TRAFFIC IMPACT STUDY

THE COMMONS AT FIELDSIDE

Residential Development & Self-Storage
City of Aberdeen, Maryland

February, 2021

Prepared For:

Sage Ventures, LLC

Prepared By:

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INTRODUCTION

Traffic Concepts, Inc. has prepared a traffic impact study for The Commons at Fieldside project. The developer proposes to construct 484 apartment units and 49 townhouse units. Additionally, the developer proposes to repurpose the existing 117,792 SF building that was originally developed as an office building. This building has remained vacant since it was constructed and will now be used for self-storage.

The development property is located on the southeast quadrant of Gilbert Road and Long Drive. The property now has driveway access to Gilbert Road and two access points onto Long Drive. The developer plans to retain one full-movement access to Long Drive and create two access points onto Gilbert Road. The site is depicted on Exhibit 1 and the site plan is provided in the appendix.

The study was developed in accordance with the City of Aberdeen's Adequate Public Facilities Ordinance and the Maryland Department of Transportation State Highway Administration Traffic Impact Analysis Guidelines. The intersections listed below were determined by the City to be the key study intersections. These intersections were evaluated during the weekday AM and PM peak time periods.

Key Intersections

- MD 22 (Churchville Road) @ Technology Drive/Long Drive (Signalized)
- MD 22 (Churchville Road) @ Aldino-Stepney Road (Unsignalized)
- Long Drive @ Gilbert Road (Unsignalized)
- Gilbert Road @ Maxa Road (Unsignalized)
- Aldino-Stepney Road @ Arnet Way (Unsignalized)
- Gilbert Road @ Proposed Site Access (Unsignalized)
- Long Drive @ Proposed Site Access (Unsignalized)

The existing condition diagrams for the key intersections are included in Appendix III of this report. The existing intersection lane use and the planned road improvements at the key intersections are shown on Exhibit 2.

Methodology

The study was conducted with three traffic conditions that determine the existing, background, and future traffic conditions. The existing traffic condition creates the baseline intersection levels of service using current intersection peak hour turning movement volumes.

The background traffic condition includes an analysis of the key intersections with additional trips generated by a traffic growth rate that is calculated through the project's design year and trips generated by the background developments. The background trips are added to the existing traffic volumes to create the total background traffic volumes.

The future traffic condition determines the site generated peak hour trips. The total background traffic volumes are added to the new site trips to create the total future traffic volumes. The total future traffic condition is described with the following formula:

Total Future Traffic = (Existing Traffic + Growth in Existing Traffic + Approved Development Traffic + Site Generated Traffic)

The intersection analysis methodologies used to determine the intersection levels of service are the Critical Lane Volume (CLV) method and the Highway Capacity Manual (HCM), Signalized and Unsignalized, methodologies. Queuing analyses were also conducted at all dedicated left turn lanes at the signalized intersection.

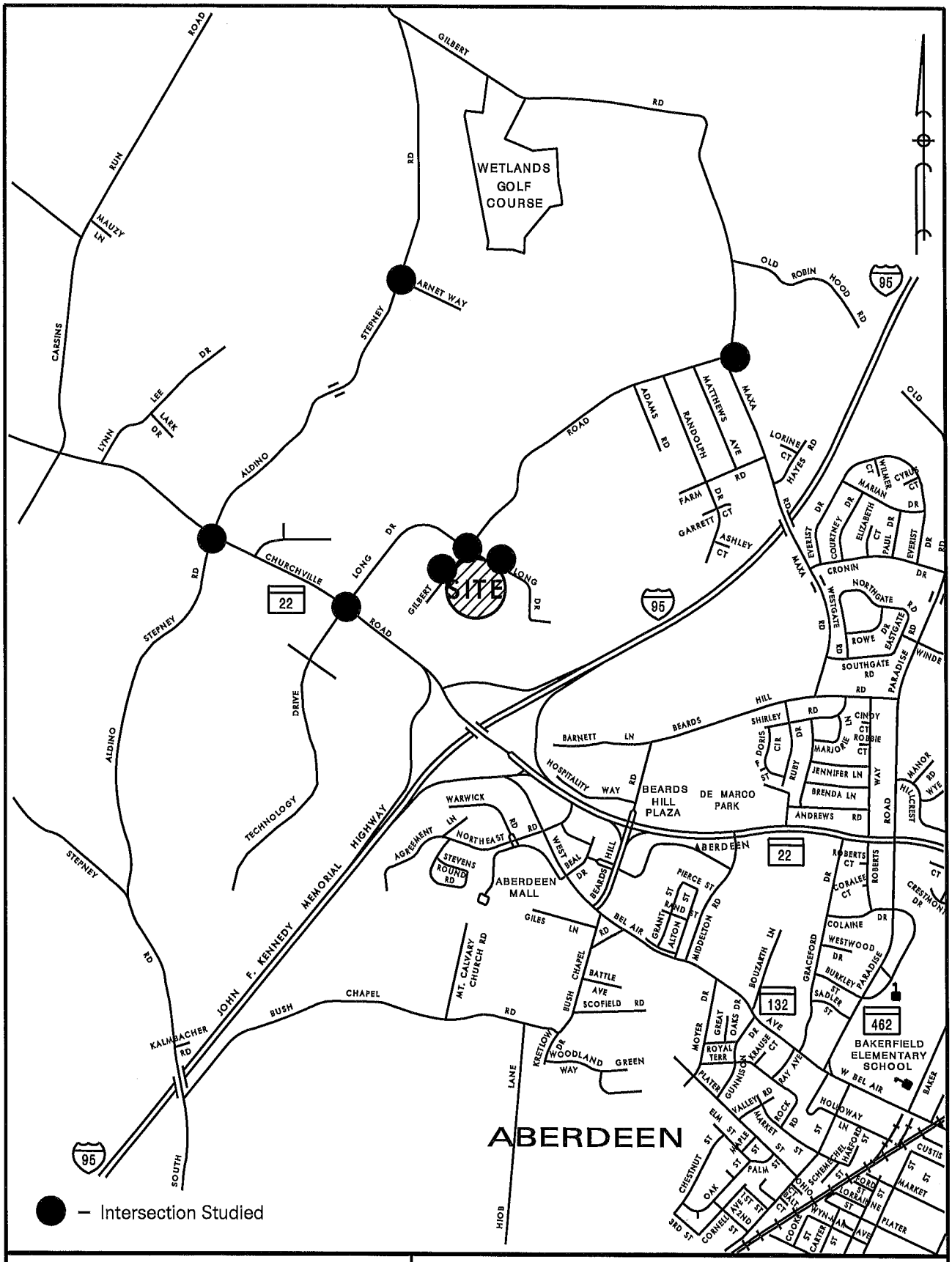

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EXHIBIT 1.
Site Location

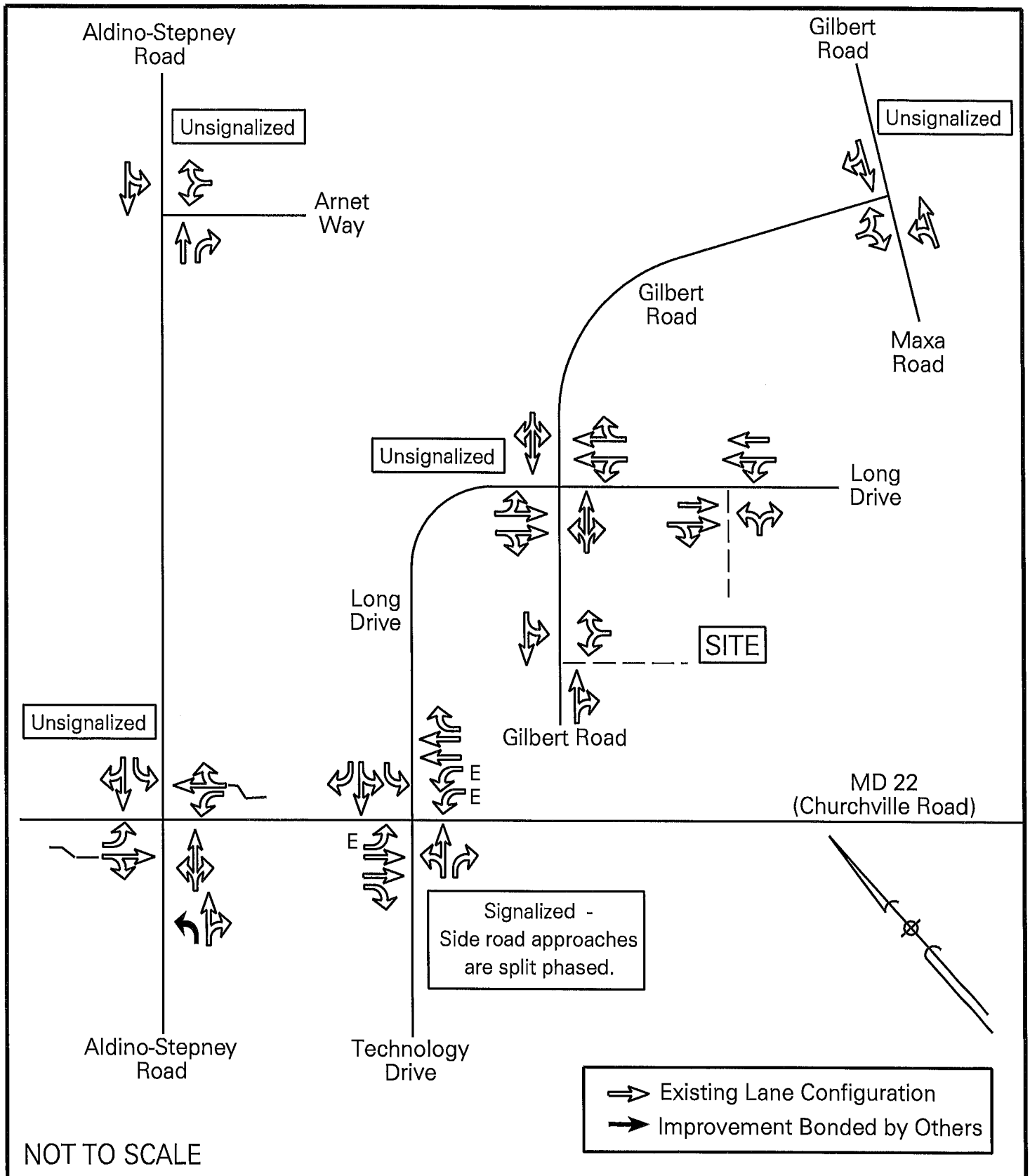

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EXHIBIT 2

Lane Configuration

EXISTING CONDITION

The existing traffic condition establishes intersection levels of service at the key intersections listed below. The existing conditions are required for all proceeding levels of analysis. The weekday AM and PM peak hour counts are displayed on Exhibit 3. Details of the traffic count data are provided in Appendix III.

Key Intersections

- MD 22 (Churchville Road) @ Technology Drive/Long Drive (Signalized)
- MD 22 (Churchville Road) @ Aldino-Stepney Road (Unsignalized)
- Long Drive @ Gilbert Road (Unsignalized)
- Gilbert Road @ Maxa Road (Unsignalized)
- Aldino-Stepney Road @ Arnet Way (Unsignalized)
- Gilbert Road @ Proposed Site Access (Unsignalized)
- Long Drive @ Proposed Site Access (Unsignalized)

The intersection capacity results are provided below and on the following pages. The details of the intersection calculations are included in Appendix I. The proposed site access intersections were analyzed in the future traffic condition section of this report.

CRITICAL LANE ANALYSIS

	AM CLV(LOS)	PM CLV(LOS)
MD 22 @ Technology Drive/Long Drive	549(A)	599(A)
MD 22 @ Aldino-Stepney Road	837(A)	1040(B)
Long Drive @ Gilbert Road	94(A)	97(A)
Gilbert Road @ Maxa Road	314(A)	85(A)
Aldino-Stepney Road @ Arnet Way	66(A)	61(A)

HCM ANALYSIS – SIGNALIZED INTERSECTION

MD 22 @ Technology Drive/Long Drive

	LOS AM(PM)	Approach LOS AM(PM)
Eastbound		
Left	D(D)	B(C)
Thru	B(C)	
Right	A(C)	
Westbound		
Left	D(D)	B(C)
Thru	A(C)	
Right	A(C)	
Northbound		
Left/Thru	A(D)	D(D)
Right	D(D)	
Southbound		
Left	D(D)	D(D)
Left/Thru	D(D)	
Right	C(C)	

AM Intersection: Delay = 15.9 sec/veh; LOS = B
PM Intersection: Delay = 29.1 sec/veh; LOS = C

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS

MD 22 @ Aldino Stepney Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left	8.1(10.3)	A(B)		
Westbound				
Left	9.5(8.2)	A(A)		
Northbound				
L/T/R	21.9(29.3)	C(D)	21.9(29.3)	C(D)
Southbound				
Left	42.8(62.3)	E(F)	36.3(52.4)	E(F)
Thru/Right	10.4(25.1)	B(D)		

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS (CONTINUED)

Long Drive @ Gilbert Road

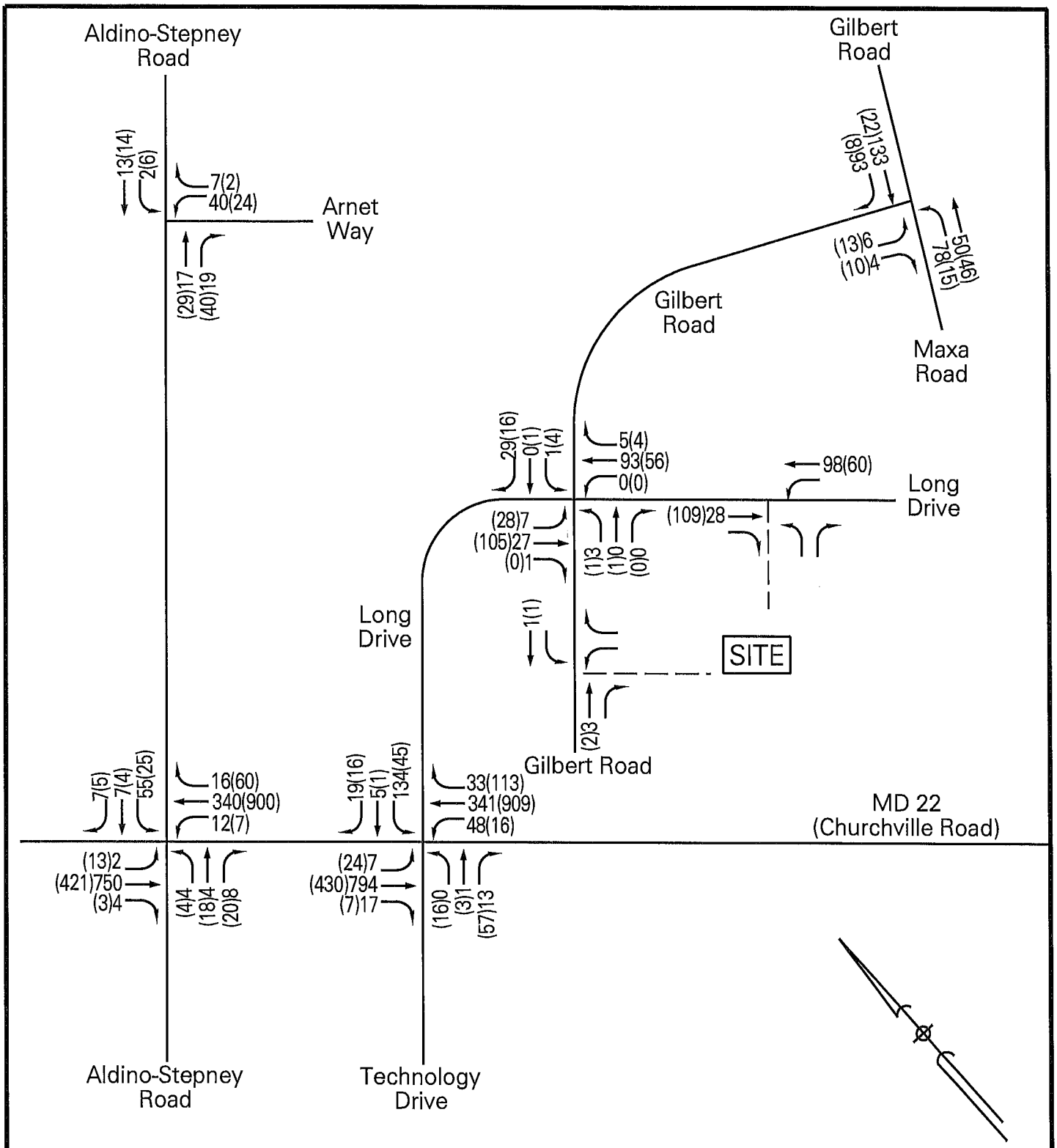
	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Thru	7.4(7.4)	A(A)		
Westbound				
Left/Thru	7.3(7.4)	A(A)		
Northbound				
L/T/R	9.3(10.3)	A(B)	9.3(10.3)	A(B)
Southbound				
L/T/R	8.7(8.9)	A(A)	8.7(8.9)	A(A)

Gilbert Road @ Maxa Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Right	10.8(8.9)	B(A)	10.8(8.9)	B(A)
Northbound				
Left/Thru	7.9(7.3)	A(A)		

Aldino-Stepney Road @ Arnet Way

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Westbound				
Left/Right	8.9(8.9)	A(A)	8.9(8.9)	A(A)
Southbound				
Left/Thru	7.3(7.4)	A(A)		



TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 3 Existing Traffic Volumes

BACKGROUND CONDITION

The background traffic condition evaluates the key intersections with additional traffic generated by a regional growth rate and background developments.

The required growth rate of 2.2% was projected along MD 22 to account for a regional growth in through traffic volumes. Since the build-out of the proposed development is expected to take five (5) years, the growth rate was projected for that length of time. These figures are shown on Exhibit 4.

Background developments consist of approved projects that are not yet built. Planning officials from Harford County and the City of Aberdeen have identified six (6) background developments that could impact the key intersections. The locations of these developments are shown on Exhibit 5. The background peak hour trips listed below were determined with the Institute of Transportation Engineers', Trip Generation Manual, 10th Edition.

BACKGROUND DEVELOPMENTS

	AM		PM	
	IN	OUT	IN	OUT
1. Adams Heights ITE Land Use Code 210 **14 sfu**	**4**	**11**	**9**	**6**
2. Carsinwood ITE Land Use Code 210 **6 sfu**	**2**	**7**	**4**	**3**
3. Peverly Estates ITE Land Use Code 210 **16 sfu**	**4**	**12**	**11**	**6**
4. Stadium Towne Center **Total New Trips***	**199**	**179**	**215**	**209**
5. Eagle's Rest (Phase C & Phase II) ITE Land Use Code 210 **100sfu**	**19**	**57**	**64**	**38**

* These trips represent the trips and distribution patterns approved in the TIS. The pass-by trips do not impact the study intersections. Excerpts of the Stadium Towne Center TIS are included in Appendix II.

6. Adams Siebert Residential (New Trips)

	AM		PM	
	IN	OUT	IN	OUT
Single Family Units*				
ITE (210) - 83 units	16	48	54	31
Multi Family (Low-Rise)*				
ITE (220) - 93 units	10	35	35	20
Total Site Trips	**26**	**83**	**89**	**51**

* These trips represent the trips and distribution patterns approved in the TIS. Information for the Adams Siebert project are included in Appendix II.

The trips generated background developments 1 through 5 were distributed through the key intersections using distribution patterns that were previously approved in other traffic studies. The individual background trip distribution and assignment patterns are located in Appendix II. Exhibit 6 shows the combined trip assignment for these developments.

The Adams Siebert project (Background #6) will construct a new public road that will connect the proposed Adams Siebert development to the Eagle's Rest subdivision. This road connection will divert a portion of the Eagle's Rest peak hour trips to the signalized MD 22 @ Long Drive intersection. The trip diversion included in this analysis is conservative, since the analysis accounts for only the units planned for construction within Eagles Rest "Phase C". The Phase C trips are approximately one-third of the total trips generated by the 100 remaining Eagle's Rest units. Therefore, one-third of the Eagle's Rest trips (to/from MD 22 East) were diverted through the Adams Siebert project. The trip diversion pattern as described is provided on Exhibit 6B. The Adams Siebert background trips are shown on Exhibit 6C.

The total background trips are shown on Exhibit 7. The background intersection analysis results are provided on the following pages and the calculations are found in Appendix I.

CRITICAL LANE ANALYSIS

	AM CLV(LOS)	PM CLV(LOS)
MD 22 @ Technology Drive/Long Drive	702(A)	769(A)
MD 22 @ Aldino-Stepney Road*	1035(B)	1298(C)
Long Drive @ Gilbert Road	262(A)	284(A)
Gilbert Road @ Maxa Road	329(A)	108(A)
Aldino-Stepney Road @ Arnet Way	115(A)	105(A)

* Includes improvements planned by the Beechtree Estates developer to construct a northbound left turn lane.

HCM ANALYSIS – SIGNALIZED INTERSECTION

MD 22 @ Technology Drive/Long Drive

	LOS AM(PM)	Approach LOS AM(PM)
Eastbound		
Left	D(D)	B(C)
Thru	B(C)	
Right	A(C)	
Westbound		
Left	D(D)	B(C)
Thru	A(C)	
Right	A(C)	
Northbound		
Left/Thru	A(D)	D(D)
Right	D(D)	
Southbound		
Left	D(D)	D(D)
Left/Thru	D(D)	
Right	C(C)	

AM Intersection: Delay = 17.3 sec/veh; LOS = B
PM Intersection: Delay = 32.5 sec/veh; LOS = C

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS

MD 22 @ Aldino Stepney Road*

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left	8.5(11.8)	A(B)		
Westbound				
Left	10.3(8.7)	B(A)		
Northbound				
Left	52.1(91.9)	F(F)	26.2(20.4)	D(C)
Thru/Right	17.6(12.9)	C(B)		
Southbound				
Left	179.9(353.5)	F(F)	135.5(250.7)	F(F)
Thru/Right	11.8(22.3)	B(C)		

* Includes improvements planned by the Beechtree Estates developer to construct a northbound left turn lane.

Long Drive @ Gilbert Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Thru	7.5(7.5)	A(A)		
Westbound				
Left/Thru	7.3(7.4)	A(A)		
Northbound				
L/T/R	10.5(12.0)	B(B)	10.5(12.0)	B(B)
Southbound				
L/T/R	9.2(9.0)	A(A)	9.2(9.0)	A(A)

Gilbert Road @ Maxa Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Right	10.3(9.0)	B(A)	10.3(9.0)	B(A)
Northbound				
Left/Thru	7.9(7.3)	A(A)		

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS (CONTINUED)

Aldino-Stepney Road @ Arnet Way

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Westbound				
Left/Right	9.1(9.2)	A(A)	9.1(9.2)	A(A)
Southbound				
Left/Thru	7.3(7.5)	A(A)		

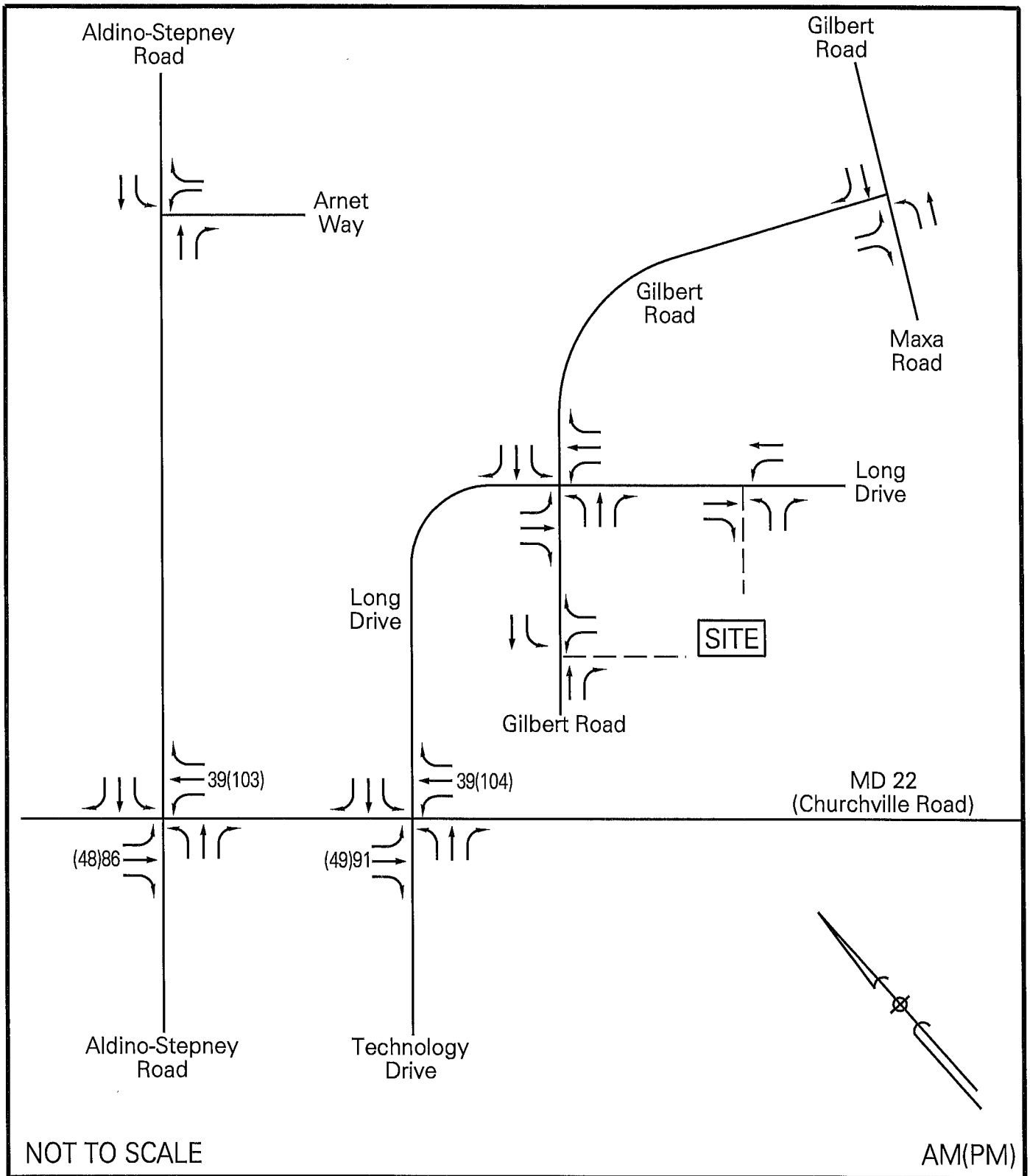


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EXHIBIT 4
Projected Growth Rates
(2.2% for Five Years)

