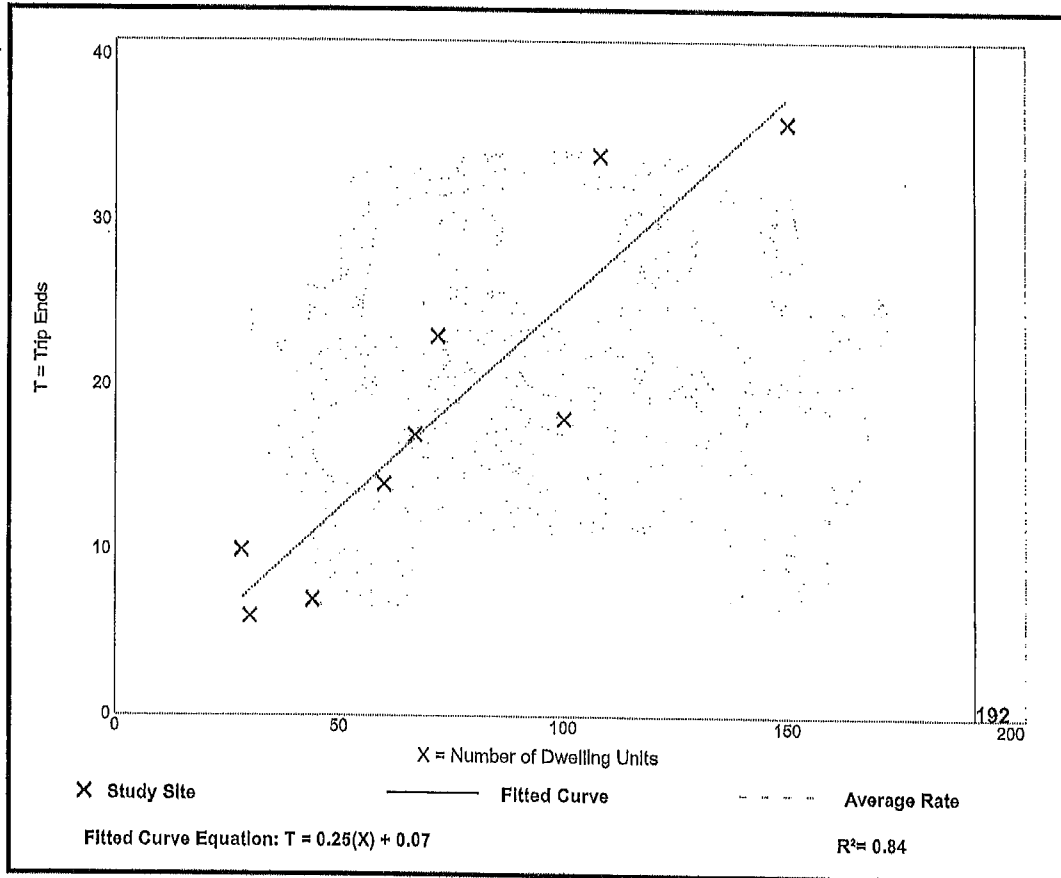
Senior Adult Housing - Multifamily (252)

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: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.25	0.16 - 0.36	0.06

Data Plot and Equation



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JN-27 OUT-21

Senior Adult Housing - Multifamily (252)

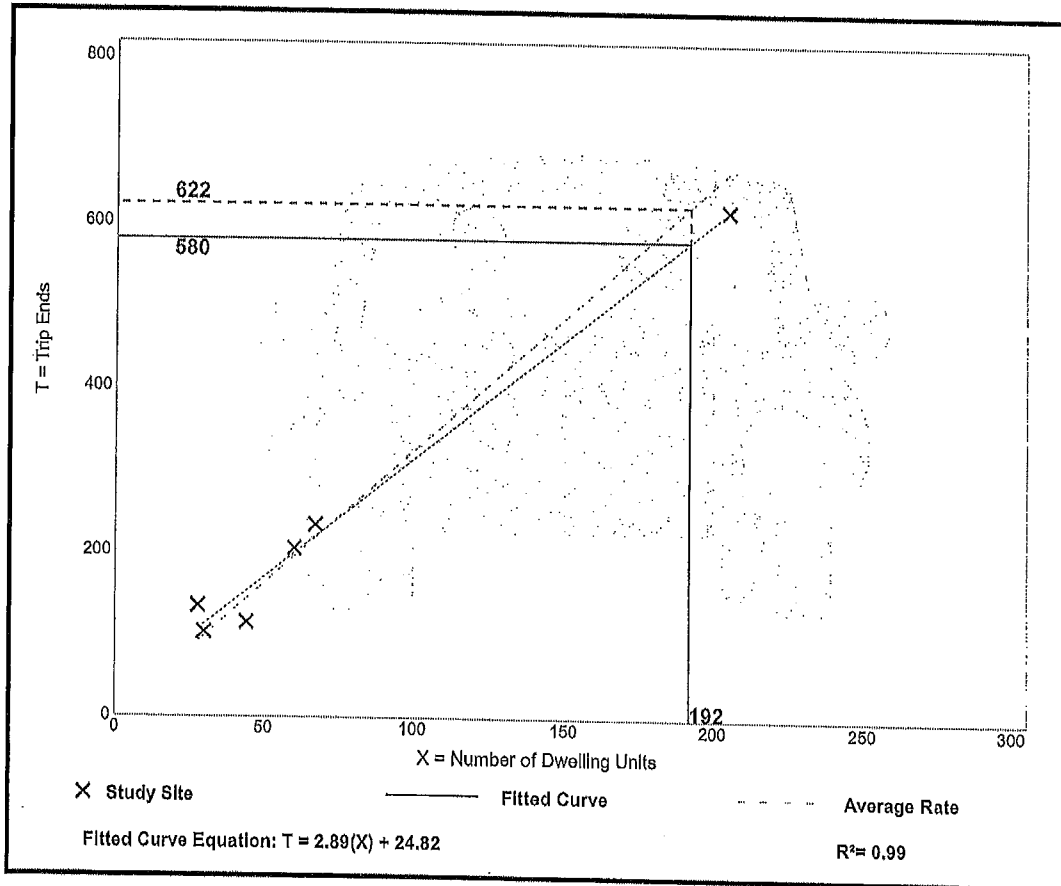
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 72
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.24	2.69 - 4.79	0.53

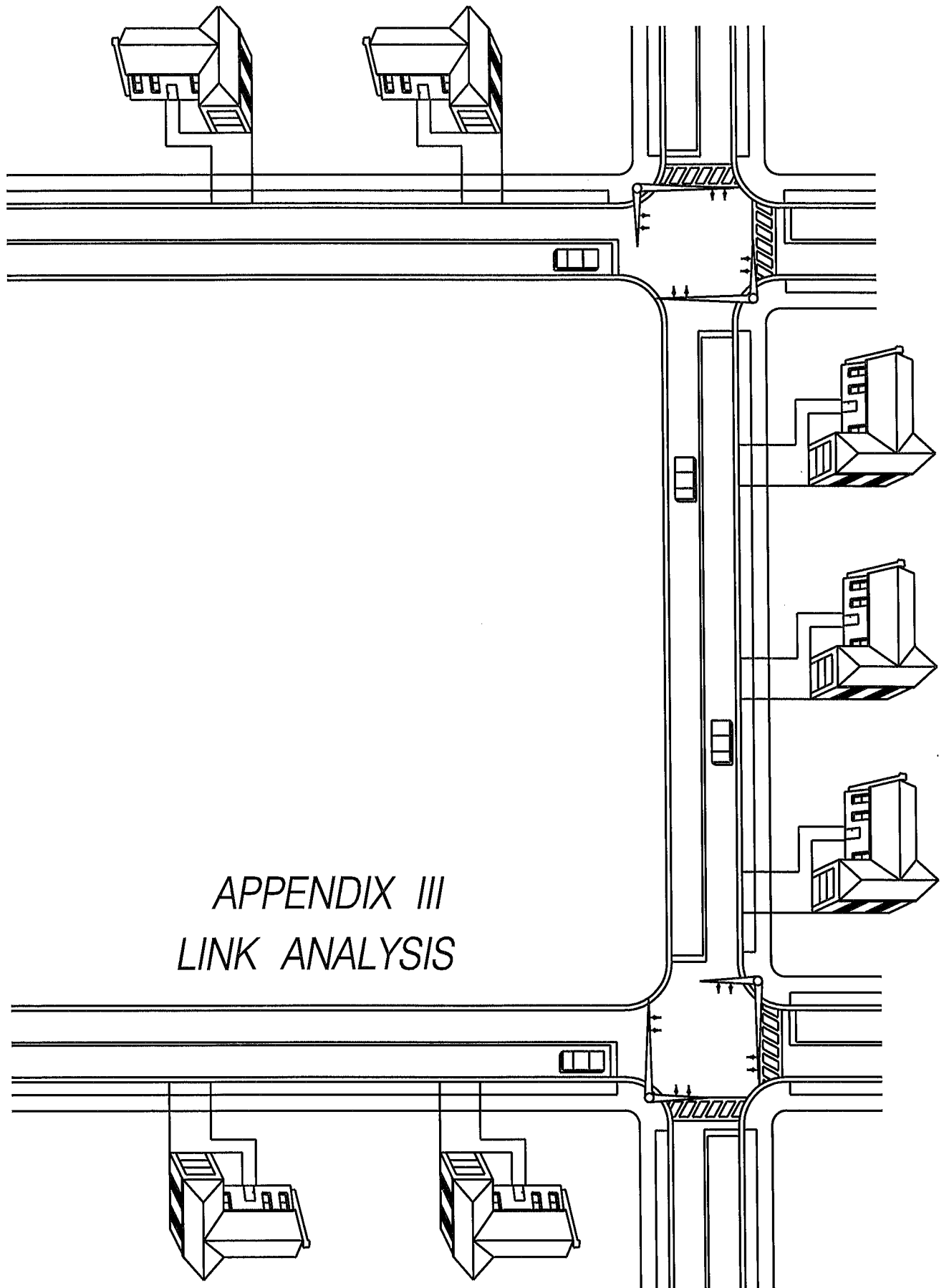
Data Plot and Equation



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580



APPENDIX III
LINK ANALYSIS

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 1)
 SEGMENT LIMITS FROM: MD 100
 TO: Jonathan Avenue
 CONDITION OF ANALYSIS: Existing
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.16
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21077
 SEGMENT PEAK HOUR VOLUME (two-way): 1875
 SEGMENT PEAK HOUR VOLUME (one-way): 1054
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA RATING NORMALIZED ELEMENT			
	INPUT	POINTS	WEIGHTING	SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	good	8.5	1.111	9.4
FREQUENCY OF ACCESS (feet per segment)	110	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	688			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1054			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 86

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 1)
 SEGMENT LIMITS FROM: MD 100
 TO: Jonathan Avenue
 CONDITION OF ANALYSIS: Background
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.16
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21690
 SEGMENT PEAK HOUR VOLUME (two-way): 1923
 SEGMENT PEAK HOUR VOLUME (one-way): 1075
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA RATING NORMALIZED ELEMENT			
	INPUT	POINTS	WEIGHTING	SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	good	8.5	1.111	9.4
FREQUENCY OF ACCESS (feet per segment)	110	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	688			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1075			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 86

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 1)
 SEGMENT LIMITS FROM: MD 100
 TO: Jonathan Avenue
 CONDITION OF ANALYSIS: Future
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.16
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 22009
 SEGMENT PEAK HOUR VOLUME (two-way): 1946
 SEGMENT PEAK HOUR VOLUME (one-way): 1086
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA RATING NORMALIZED ELEMENT			
	INPUT	POINTS	WEIGHTING	SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	good	8.5	1.111	9.4
FREQUENCY OF ACCESS (feet per segment)	110	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	688			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1086			
COMPUTED "V/C" RATIO	0.42			

***** ROAD RATING = TOTAL: 86

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 2)
 SEGMENT LIMITS FROM: Jonathan Avenue
 TO: Old Stage Road
 CONDITION OF ANALYSIS: Existing
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.10
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21077
 SEGMENT PEAK HOUR VOLUME (two-way): 1875
 SEGMENT PEAK HOUR VOLUME (one-way): 1054
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	140	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1400			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1054			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 78

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 2)
 SEGMENT LIMITS FROM: Jonathan Avenue
 TO: Old Stage Road
 CONDITION OF ANALYSIS: Background
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.10
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21690
 SEGMENT PEAK HOUR VOLUME (two-way): 1923
 SEGMENT PEAK HOUR VOLUME (one-way): 1075
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	140	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1400			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1075			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 78

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 2)
 SEGMENT LIMITS FROM: Jonathan Avenue
 TO: Old Stage Road
 CONDITION OF ANALYSIS: Future
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.10
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 22009
 SEGMENT PEAK HOUR VOLUME (two-way): 1946
 SEGMENT PEAK HOUR VOLUME (one-way): 1086
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): no

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	fair	7	1.250	8.8
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	140	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1400			
TRAFFIC SERVICE:		10	1.389	13.9
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1086			
COMPUTED "V/C" RATIO	0.42			

***** ROAD RATING = TOTAL: 78

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 3)
 SEGMENT LIMITS FROM: Old Stage Road
 TO: Pamela Road
 CONDITION OF ANALYSIS: Existing
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.14
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21077
 SEGMENT PEAK HOUR VOLUME (two-way): 1875
 SEGMENT PEAK HOUR VOLUME (one-way): 1054
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	fair	7	1.111	7.8
FREQUENCY OF ACCESS (feet per segment)	190	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1357			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1054			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 89

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 3)
 SEGMENT LIMITS FROM: Old Stage Road
 TO: Pamela Road
 CONDITION OF ANALYSIS: Background
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.14
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21690
 SEGMENT PEAK HOUR VOLUME (two-way): 1923
 SEGMENT PEAK HOUR VOLUME (one-way): 1075
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA RATING NORMALIZED ELEMENT			
	INPUT	POINTS	WEIGHTING	SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	fair	7	1.111	7.8
FREQUENCY OF ACCESS (feet per segment)	190	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1357			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1075			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 89

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 3)
 SEGMENT LIMITS FROM: Old Stage Road
 TO: Pamela Road
 CONDITION OF ANALYSIS: Future
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.14
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 22009
 SEGMENT PEAK HOUR VOLUME (two-way): 1946
 SEGMENT PEAK HOUR VOLUME (one-way): 1086
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA RATING NORMALIZED ELEMENT			SCORE
	INPUT	POINTS	WEIGHTING	
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	1000	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	fair	7	1.111	7.8
FREQUENCY OF ACCESS (feet per segment)	190	4	0.972	3.9
ACCESS CONVERSION (feet per mile)	1357			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1086			
COMPUTED "V/C" RATIO	0.42			

***** ROAD RATING = TOTAL: 89

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 4)
 SEGMENT LIMITS FROM: Pamela Road
 TO: George Clauss Blvd
 CONDITION OF ANALYSIS: Existing
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.45
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21077
 SEGMENT PEAK HOUR VOLUME (two-way): 1875
 SEGMENT PEAK HOUR VOLUME (one-way): 1054
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	800	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	100	8.5	0.972	8.3
ACCESS CONVERSION (feet per mile)	222			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1054			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 87

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 4)
 SEGMENT LIMITS FROM: Pamela Road
 TO: George Clauss Blvd
 CONDITION OF ANALYSIS: Background
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.45
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 21690
 SEGMENT PEAK HOUR VOLUME (two-way): 1923
 SEGMENT PEAK HOUR VOLUME (one-way): 1075
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	800	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
INTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	100	8.5	0.972	8.3
ACCESS CONVERSION (feet per mile)	222			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1075			
COMPUTED "V/C" RATIO	0.41			

***** ROAD RATING = TOTAL: 87

ANNE ARUNDEL COUNTY ROAD RATING SYSTEM

IDENTIFYING INFORMATION:

ROAD NAME: MD 174 (Section 4)
 SEGMENT LIMITS FROM: Pamela Road
 TO: George Clauss Blvd
 CONDITION OF ANALYSIS: Future
 TODAY'S DATE: February 16, 2022
 TECHNICIAN NAME: JLC
 SEGMENT LENGTH (x.xx miles): 0.45
 SECTION TYPE (open or closed): closed
 SEGMENT ADT: 22009
 SEGMENT PEAK HOUR VOLUME (two-way): 1946
 SEGMENT PEAK HOUR VOLUME (one-way): 1086
 ROADWAY CLASSIFICATION: CLASS 6
 POSTED SPEED LIMIT (mph): 35
 TWO-WAY LEFT TURN LANE (yes/no): yes

ANALYSIS:

ELEMENT NAME	DATA INPUT	RATING POINTS	NORMALIZED WEIGHTING	ELEMENT SCORE
MINIMUM LANE WIDTH (x.x feet)	12	10	1.389	13.9
MIN. OUTSIDE SHOULDER WIDTH (x.x feet)	0	1	0.139	0.1
MINIMUM PAVEMENT CONDITION	good	8.5	1.111	9.4
MINIMUM SIGHT DISTANCE (feet)	800	10	1.389	13.9
MIN.INTERSECTION SIGHT DISTANCE (feet)	n/a	10	1.250	12.5
NTERSECTING ROAD POSTED SPEED (mph)	n/a			
ROADSIDE FRICTION	good	8.5	1.250	10.6
SIDEWALKS	very poor	1	1.111	1.1
FREQUENCY OF ACCESS (feet per segment)	100	8.5	0.972	8.3
ACCESS CONVERSION (feet per mile)	222			
TRAFFIC SERVICE:		12	1.389	16.7
NUMBER OF LANES (one-way)	2			
PEAK HOUR VOLUME (one-way)	1086			
COMPUTED "V/C" RATIO	0.42			

***** ROAD RATING = TOTAL: 87

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Existing Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1196	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	698
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	19.0
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	664	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.39
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Existing Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1021	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	596
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	16.2
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	567	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.31
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information			
Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Background Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary
Direction 1 Geometric Data			
Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		
Direction 1 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		
Direction 1 Demand and Capacity			
Volume(V) veh/h	1236	Heavy Vehicle Adjustment Factor (fhv)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	722
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38
Direction 1 Speed and Density			
Lane Width Adjustment (flw)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	19.6
Median Type Adjustment (fm)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		
Direction 1 Bicycle LOS			
Flow Rate in Outside Lane (vOL),veh/h	687	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.40
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Background Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1042	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	608
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	16.5
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	579	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.32
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Future Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1252	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	730
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	19.8
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	696	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.41
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Future Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	AM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1057	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.90	Flow Rate (Vp), pc/h/ln	617
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	16.8
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	587	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.32
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Existing Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1450	Heavy Vehicle Adjustment Factor (f _{HV})	0.952
Peak Hour Factor	0.97	Flow Rate (V _p), pc/h/ln	785
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c _{adj}), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41