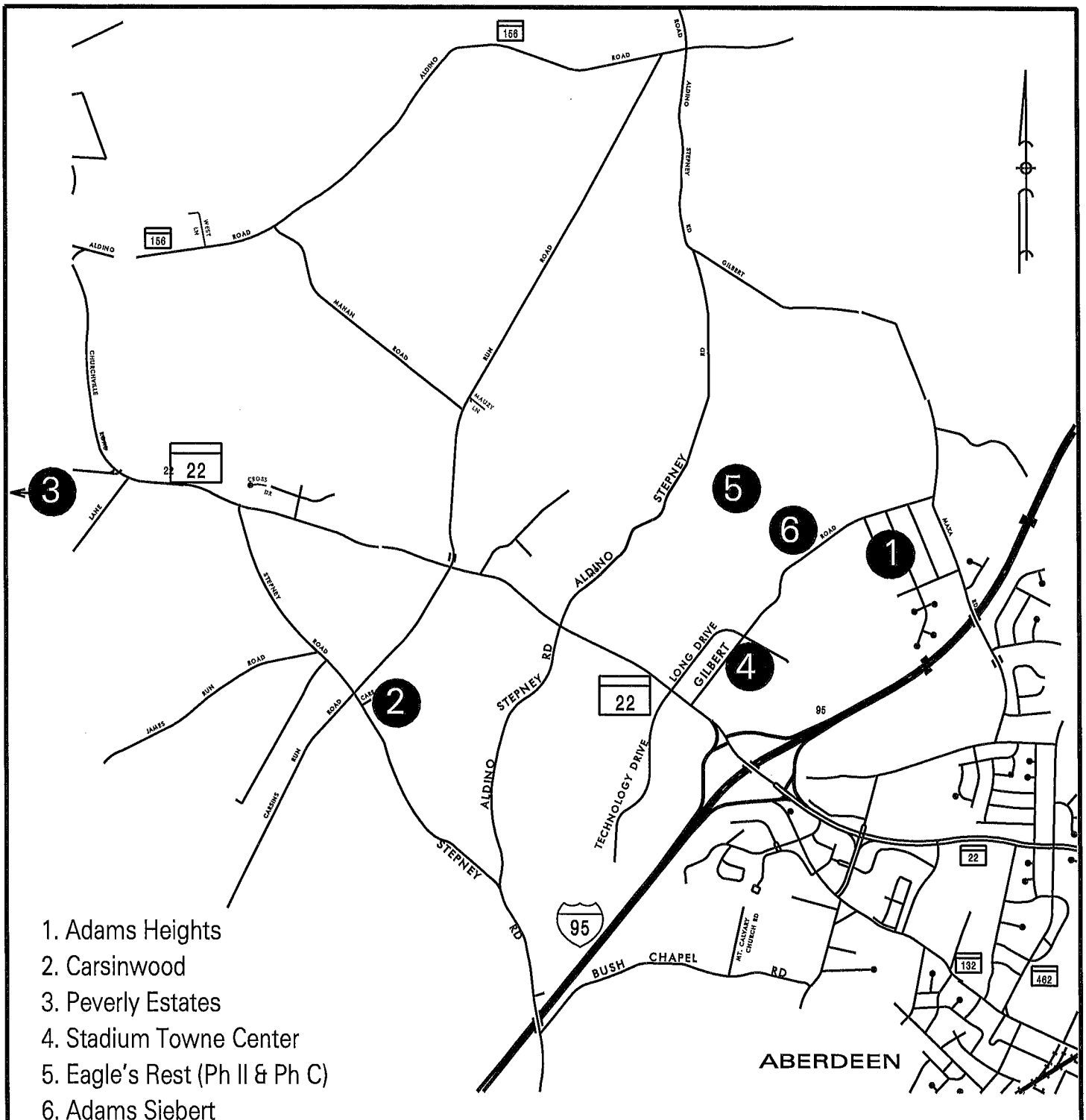

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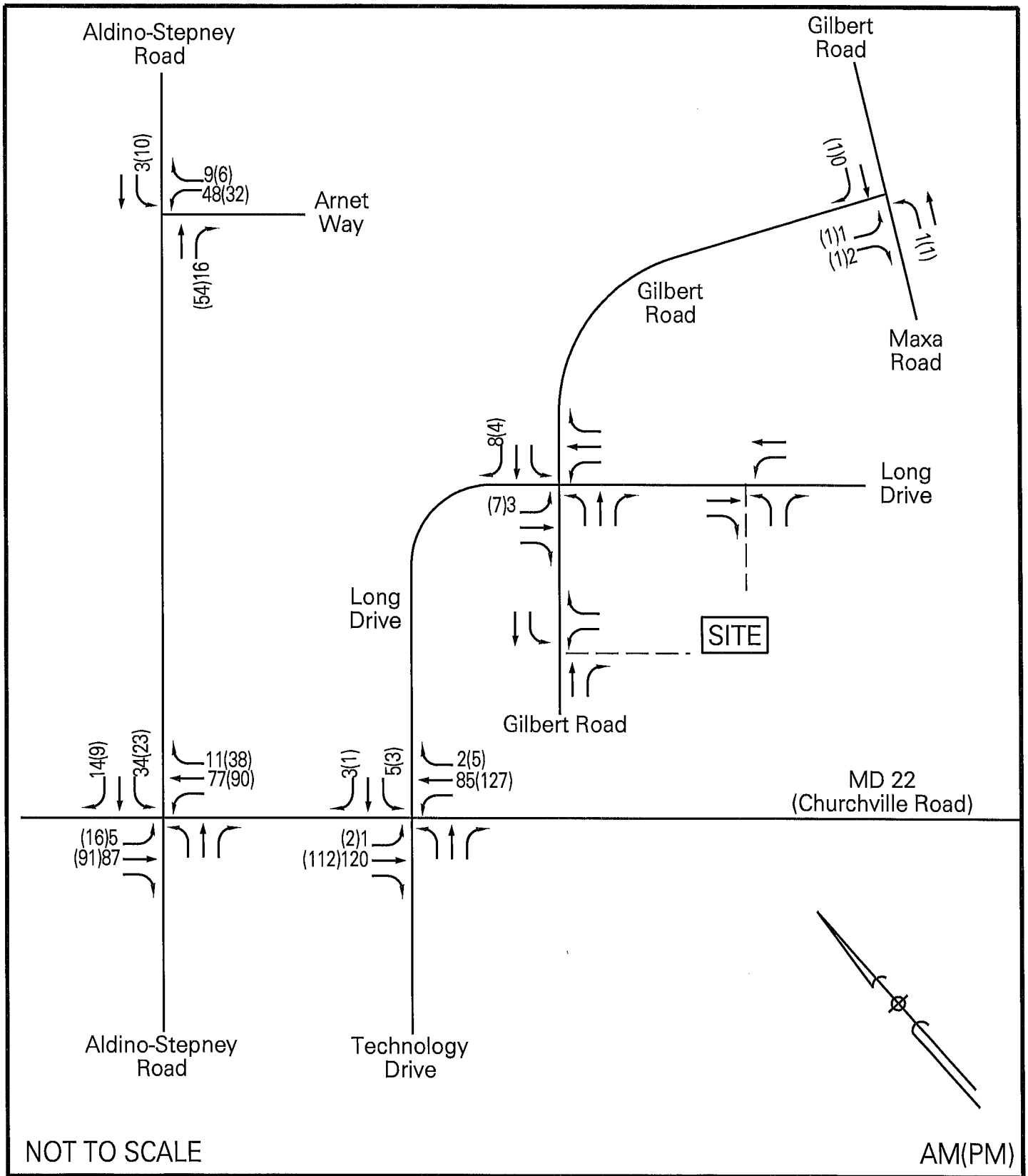
EXHIBIT 5
Background Development Locations



TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 6 Background Traffic Volumes (1 Through 5)

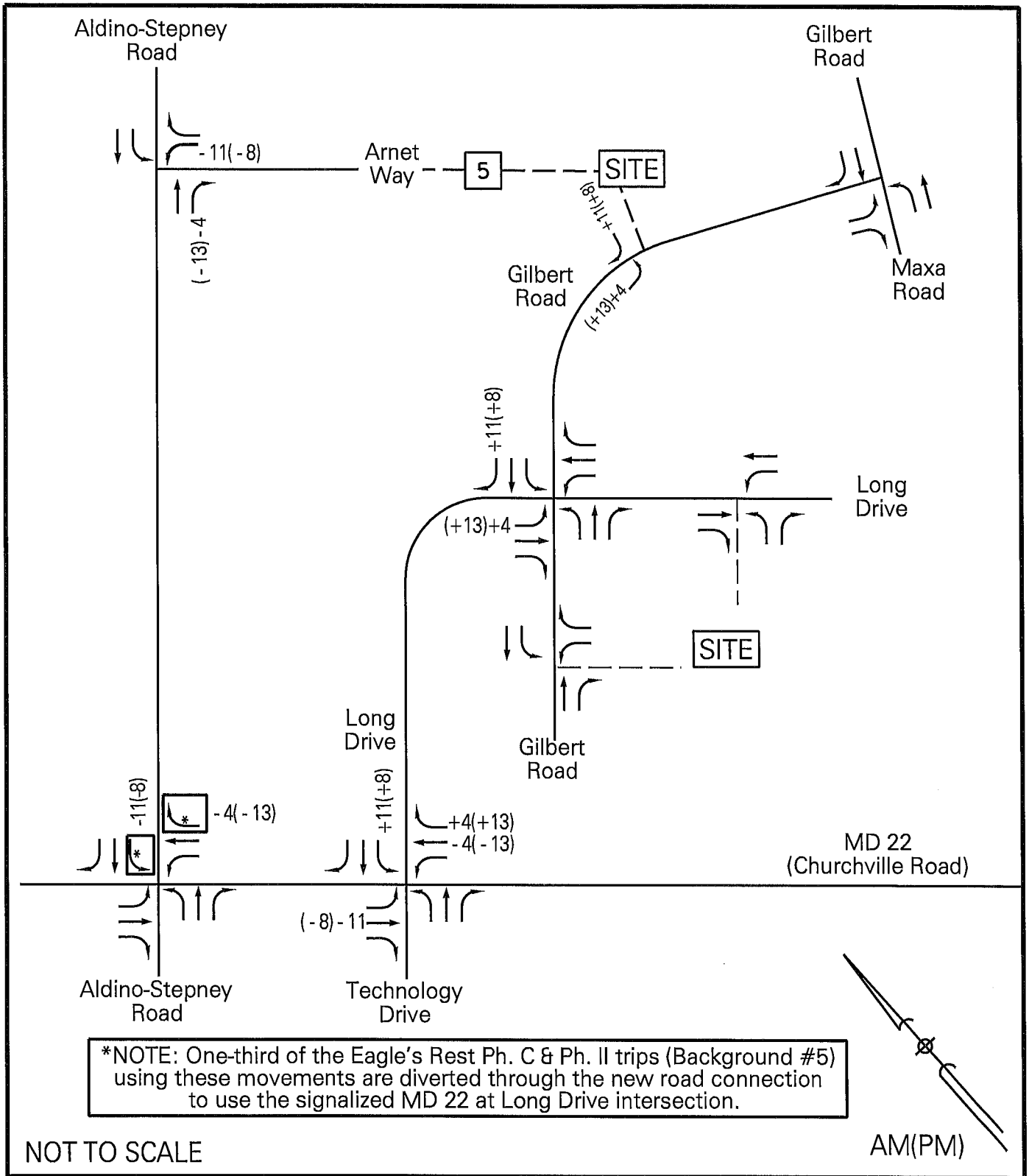


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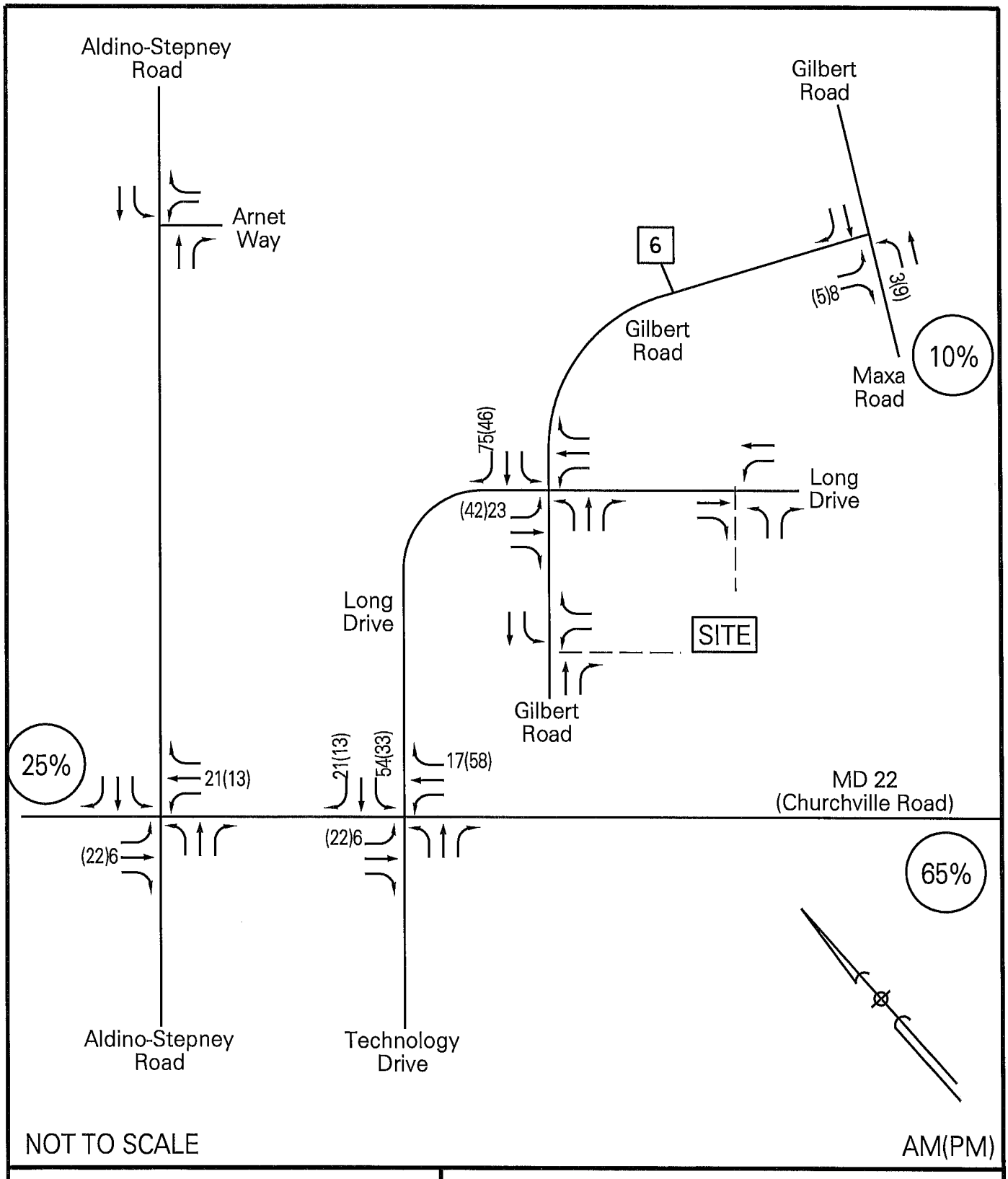
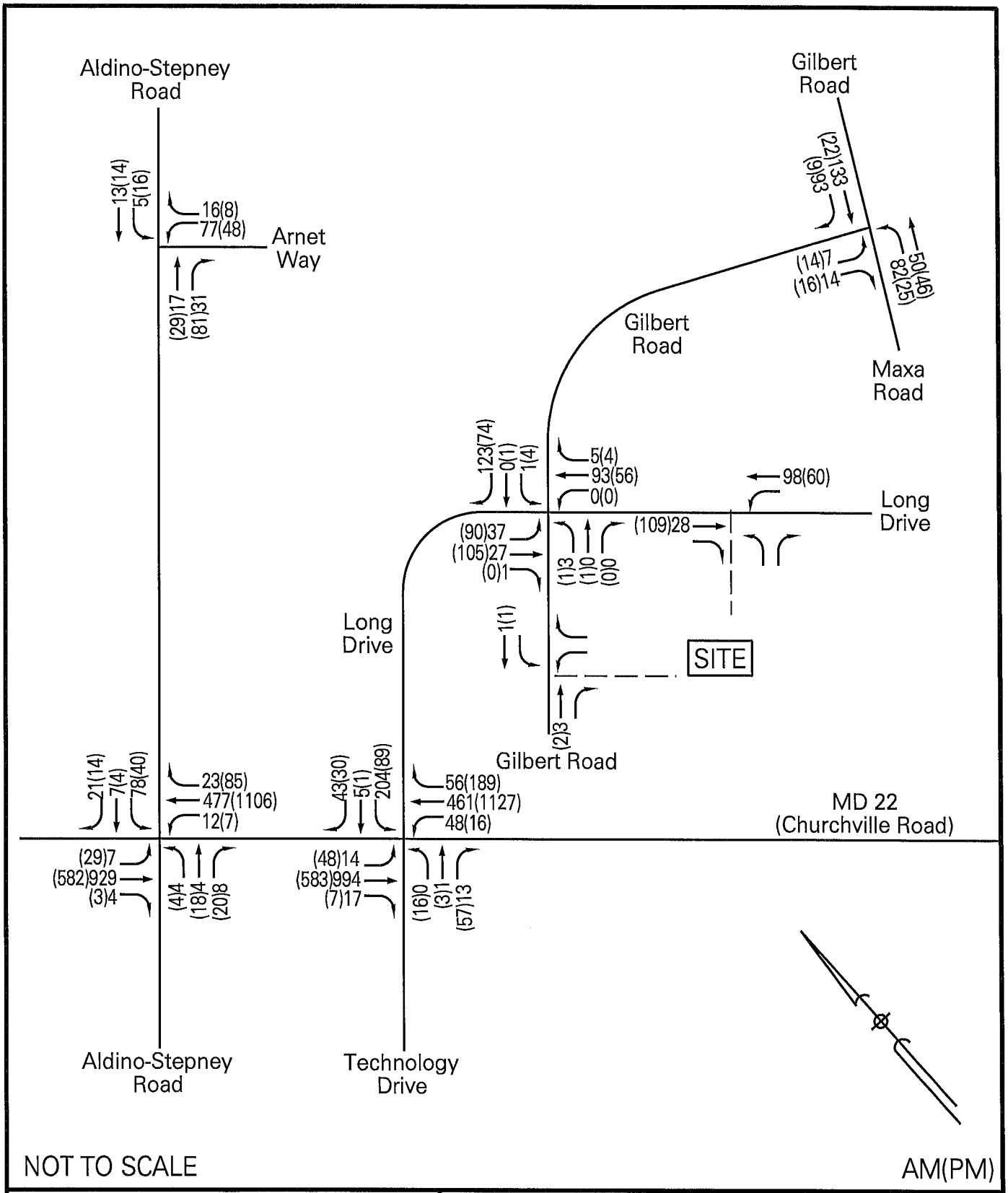
EXHIBIT 6B

Diverted Background Trips (Eagle's Rest) - Due to New Road Connection



TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 6C Background Traffic Volume (Background #6)



TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 7 Total Background Traffic Volumes

FUTURE CONDITION

The future condition determined the new site generated peak hour trips and the impact the new trips will have on the key intersections. The new site peak hour trips generated by 484 apartments, 49 townhouse units, and a 117,792 SF mini-storage building were determined with the Institute of Transportation Engineers', Trip Generation Manual, 10th Edition. The new peak hour site trips are shown below.

	AM		PM	
	IN	**OUT**	**IN**	**OUT**
Multi Family (Low-Rise) ITE (220) 49 units	5	19	19	12
Multi Family (Mid-Rise) ITE (221) 484 units	42	119	122	79
Total (residential) Site Trips	**47**	**138**	**141**	**91**
Mimi-Warehouse ITE (151) 117.792	7	5	19	12

The new site trips were distributed and assigned to the key intersections based previously distribution patters for this site. We also examined the existing traffic volumes and traffic patterns along the adjacent roadway network. The new site generated peak hour trips are shown on Exhibit 8. The new trips were then added to the total background traffic volumes to obtain the total future traffic volumes. (See Exhibit 9).

The total future traffic volumes, as assigned to the key intersections, were analyzed. The intersection capacity results are listed on the following pages. The detailed intersection capacity calculations are provided in Appendix I.

CRITICAL LANE ANALYSIS

	AM CLV(LOS)	PM CLV(LOS)
MD 22 @ Technology Drive/Long Drive	758(A)	849(A)
MD 22 @ Aldino-Stepney Road*	1048(B)	1324(D)
Long Drive @ Gilbert Road	317(A)	316(A)
Gilbert Road @ Maxa Road	348(A)	131(A)
Aldino-Stepney Road @ Arnet Way	115(A)	105(A)
Gilbert Road @ Site Access	63(A)	85(A)
Long Drive @ Site Access	198(A)	194(A)

* Includes improvements planned by the Beechtree Estates developer to construct a northbound left turn lane.

HCM ANALYSIS – SIGNALIZED INTERSECTION

MD 22 @ Technology Drive/Long Drive

	LOS AM(PM)	Approach LOS AM(PM)
Eastbound		
Left	D(E)	B(C)
Thru	B(C)	
Right	A(C)	
Westbound		
Left	D(D)	B(C)
Thru	A(C)	
Right	A(C)	
Northbound		
Left/Thru	A(D)	D(D)
Right	D(D)	
Southbound		
Left	D(D)	D(D)
Left/Thru	D(D)	
Right	D(C)	

AM Intersection: Delay = 19.5 sec/veh; LOS = B
PM Intersection: Delay = 33.5 sec/veh; LOS = C

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS

MD 22 @ Aldino Stepney Road*

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left	8.6(12.0)	A(B)		
Westbound				
Left	10.3(8.9)	B(A)		
Northbound				
Left	56.9(104.4)	F(F)	27.6(22.0)	D(C)
Thru/Right	17.8(13.4)	C(B)		
Southbound				
Left	217.9(452.5)	F(F)	163.6(319.2)	F(F)
Thru/Right	12.2(23.0)	B(C)		

* Includes improvements planned by the Beechtree Estates developer to construct a northbound left turn lane.

Long Drive @ Gilbert Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Thru	7.8(7.7)	A(A)		
Westbound				
Left/Thru	7.4(7.8)	A(A)		
Northbound				
L/T/R	12.2(15.5)	B(C)	12.2(15.5)	B(C)
Southbound				
L/T/R	9.8(10.4)	A(B)	9.8(10.4)	A(B)

Gilbert Road @ Maxa Road

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Eastbound				
Left/Right	10.1(9.0)	B(A)	10.1(9.0)	B(A)
Northbound				
Left/Thru	8.0(7.3)	A(A)		

HCM ANALYSIS – UNSIGNALIZED INTERSECTIONS (CONTINUED)

Aldino-Stepney Road @ Arnet Way

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Westbound				
Left/Right	9.1(9.2)	A(A)	9.1(9.2)	A(A)
Southbound				
Left/Thru	7.3(7.5)	A(A)		

Gilbert Road @ Site Access

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Westbound				
Left/Right	8.5(8.4)	A(A)	8.5(8.4)	A(A)
Southbound				
Left/Thru	7.3(7.3)	A(A)		

Gilbert Road @ East Site Access

	Control Delay AM(PM)	LOS AM(PM)	Delay By Approach AM(PM)	LOS By Approach AM(PM)
Westbound				
Left/Thru	7.4(7.7)	A(A)		
Northbound				
Left/Right	9.7(10.3)	A(B)	9.7(10.3)	A(B)

QUEUING ANALYSIS

As required by the City of Aberdeen, a queuing analysis was conducted at the signalized key intersections that have exclusive left turn lanes and no continuous lane storage. The analysis was conducted with the *95th Percentile Highway Capacity Manual (HCM) Back-of-Queue* methodology. The traffic volumes used in the queuing analysis are the total background volumes and the total future traffic volumes. The queuing analysis results are listed below and the detailed calculations are provided in Appendix I.

	Background Queue (feet) AM(PM)	Future Queue (feet) AM(PM)	Storage Bay (feet)
MD 22 @ Long Drive			
EB Left – MD 22	20(73)	40(137)	300
WB Left – MD 22	34(12)	34(12)	450*

* This is the average storage of the two left turn lanes.

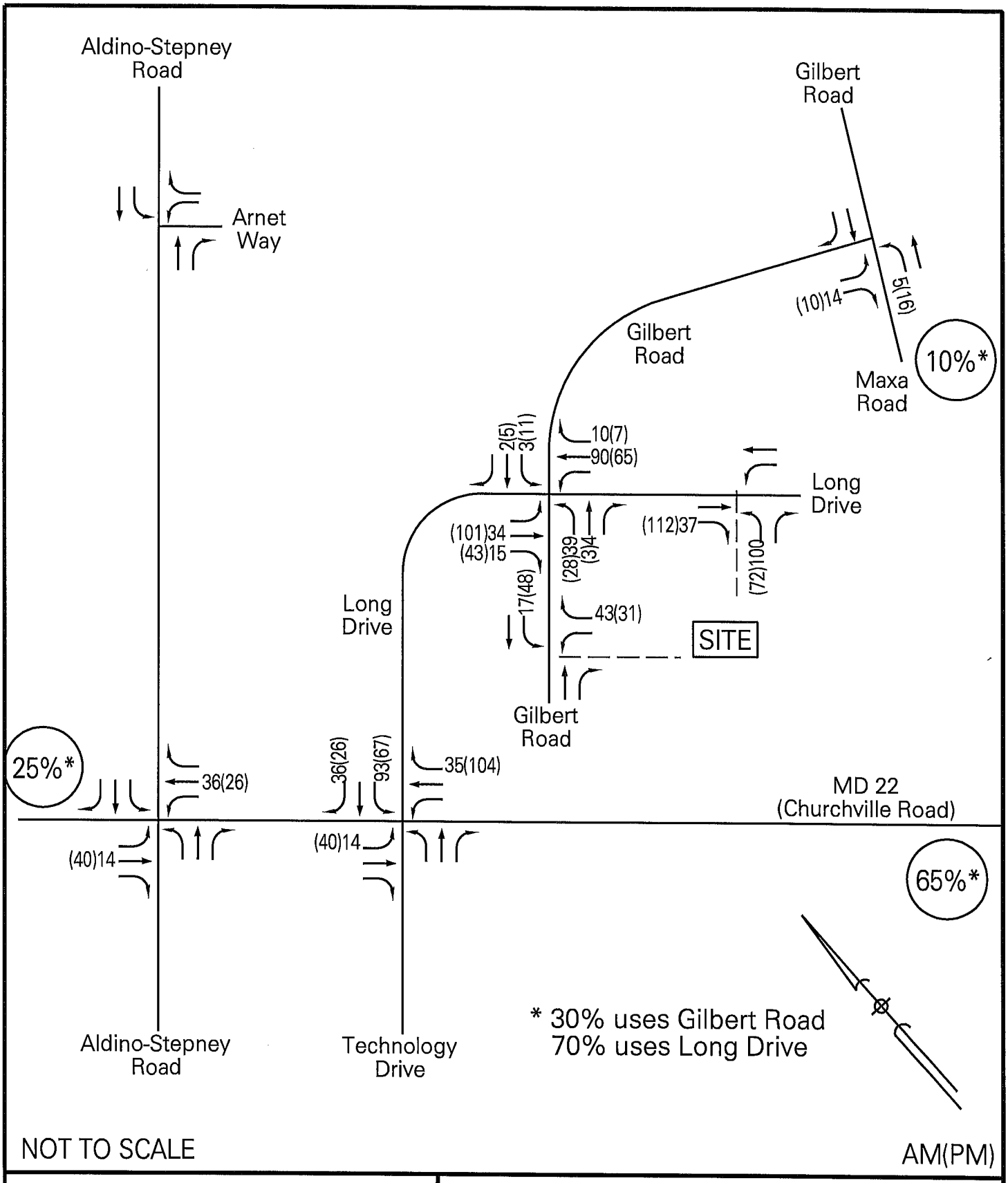


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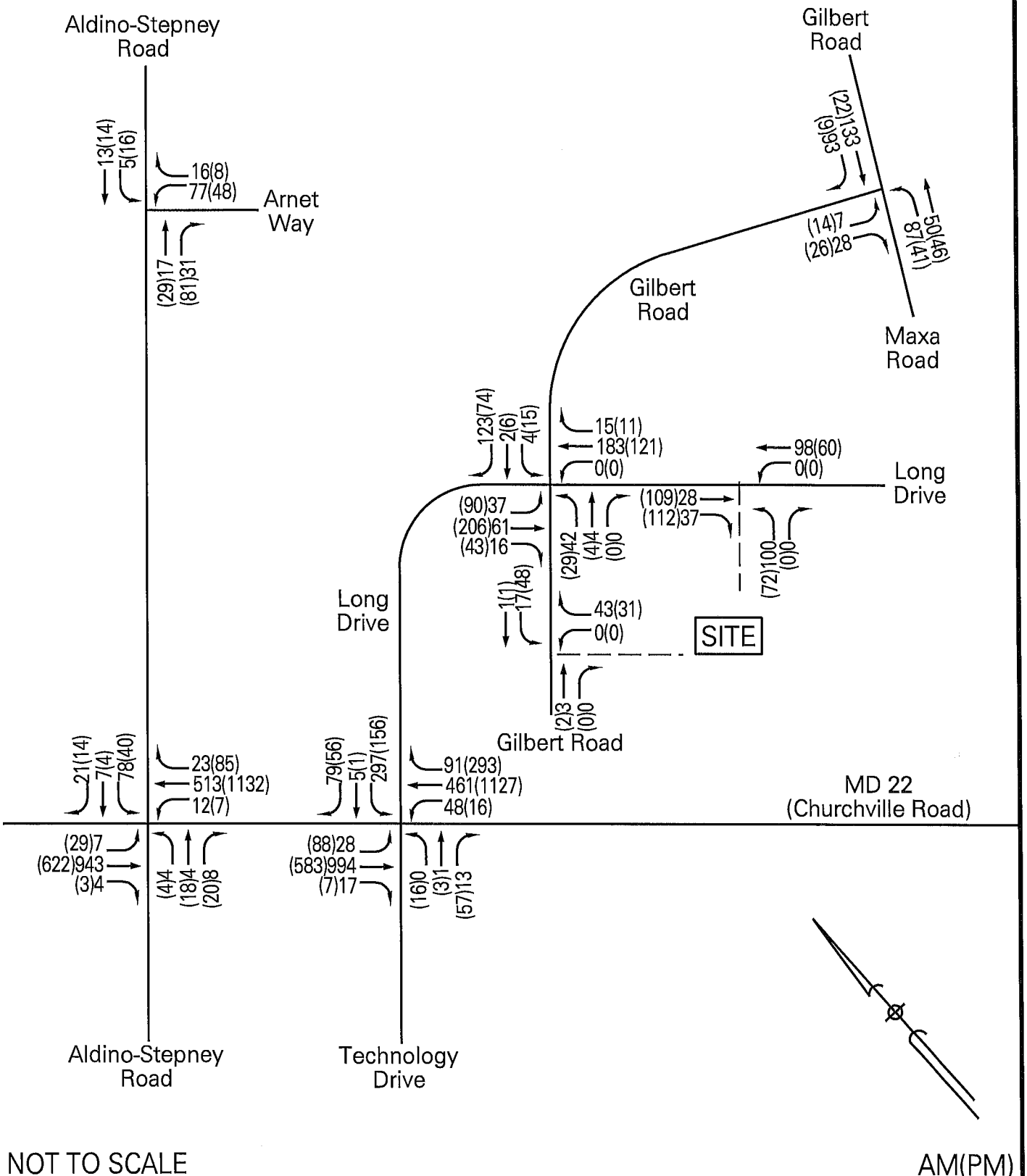
EXHIBIT 8

Site Generated Traffic



TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 9 Total Future Traffic Volumes

QUEUING ANALYSIS

As required by the City of Aberdeen, a queuing analysis was conducted at the signalized key intersections that have exclusive left turn lanes and no continuous lane storage. The analysis was conducted with the *95th Percentile Highway Capacity Manual (HCM) Back-of-Queue* methodology. The traffic volumes used in the queuing analysis are the total background volumes and the total future traffic volumes. The queuing analysis results are listed below and the detailed calculations are provided in Appendix I.

	Background Queue (feet) AM(PM)	Future Queue (feet) AM(PM)	Storage Bay (feet)
MD 22 @ Long Drive			
EB Left – MD 22	20(73)	40(137)	300
WB Left – MD 22	34(12)	34(12)	450*

* This is the average storage of the two left turn lanes.

CONCLUSIONS AND RECOMMENDATIONS

The City of Aberdeen's Adequate Public Facilities Ordinance defines the terms for intersection adequacy. The minimum acceptable level of service for a city intersection in a residential development study area is "C" for intersections in or abutting a residential district and "D" for all other intersections. The results of the study show that all key intersections meet the adequacy standards required by the City's APFO, with the exception of the MD 22 @ Aldino-Stepney Road intersection.

MD 22 @ Aldino-Stepney Road

The proposed development will not increase the volume of traffic along Aldino-Stepney Road nor will the proposed development increase the number of vehicles turning onto Aldino-Stepny Road from MD 22. However, the Highway Capacity Manual methodology determined the southbound Aldino-Stepny Road movement is a LOS "F" during the weekday AM and PM peak hour conditions. This "F" condition is the result of the southbound Aldino-Stepney Road left turn delay. From a Critical Lane Analysis standpoint, this intersection would continue to operate with a level of service of "D" or better during the future traffic conditions. The study findings are summarized in the tables below.

MD 22 @ Aldino-Stepney Road – Critical Lane Analysis		
	Aldino-Stepney Road SB Approach AM - Critical Trips (LOS)	Aldino-Stepney Road SB Approach PM - Critical Trips (LOS)
BACKGROUND	1035 (B)	1298 (C)
FUTURE	1048 (B)	1324 (D)

MD 22 @ Aldino-Stepney Road – Highway Capacity Analysis		
	Aldino-Stepney Road SB Approach AM Delay (LOS)	Aldino-Stepney Road SB Approach PM Delay (LOS)
BACKGROUND	135.5 (F)	250.7 (F)
FUTURE	163.6 (F)	319.2 (F)

MD 22 @ Aldino-Stepney Road

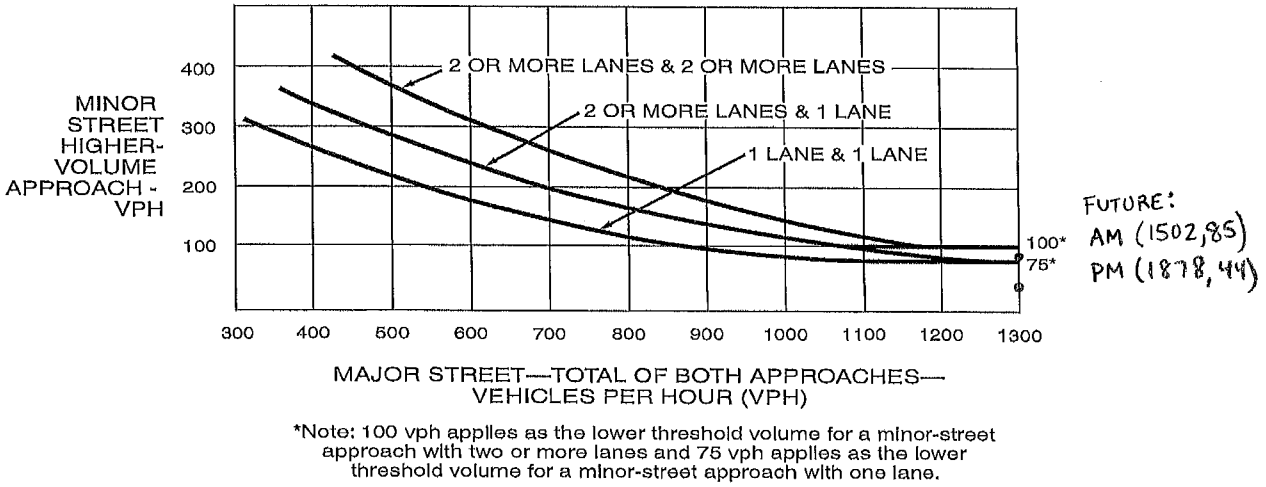
The southbound Aldino-Stepny Road approach provides a shared thru/right turn lane and a separate left turn lane. Based on the minimal southbound Aldino-Stepney Road volume, separate lanes for each movement would not mitigate the left turn delay. The southbound approach delay is a function of the heavy through volumes along MD 22. However, the MD 22 lane use includes left-turn bypass lanes that creates a queue free left turn condition along MD 22 in both directions. Additional MD 22 auxiliary lanes do not improve delay on the southbound approach.

Signal Warrant Test

A peak hour signal warrant analysis was conducted as an initial step to determine if signal control is warranted. The PM peak hour traffic volume does not satisfy the warrant. This indicates the side street volume would not meet the eight-hour warrant needed for signalization.

Future AM volume = 1502 (Major Street Volume of Both Approaches)
Future AM volume = 85 (Minor Street Higher Volume Approach)
Future PM volume = 1878 (Major Street Volume of Both Approaches)
Future MM volume = 44 (Minor Street Higher Volume Approach)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

The peak hour signal warrant is not met during the weekday peak hour therefore it appears that traffic signal control is not warranted. Based on the findings of this report other than restricting the southbound left turn movement during the weekday peak hours, there are no geometric improvements to implement that would mitigate the southbound Aldino-Stepney Road approach delay.

Based on these results, we recommend approval of this development from a traffic-impact standpoint.

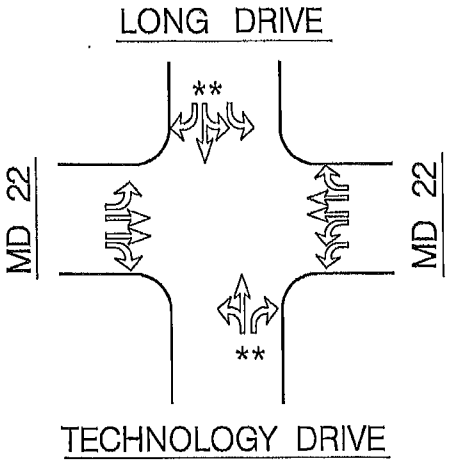
APPENDIX I

INTERSECTION CAPACITY ANALYSES

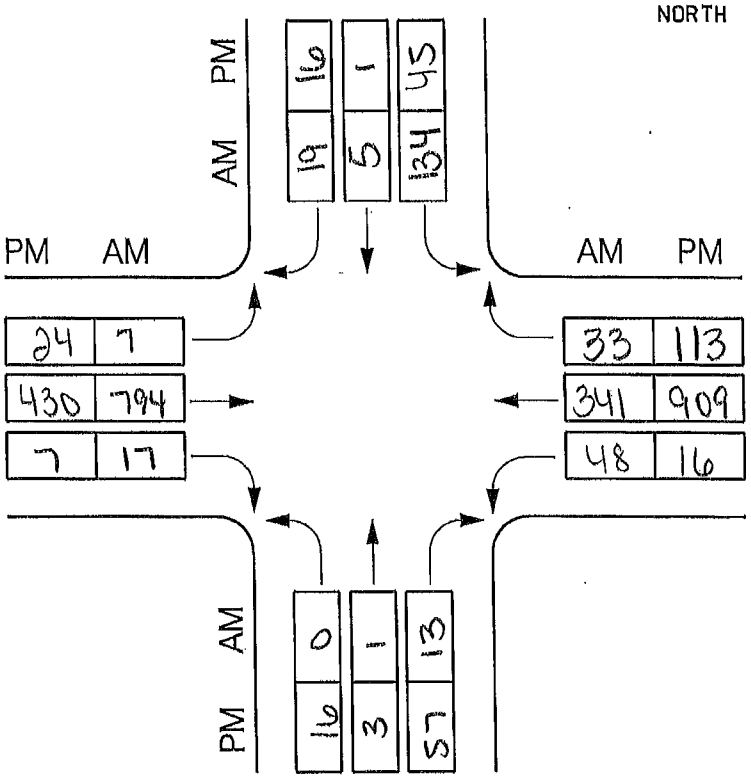
TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION

** SPLIT PHASED



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(0 + 17) * 1.0	1 *	
	SB	(134 + 5) * .6	83 *	
	EB	794 * .55 + 48 * .6	465 *	A
	WB	341 * .55 + 7 * 1.0	195	549
PM	NB	(57 * 1.0) - (16 * .6)	47 *	
	SB	(45 + 17) * .6	38 *	
	EB	430 * .55 + 16 * .6	246	A
	WB	909 * .55 + 24 * 1.0	524 *	599

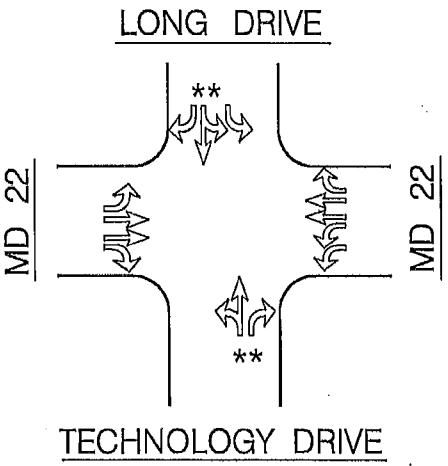
CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: EXISTING

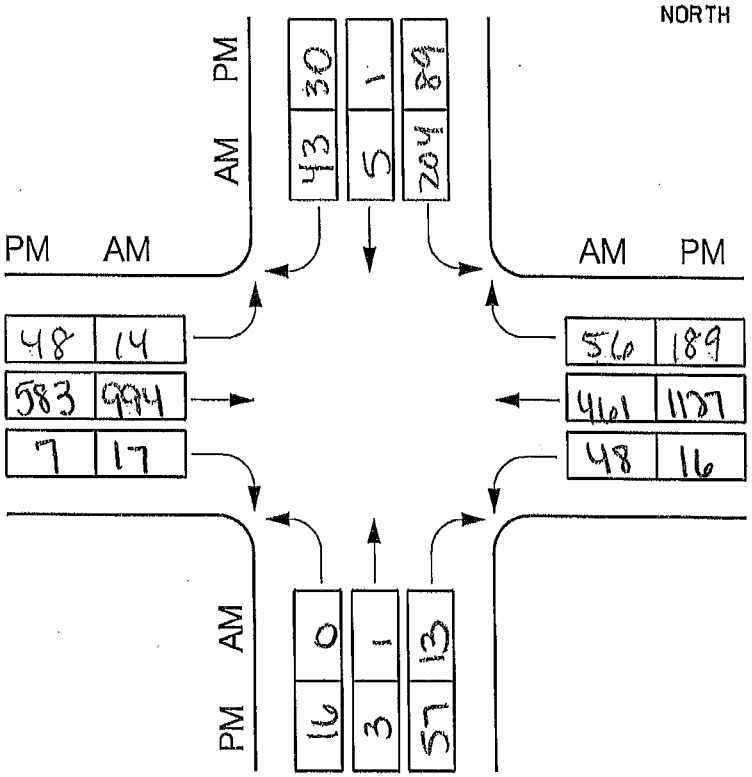
TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION

** SPLIT PHASED



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(0 + 1) * 1.0	1 *	
	SB	(204 + 5) * .6	125 *	
	EB	994 * .55 + 48 * .6	576*	A
	WB	461 * .55 + 14 * 1.0	268	702
PM	NB	(57 * 1.0) - (16 * .6)	47 *	
	SB	(89 + 1) * .6	54 *	
	EB	583 * .55 + 16 * .6	330	A
	WB	1127 * .55 + 48 * 1.0	668*	769

CRITICAL LANE ANALYSIS

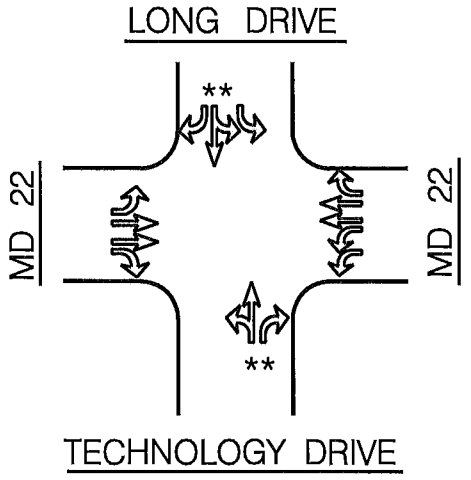
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION

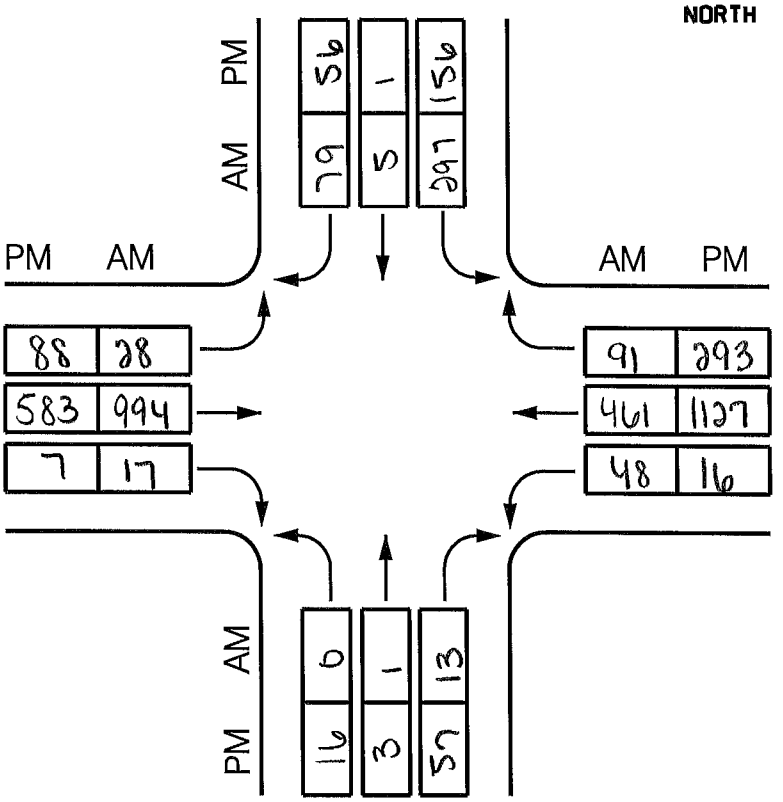
NORTH

** SPLIT PHASED



TRAFFIC VOLUMES

NORTH



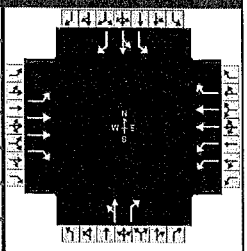
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(0 + 1) *1.0	1 *	
	SB	(297 + 5) *.6	181 *	
	EB	994 *.55 + 48 *.6	576	A
	WB	461 *.55 + 38 *1.0	282	758
PM	NB	(57 *1.0) - (16 *.6)	47 *	
	SB	(156 + 1) *.6	94 *	
	EB	583 *.55 + 16 *.6	330	A
	WB	1127 *.55 + 88 *1.0	708	849

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Signalized Intersection Input Data

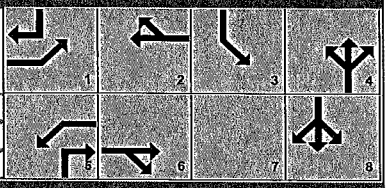
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Existing AM	PHF	0.90
Urban Street		Analysis Year	2021	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Ex Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	7	794	17	48	341	33	0	1	13	134	5	19

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0						
Yellow	4.0	5.0	4.0	4.0	0.0	0.0						
Red	1.0	1.0	2.0	2.0	0.0	0.0						



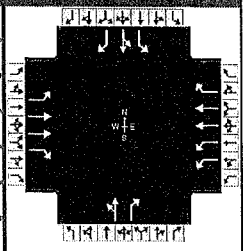
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	7	794	17	48	341	33	0	1	13	134	5	19
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	14.0	68.0	14.0	68.0		14.0	24.0	24.0
Yellow Change Interval (Y), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

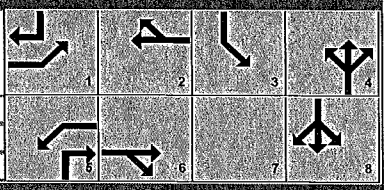
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Existing AM	PHF	0.90
Urban Street		Analysis Year	2021	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Ex Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	7	794	17	48	341	33	0	1	13	134	5	19

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0						
Yellow	4.0	5.0	4.0	4.0	0.0	0.0						
Red	1.0	1.0	2.0	2.0	0.0	0.0						



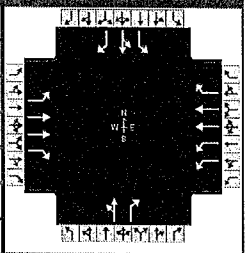
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	14.0	68.0	14.0	68.0		14.0		24.0
Change Period, ($Y+R_c$), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (g_s), s	2.5		3.7			2.9		6.8
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0		0.4
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.01		0.19			0.32		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	8	882	19	53	379	37		0	14	82	73	21
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1781	1648	1730	1781	1648		0	1648	1781	1788	1585
Queue Service Time (g_s), s	0.5	12.8	0.4	1.7	4.3	0.8		0.0	0.9	4.8	4.2	1.2
Cycle Queue Clearance Time (g_c), s	0.5	12.8	0.4	1.7	4.3	0.8		0.0	0.9	4.8	4.2	1.2
Green Ratio (*g/C*)	0.09	0.53	0.53	0.09	0.53	0.53			0.18	0.17	0.17	0.26
Capacity (*c*), veh/h	170	1899	879	317	1899	879			288	297	298	409
Volume-to-Capacity Ratio (*X*)	0.046	0.465	0.021	0.168	0.199	0.042		0.000	0.050	0.276	0.243	0.052
Back of Queue (*Q*), ft/ln (95 th percentile)	9.9	189.9	7.1	33.8	72.8	13.9		0	16.6	99.5	87.6	21.6
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	7.5	0.3	1.3	2.9	0.5		0.0	0.7	3.9	3.4	0.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.03	0.08	0.00	0.00		0.00	0.04	0.00	0.00	0.09
Uniform Delay (d_1), s/veh	49.7	10.3	8.1	50.3	9.0	8.2			41.2	43.7	43.4	33.4
Incremental Delay (d_2), s/veh	0.1	0.8	0.0	0.2	0.2	0.1		0.0	0.1	0.5	0.4	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	49.8	11.1	8.2	50.5	9.2	8.3			41.3	44.2	43.8	33.5
Level of Service (LOS)	D	B	A	D	A	A			D	D	D	C
Approach Delay, s/veh / LOS	11.4	B		13.9	B		41.9	D		42.8	D	
Intersection Delay, s/veh / LOS	15.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS7 Signalized Intersection Input Data

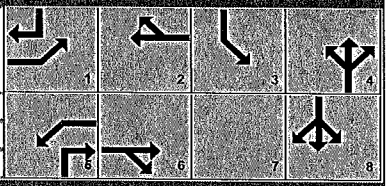
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Aktinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Existing PM	PHF	0.98
Urban Street		Analysis Year	2021	Analysis Period	1> 4:30
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Ex PM.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	24	430	7	16	909	113	16	3	57	45	1	16