Direction 1 Speed and Density

Lane Width Adjustment (f _{LW})	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (f _{LLC})	0.0	Density (D), pc/mi/ln	21.3
Median Type Adjustment (f _M)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (f _A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v _{OL}),veh/h	747	Effective Speed Factor (S _t)	3.84
Effective Width of Volume (W _v), ft	18	Bicycle LOS Score (BLOS)	3.45
Average Effective Width (W _e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Existing Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1349	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.97	Flow Rate (Vp), pc/h/ln	730
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	19.8
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	695	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.41
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Background Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1475	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.97	Flow Rate (Vp), pc/h/ln	798
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	21.7
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	760	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.46
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Background Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1381	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.97	Flow Rate (Vp), pc/h/ln	748
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	20.3
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	712	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.42
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Future Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	EB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1486	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.97	Flow Rate (Vp), pc/h/ln	804
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	21.8
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (VOL),veh/h	766	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.46
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	C. Atkinson	Date	2/17/2022
Agency	Traffic Concepts, Inc.	Analysis Year	Future Condition
Jurisdiction	Anne Arundel County, Maryland	Time Period Analyzed	PM Peak
Project Description	3836 - Crainview Gardens	Unit	United States Customary

Direction 2 Geometric Data

Direction 2	WB MD 174 between MD 100 WB Ramp & I-97 SB Ramp		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	0.0
Lane Width, ft	10	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	36.8		

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

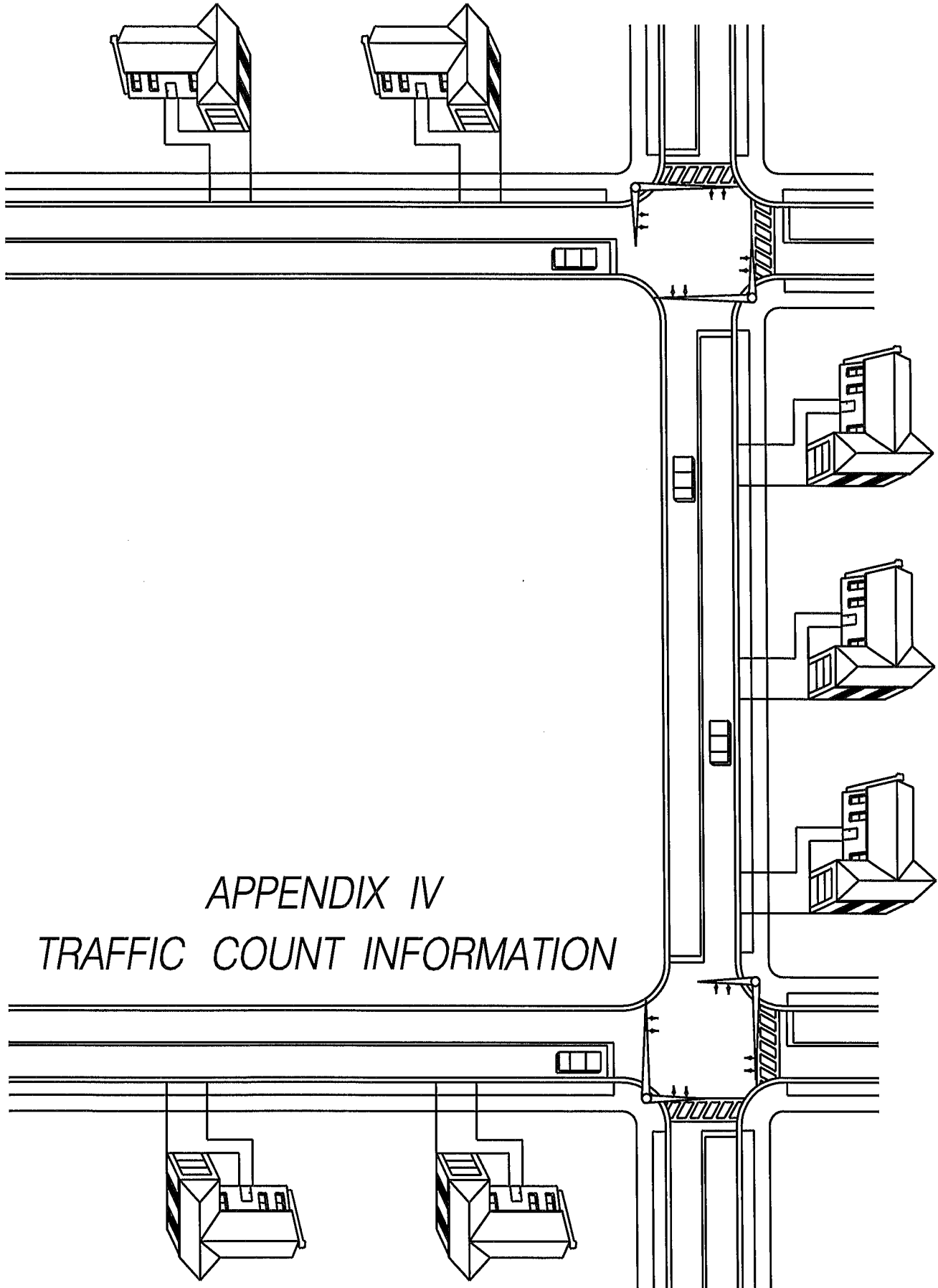
Volume(V) veh/h	1392	Heavy Vehicle Adjustment Factor (fHV)	0.952
Peak Hour Factor	0.97	Flow Rate (Vp), pc/h/ln	754
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40

Direction 2 Speed and Density

Lane Width Adjustment (fLW)	6.6	Average Speed (S), mi/h	36.8
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	20.5
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (fA)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (vOL),veh/h	718	Effective Speed Factor (St)	3.84
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	3.43
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	C



APPENDIX IV
TRAFFIC COUNT INFORMATION

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 & I-97 SB RAMP/ GEORGE CLAUSS BLVD

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA

DATE: FEBRUARY 8, 2022

WEATHER: CLEAR

DAY: TUESDAY

CAM

TIME	I-97 SB RAMP NORTHBOUND			GEORGE CLAUSS BLVD SOUTHBOUND			MD 174 EASTBOUND			MD 174 WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	44	24	50	39	18	7	10	136	57	24	108	59	576
7:15-7:30	55	35	40	37	19	7	14	163	56	26	159	52	663
7:30-7:45	48	31	63	51	16	2	10	185	53	43	203	49	754
7:45-8:00	60	55	83	41	25	6	15	223	54	39	164	61	826
8:00-8:15	43	42	72	48	21	6	22	164	33	32	131	65	679
8:15-8:30	44	38	60	65	29	4	18	149	47	25	122	71	672
8:30-8:45	38	31	47	65	24	4	19	165	36	30	106	85	650
8:45-9:00	34	45	63	57	35	8	18	151	54	23	126	96	710
PEAK HR 7:30-8:30	195	166	278	205	91	18	65	721	187	139	620	246	PHF 0.89
TOTALS													
PM													
4:00-4:15	71	52	50	121	58	17	34	199	28	36	179	103	948
4:15-4:30	66	55	65	108	74	24	37	156	35	33	171	107	931
4:30-4:45	65	56	79	102	62	27	30	176	29	33	218	127	1004
4:45-5:00	75	64	60	110	65	24	13	159	35	28	172	121	926
5:00-5:15	91	61	64	100	55	23	34	198	35	26	197	116	1000
5:15-5:30	81	61	78	128	63	27	32	166	27	29	166	119	977
5:30-5:45	68	63	73	123	51	29	33	171	27	22	155	104	919
5:45-6:00	69	67	65	110	65	30	34	134	28	16	132	103	853
PEAK HR 4:30-5:30	312	242	281	440	245	101	109	699	126	116	753	483	PHF 0.97
TOTALS													

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 7525 CONNELLEY DRIVE, SUITE B
 HANOVER, MARYLAND 21076
 410-760-2911 FAX 410-760-2915
 E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

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View the Film and Pre-Recorded Panel Discussion -
coming February 14, 2022

TheLikeMovie.com

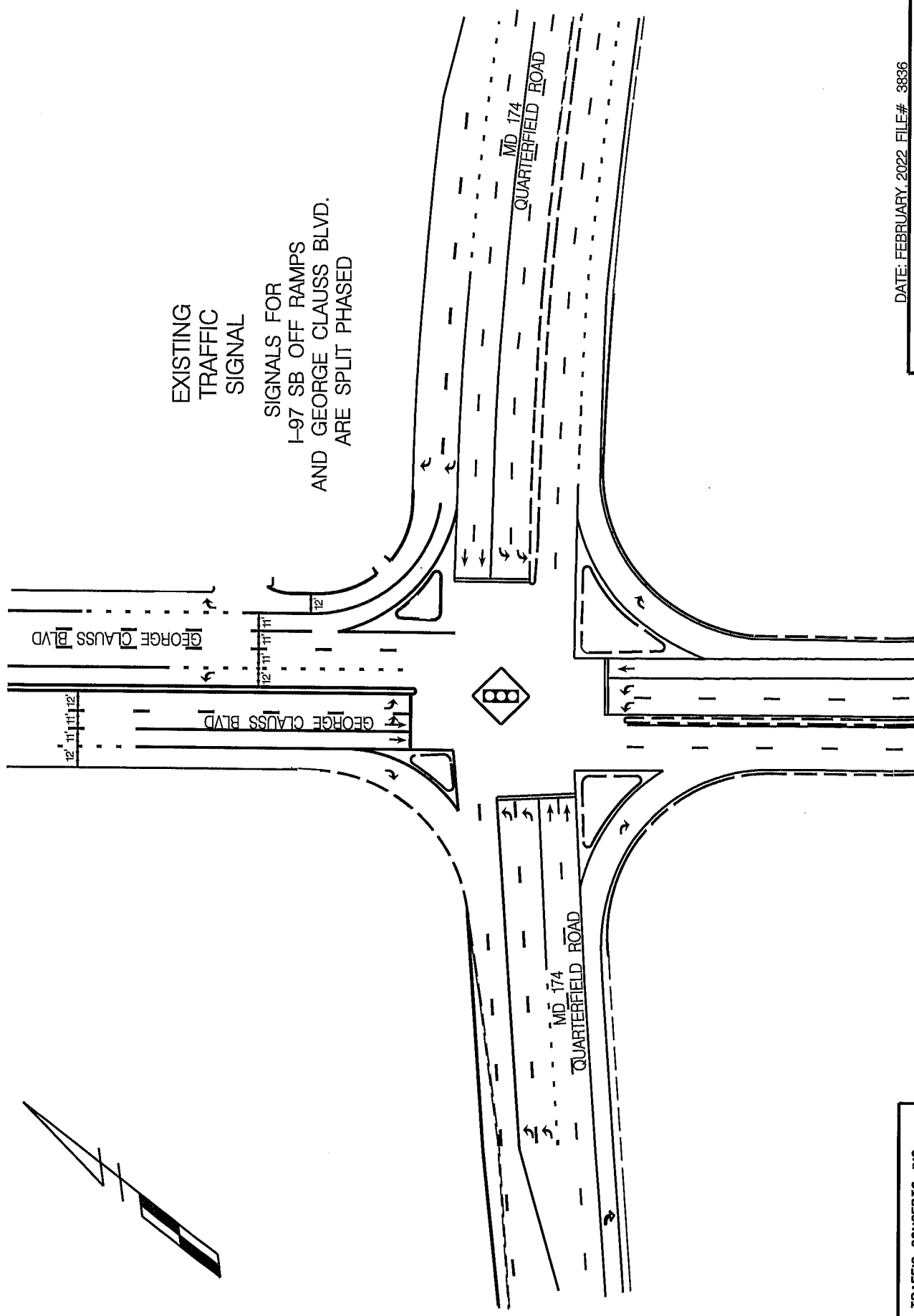
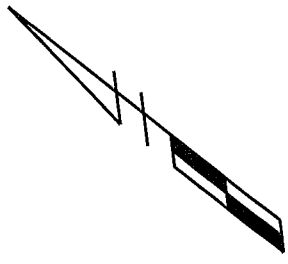
REOPENING

[COVID-19 RESOURCES](#)

Information & Resources for Fall 2021 Reopening of Schools

[UPCOMING DATES/EVENTS](#)

COVID-Related Federal Funding (ESSER)



EXISTING
TRAFFIC
SIGNAL

SIGNALS FOR
I-97 SB OFF RAMP
AND GEORGE CLAUSS BLVD.
ARE SPLIT PHASED

DATE: FEBRUARY, 2022 FILE# 3836

EXISTING INTERSECTION CONFIGURATION
MD 174 AT I-97 SB ON /OFF RAMP
ANNE ARUNDEL COUNTY, MARYLAND

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

SB I-97 ON RAMP
SB I-97 OFF RAMP

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 @ I-97 NB RAMP

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA

DATE: FEBRUARY 8, 2022

WEATHER: CLEAR

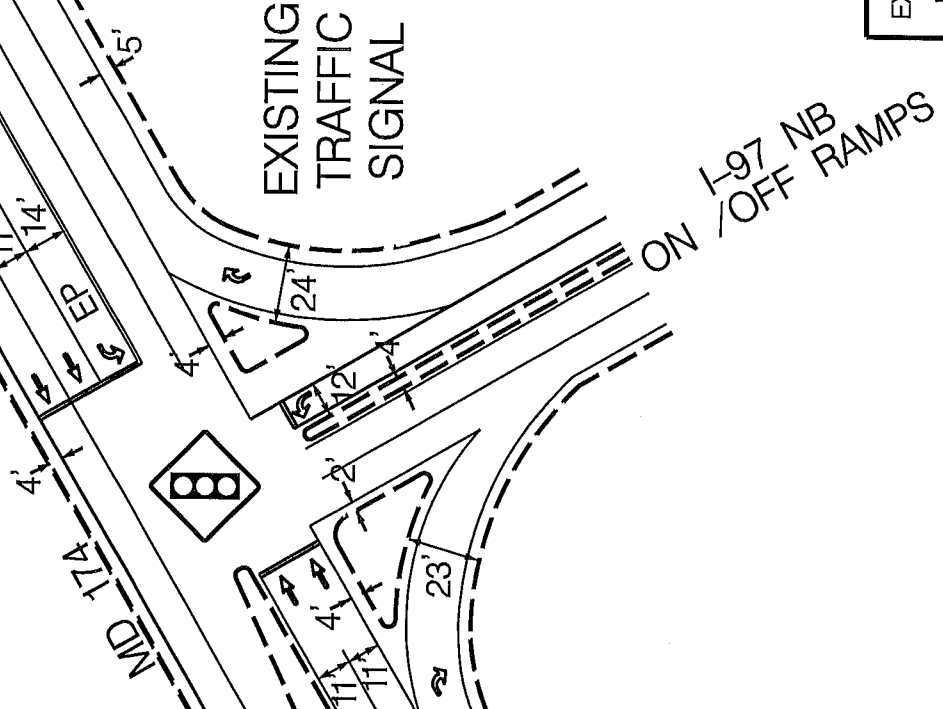
DAY: TUESDAY

TIME	I-97 OFF RAMP NORTHBOUND			SOUTHBOUND			MD 174 EASTBOUND			MD 174 WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	31		22					141	85	39	139		457
7:15-7:30	68		36					152	96	42	175		569
7:30-7:45	101		34					179	108	40	195		657
7:45-8:00	71		53					211	143	49	178		705
8:00-8:15	58		49					188	119	43	175		632
8:15-8:30	68		37					184	95	34	147		565
8:30-8:45	56		24					157	119	60	166		582
8:45-9:00	89		35					192	84	37	164		601
PEAK HR 7:15-8:15 TOTALS	298		172					730	466	174	723		PHF 0.91
PM													
4:00-4:15	103		61					271	118	51	224		828
4:15-4:30	128		61					227	70	58	204		748
4:30-4:45	113		65					259	91	56	246		830
4:45-5:00	111		51					250	119	63	224		818
5:00-5:15	85		49					280	81	53	239		787
5:15-5:30	127		60					255	115	41	204		802
5:30-5:45	85		49					272	108	42	177		733
5:45-6:00	95		63					229	83	37	181		688
PEAK HR 4:30-5:30 TOTALS	436		225					1044	406	213	913		PHF 0.98

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M:\ 3836 ✓

330' CONSTANT FULL
WIDTH TURN LANE



DATE: FEBRUARY, 2022 FILE #3836

EXISTING INTERSECTION CONFIGURATION
MD 174 AT I-97 NB ON /OFF RAMP
ANNE ARUNDEL COUNTY, MARYLAND

NOT TO SCALE

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 @ OLD STAGE ROAD

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA

DATE: FEBRUARY 8, 2022

WEATHER: CLEAR

DAY: TUESDAY

TIME	OLD STAGE ROAD NORTHBOUND			OLD STAGE ROAD SOUTHBOUND			MD 174 EASTBOUND			MD 174 WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	21	1	7	5	4	12	8	118	20	9	117	3	325
7:15-7:30	31	1	14	7	2	16	2	131	22	11	132	6	375
7:30-7:45	31	1	15	10	3	7	2	135	26	16	160	3	409
7:45-8:00	36	3	20	12	6	8	5	162	23	19	146	7	447
8:00-8:15	30	1	19	8	2	7	6	135	23	17	156	7	411
8:15-8:30	22	5	12	6	4	8	2	131	23	13	131	10	367
8:30-8:45	30	3	25	10	2	14	5	127	25	11	125	9	386
8:45-9:00	38	1	13	14	2	4	4	140	26	5	135	5	387
PEAK HR 7:15-8:15	128	6	68	37	13	38	15	563	94	63	594	23	PHF 0.92
TOTALS													
PM													
4:00-4:15	29	0	17	12	5	6	12	227	35	17	193	9	562
4:15-4:30	43	3	19	9	5	11	14	222	44	21	171	10	572
4:30-4:45	47	0	24	13	4	8	10	244	34	18	198	9	609
4:45-5:00	36	1	22	11	4	10	15	208	47	21	181	12	568
5:00-5:15	32	4	18	11	6	13	14	208	44	27	199	10	586
5:15-5:30	46	6	18	8	7	12	12	235	58	27	169	9	607
5:30-5:45	34	5	17	9	5	9	19	182	62	20	160	7	529
5:45-6:00	37	3	16	14	5	3	13	189	44	19	147	8	498
PEAK HR 4:30-5:30	161	11	82	43	21	43	51	895	183	93	747	40	PHF 0.97
TOTALS													