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	23.0	59.0		21.0	24.0	0.0	0.0					
Yellow	4.0	5.0		4.0	4.0	0.0	0.0					
Red	1.0	1.0		2.0	2.0	0.0	0.0					



Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	24	430	7	16	909	113	16	3	57	45	1	16
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	28.0	65.0	28.0	65.0		27.0	30.0	30.0
Yellow Change Interval (*Y*), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

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General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
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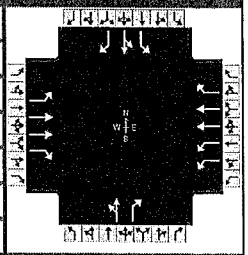
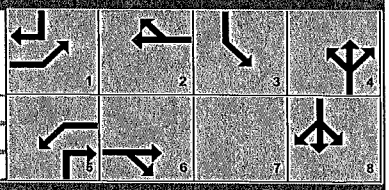


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	24	430	7	16	909	113	16	3	57	45	1	16

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	23.0	59.0	21.0	24.0	0.0	0.0						
Yellow	4.0	5.0	4.0	4.0	0.0	0.0						
Red	1.0	1.0	2.0	2.0	0.0	0.0						



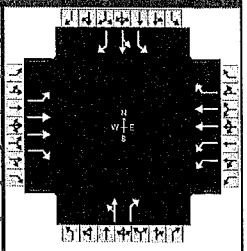
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	28.0	65.0	28.0	65.0		27.0		30.0
Change Period, (*Y*+*R c*), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (*g s*), s	3.7		2.6			5.7		3.8
Green Extension Time (*g e*), s	0.0	0.0	0.0	0.0		0.2		0.1
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	24	439	7	16	928	115		19	58	25	22	16
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1781	1648	1730	1781	1648		1867	1648	1781	1785	1585
Queue Service Time (*g s*), s	1.7	10.1	0.3	0.6	27.4	5.3		1.3	3.7	1.8	1.5	1.0
Cycle Queue Clearance Time (*g c*), s	1.7	10.1	0.3	0.6	27.4	5.3		1.3	3.7	1.8	1.5	1.0
Green Ratio (*g/C*)	0.17	0.41	0.41	0.17	0.41	0.41		0.15	0.32	0.17	0.17	0.34
Capacity (*c*), veh/h	309	1448	670	577	1448	670		286	528	309	309	539
Volume-to-Capacity Ratio (*X*)	0.079	0.303	0.011	0.028	0.640	0.172		0.068	0.110	0.082	0.070	0.030
Back of Queue (*Q*), ft/ln (95 th percentile)	36	187.5	5.6	11.8	411.9	96.6		29.4	70.7	37.4	32	18.7
Back of Queue (*Q*), veh/ln (95 th percentile)	1.4	7.4	0.2	0.5	16.2	3.8		1.2	2.8	1.5	1.3	0.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.12	0.00	0.02	0.03	0.00	0.00		0.00	0.18	0.00	0.00	0.08
Uniform Delay (*d 1*), s/veh	52.8	23.2	20.4	52.3	27.2	21.6		54.3	35.9	52.0	51.9	33.0
Incremental Delay (*d 2*), s/veh	0.1	0.5	0.0	0.0	2.2	0.6		0.1	0.1	0.1	0.1	0.0
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	52.9	23.7	20.5	52.3	29.4	22.1		54.4	36.0	52.1	52.0	33.0
Level of Service (LOS)	D	C	C	D	C	C		D	D	D	D	C
Approach Delay, s/veh / LOS	25.2	C		29.0	C		40.6	D		47.1	D	
Intersection Delay, s/veh / LOS	29.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS7 Signalized Intersection Input Data

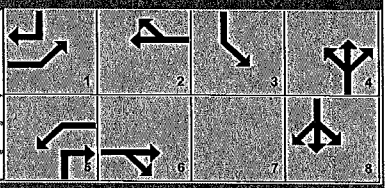
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Background AM	PHF	0.90
Urban Street		Analysis Year	2026	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Back Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	994	17	48	461	56	0	1	13	204	5	43

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0	
Yellow	4.0	5.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	2.0	2.0	0.0	0.0	



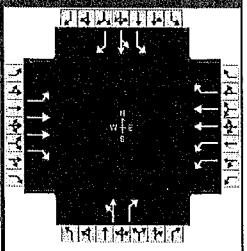
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	994	17	48	461	56	0	1	13	204	5	43
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	14.0	68.0	14.0	68.0		14.0	24.0	24.0
Yellow Change Interval (Y), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Background AM	PHF	0.90
Urban Street		Analysis Year	2026	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Back Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	994	17	48	461	56	0	1	13	204	5	43

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0	1	2	3	4	5	6	7	8
Yellow	4.0	5.0	4.0	4.0	0.0	0.0								
Red	1.0	1.0	2.0	2.0	0.0	0.0								

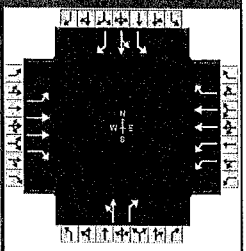
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	14.0	68.0	14.0	68.0		14.0		24.0
Change Period, (*Y+R c*), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (*g s*), s	2.9		3.7			2.9		9.5
Green Extension Time (*g e*), s	0.0	0.0	0.0	0.0		0.0		0.6
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.03		0.19			0.32		0.09

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	16	1104	19	53	512	62		0	14	125	108	48
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1781	1648	1730	1781	1648		0	1648	1781	1786	1585
Queue Service Time (*g s*), s	0.9	18.3	0.4	1.7	6.2	1.4		0.0	0.9	7.5	6.4	2.8
Cycle Queue Clearance Time (*g c*), s	0.9	18.3	0.4	1.7	6.2	1.4		0.0	0.9	7.5	6.4	2.8
Green Ratio (*g/C*)	0.09	0.53	0.53	0.09	0.53	0.53			0.18	0.17	0.17	0.26
Capacity (*c*), veh/h	170	1899	879	317	1899	879			288	297	298	409
Volume-to-Capacity Ratio (*X*)	0.092	0.582	0.021	0.168	0.270	0.071		0.000	0.050	0.420	0.361	0.117
Back of Queue (*Q*), ft/ln (95 th percentile)	19.8	237.8	7.1	33.8	101.5	23.8		0	16.6	156	133	49.8
Back of Queue (*Q*), veh/ln (95 th percentile)	0.8	9.4	0.3	1.3	4.0	0.9		0.0	0.7	6.1	5.2	2.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00	0.03	0.08	0.00	0.00		0.00	0.04	0.00	0.00	0.22
Uniform Delay (*d 1*), s/veh	49.9	11.1	8.1	50.3	9.3	8.3			41.2	44.8	44.3	34.0
Incremental Delay (*d 2*), s/veh	0.2	1.3	0.0	0.2	0.3	0.2		0.0	0.1	0.9	0.7	0.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	50.2	12.4	8.2	50.5	9.6	8.4			41.3	45.7	45.1	34.2
Level of Service (LOS)	D	B	A	D	A	A			D	D	D	C
Approach Delay, s/veh / LOS	12.8	B		13.0	B		41.9	D		43.5	D	
Intersection Delay, s/veh / LOS	17.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS7 Signalized Intersection Input Data

General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Background PM	PHF	0.98
Urban Street		Analysis Year	2026	Analysis Period	1> 4:30
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Back PM.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	48	583	7	16	1127	189	16	3	57	89	1	30

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	23.0	59.0		21.0	24.0	0.0	0.0					
Yellow	4.0	5.0		4.0	4.0	0.0	0.0					
Red	1.0	1.0		2.0	2.0	0.0	0.0	5	6	7	8	

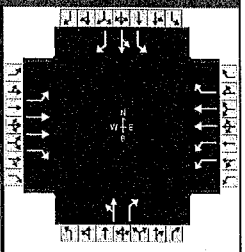
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	48	583	7	16	1127	189	16	3	57	89	1	30
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	28.0	65.0	28.0	65.0		27.0	30.0	30.0
Yellow Change Interval (*Y*), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

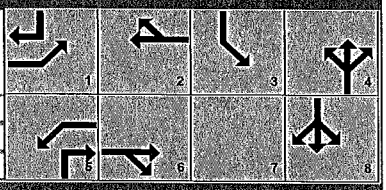
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Background PM	PHF	0.98
Urban Street		Analysis Year	2026	Analysis Period	1> 4:30
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Back PM.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	48	583	7	16	1127	189	16	3	57	89	1	30

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	23.0	59.0	21.0	24.0	0.0	0.0	
Yellow	4.0	5.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	2.0	2.0	0.0	0.0	



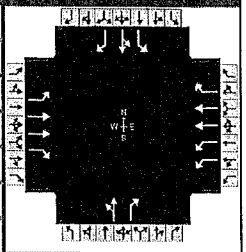
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	28.0	65.0	28.0	65.0		27.0		30.0
Change Period, ($Y+R_c$), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (g_s), s	5.4		2.6			5.7		5.6
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.2		0.3
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	49	595	7	16	1150	193		19	58	50	42	31
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1781	1648	1730	1781	1648		1867	1648	1781	1783	1585
Queue Service Time (g_s), s	3.4	14.8	0.3	0.6	38.9	9.5		1.3	3.7	3.6	3.0	1.9
Cycle Queue Clearance Time (g_c), s	3.4	14.8	0.3	0.6	38.9	9.5		1.3	3.7	3.6	3.0	1.9
Green Ratio (*g/C*)	0.17	0.41	0.41	0.17	0.41	0.41		0.15	0.32	0.17	0.17	0.34
Capacity (*c*), veh/h	309	1448	670	577	1448	670		286	528	309	309	539
Volume-to-Capacity Ratio (*X*)	0.159	0.411	0.011	0.028	0.794	0.288		0.068	0.110	0.162	0.136	0.057
Back of Queue (*Q*), ft/ln (95 th percentile)	73.1	247.7	5.6	11.8	562.8	169.1		29.4	70.7	75	62.6	35.4
Back of Queue (*Q*), veh/ln (95 th percentile)	2.9	9.8	0.2	0.5	22.2	6.7		1.2	2.8	3.0	2.5	1.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.24	0.00	0.02	0.03	0.00	0.00		0.00	0.18	0.00	0.00	0.15
Uniform Delay (d_1), s/veh	53.5	24.2	20.4	52.3	30.0	22.5		54.3	35.9	52.7	52.5	33.3
Incremental Delay (d_2), s/veh	0.2	0.9	0.0	0.0	4.6	1.1		0.1	0.1	0.2	0.2	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	53.7	25.1	20.5	52.3	34.5	23.6		54.4	36.0	53.0	52.7	33.4
Level of Service (LOS)	D	C	C	D	C	C		D	D	D	D	C
Approach Delay, s/veh / LOS	27.2	C		33.2	C		40.6	D		48.0	D	
Intersection Delay, s/veh / LOS	32.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS7 Signalized Intersection Input Data

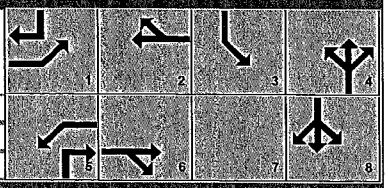
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Future AM	PHF	0.90
Urban Street		Analysis Year	2026	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Fu Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	28	994	17	48	461	91	0	1	13	297	5	79

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0
Yellow	4.0	5.0	4.0	4.0	0.0	0.0
Red	1.0	1.0	2.0	2.0	0.0	0.0



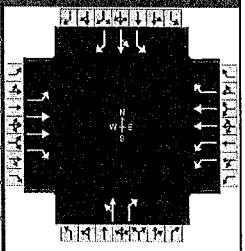
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	28	994	17	48	461	91	0	1	13	297	5	79
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	14.0	68.0	14.0	68.0		14.0	24.0	24.0
Yellow Change Interval (*Y*), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*lt*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Future AM	PHF	0.90
Urban Street		Analysis Year	2026	Analysis Period	1> 7:15
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Fu Am.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	28	994	17	48	461	91	0	1	13	297	5	79

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.0	62.0	8.0	18.0	0.0	0.0	1	2	3	4		
Yellow	4.0	5.0	4.0	4.0	0.0	0.0						
Red	1.0	1.0	2.0	2.0	0.0	0.0	5	6	7	8		

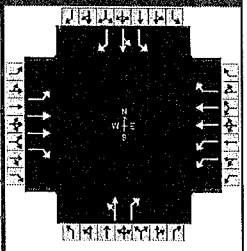
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	14.0	68.0	14.0	68.0		14.0		24.0
Change Period, ($Y+R_c$), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (MAH), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (g_s), s	3.9		3.7			2.9		13.3
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0		0.7
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.21		0.19			0.32		0.82

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (v), veh/h	31	1104	19	53	512	101		0	14	182	154	88
Adjusted Saturation Flow Rate (s), veh/h/ln	1853	1781	1648	1730	1781	1648		0	1648	1781	1785	1585
Queue Service Time (g_s), s	1.9	18.3	0.4	1.7	6.2	2.3		0.0	0.9	11.3	9.4	5.2
Cycle Queue Clearance Time (g_c), s	1.9	18.3	0.4	1.7	6.2	2.3		0.0	0.9	11.3	9.4	5.2
Green Ratio (g/C)	0.09	0.53	0.53	0.09	0.53	0.53			0.18	0.17	0.17	0.26
Capacity (c), veh/h	170	1899	879	317	1899	879			288	297	297	409
Volume-to-Capacity Ratio (X)	0.183	0.582	0.021	0.168	0.270	0.115		0.000	0.050	0.611	0.518	0.214
Back of Queue (Q), ft/ln (95 th percentile)	40.1	237.8	7.1	33.8	101.5	39.3		0	16.6	231.5	196.5	94.1
Back of Queue (Q), veh/ln (95 th percentile)	1.6	9.4	0.3	1.3	4.0	1.5		0.0	0.7	9.1	7.7	3.7
Queue Storage Ratio (RQ) (95 th percentile)	0.13	0.00	0.03	0.08	0.00	0.00		0.00	0.04	0.00	0.00	0.41
Uniform Delay (d_1), s/veh	50.3	11.1	8.1	50.3	9.3	8.4			41.2	46.4	45.6	34.9
Incremental Delay (d_2), s/veh	0.5	1.3	0.0	0.2	0.3	0.3		0.0	0.1	3.6	1.6	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	50.9	12.4	8.2	50.5	9.6	8.7			41.3	50.0	47.2	35.2
Level of Service (LOS)	D	B	A	D	A	A			D	D	D	D
Approach Delay, s/veh / LOS	13.4	B		12.8	B		41.9	D		45.9	D	
Intersection Delay, s/veh / LOS	19.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

HCS7 Signalized Intersection Input Data

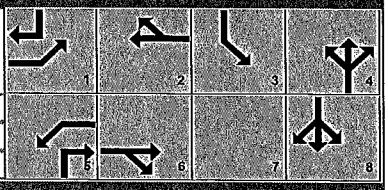
General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Future PM	PHF	0.98
Urban Street		Analysis Year	2026	Analysis Period	1> 4:30
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Fu PM.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	88	583	7	16	1127	293	16	3	57	156	1	56

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	23.0	59.0	21.0	24.0	0.0	0.0	
Yellow	4.0	5.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	2.0	2.0	0.0	0.0	



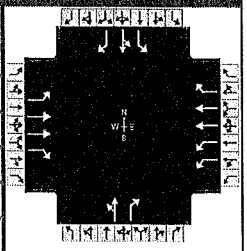
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	88	583	7	16	1127	293	16	3	57	156	1	56
Initial Queue (Q_b), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s_o), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N_m), man/h		None			None			None			None	
Heavy Vehicles (P_{HV}), %	2	2	2	2	2	2		2	2	2	2	2
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N_b), buses/h	0	0	0	0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)	3	4	4	3	4	4	3	3	3	3	3	3
Upstream Filtering (*I*)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (*W*), ft	13.0	12.0	15.0	11.0	12.0	16.0		13.0	13.0	11.0	11.0	11.0
Turn Bay Length, ft	300	0	270	450	0	0		0	400	0	0	230
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	40	40	40	40	40	40	30	30	30	30	30	30

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	28.0	65.0	28.0	65.0		27.0	30.0	30.0
Yellow Change Interval (*Y*), s	4.0	5.0	4.0	5.0		4.0	4.0	4.0
Red Clearance Interval (R_c), s	1.0	1.0	1.0	1.0		2.0	2.0	2.0
Minimum Green (G_{min}), s	5	5	5	5		5	5	5
Start-Up Lost Time (*l1*), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (*e*), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Passage (*PT*), s	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	Off	Min	Off	Min		Off	Off	Off
Dual Entry	No	Yes	No	Yes		Yes	No	Yes
Walk (*Walk*), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25	0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0	9.0	12	0
Street Width / Island / Curb	0	0	No	0	0	No	0	0	No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

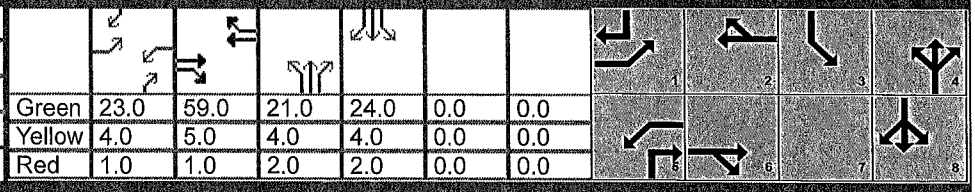
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Traffic Concepts, Inc.			Duration, h	0.250
Analyst	C. Atkinson	Analysis Date	Feb 9, 2021	Area Type	Other
Jurisdiction	Harford Co, MD	Time Period	Future PM	PHF	0.98
Urban Street		Analysis Year	2026	Analysis Period	1> 4:30
Intersection	MD 22 at Long Drive - T...	File Name	MD 22 at Long Dr - Fu PM.xus		
Project Description	3714				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	88	583	7	16	1127	293	16	3	57	156	1	56

Signal Information			
Cycle, s	150.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	23.0	59.0	21.0	24.0	0.0	0.0
Yellow	4.0	5.0	4.0	4.0	0.0	0.0
Red	1.0	1.0	2.0	2.0	0.0	0.0

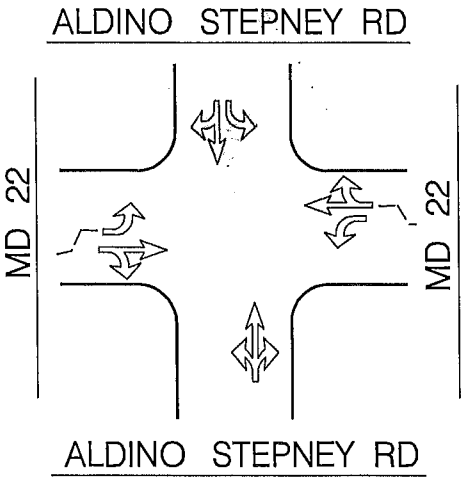
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2		4		8
Case Number	2.0	3.0	2.0	3.0		11.0		9.0
Phase Duration, s	28.0	65.0	28.0	65.0		27.0		30.0
Change Period, ($Y+R_c$), s	5.0	6.0	5.0	6.0		6.0		6.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.4		4.2
Queue Clearance Time (g_s), s	8.4		2.6			5.7		8.4
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.2		0.6
Phase Call Probability	1.00		1.00			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	90	595	7	16	1150	299		19	58	88	73	57
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1853	1781	1648	1730	1781	1648		1867	1648	1781	1783	1585
Queue Service Time (g_s), s	6.4	14.8	0.3	0.6	38.9	16.4		1.3	3.7	6.4	5.3	3.7
Cycle Queue Clearance Time (g_c), s	6.4	14.8	0.3	0.6	38.9	16.4		1.3	3.7	6.4	5.3	3.7
Green Ratio (*g/C*)	0.17	0.41	0.41	0.17	0.41	0.41		0.15	0.32	0.17	0.17	0.34
Capacity (*c*), veh/h	309	1448	670	577	1448	670		286	528	309	309	539
Volume-to-Capacity Ratio (*X*)	0.291	0.411	0.011	0.028	0.794	0.446		0.068	0.110	0.284	0.235	0.106
Back of Queue (*Q*), ft/ln (95 th percentile)	137.4	247.7	5.6	11.8	562.8	259.8		29.4	70.7	134.7	110.8	67.3
Back of Queue (*Q*), veh/ln (95 th percentile)	5.4	9.8	0.2	0.5	22.2	10.2		1.2	2.8	5.3	4.4	2.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.46	0.00	0.02	0.03	0.00	0.00		0.00	0.18	0.00	0.00	0.29
Uniform Delay (d_1), s/veh	54.7	24.2	20.4	52.3	30.0	24.1		54.3	35.9	53.9	53.4	33.9
Incremental Delay (d_2), s/veh	0.5	0.9	0.0	0.0	4.6	2.1		0.1	0.1	0.5	0.4	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	55.3	25.1	20.5	52.3	34.5	26.3		54.4	36.0	54.4	53.8	34.0
Level of Service (LOS)	E	C	C	D	C	C		D	D	D	D	C
Approach Delay, s/veh / LOS	29.0	C		33.1	C		40.6	D		48.8	D	
Intersection Delay, s/veh / LOS	33.5						C					

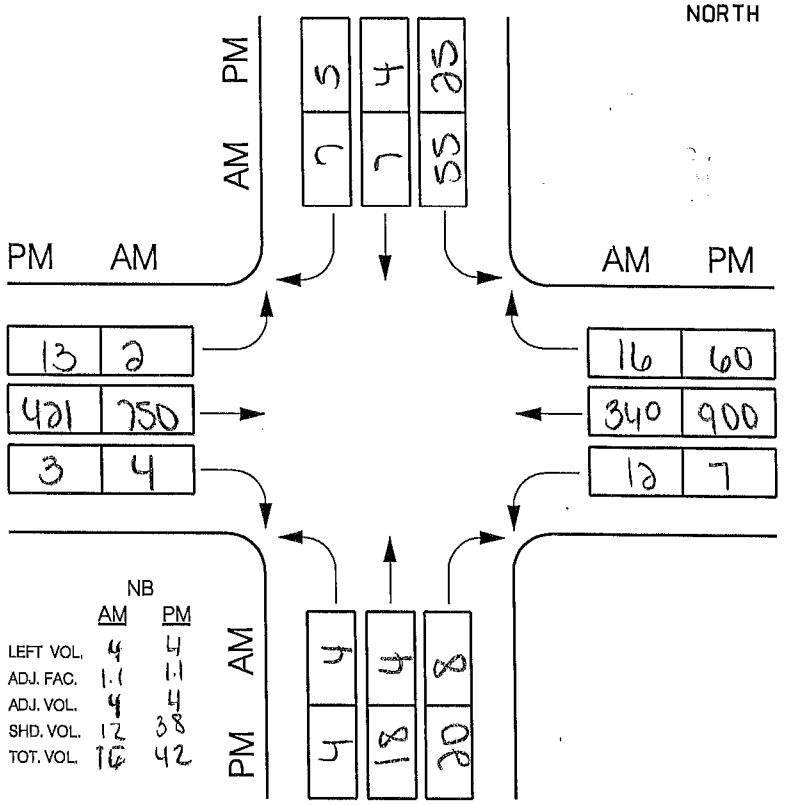
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



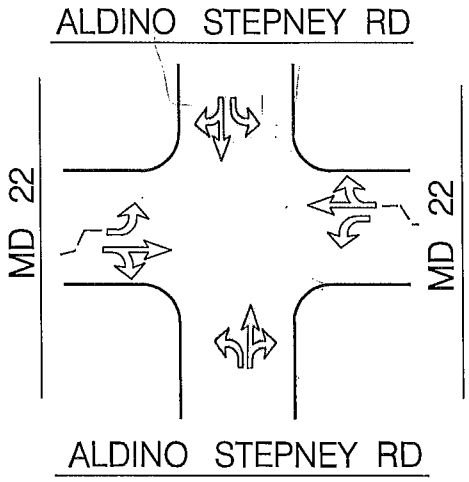
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	16 * 1.0 + 55 * 1.0	71 *	
	SB	(7+7) * 1.0 + 14 * 1.0	28	
	EB	(750 + 4) * 1.0 + 12 * 1.0	766 *	A
	WB	(340 + 16) * 1.0 + 2 * 1.0	358	837
PM	NB	42 * 1.0 + 25 * 1.0	67 *	
	SB	(5+4) * 1.0 + 4 * 1.0	13	
	EB	(421 + 3) * 1.0 + 7 * 1.0	431	B
	WB	(900 + 60) * 1.0 + 13 * 1.0	973 *	1040

CRITICAL LANE ANALYSIS

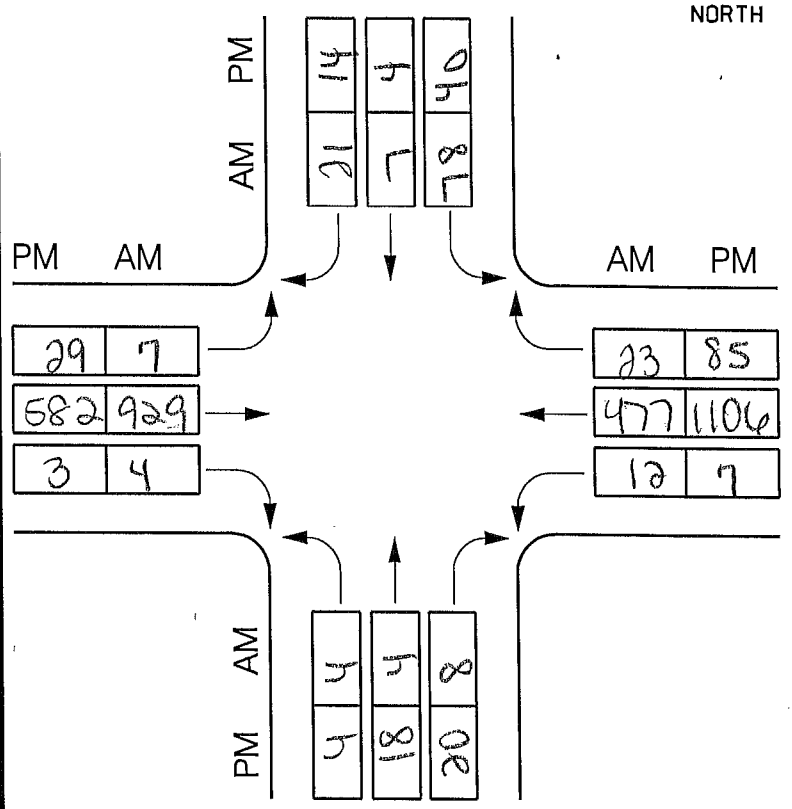
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



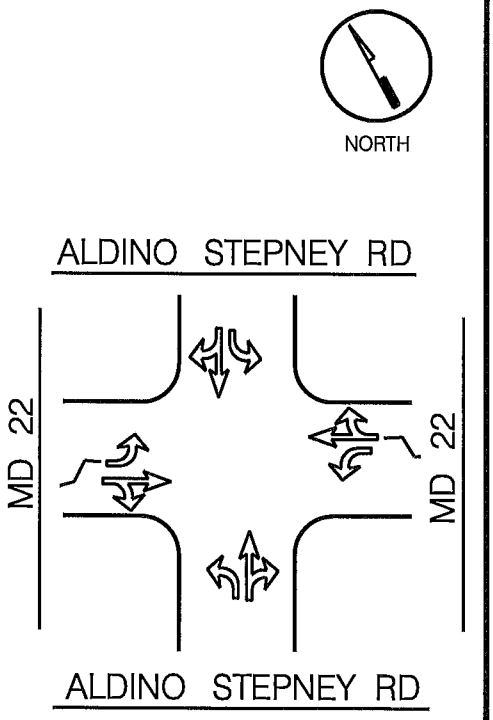
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(4 + 8) *1.0 + 78 *1.0	90*	
	SB	(7 + 21) *1.0 + 4 *1.0	32	
	EB	(929 + 4) *1.0 + 12 *1.0	945*	B
	WB	(477 + 23) *1.0 + 7 *1.0	507	1035
PM	NB	(18 + 20) *1.0 + 40 *1.0	78*	
	SB	(4 + 14) *1.0 + 4 *1.0	22	
	EB	(582 + 3) *1.0 + 7 *1.0	592	C
	WB	(1106 + 85) *1.0 + 29 *1.0	1220*	1298

CRITICAL LANE ANALYSIS

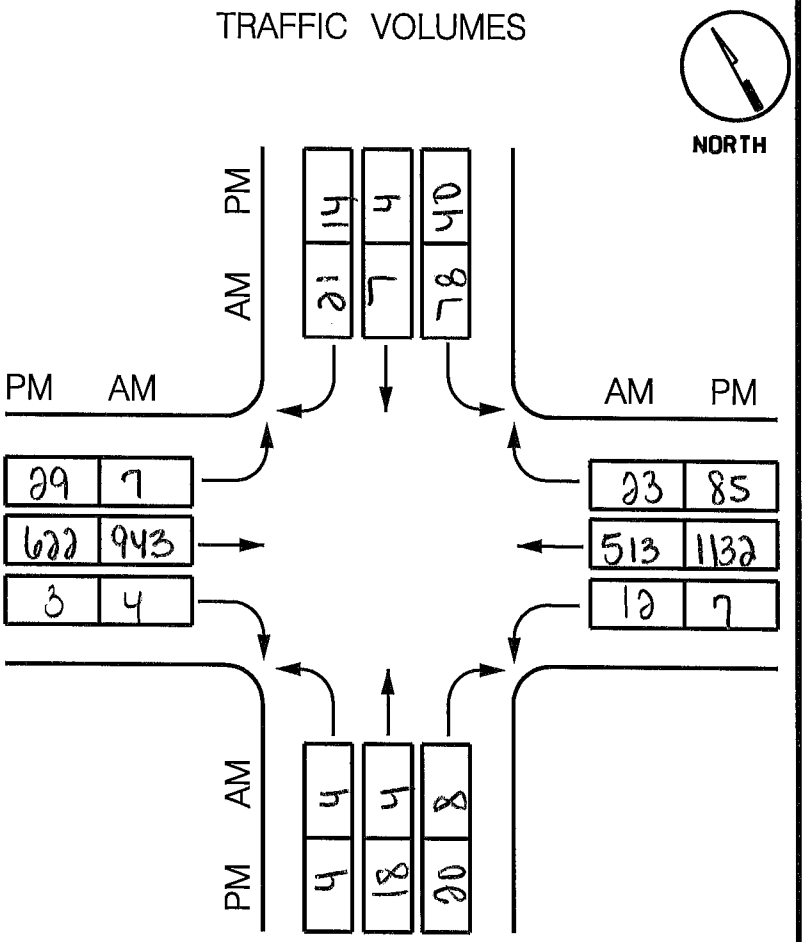
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(4 + 8) * 1.0 + 78 * 1.0	90 *	
	SB	(7 + 21) * 1.0 + 4 * 1.0	32	
	EB	(943 + 4) * 1.0 + 12 * 1.0	958 *	B
	WB	(513 + 23) * 1.0 + 7 * 1.0	543	1048
PM	NB	(18 + 20) * 1.0 + 40 * 1.0	78 *	
	SB	(4 + 14) * 1.0 + 4 * 1.0	22	
	EB	(622 + 3) * 1.0 + 7 * 1.0	632	D
	WB	(1132 + 85) * 1.0 + 29 * 1.0	1246 *	1324

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

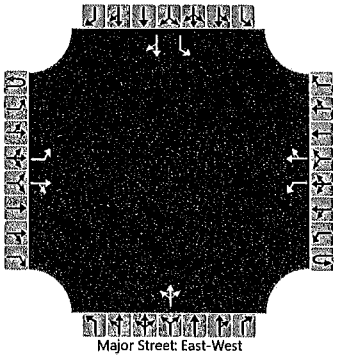
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		2	750	4		12	340	16		4	4	8		55	7	7
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				13					17			59		15
Capacity, c (veh/h)		1180				821					230			152		675
v/c Ratio		0.00				0.02					0.07			0.39		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			1.6		0.1
Control Delay (s/veh)		8.1				9.5					21.9			42.8		10.4
Level of Service (LOS)		A				A					C			E		B
Approach Delay (s/veh)	0.0				0.3				21.9				36.3			
Approach LOS									C				E			

HCS7 Two-Way Stop-Control Report

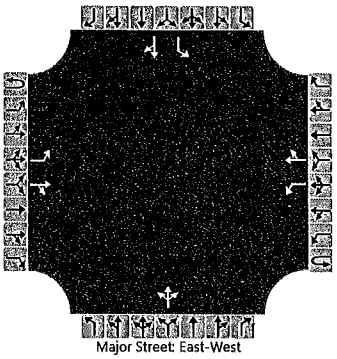
General Information

Analyst	J. Carey
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		13	421	3		7	900	60		4	18	20		25	4	5
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		14				7					44			26		9
Capacity, c (veh/h)		692				1118					191			88		308
v/c Ratio		0.02				0.01					0.23			0.30		0.03
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.9			1.1		0.1
Control Delay (s/veh)		10.3				8.2					29.3			62.3		17.1
Level of Service (LOS)		B				A					D			F		C
Approach Delay (s/veh)	0.3				0.1				29.3				50.3			
Approach LOS									D				F			

HCS7 Two-Way Stop-Control Report

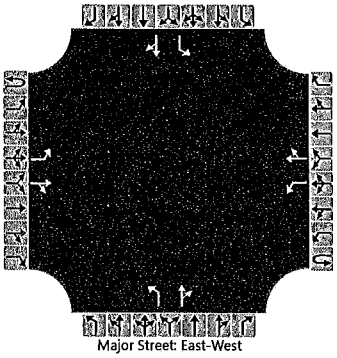
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		7	929	4		12	477	23		4	4	8		78	7	21
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7				13				4		13		83		30
Capacity, c (veh/h)		1036				697				81		299		85		556
v/c Ratio		0.01				0.02				0.05		0.04		0.98		0.05
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.2		0.1		5.5		0.2
Control Delay (s/veh)		8.5				10.3				52.1		17.6		179.9		11.8
Level of Service (LOS)		A				B				F		C		F		B
Approach Delay (s/veh)	0.1				0.2				26.2				135.5			
Approach LOS									D				F			

HCS7 Two-Way Stop-Control Report

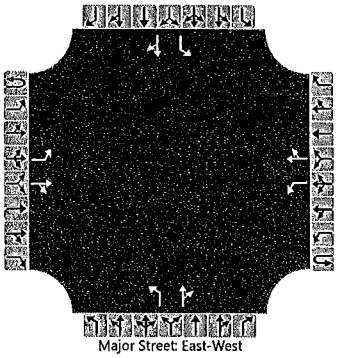
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		29	582	3		7	1106	85		4	18	20		40	4	14
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		30				7				4		40		42		19
Capacity, c (veh/h)		561				969				46		496		37		227
v/c Ratio		0.05				0.01				0.09		0.08		1.12		0.08
95% Queue Length, Q_{95} (veh)		0.2				0.0				0.3		0.3		4.3		0.3
Control Delay (s/veh)		11.8				8.7				91.9		12.9		353.5		22.3
Level of Service (LOS)		B				A				F		B		F		C
Approach Delay (s/veh)	0.6				0.1				20.4				250.7			
Approach LOS									C				F			

HCS7 Two-Way Stop-Control Report

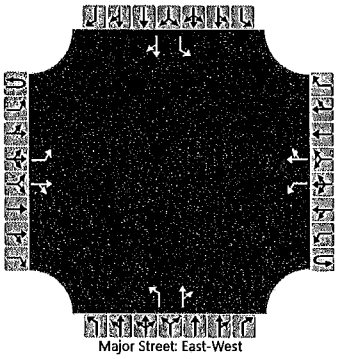
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Future AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		7	943	4		12	513	23		4	4	8		78	7	21
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7				13				4		13		83		30
Capacity, c (veh/h)		1002				688				74		293		77		529
v/c Ratio		0.01				0.02				0.06		0.04		1.07		0.06
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.2		0.1		5.9		0.2
Control Delay (s/veh)		8.6				10.3				56.9		17.8		217.9		12.2
Level of Service (LOS)		A				B				F		C		F		B
Approach Delay (s/veh)	0.1				0.2				27.6				163.6			
Approach LOS									D				F			

HCS7 Two-Way Stop-Control Report

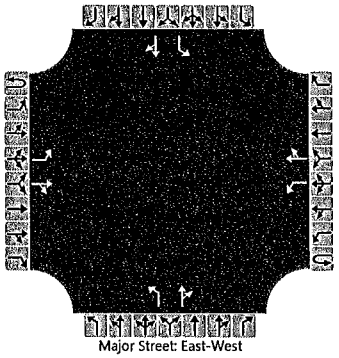
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	MD 22 at Aldino-Stepney R
Jurisdiction	Harford Co, MD
East/West Street	MD 22
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		29	622	3		7	1132	85		4	18	20		40	4	14
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

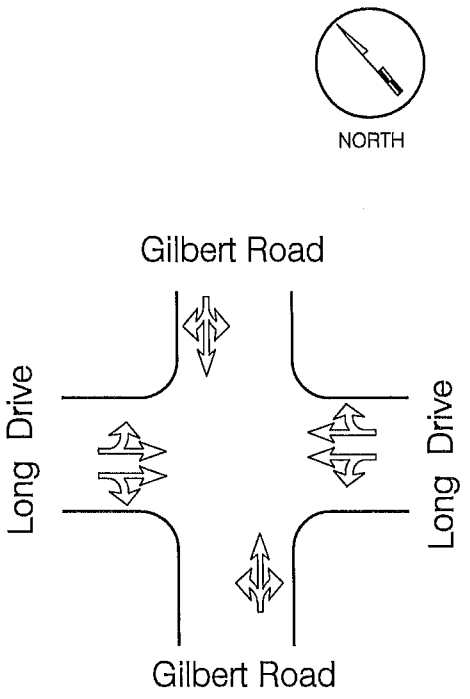
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.12				7.12	6.52	6.22		7.12	6.52	6.22
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

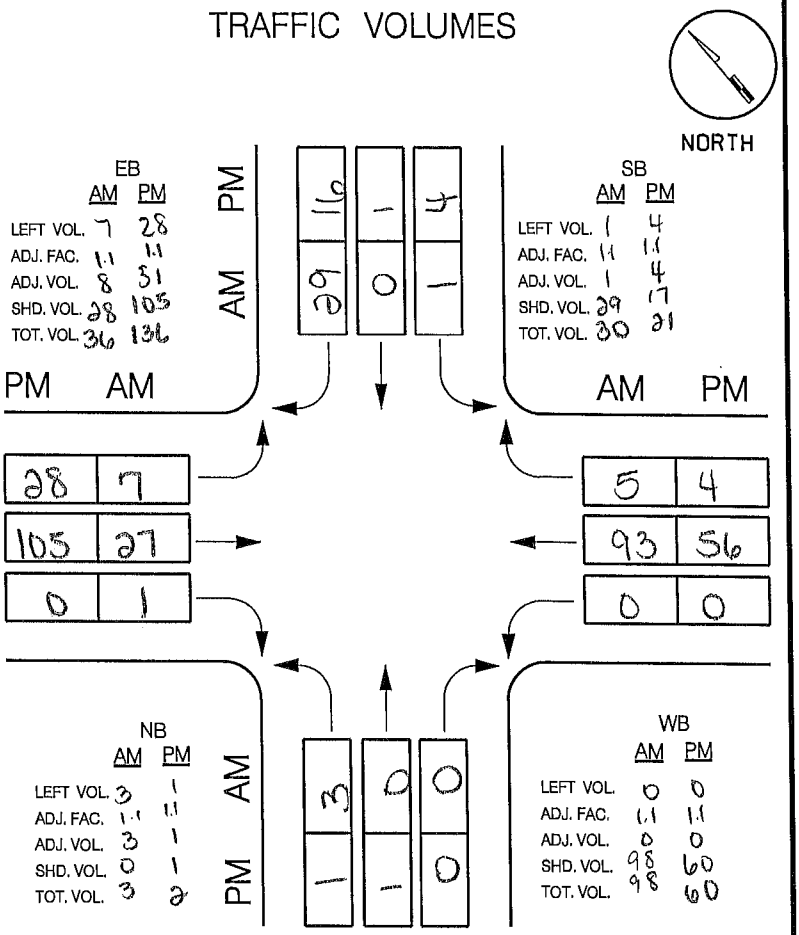
Flow Rate, v (veh/h)		30				7				4		40		42		19
Capacity, c (veh/h)		548				935				40		469		32		219
v/c Ratio		0.06				0.01				0.10		0.08		1.30		0.09
95% Queue Length, Q_{95} (veh)		0.2				0.0				0.3		0.3		4.6		0.3
Control Delay (s/veh)		12.0				8.9				104.4		13.4		452.5		23.0
Level of Service (LOS)		B				A				F		B		F		C
Approach Delay (s/veh)		0.5				0.1				22.0				319.2		
Approach LOS										C				F		

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



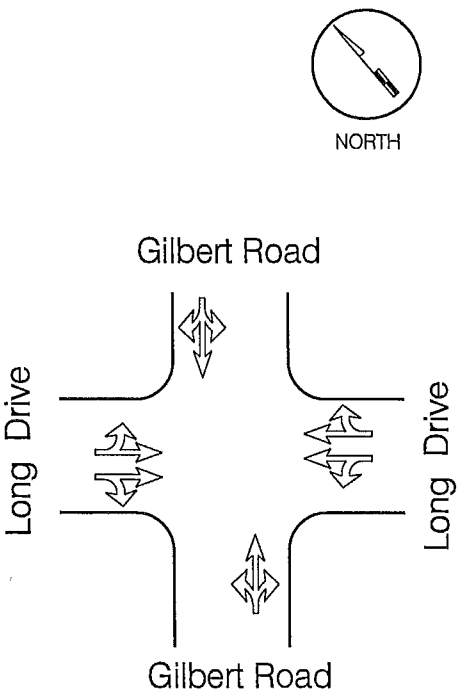
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	3 * 1.0 + 1 * 1.0	4	
	SB	30 * 1.0 + 3 * 1.0	33	
	EB	36 * .55 + 0 * 1.0	20	A
	WB	98 * .55 + 7 * 1.0	61	94
PM	NB	2 * 1.0 + 4 * 1.0	6	
	SB	21 * 1.0 + 1 * 1.0	22	
	EB	136 * .55 + 0 * 1.0	75	A
	WB	60 * .55 + 28 * 1.0	61	97

CRITICAL LANE ANALYSIS

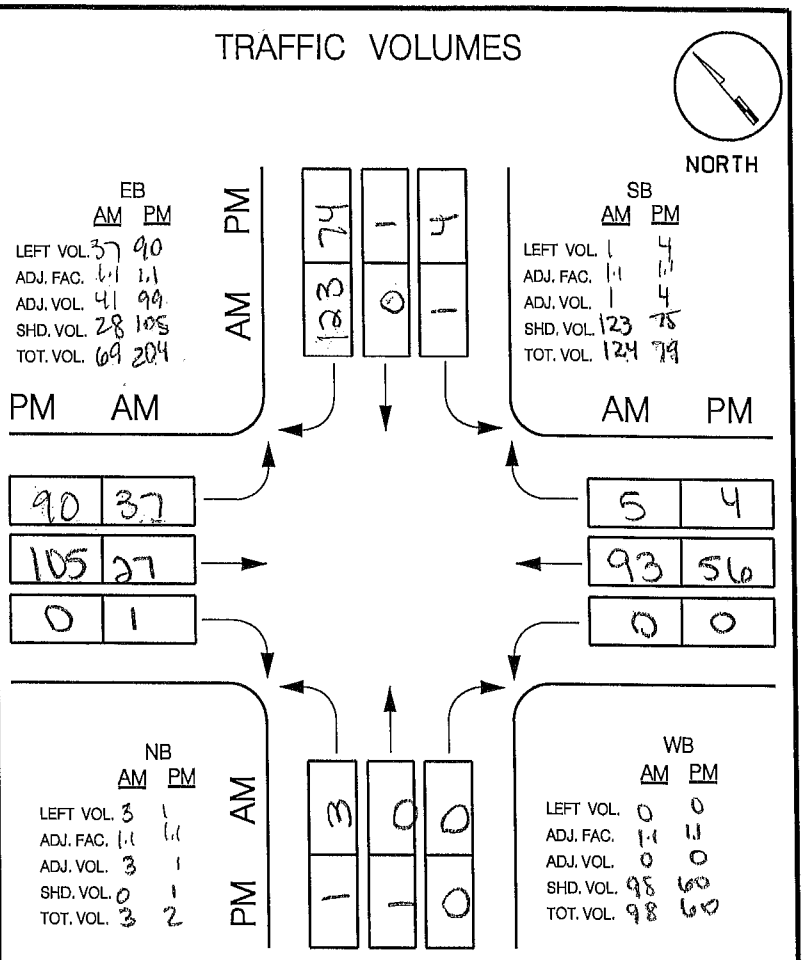
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



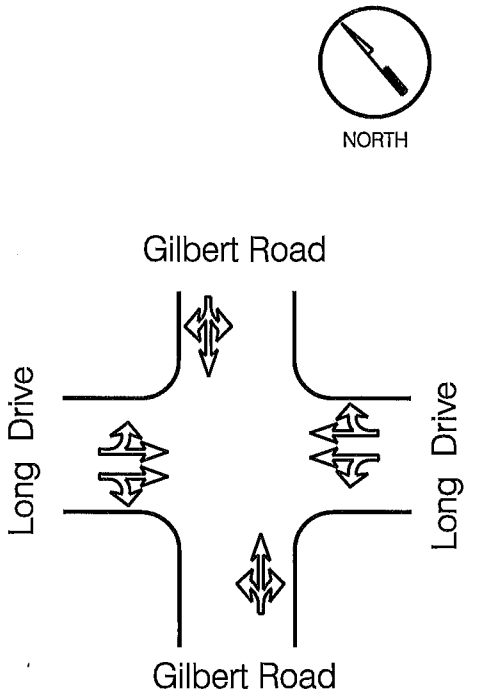
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	3 * 1.0 + 1 * 1.0	4	
	SB	124 * 1.0 + 3 * 1.0	127*	
	EB	69 * 1.0 + 0 * 1.0	69	A
	WB	98 * 1.0 + 37 * 1.0	135*	262
PM	NB	2 * 1.0 + 4 * 1.0	6	
	SB	79 * 1.0 + 1 * 1.0	80*	
	EB	204 * 1.0 + 0 * 1.0	204*	A
	WB	60 * 1.0 + 90 * 1.0	150	284

CRITICAL LANE ANALYSIS

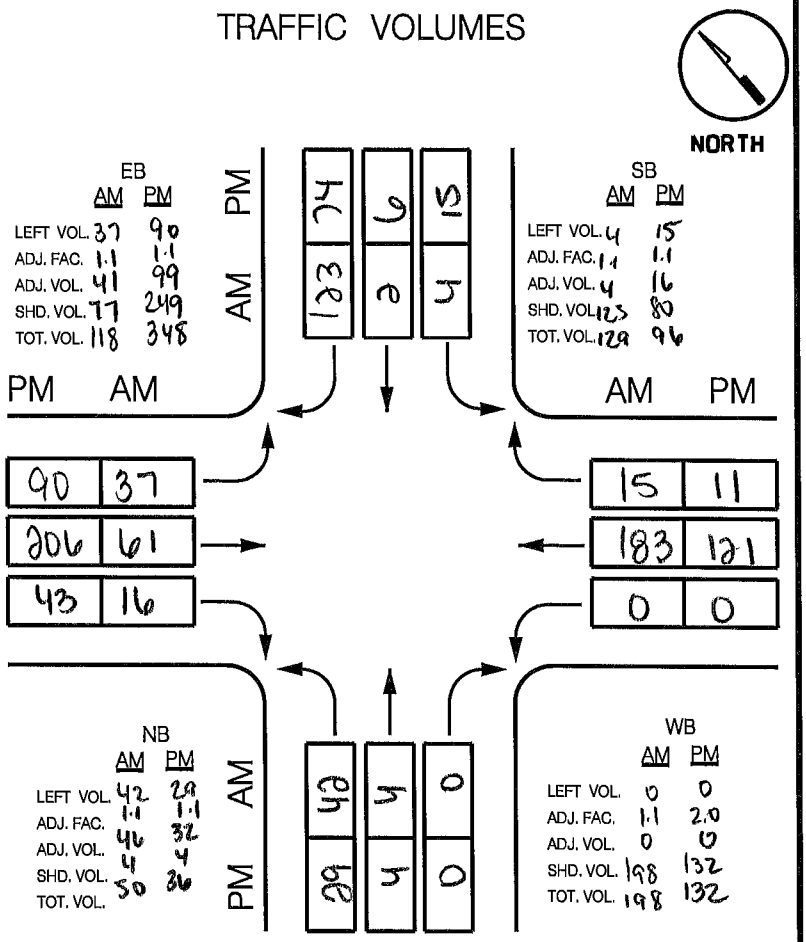
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	50 * 1.0 + 4 * 1.0	54	
	SB	129 * 1.0 + 42 * 1.0	171*	
	EB	118 * .55 + 0 * 1.0	65	A
	WB	198 * .55 + 37 * 1.0	146*	317
PM	NB	36 * 1.0 + 15 * 1.0	51	
	SB	96 * 1.0 + 29 * 1.0	125*	
	EB	348 * .55 + 0 * 1.0	191*	A
	WB	132 * .55 + 90 * 1.0	163	316

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

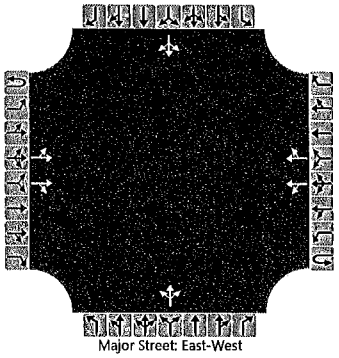
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2021
Time Analyzed	Existing AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		7	27	1		0	93	5		3	0	0		1	0	29
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8				0					3				33	
Capacity, c (veh/h)		1479				1580					842				994	
v/c Ratio		0.01				0.00					0.00				0.03	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.1	
Control Delay (s/veh)		7.4				7.3					9.3				8.7	
Level of Service (LOS)		A				A					A				A	
Approach Delay (s/veh)	1.5				0.0				9.3				8.7			
Approach LOS									A				A			

HCS7 Two-Way Stop-Control Report

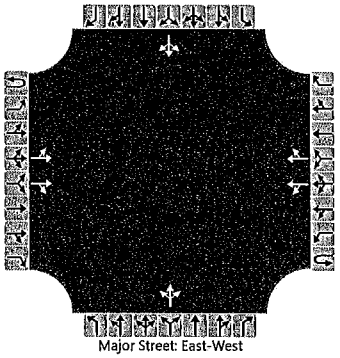
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2021
Time Analyzed	Existing PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		28	105	0		0	56	4		1	1	0		4	1	16
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		30				0					2				23	
Capacity, c (veh/h)		1535				1473					676				939	
v/c Ratio		0.02				0.00					0.00				0.02	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.0				0.1	
Control Delay (s/veh)		7.4				7.4					10.3				8.9	
Level of Service (LOS)		A				A					B				A	
Approach Delay (s/veh)	1.6				0.0				10.3				8.9			
Approach LOS									B				A			