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REOPENING

REOPENING

COVID-19 RESOURCES

Information & Resources for Fall 2021 Reopening of Schools

UPCOMING DATES/EVENTS

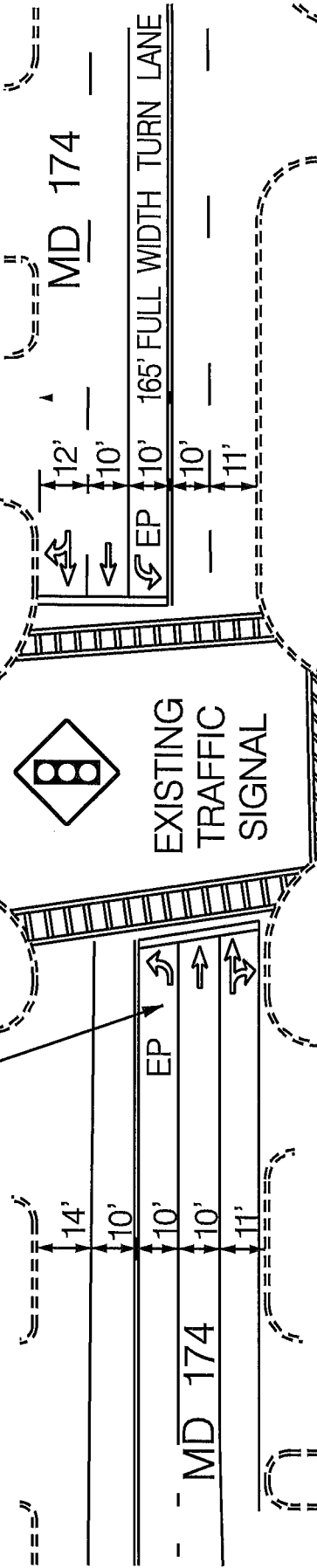
COVID-Related Federal Funding (ESSER)



75' CONSTANT FULL WIDTH TURN LANE

NO TURN ON RED

207' CONSTANT FULL WIDTH TURN LANE



MD 174

EXISTING TRAFFIC SIGNAL

SIGNALIZED INTERSECTION

83' CONSTANT FULL WIDTH TURN LANE

NOT TO SCALE

TRAFFIC **C**ONCEPTS, INC.
 7525 Connelley Drive, Suite B
 Hanover, MD 21076
 410-760-2511
 EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

DATE: FEBRUARY, 2022 FILE# 3836

EXISTING INTERSECTION CONFIGURATION

MD 174 AT OLD STAGE ROAD
ANNE ARUNDEL COUNTY, MARYLAND

OLD STAGE ROAD

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 @ MD 100 WB OFF RAMP

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA

DATE: FEBRUARY 8, 2022

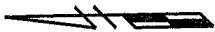
WEATHER: CLEAR

DAY: TUESDAY

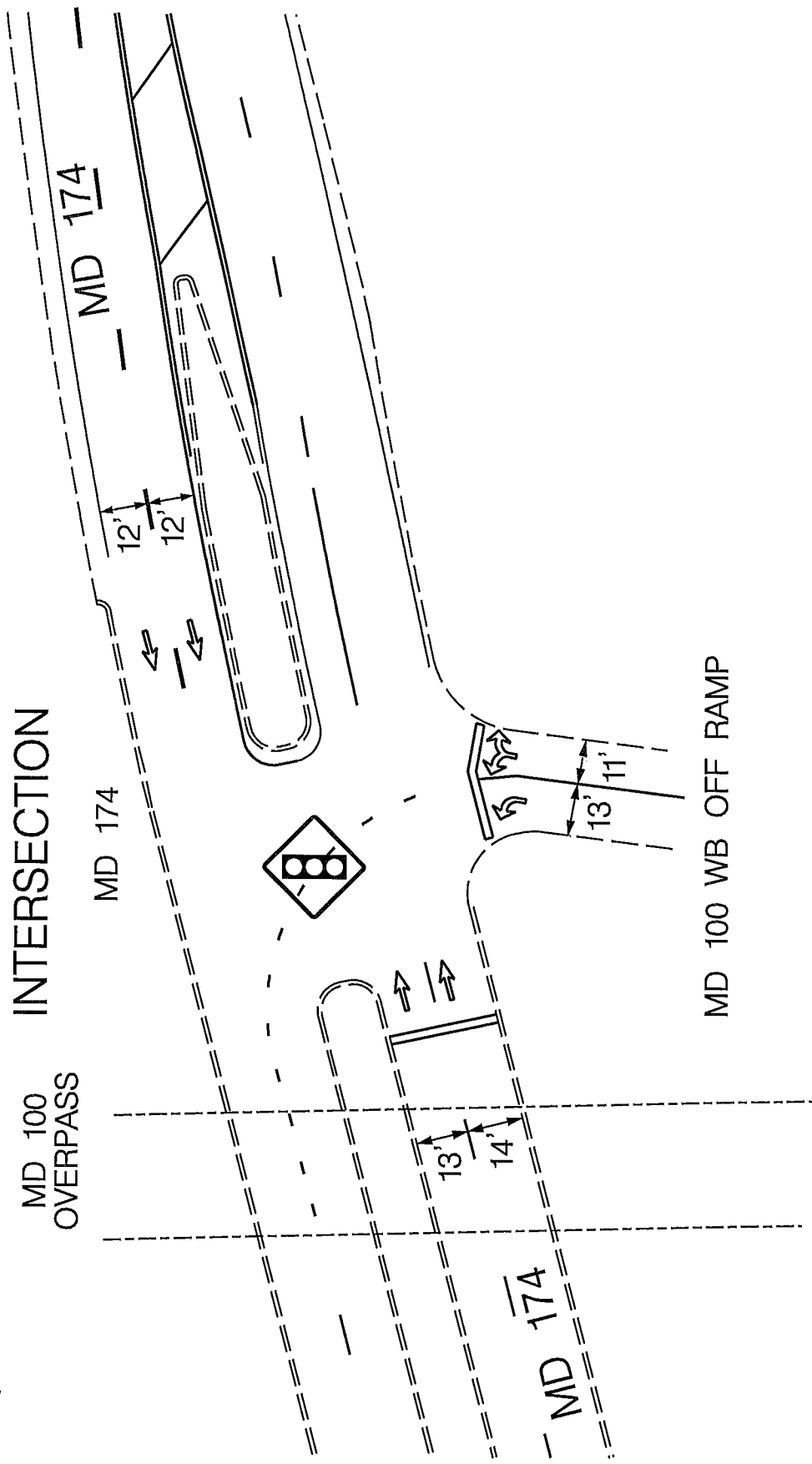
TIME	MD 174 NORTHBOUND			MD 174 SOUTHBOUND			EASTBOUND			MD 100 WB OFF RAMP WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15		87			90					53		5	235
7:15-7:30		106			134					46		9	295
7:30-7:45		128			156					52		3	339
7:45-8:00		131			157					50		7	345
8:00-8:15		137			149					61		7	354
8:15-8:30		103			142					65		13	323
8:30-8:45		106			102					65		12	285
8:45-9:00		109			119					65		10	303
PEAK HR 7:30-8:30		499			604					228		30	PHF 0.96
TOTALS													
PM													
4:00-4:15		199			157					64		13	433
4:15-4:30		178			132					67		15	392
4:30-4:45		207			180					73		12	472
4:45-5:00		178			144					81		8	411
5:00-5:15		171			153					75		14	413
5:15-5:30		185			125					74		21	405
5:30-5:45		137			123					72		21	353
5:45-6:00		105			73					46		7	231
PEAK HR 4:00-5:00		762			613					285		48	PHF 0.90
TOTALS													

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 HANOVER, MARYLAND 21076
 410-760-2911 FAX 410-760-2915
 E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

M:13836



SIGNALIZED INTERSECTION



MD 100
OVERPASS

MD 174

MD 174

MD 174

MD 100 WB OFF RAMP

NOT TO SCALE

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Hanover, MD 21076
410-760-2911
EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM

DATE: FEBRUARY, 2022 FILE #3836

EXISTING INTERSECTION CONFIGURATION
MD 174 AT MD 100 WB OFF RAMP
ANNE ARUNDEL COUNTY, MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 @ PAMELA RD

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA (B.SMITH)

DATE: FEBRUARY 8, 2022

WEATHER: CLEAR

DAY: TUESDAY

CAM

TIME	PAMELA ROAD NORTHBOUND			LANDMARK DRIVE SOUTHBOUND			MD 174 EASTBOUND			MD 174 WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15	22	0	15	0	0	7	8	144	9	3	157	7	372
7:15-7:30	25	0	5	0	0	2	19	183	10	1	191	9	445
7:30-7:45	47	0	8	3	0	6	35	157	9	1	188	15	469
7:45-8:00	24	0	10	3	0	8	50	194	23	2	192	19	525
8:00-8:15	33	1	11	1	1	13	38	209	19	2	173	14	515
8:15-8:30	27	0	12	6	0	12	36	170	17	9	147	13	449
8:30-8:45	46	0	5	6	2	22	14	149	15	5	151	15	430
8:45-9:00	29	1	7	5	0	13	28	190	24	3	157	10	467
PEAK HR 7:30-8:30 TOTALS	131	1	41	13	1	39	159	730	68	14	700	61	PHF 0.93
PM													
4:00-4:15	13	1	6	12	0	33	19	261	28	5	223	8	609
4:15-4:30	28	1	8	12	1	21	16	260	36	9	213	5	610
4:30-4:45	27	2	8	19	1	38	7	287	31	7	252	8	687
4:45-5:00	26	0	10	21	0	38	14	243	41	8	215	8	624
5:00-5:15	15	1	6	12	2	37	17	259	37	7	240	12	645
5:15-5:30	23	1	9	10	0	18	16	280	31	4	193	5	590
5:30-5:45	17	0	5	14	1	17	13	260	39	11	191	4	572
5:45-6:00	20	0	9	10	1	11	10	250	35	9	172	3	530
PEAK HR 4:15-5:15 TOTALS	96	4	32	64	4	134	54	1049	145	31	920	33	PHF 0.93

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ELEVATING ALL STUDENTS...ELIMINATING ALL GAPS

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View the Film and Pre-Recorded Panel Discussion -
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REOPENING

COVID-19 RESOURCES

Information & Resources for Fall 2021 Reopening of Schools

UPCOMING
DATES/EVENTS

COVID-Related Federal Funding (ESSER)