HCS7 Two-Way Stop-Control Report

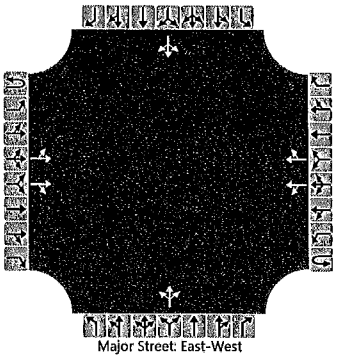
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Background AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		37	27	1		0	93	5		3	0	0		1	0	123
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		41				0					3				138	
Capacity, c (veh/h)		1479				1580					663				998	
v/c Ratio		0.03				0.00					0.01				0.14	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.0				0.5	
Control Delay (s/veh)		7.5				7.3					10.5				9.2	
Level of Service (LOS)		A				A					B				A	
Approach Delay (s/veh)	4.3				0.0				10.5				9.2			
Approach LOS									B				A			

HCS7 Two-Way Stop-Control Report

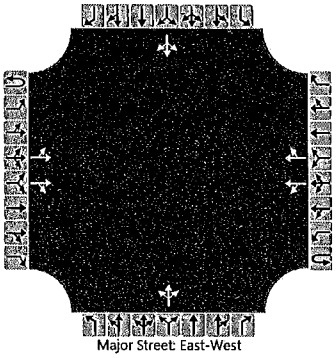
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	8/9/2021
Analysis Year	2026
Time Analyzed	Background PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		90	105	0		0	56	4		1	1	0		4	1	74
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		98				0					2				86	
Capacity, c (veh/h)		1535				1473					515				982	
v/c Ratio		0.06				0.00					0.00				0.09	
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.0				0.3	
Control Delay (s/veh)		7.5				7.4					12.0				9.0	
Level of Service (LOS)		A				A					B				A	
Approach Delay (s/veh)	3.5				0.0				12.0				9.0			
Approach LOS									B				A			

HCS7 Two-Way Stop-Control Report

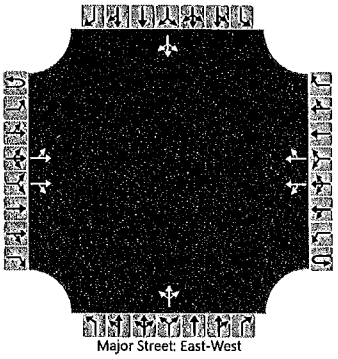
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		37	61	16		0	183	15		42	4	0		4	2	123
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		41				0					51				143	
Capacity, c (veh/h)		1346				1509					553				896	
v/c Ratio		0.03				0.00					0.09				0.16	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.3				0.6	
Control Delay (s/veh)		7.8				7.4					12.2				9.8	
Level of Service (LOS)		A				A					B				A	
Approach Delay (s/veh)	2.5				0.0				12.2				9.8			
Approach LOS									B				A			

HCS7 Two-Way Stop-Control Report

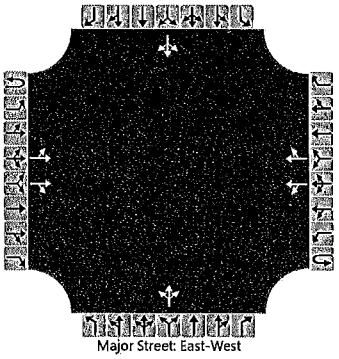
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Gilbert Rd
Jurisdiction	City of Aberdeen, MD
East/West Street	Long Drive
North/South Street	Gilbert Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		LT		TR		LT		TR			LTR				LTR	
Volume (veh/h)		90	206	43		0	121	11		29	4	0		15	6	74
Percent Heavy Vehicles (%)		2				2				2	2	2		2	2	2
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

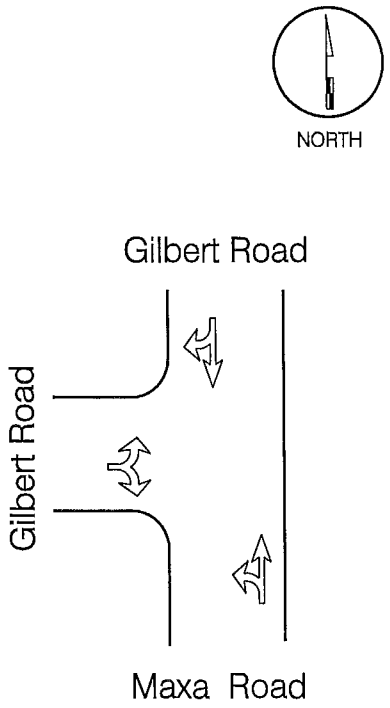
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.14				7.54	6.54	6.94		7.54	6.54	6.94
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.22				3.52	4.02	3.32		3.52	4.02	3.32

Delay, Queue Length, and Level of Service

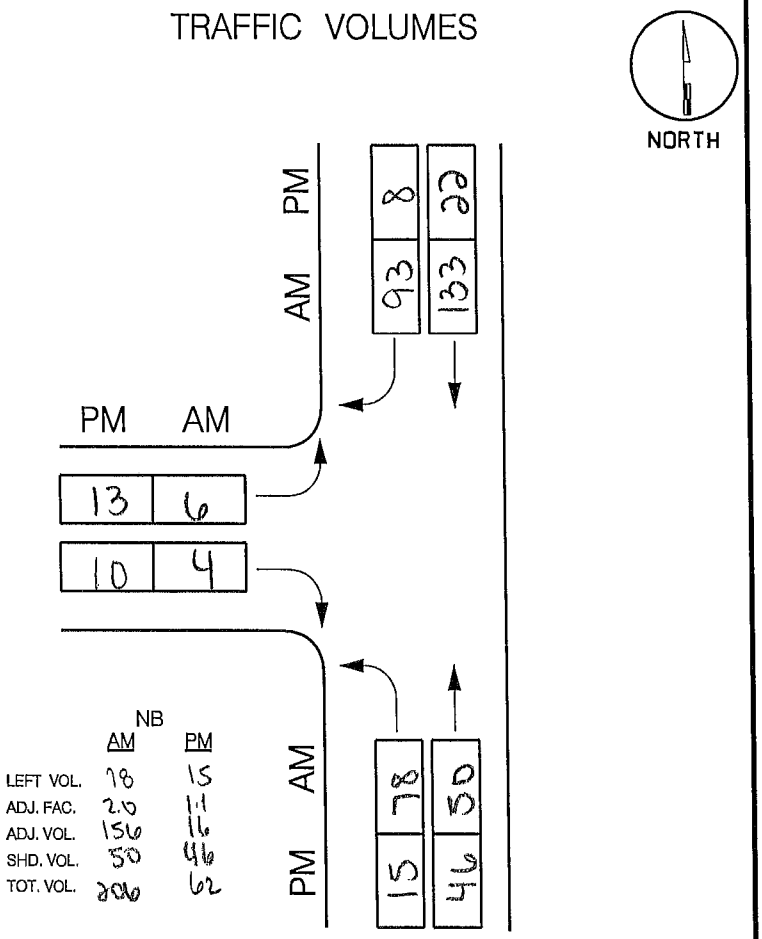
Flow Rate, v (veh/h)		98				0					36				103	
Capacity, c (veh/h)		1437				1290					379				764	
v/c Ratio		0.07				0.00					0.09				0.14	
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.3				0.5	
Control Delay (s/veh)		7.7				7.8					15.5				10.4	
Level of Service (LOS)		A				A					C				B	
Approach Delay (s/veh)	2.1				0.0				15.5				10.4			
Approach LOS									C				B			

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



NB	AM	PM
LEFT VOL.	78	15
ADJ. FAC.	2.0	1.1
ADJ. VOL.	156	16
SHD. VOL.	50	46
TOT. VOL.	206	62

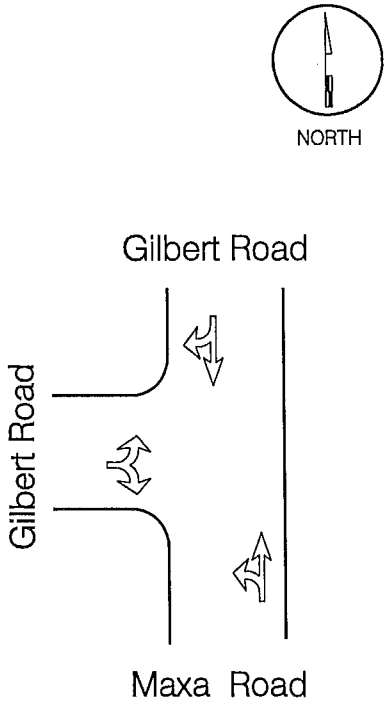
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	206 * 1.0	206	
	SB	(133 + 93) * 1.0 + 78 * 1.0	304 *	
	EB	(6 + 4) * 1.0	10 *	A
	WB	—	—	314
PM	NB	62 * 1.0	62 *	
	SB	(22 + 8) * 1.0 + 15 * 1.0	45	
	EB	(13 + 10) * 1.0	23 *	A
	WB	—	—	85

CRITICAL LANE ANALYSIS

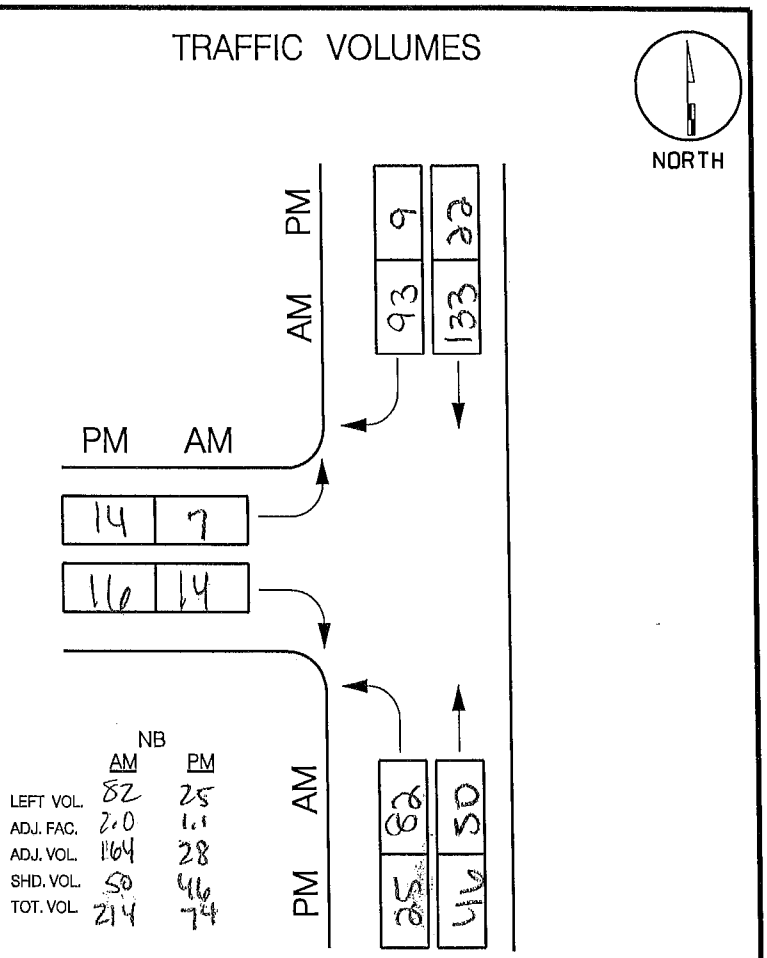
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



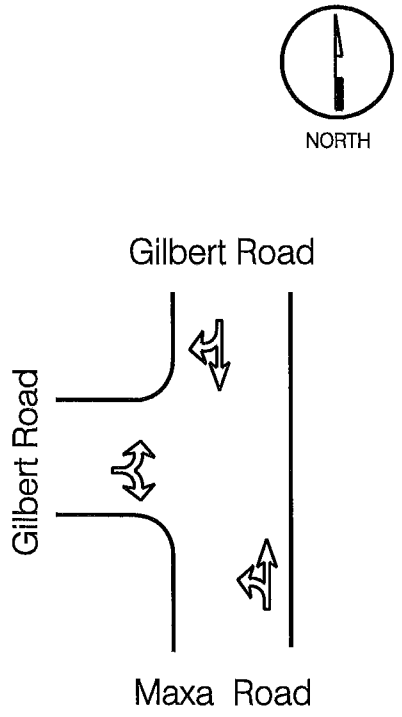
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	214 * 1.0	214	A 329
	SB	(133 + 93) * 1.0 + 82 * 1.0	308*	
	EB	(14 + 7) * 1.0	21 *	
	WB	—	—	
PM	NB	74 * 1.0	74 *	A 108
	SB	(22 + 9) * 1.0 + 25 * 1.0	56	
	EB	(14 + 20) * 1.0	34 *	
	WB	—	—	

CRITICAL LANE ANALYSIS

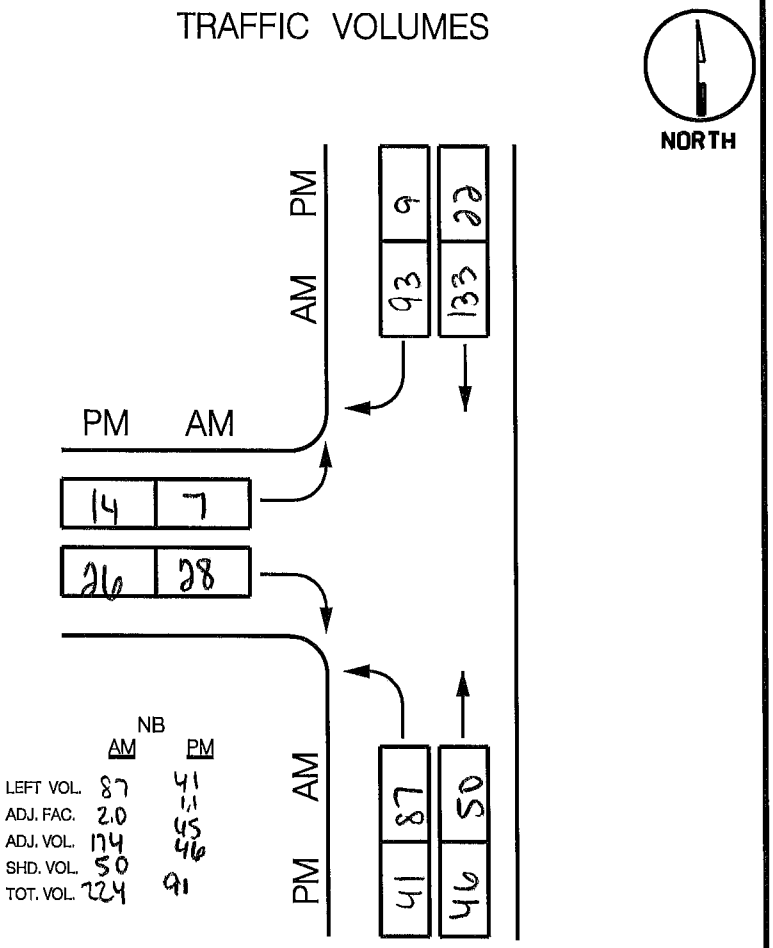
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	224 * 1.0	224	
	SB	(133 + 93) * 1.0 + 87 * 1.0	313*	
	EB	(7 + 28) * 1.0	35*	A
	WB	—	—	348
PM	NB	91 * 1.0	91*	
	SB	(22 + 9) * 1.0 + 41 * 1.0	72	
	EB	(14 + 26) * 1.0	40*	A
	WB	—	—	131

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

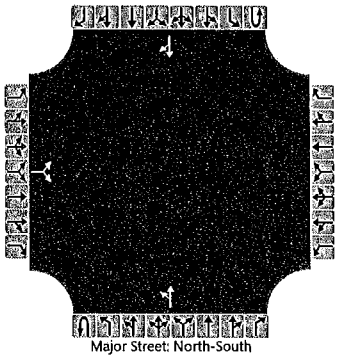
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Road at Maxa Road
Jurisdiction	Harford Co, MD
East/West Street	Gilbert Rd
North/South Street	Maxa Rd/Gilbert
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		4						78	50				133	93
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11							87						
Capacity, c (veh/h)			633							1314						
v/c Ratio			0.02							0.07						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
Control Delay (s/veh)			10.8							7.9						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)		10.8								5.0						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

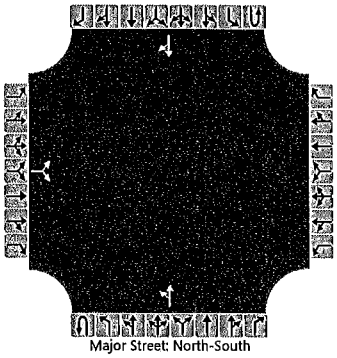
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Road at Maxa Road
Jurisdiction	Harford Co, MD
East/West Street	Gilbert Rd
North/South Street	Maxa Rd/Gilbert
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		13		10						15	46				22	8
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			26							17						
Capacity, c (veh/h)			941							1578						
v/c Ratio			0.03							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.9							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		8.9								1.9						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

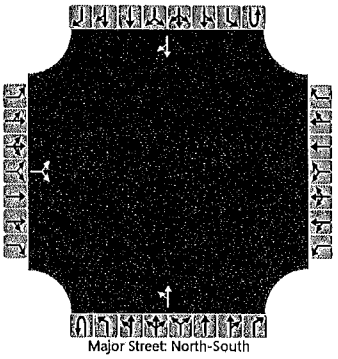
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Road at Maxa Road
Jurisdiction	Harford Co, MD
East/West Street	Gilbert Rd
North/South Street	Maxa Rd/Gilbert
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		7		14						82	50				133	93
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			23							91						
Capacity, c (veh/h)			707							1314						
v/c Ratio			0.03							0.07						
95% Queue Length, Q_{95} (veh)			0.1							0.2						
Control Delay (s/veh)			10.3							7.9						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)		10.3								5.1						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

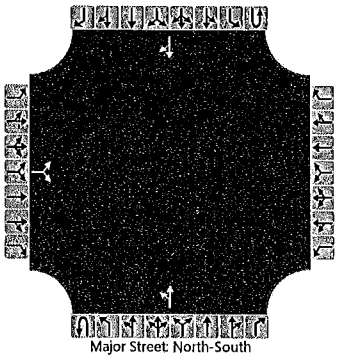
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Road at Maxa Road
Jurisdiction	Harford Co, MD
East/West Street	Gilbert Rd
North/South Street	Maxa Rd/Gilbert
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		16						25	46				22	9
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

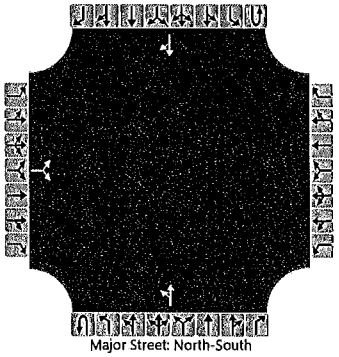
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			33							27						
Capacity, c (veh/h)			942							1578						
v/c Ratio			0.03							0.02						
95% Queue Length, Q_{95} (veh)			0.1							0.1						
Control Delay (s/veh)			9.0							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.0								2.7						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	C. Atkinson	Intersection	Gilbert Road at Maxa Road
Agency/Co.	Traffic Concepts, Inc.	Jurisdiction	Harford Co, MD
Date Performed	2/8/2021	East/West Street	Gilbert Rd
Analysis Year	2026	North/South Street	Maxa Rd/Gilbert
Time Analyzed	Future AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3714		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		7		28						87	50				133	93
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			39							97						
Capacity, c (veh/h)			751							1314						
v/c Ratio			0.05							0.07						
95% Queue Length, Q_{95} (veh)			0.2							0.2						
Control Delay (s/veh)			10.1							8.0						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)		10.1								5.3						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

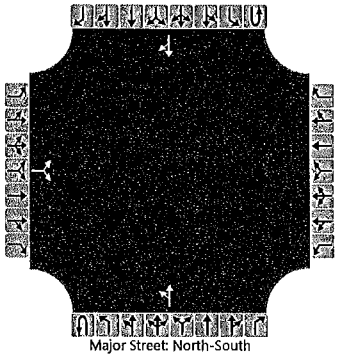
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Road at Maxa Road
Jurisdiction	Harford Co, MD
East/West Street	Gilbert Rd
North/South Street	Maxa Rd/Gilbert
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		26						41	46				22	9
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

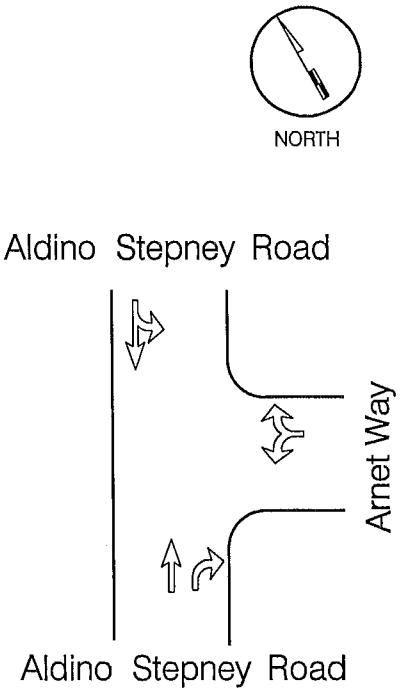
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

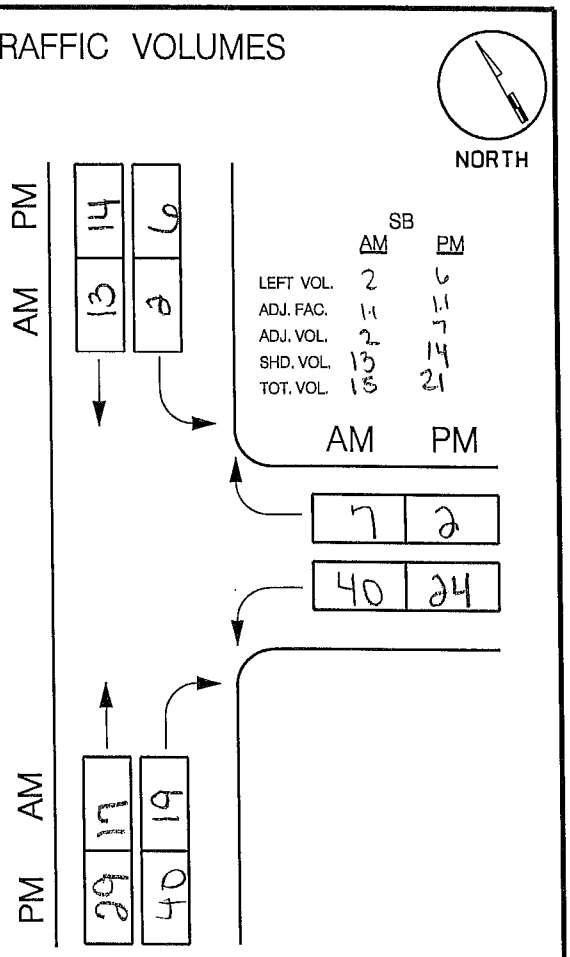
Flow Rate, v (veh/h)			43							45						
Capacity, c (veh/h)			944							1578						
v/c Ratio			0.05							0.03						
95% Queue Length, Q_{95} (veh)			0.1							0.1						
Control Delay (s/veh)			9.0							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.0								3.6						
Approach LOS		A														

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



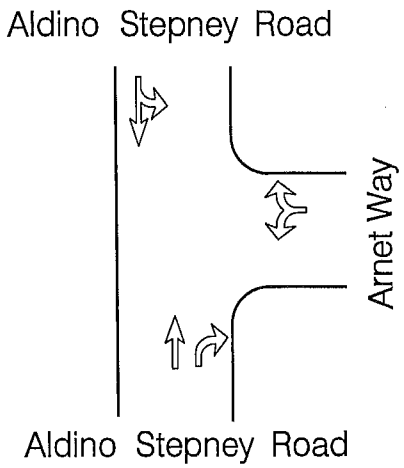
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	17 * 1.0 + 2 * 1.0	19 *	
	SB	15 * 1.0	15	
	EB	—	—	A
	WB	(40 + 7) * 1.0	47 *	66
PM	NB	29 * 1.0 + 6 * 1.0	35 *	
	SB	21 * 1.0	21	
	EB	—	—	A
	WB	(24 + 2) * 1.0	26 *	61

CRITICAL LANE ANALYSIS

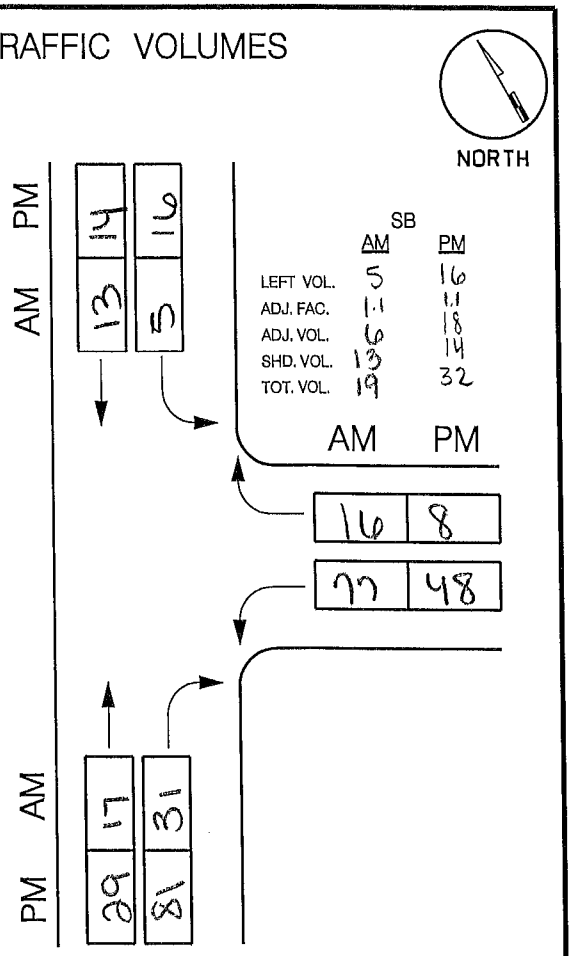
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



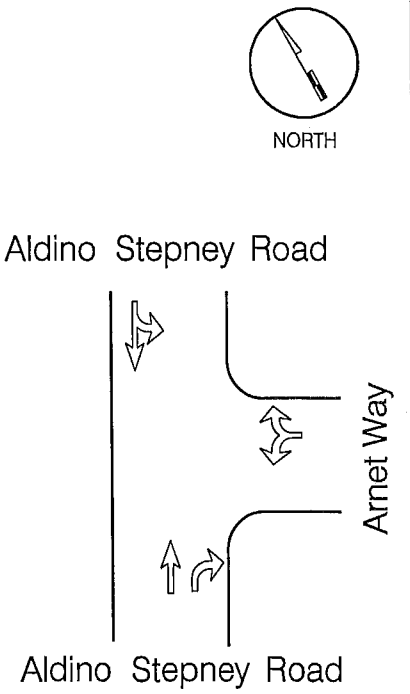
		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	17 *1.0 + 5 *1.0	22 *	
	SB	19 *1.0	19	
	EB	—	—	A
	WB	(16 + 77) *1.0	93*	115
PM	NB	(81 - 48) *1.0 + 16 *1.0	49*	
	SB	32 *1.0	32	
	EB	—	—	A
	WB	(8 + 48) *1.0	56*	105

CRITICAL LANE ANALYSIS

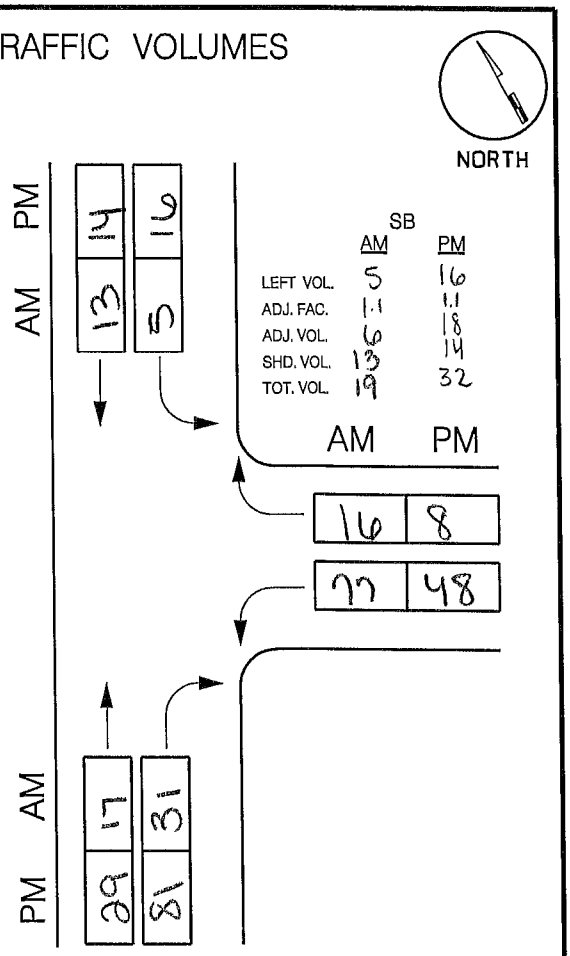
Prepared By: C. ATKINSON Condition: BACKGROUND

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	17 *1.0 + 5 *1.0	22*	
	SB	19 *1.0	19	
	EB	—	—	A
	WB	(16+77) *1.0	93*	115
PM	NB	(81-48) *1.0 + 16 *1.0	49*	
	SB	32 *1.0	32	
	EB	—	—	A
	WB	(8 + 48) *1.0	56*	105

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

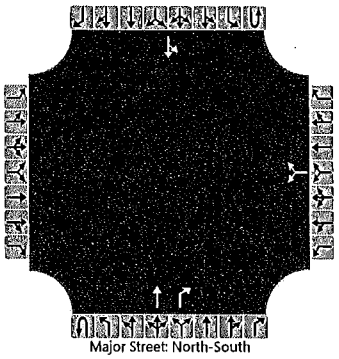
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						40		7			17	19		2	13	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							52							2		
Capacity, c (veh/h)							985							1570		
v/c Ratio							0.05							0.00		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
Control Delay (s/veh)							8.9							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						8.9								1.0		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

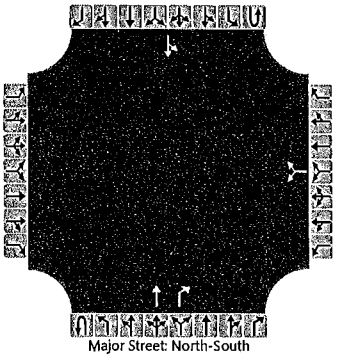
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2021
Time Analyzed	Existing PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						24		2			29	40		6	14	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							29							7		
Capacity, c (veh/h)							948							1522		
v/c Ratio							0.03							0.00		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
Control Delay (s/veh)							8.9							7.4		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						8.9								2.2		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

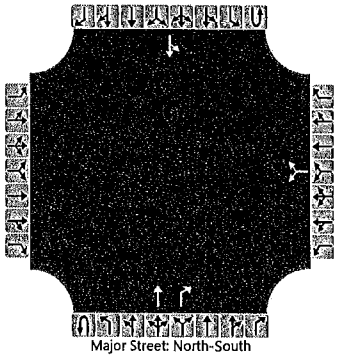
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						77		16			17	31		5	13	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							103							6		
Capacity, c (veh/h)							978							1552		
v/c Ratio							0.11							0.00		
95% Queue Length, Q_{95} (veh)							0.4							0.0		
Control Delay (s/veh)							9.1							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						9.1								2.1		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

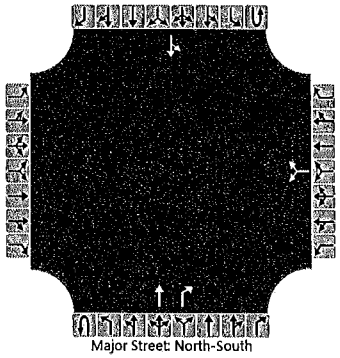
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Background PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						48		8			29	81		16	14	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							62							18		
Capacity, c (veh/h)							924							1465		
v/c Ratio							0.07							0.01		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
Control Delay (s/veh)							9.2							7.5		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						9.2								4.0		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

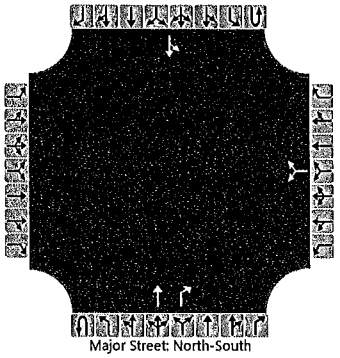
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Future AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						77		16			17	31		5	13	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							103							6		
Capacity, c (veh/h)							978							1552		
v/c Ratio							0.11							0.00		
95% Queue Length, Q_{95} (veh)							0.4							0.0		
Control Delay (s/veh)							9.1							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						9.1								2.1		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

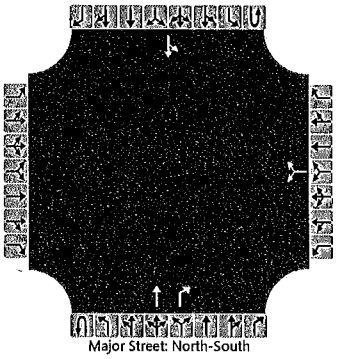
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/8/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Aldino-Stepney at Arnet W
Jurisdiction	City of Aberdeen, MD
East/West Street	Arnet Way
North/South Street	Aldino Stepney Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	0	1	0
Configuration							LR				T	R		LT		
Volume (veh/h)						48		8			29	81		16	14	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage	Undivided															

Critical and Follow-up Headways

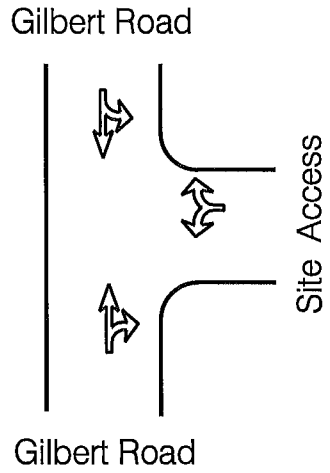
Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

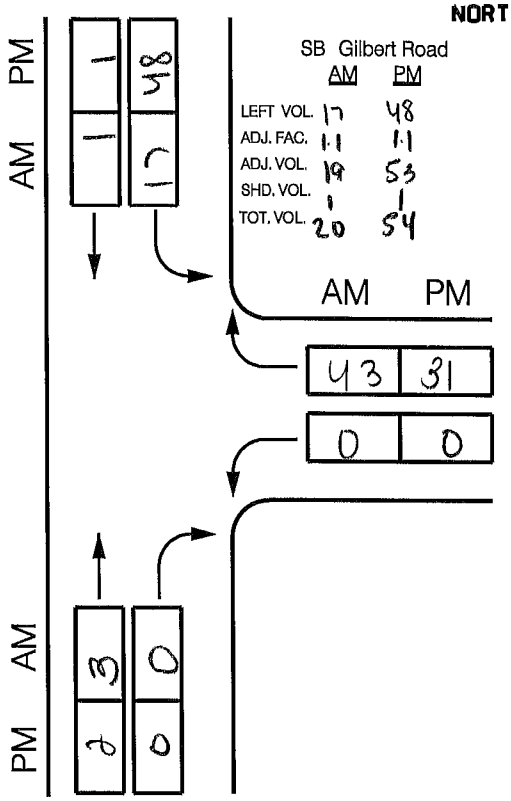
Flow Rate, v (veh/h)							62							18		
Capacity, c (veh/h)							924							1465		
v/c Ratio							0.07							0.01		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
Control Delay (s/veh)							9.2							7.5		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					9.2								4.0			
Approach LOS					A											

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(3 + 0) * 1.0 + 17 * 1.0	20 *	
	SB	20 * 1.0	20	
	EB	—	—	A
	WB	(43 + 0) * 1.0	43 *	103
PM	NB	(2 + 0) * 1.0 + 48 * 1.0	50	
	SB	54 * 1.0	54 *	
	EB	—	—	A
	WB	(31 + 0) * 1.0	31 *	85

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

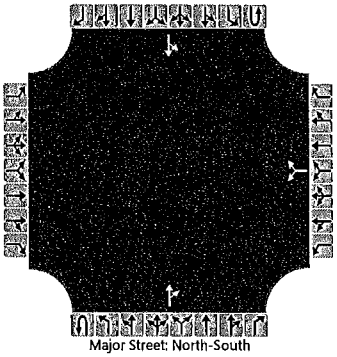
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future AM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Rd @ Site Access
Jurisdiction	Harford Co, MD
East/West Street	Site Access
North/South Street	Gilbert Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						0		43			3	0		17	1	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							48							19		
Capacity, c (veh/h)							1080							1619		
v/c Ratio							0.04							0.01		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
Control Delay (s/veh)							8.5							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					8.5								6.9			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

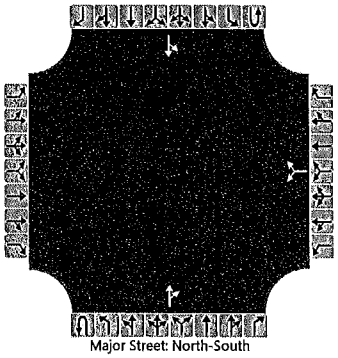
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	North-South
Project Description	3714

Site Information

Intersection	Gilbert Rd @ Site Access
Jurisdiction	Harford Co, MD
East/West Street	Site Access
North/South Street	Gilbert Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						0		31			2	0		48	1	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

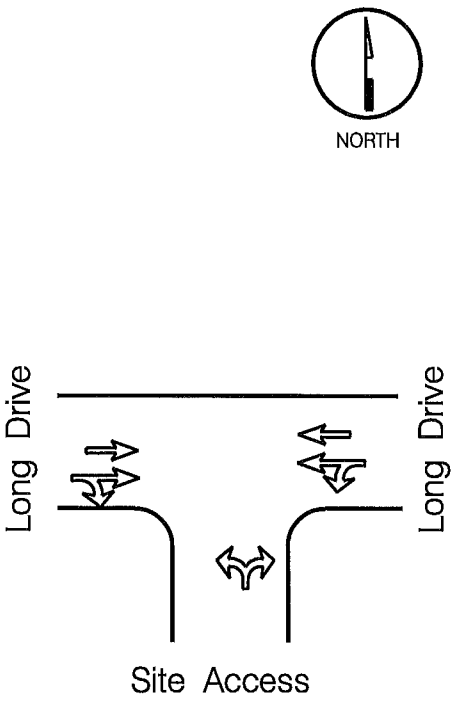
Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

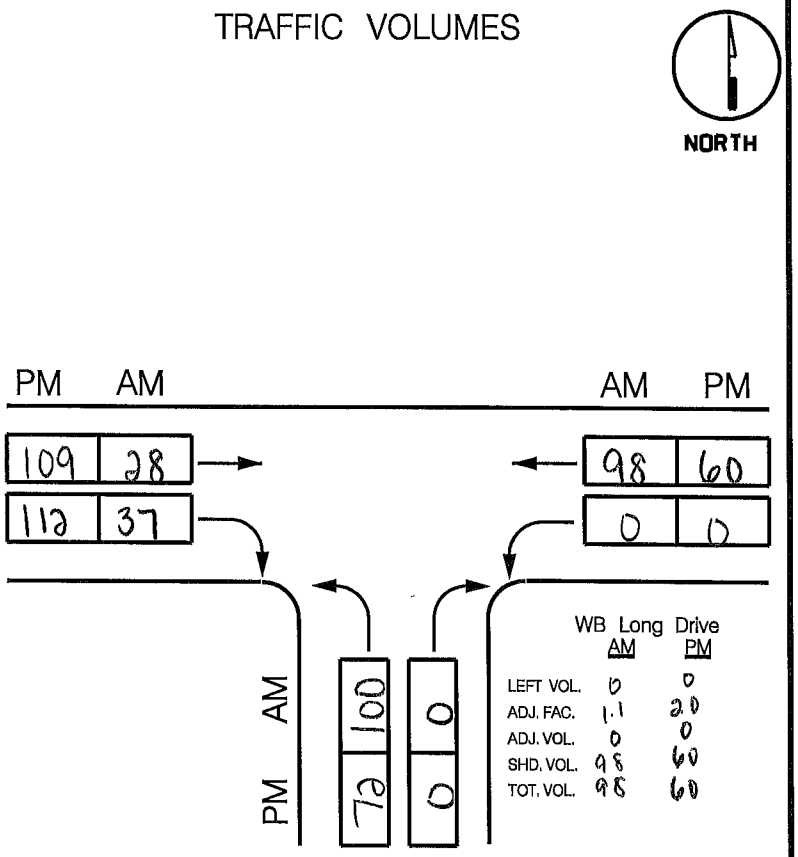
Flow Rate, v (veh/h)							34							52		
Capacity, c (veh/h)							1082							1620		
v/c Ratio							0.03							0.03		
95% Queue Length, Q_{95} (veh)							0.1							0.1		
Control Delay (s/veh)							8.4							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					8.4								7.2			
Approach LOS					A											

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



		TOTAL VOLUME * LUF + OPPOSING LEFTS * LUF =	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(100 + 0) * 1.0	100*	
	SB	—	—	
	EB	(28 + 37) * .55 + 0 * 1.0	36	A
	WB	98 * .55	98*	198
PM	NB	(72 + 0) * 1.0	72*	
	SB	—	—	
	EB	(109 + 112) * .55 + 0 * 1.0	122*	A
	WB	60 * .55	60	194

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

HCS7 Two-Way Stop-Control Report

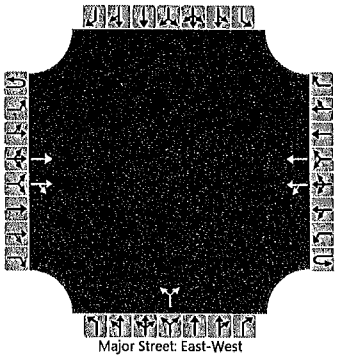
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future AM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Site Access
Jurisdiction	Harford Co, MD
East/West Street	Long Drive
North/South Street	Site Access
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	0	0
Configuration			T	TR		LT	T				LR					
Volume (veh/h)			28	37		0	98			100		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					111					
Capacity, c (veh/h)						1526					880					
v/c Ratio						0.00					0.13					
95% Queue Length, Q_{95} (veh)						0.0					0.4					
Control Delay (s/veh)						7.4					9.7					
Level of Service (LOS)						A					A					
Approach Delay (s/veh)					0.0				9.7							
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

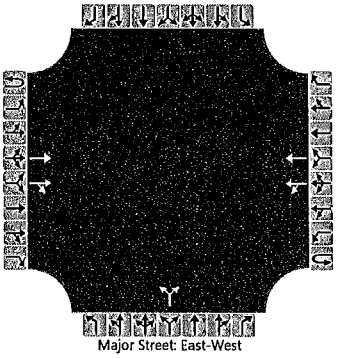
General Information

Analyst	C. Atkinson
Agency/Co.	Traffic Concepts, Inc.
Date Performed	2/9/2021
Analysis Year	2026
Time Analyzed	Future PM
Intersection Orientation	East-West
Project Description	3714

Site Information

Intersection	Long Drive at Site Access
Jurisdiction	Harford Co, MD
East/West Street	Long Drive
North/South Street	Site Access
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	0	2	0		0	1	0		0	0	0
Configuration			T	TR		LT	T				LR					
Volume (veh/h)			109	112		0	60			72		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

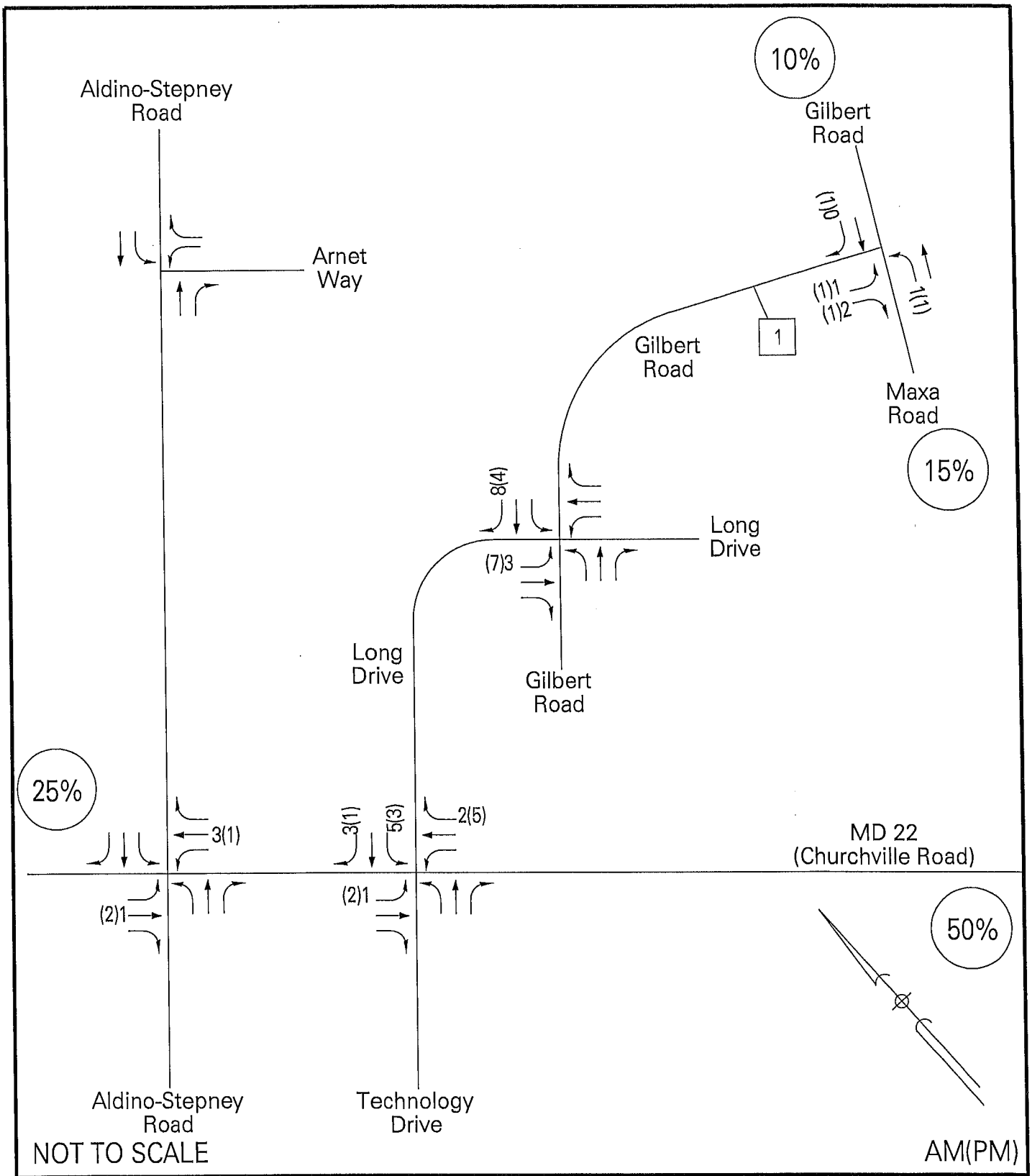
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					78					
Capacity, c (veh/h)						1324					757					
v/c Ratio						0.00					0.10					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
Control Delay (s/veh)						7.7					10.3					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.0				10.3							
Approach LOS					B											