Google Earth

NOT TO SCALE

DATE: FEBRUARY, 2022 FILE #3836

EXISTING INTERSECTION CONFIGURATION
MD 174 AT PAMELA RD/LANDMARK DR
ANNE ARUNDEL COUNTY, MARYLAND

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 174 @ MD 100 EB ON RAMP

COUNTY: ANNE ARUNDEL

COUNT BY: CAMERA

DATE: FEBRUARY 8, 2022

WEATHER: CLEAR

DAY: TUESDAY

TIME	MD 174 NORTHBOUND			MD 174 SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
AM													
7:00-7:15		83	23	8	134								248
7:15-7:30		107	37	7	168								319
7:30-7:45		128	36	9	204								377
7:45-8:00		127	45	14	201								387
8:00-8:15		143	37	17	195								392
8:15-8:30		107	35	17	194								353
8:30-8:45		113	50	13	151								327
8:45-9:00		112	54	7	185								358
PEAK HR 7:30-8:30		505	153	57	794								PHF 0.96
TOTALS													
PM													
4:00-4:15		193	84	21	205								503
4:15-4:30		174	96	19	176								465
4:30-4:45		201	92	17	234								544
4:45-5:00		179	92	11	215								497
5:00-5:15		166	83	13	221								483
5:15-5:30		186	88	9	189								472
5:30-5:45		132	71	13	185								401
5:45-6:00		135	54	15	152								356
PEAK HR 4:00-5:00		747	364	68	830								PHF 0.92
TOTALS													


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M:13836

SCHOOLS TODAY
02/08/2022

View schools or grades that have converted to virtual learning due to COVID-19 outbreaks
All schools open and operating on a normal schedule.
Delay notices are posted as soon as they become available.

02/08/2022 10:00 AM

Select Language 
Powered by Google Translate



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A black and white movie poster for "LIKE" presented by IndieFlux. The word "LIKE" is written in large, bold, white letters. A white text box in the center contains the title and event information. The background features a dark, moody image of a person's face in profile, partially obscured by shadows and a vertical light streak.

INDIEFLIX
PRESENTS

LIKE

"LIKE" - A FILM ABOUT THE IMPACT OF SOCIAL MEDIA ON OUR LIVES
View the Film and Pre-Recorded Panel Discussion -
coming February 14, 2022

TheLikeMovie.com

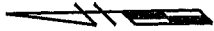
REOPENING

COVID-19 RESOURCES

[Information & Resources for Fall 2021 Reopening of Schools](#)

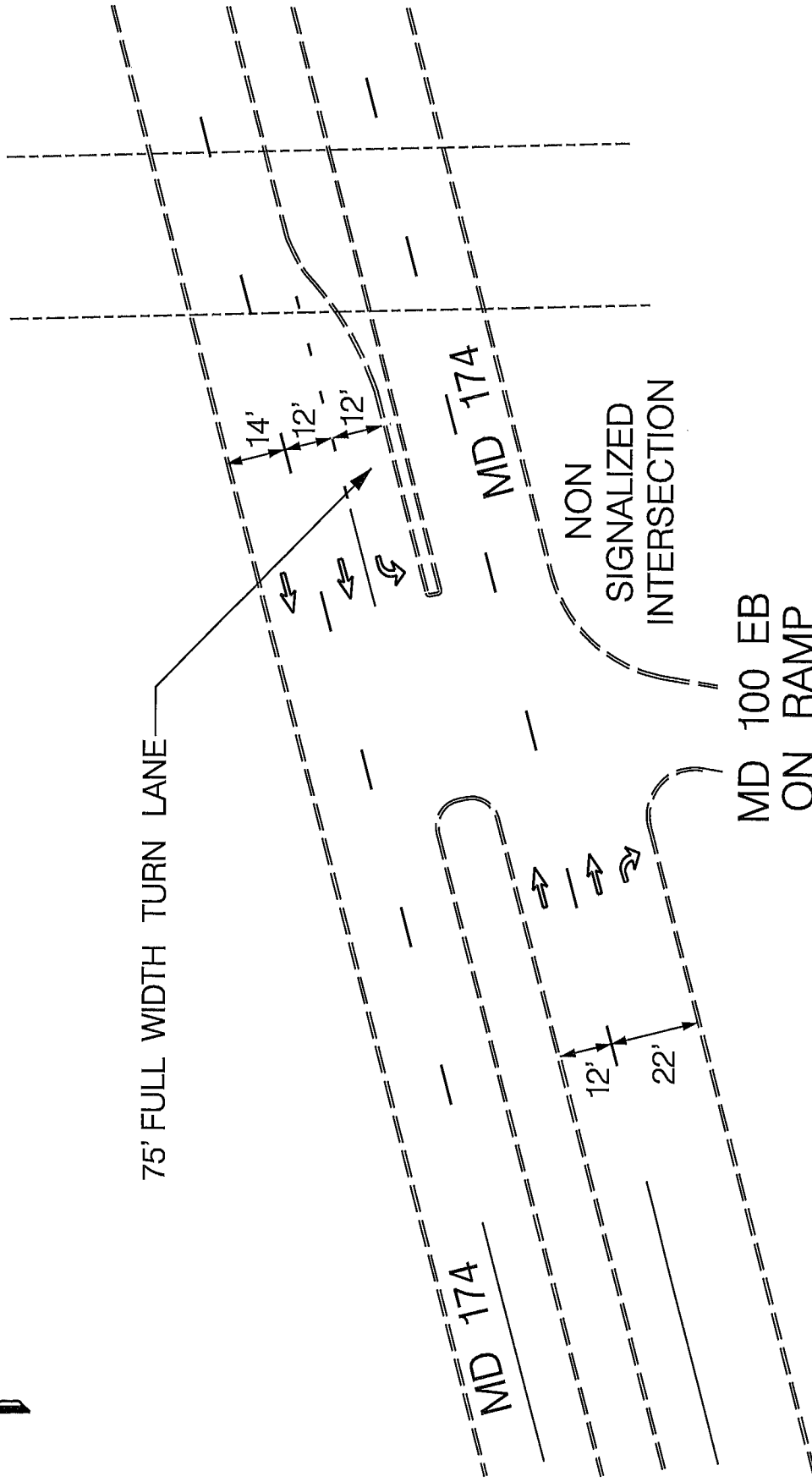
UPCOMING DATES/EVENTS

COVID-Related Federal Funding (ESSER)



MD 100
OVERPASS

75' FULL WIDTH TURN LANE



NOT TO SCALE

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DATE: FEBRUARY, 2022 FILE# 3836

EXISTING INTERSECTION CONFIGURATION

MD 174 AT MD 100 EB ON RAMP

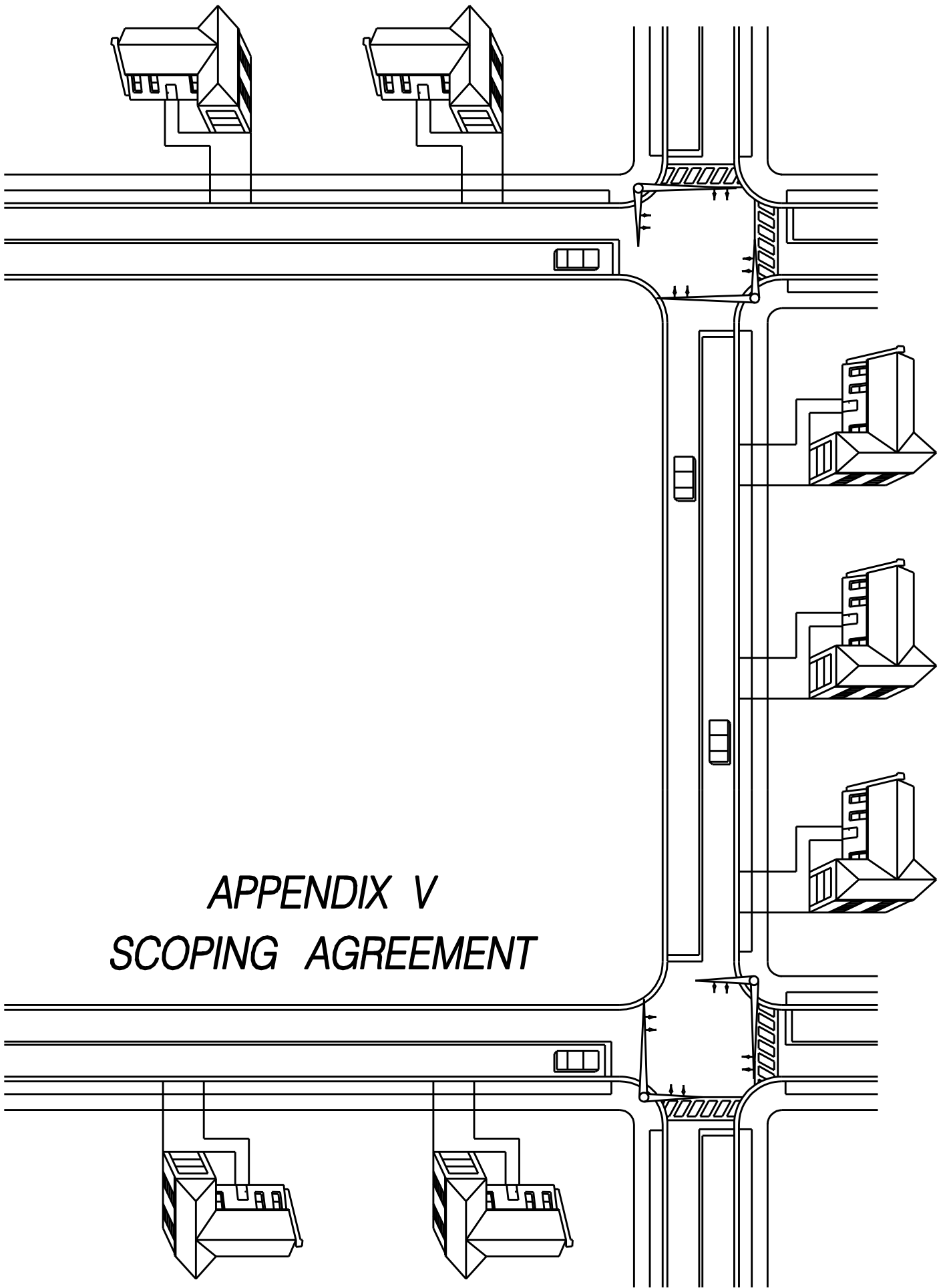
ANNE ARUNDEL COUNTY, MARYLAND

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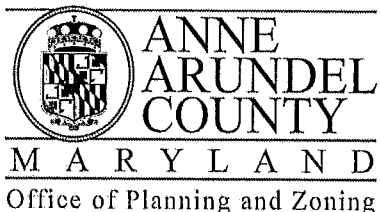
Site Code:
 Station ID: # 3836
 MD 174, S of MD 100 Overpass
 Latitude: 0' 0.0000 Undefined

Start Time	14-Feb-22		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	44	49	32	43	40	45	*	*	*	*	*	*	39	46
01:00	*	*	20	34	26	28	25	33	*	*	*	*	*	*	24	32
02:00	*	*	14	24	11	24	15	24	*	*	*	*	*	*	13	24
03:00	*	*	22	25	18	24	22	25	*	*	*	*	*	*	21	25
04:00	*	*	38	84	37	69	35	77	*	*	*	*	*	*	37	77
05:00	*	*	103	179	88	172	99	188	*	*	*	*	*	*	97	180
06:00	*	*	234	347	265	365	255	350	*	*	*	*	*	*	251	354
07:00	*	*	623	678	667	689	680	680	*	*	*	*	*	*	657	682
08:00	*	*	639	687	656	652	645	699	*	*	*	*	*	*	647	679
09:00	*	*	611	608	616	623	599	599	*	*	*	*	*	*	609	610
10:00	*	*	578	638	599	608	601	618	*	*	*	*	*	*	593	621
11:00	*	*	671	616	650	622	666	606	*	*	*	*	*	*	662	615
12:00 PM	*	*	641	654	670	634	654	677	*	*	*	*	*	*	655	655
01:00	*	*	699	660	688	680	700	690	*	*	*	*	*	*	696	677
02:00	*	*	763	760	733	770	755	709	*	*	*	*	*	*	750	746
03:00	*	*	966	846	906	806	968	844	*	*	*	*	*	*	947	832
04:00	*	*	1044	821	1054	821	1001	811	*	*	*	*	*	*	1033	818
05:00	*	*	942	843	955	890	920	822	*	*	*	*	*	*	939	852
06:00	*	*	694	594	701	606	709	601	*	*	*	*	*	*	701	600
07:00	*	*	498	417	509	422	490	480	*	*	*	*	*	*	499	440
08:00	*	*	355	357	370	388	350	366	*	*	*	*	*	*	358	370
09:00	*	*	229	236	233	250	258	260	*	*	*	*	*	*	240	249
10:00	*	*	140	123	132	120	160	120	*	*	*	*	*	*	144	121
11:00	*	*	87	75	81	70	88	90	*	*	*	*	*	*	85	78
Lane	0	0	10655	10355	10697	10376	10735	10414	0	0	0	0	0	0	10697	10383
Day	0	0	21010	21010	21073	21073	21149	21149	0	0	0	0	0	0	21080	21080
AM Peak	-	-	11:00	08:00	07:00	07:00	07:00	08:00	-	-	-	-	-	-	11:00	07:00
Vol.	-	-	671	687	667	689	680	699	-	-	-	-	-	-	662	682
PM Peak	-	-	16:00	15:00	16:00	17:00	16:00	15:00	-	-	-	-	-	-	16:00	17:00
Vol.	-	-	1044	846	1054	890	1001	844	-	-	-	-	-	-	1033	852
Comb. Total	0	0	21010	21010	21073	21073	21149	21149	0	0	0	0	0	0	21080	21080

ADT - 21077
 TWO-WAY - 1875
 ONE-WAY - 1054 EB



APPENDIX V
SCOPING AGREEMENT



2664 Riva Road, P.O. Box 6675
Annapolis, MD 21401
410-222-7450

Steve Kaii-Ziegler, AICP
Planning and Zoning Officer

February 4, 2022

Ms. Jackie L. Chandler
Traffic Concepts, Inc.
7525 Connelley Drive, Suite B
Hanover, MD 21076

RE 7685 Quarterfield Road
Traffic Impact Study Scoping Letter

Dear Ms. Chandler:

This letter is in response to your traffic impact study scoping letter dated January 17, 2022 regarding the Property along the east side of MD 174/Quarterfield Road just north of Old Stage Road. The study limits as described in your letter are acceptable.

Please also note the following conditions that must be addressed in the study, in accordance with, and in addition to, the "Guidelines for Traffic Impact Studies" found in the *Anne Arundel County Design Manual, Chapter 3, Appendix N*:


- All counts are subject to Green Notice OPZ-21-06.
- Note that if any changes are made to the site layout resulting in access point changes, the scope of study will need to be revised accordingly.
- In accordance with 17-5-401(a)(2), perform road rating analysis on all road segments, including state roads.
- As required in the County's Guidelines for Traffic Impact Studies, the latest version of the Highway Capacity Manual intersection analysis will be required for any intersection with a total critical volume of 1300 or more. Regardless of other analyses requested by the county or provided by the applicant, a Critical Lane Volume (CLV) of 1450 represents a failure which must be addressed through mitigation.
- Please note that additional comments may follow from MDOT-SHA after further review.
- It is the consultant's responsibility to account for all developments under construction, and to include only the remaining build out in the background development analysis.
- Include all signalized intersections within the study limits in the intersections to be studied.
- The County will generally accept trip generation rates found in the latest edition of the Institute of Transportation Engineers Trip Generation report. This report provides three methods to determine average trip generation for proposed developments: weighted trip generation rate, a plot of actual trip ends versus an independent variable, and a regression equation. The consultant should determine which method provides the best fit for the type and size of the proposed development in accordance with the

county's "Guideline for Traffic Impact Study" in the Design Manual. Questions of interpretation should be directed to this office, which will have the final determination of what method to be used.

- A copy of the scoping letter and this response letter must be included as an Appendix to the Traffic Impact Study when the study is submitted.

Should you have any questions regarding the information in this response letter, please contact me at pzfowl22@aacounty.org.

Sincerely,



Sarah E. Fowler, P.E.
Senior Engineer
Transportation Team – Development Division
Office of Planning and Zoning
2664 Riva Road
Annapolis, MD 21401

cc: Charlie Wang, Martha Arzu-McIntosh, Margaret Kail-Ziegler, OPZ
Courtney Wilson, Lori Allen, Kelly Krinetz, OPZ
Nestor Flores, Kirsten Cook, DPW
Jonathan Makhoulouf, MDOT SHA

TRAFFIC CONCEPTS, INC.

Traffic Impact Studies • Feasibility • Traffic Signal Design • Traffic Counts • Expert Testimony

January 17, 2022

Ms. Sarah Fowler
Anne Arundel County
Office of Planning and Zoning
2664 Riva Road
Annapolis, MD 21401

RE: 7685 Quarterfield Road
Traffic Impact Study Scoping Letter
TC #3836

Dear Ms. Fowler:

The above referenced project is located on the east side of MD 174/ Quarterfield Road just north of Old Stage Road. The development will gain access via a full movement access to MD 174, and will create approximately 5,754 gross square feet of retail space. Attached is an aerial photo showing the location of the project and the proposed study limits.

We propose to analyze the following intersections and road sections during the weekday AM and weekday PM peak periods as part of the traffic impact study:

Intersections:

- MD 174 @ Proposed Site Access
- MD 174 @ MD 100 EB Ramp
- MD 174 @ MD 100 WB Ramp
- MD 174 @ Old Stage Road
- MD 174 @ Pamela Road/Landmark Drive
- MD 174 @ I-97 NB Ramp
- MD 174 @ George Clauss Blvd/I-97 SB Ramp

Road Sections:

- MD 174 from MD 100 WB Ramp to I-97 SB Ramp

Ms. Sarah Fowler
January 17, 2022
Page 2 of 2

Attached is a list and map showing the background developments that we intend to include in the study. Please review and provide any comments.

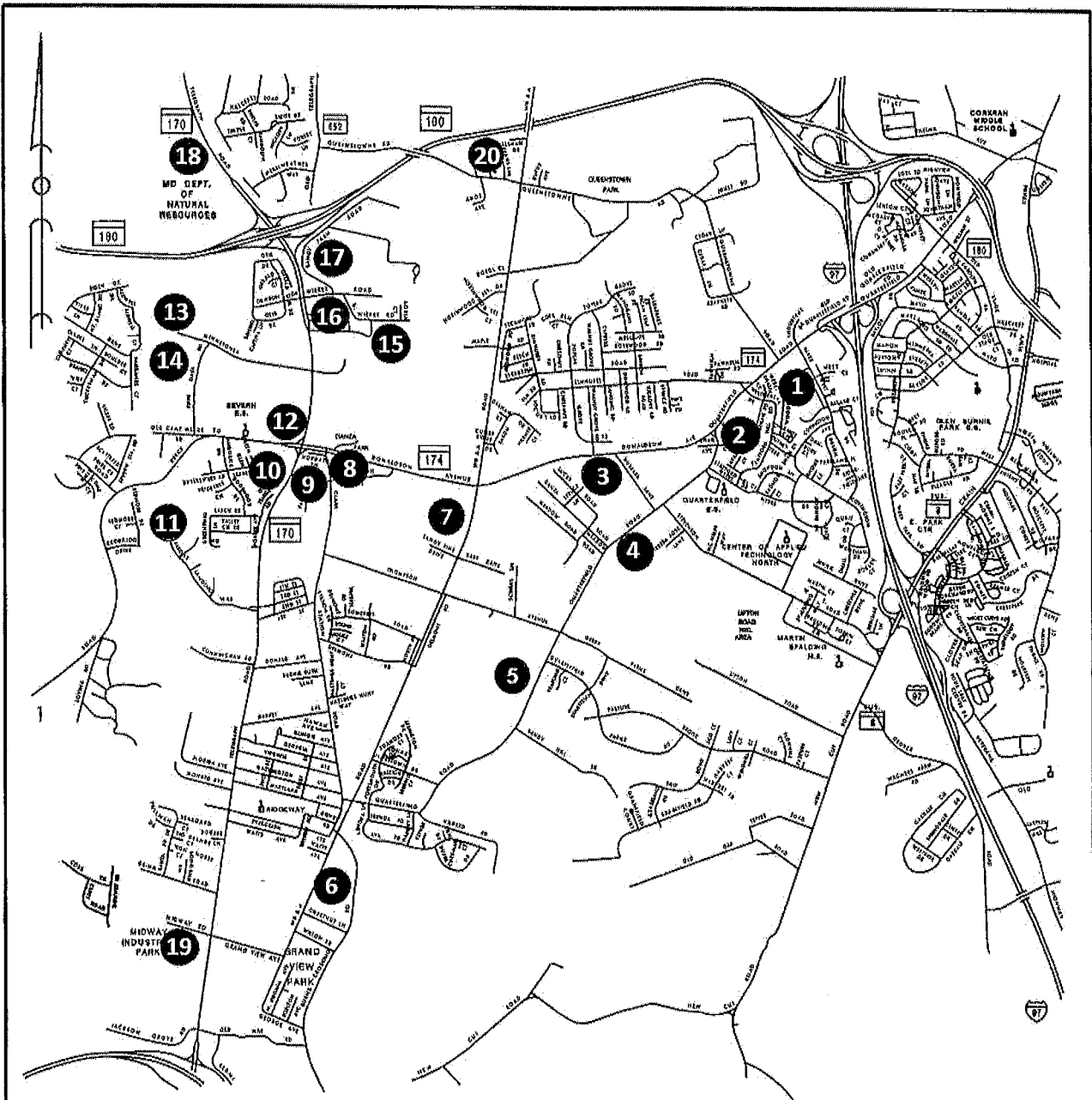
Please provide our office with any Capital Improvement Projects that may affect the proposed study area, as well as any approved mitigation proposals for the background developments listed.

We respectfully request that your office review and approve the study limits as well as the background development list for this project. If you have any questions or require additional information, please do not hesitate to contact our office at your convenience.

Sincerely,

TRAFFIC CONCEPTS, INC.

By: Jon F. Mayer
jmayer@traffic-concepts.com



- | | |
|--------------------------------|-------------------------|
| 1. Hogan Realty Investors, LLC | 16. Crestwood |
| 2. Monroe Landing | 17. Sandy Farms |
| 3. Kaplans Purchase | 18. Buckingham |
| 4. Garrison Manor | 19. Hi-Tech Color |
| 5. Nanny Property | 20. 796 Queenstown Road |
| 6. Clarks Crossing | |
| 7. Thompson Farms | |
| 8. Wolfepack, LLC | |
| 9. Advance Auto | |
| 10. 7860 Telegraph Road | |
| 11. Stephen's Knoll | |
| 12. Severn Crossroads | |
| 13. The Villas at Severn Crest | |
| 14. Prusak Property | |
| 15. Willow Creek | |

TRAFFIC CONCEPTS, INC.
 7525 Connelley Drive
 Suite B
 Hanover, Maryland 21076
 410-760-2911

Exhibit 2
 Background Development Locations

BACKGROUND DEVELOPMENTS

	<u>AM</u>		<u>PM</u>		
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	<u>ADT</u>
1. Hogan Realty Investors, LLC					
C2014-0055					
<u>ITE Land Use Code 230</u>					
Per thu	0.10	0.50	0.46	0.23	7.12
46 thu	5	23	21	11	327
Less 11 built	- 1	- 5	- 5	- 3	- 78
35 remaining	4	18	16	8	249
2. Monroe Landing (Watts Property)					
24 sfu			BUILT OUT		
3. Kaplans Purchase					
38 sfu			BUILT OUT		
4. Garrison Manor					
9 sfu			BUILT OUT		
5. Nanny Property					
S2015-003					
<u>ITE Land Use Code 210</u>					
Per sfu	0.42	1.26	0.83	0.49	12.63
10 sfu	4	13	8	5	126
6. Clarks Crossing					
26 sfu			BUILT OUT		
7. Thompson Farms - Ameristar					
8 sfu			BUILT OUT		
8. Wolfepack Property					
S2012-012					
Phase 1:					
<u>ITE Land Use Code 230</u>					
Per thu	0.11	0.56	0.51	0.25	7.63
27 thu	3	15	14	7	206
<u>Fast-Food Restaurant w/ Drive-Thru</u>					
<u>ITE Land Use Code 934</u>					
Per ksf	23.16	22.26	16.98	15.67	496.12
3,630 gsf	84	81	62	57	1801
Less passby per ITE	- 41	- 40	- 31	- 29	N/A
New Trips	43	41	31	28	1801

BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
<u>ITE Land Use Code 912</u>					
Per ksf	6.89	5.19	12.15	12.15	148.15
2,800 gsf	19	15	34	34	415
Less passby per ITE	- 0	- 0	- 16	- 16	N/A
New Trips	19	15	18	18	415
Phase 2: (Public Storage)					
<u>ITE Land Use Code 151</u>					
54,420 net rentable sf	2	3	5	4	90
TOTAL PHASE I COMMERCIAL & PHASE 2 (PUBLIC STORAGE)	64	59	54	50	2306
9. Advance Auto 6,889 gsf					
			BUILT OUT		
10. 7860 Telegraph Road C2016-0022					
<u>ITE Land Use Code 151</u>					
Per ksf	0.08	0.06	0.13	0.13	2.50
127,400 gsf	10	8	17	16	319
11. Stephen's Knoll					
<u>ITE Land Use Code 210</u>					
18 sfu			BUILT OUT		
12. Severn Crossroads (7836 Telegraph Road) S2014-018					
<u>ITE Land Use Code 230</u>					
Per thu	0.10	0.49	0.45	0.22	7.02
51 thu	5	25	23	12	358
<u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
8,000 gsf	26	29	22	18	355

BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
<u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
6,000 gsf	20	21	17	13	266
 <u>Specialty Retail</u>					
<u>ITE Land Use Code 826</u>					
Per ksf *	3.28	3.56	2.81	2.21	44.32
6,000 gsf	20	21	17	13	266
TOTAL 12,000 gsf	40	42	34	26	532
* In order to create a worse-case scenario, we have used AM and PM peak hour of the generator rates.					
13. The Villas at Severn Crest					
<u>ITE Land Use Code 220</u>					
46 thu	5	18	19	11	307
 <u>ITE Land Use Code 254</u>					
20 beds	2	2	2	3	52
14. Prusak Property					
<u>ITE Land Use Code 210</u>					
Per sfu	0.30	0.91	0.78	0.46	11.99
19 sfu	6	17	15	9	228
TOTAL BACKGROUNDS 13 & 14	13	37	36	23	587
15. Willow Creek					
12 sfu			BUILT OUT		
16. Crestwood					
117 thu			BUILT OUT		
17. Sandy Farms					
S2015-033					
<u>ITE Land Use Code 160</u>					
109,455 gsf	7	5	3	7	108

BACKGROUND DEVELOPMENTS (CONTINUED)

	<u>AM</u>		<u>PM</u>		<u>ADT</u>
	<u>IN</u>	<u>OUT</u>	<u>IN</u>	<u>OUT</u>	
18. Buckingham					
Proj#P2007-0161					
<u>ITE Land Use Code 720</u>					
Medical Office					
Per ksf	1.89	0.50	1.00	2.57	36.13
53,500 gsf	101	27	54	137	1933
Less 26,750 occupied	- 50	- 13	- 27	- 69	- 966
26,750 gsf remaining	51	14	27	68	967
<u>ITE Land Use Code 710</u>					
General Office					
Per ksf	1.43	0.20	0.25	1.22	10.81
225,000 gsf	322	44	56	274	2431
<u>ITE Land Use Code 826</u>					
Specialty Retail					
Per ksf *	3.28	3.56	2.81	2.21	44.32
11,800 gsf	39	42	33	26	523
TOTAL BACKGROUND 18	412	100	116	368	3921
19. Hi-Tech Color					
C2016-0055					
<u>ITE Land Use Code 150</u>					
Per ksf	0.24	0.06	0.08	0.24	3.56
37,500 gsf	9	2	3	9	134
20. 796 Queenstown Road					
<u>ITE Land Use Code 252</u>					
192 units	12	25	27	21	580

* In order to create a worse-case scenario, we have used AM and PM peak hour of the generator rates.