APPENDIX II

BACKGROUND
TRAFFIC DATA



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

BACKGROUND 1

Adams Heights

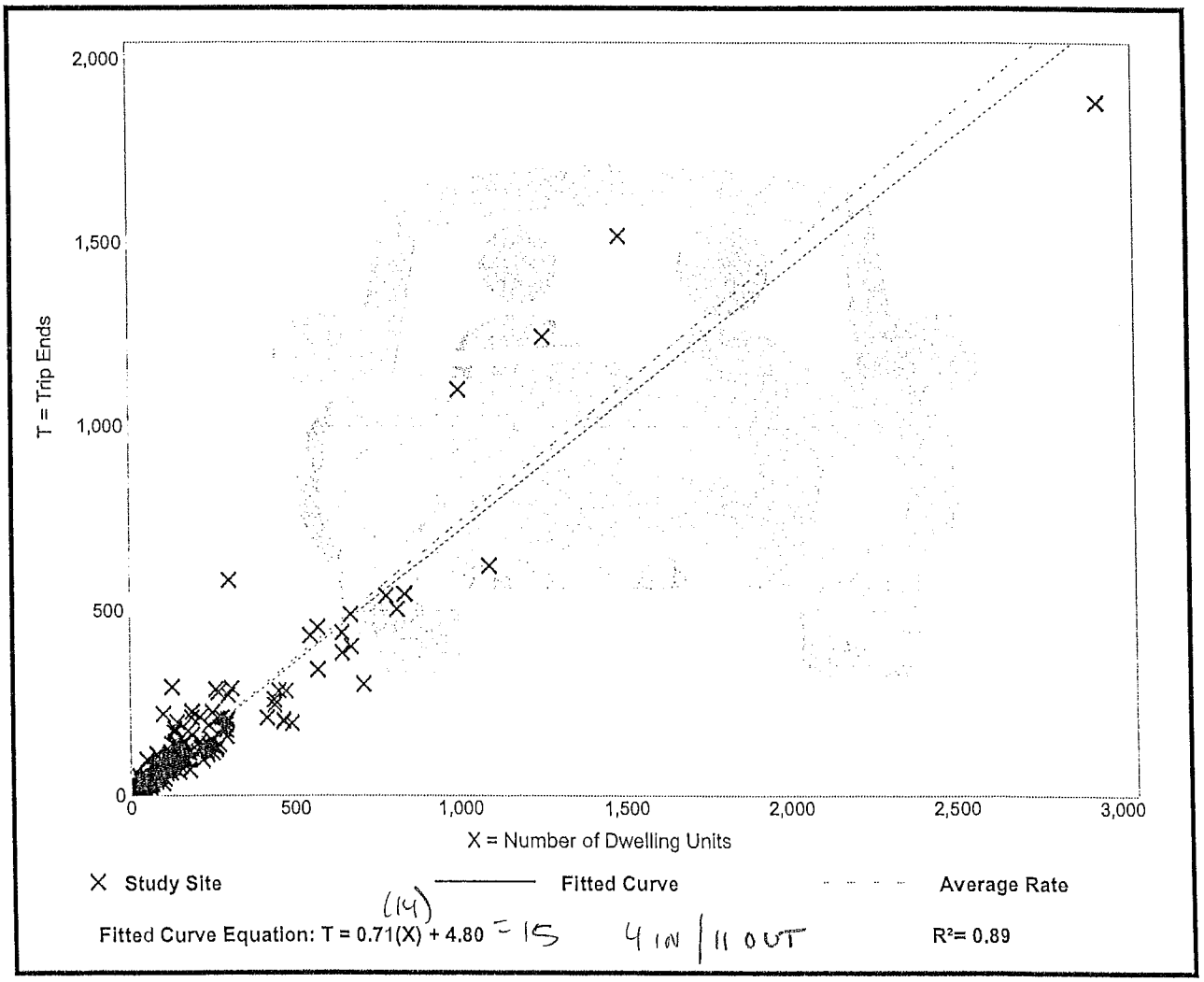
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	173
Avg. Num. of Dwelling Units:	219
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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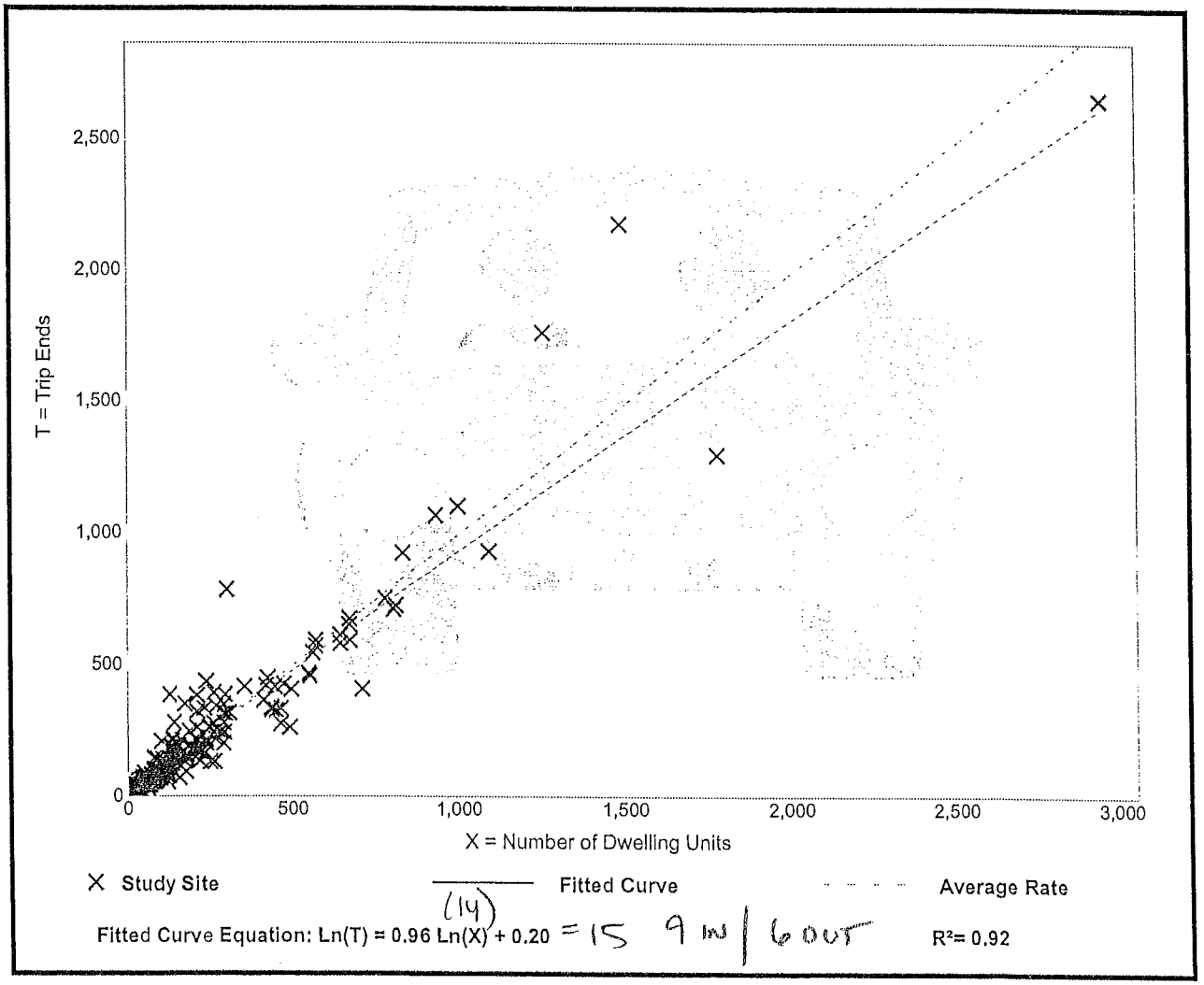
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. Num. of Dwelling Units:	242
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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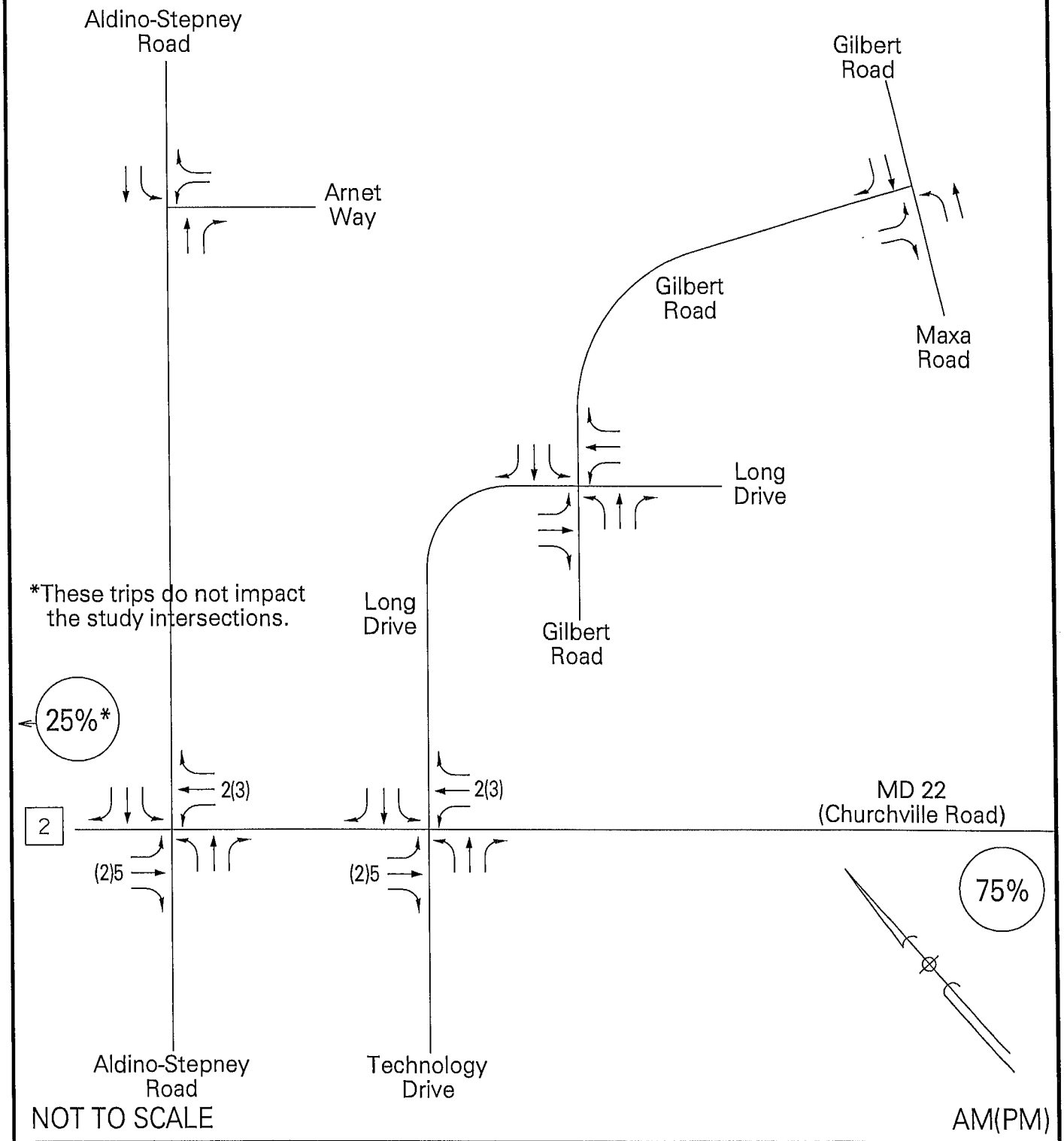


TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

BACKGROUND 2

Carsinwood

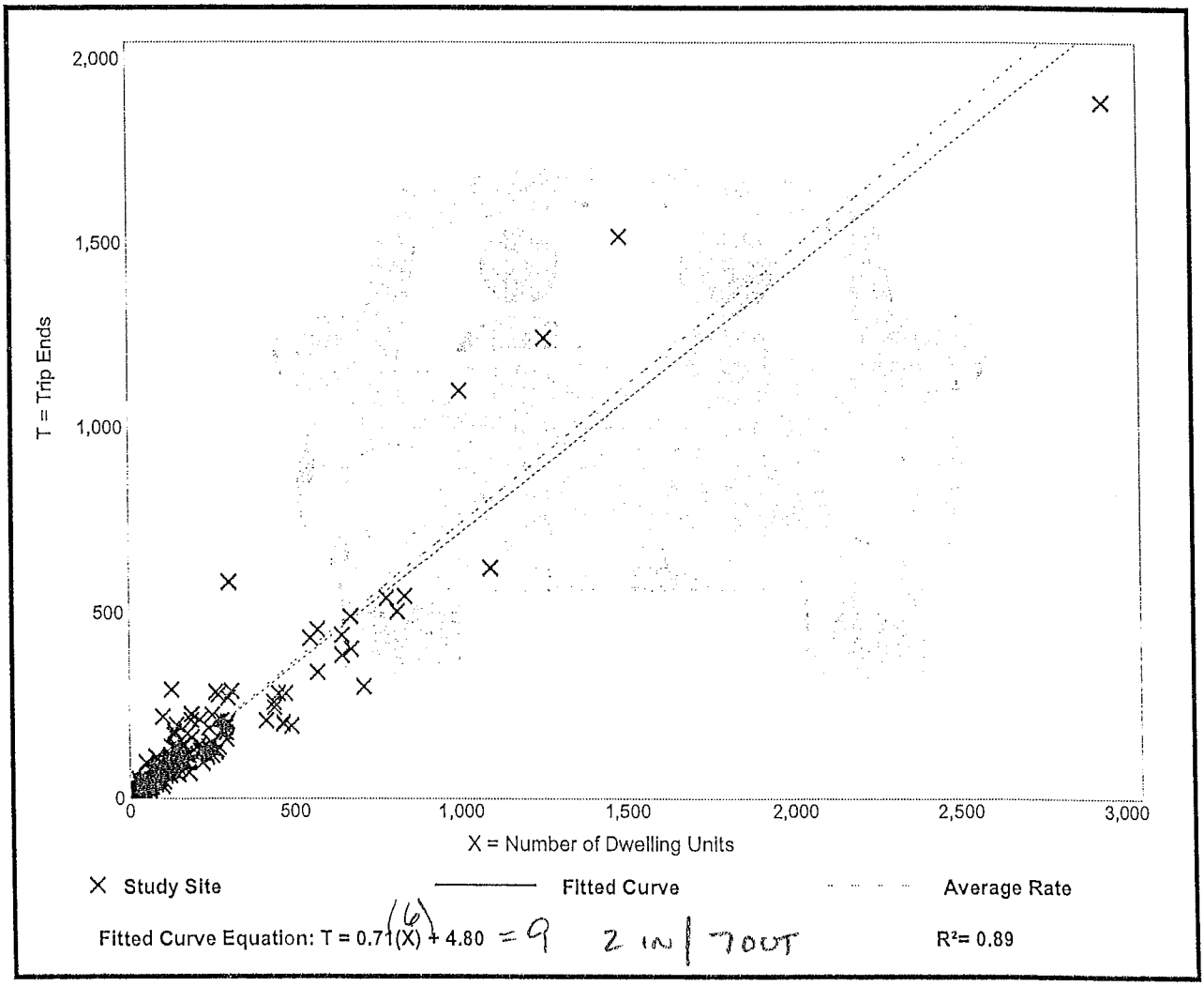
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	173
Avg. Num. of Dwelling Units:	219
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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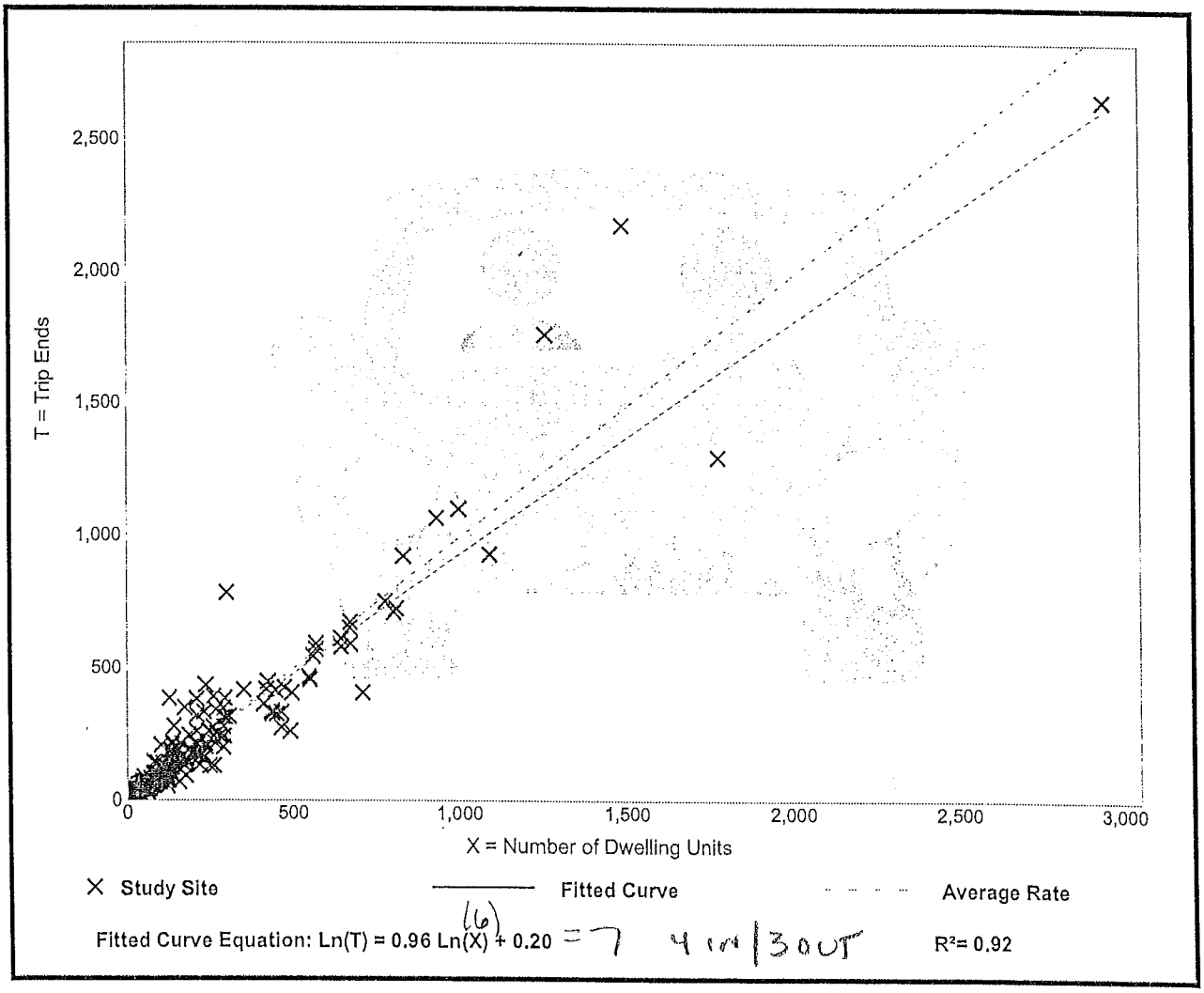
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. Num. of Dwelling Units:	242
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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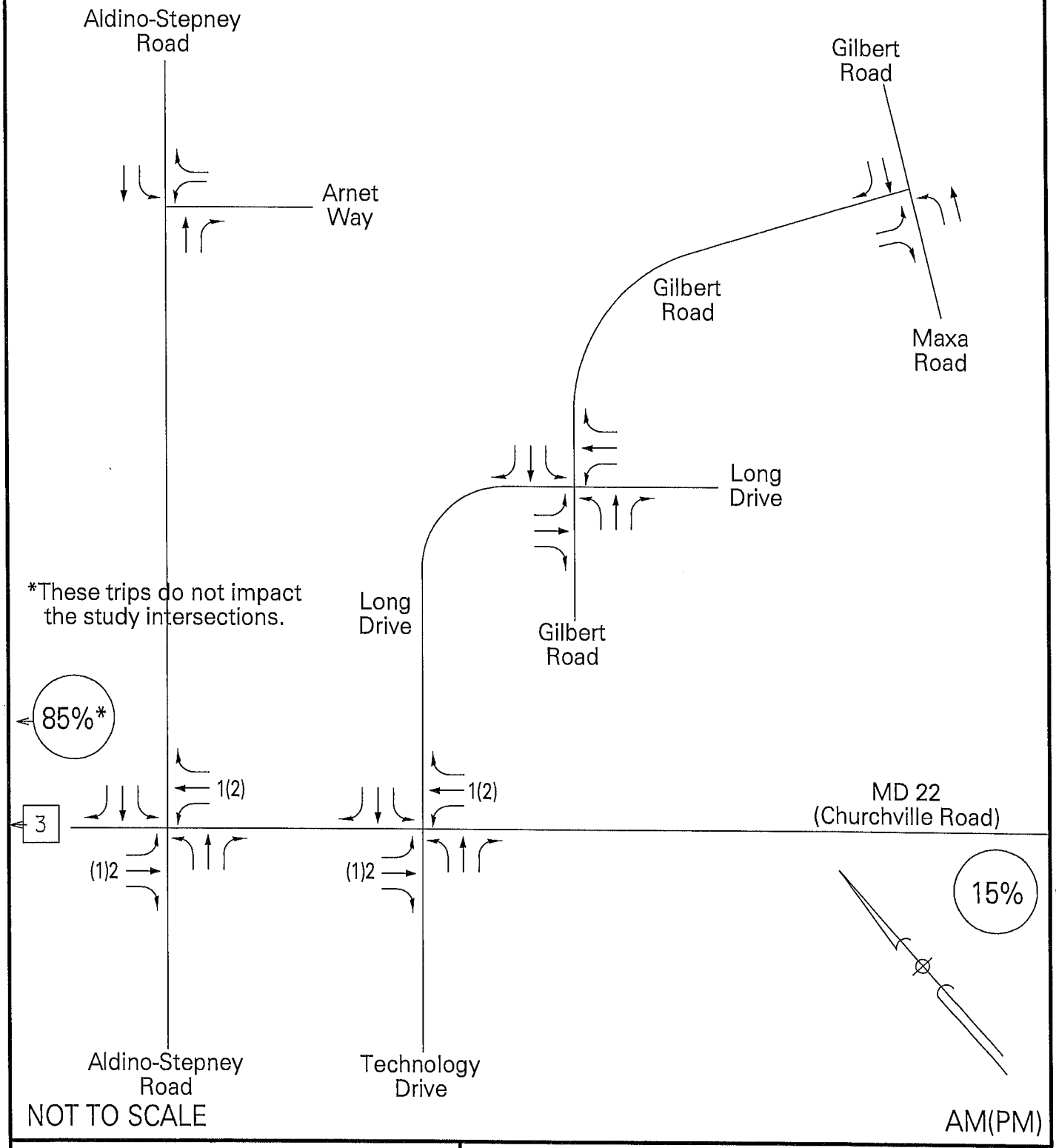

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410-760-2911

BACKGROUND 3

Peverly Estates

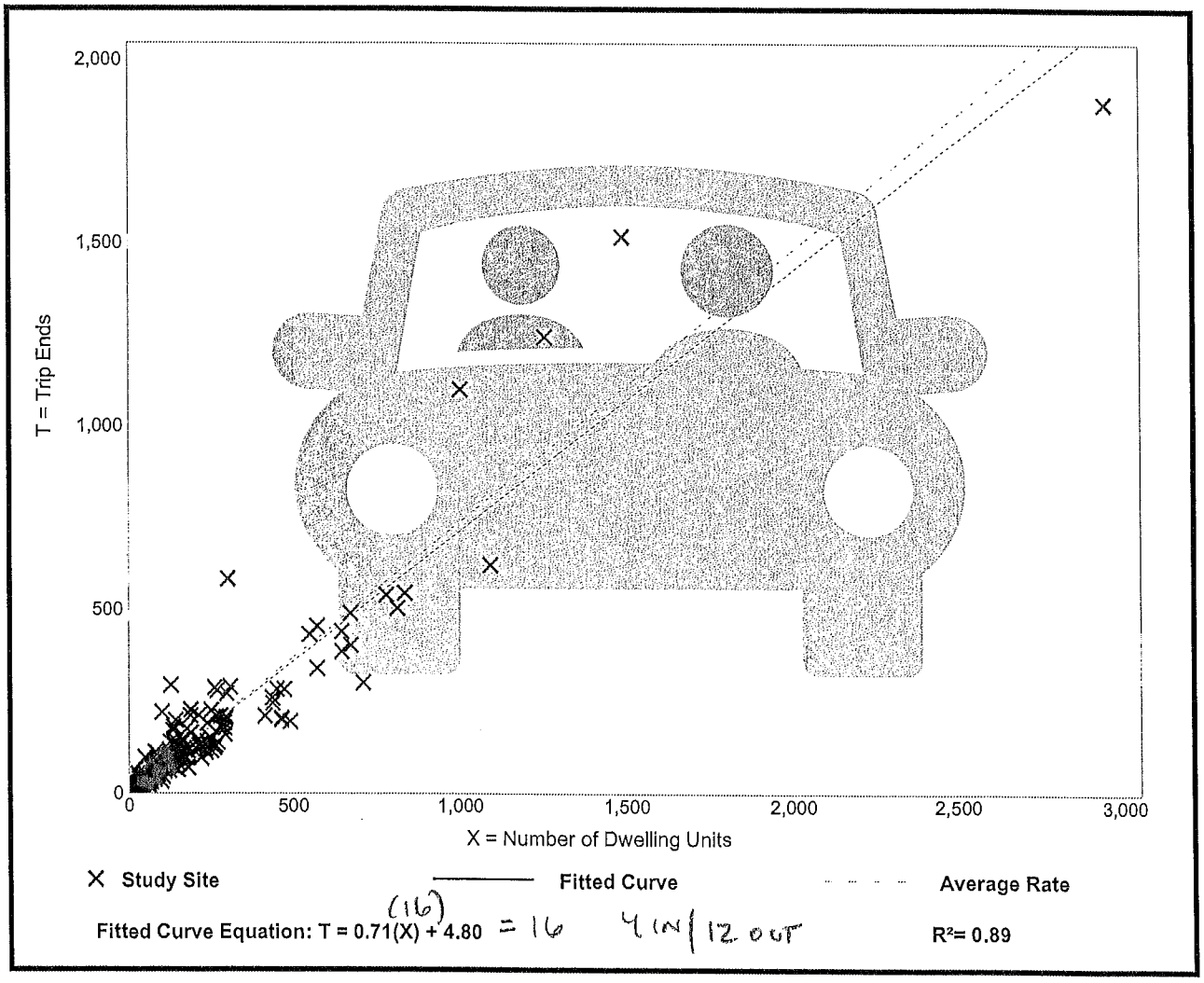
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 173
Avg. Num. of Dwelling Units: 219
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

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

Data Plot and Equation



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Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. Num. of Dwelling Units: 242
Directional Distribution: 63% entering, 37% exiting

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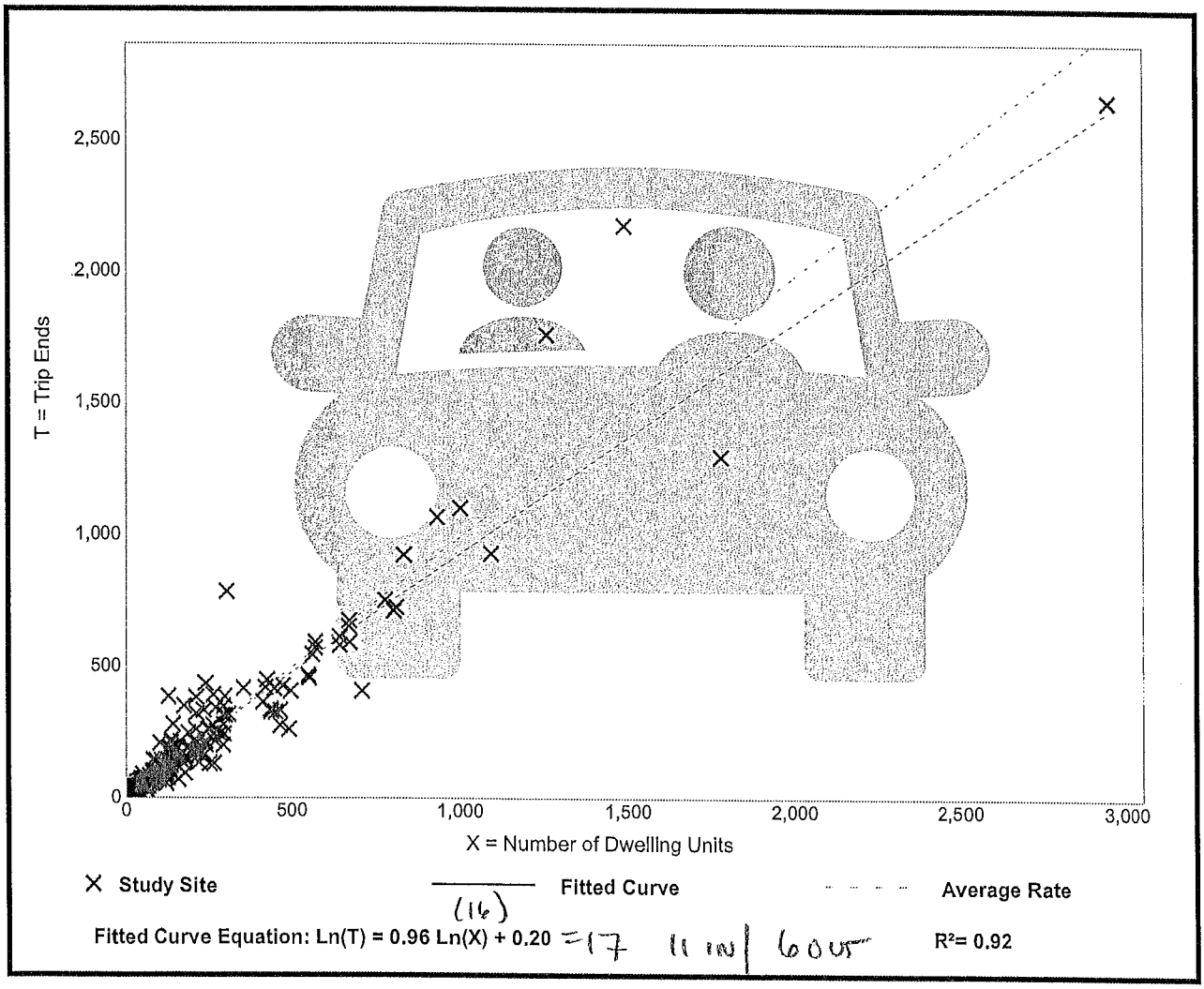
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.96 Ln(X) + 0.20 R^2= 0.92

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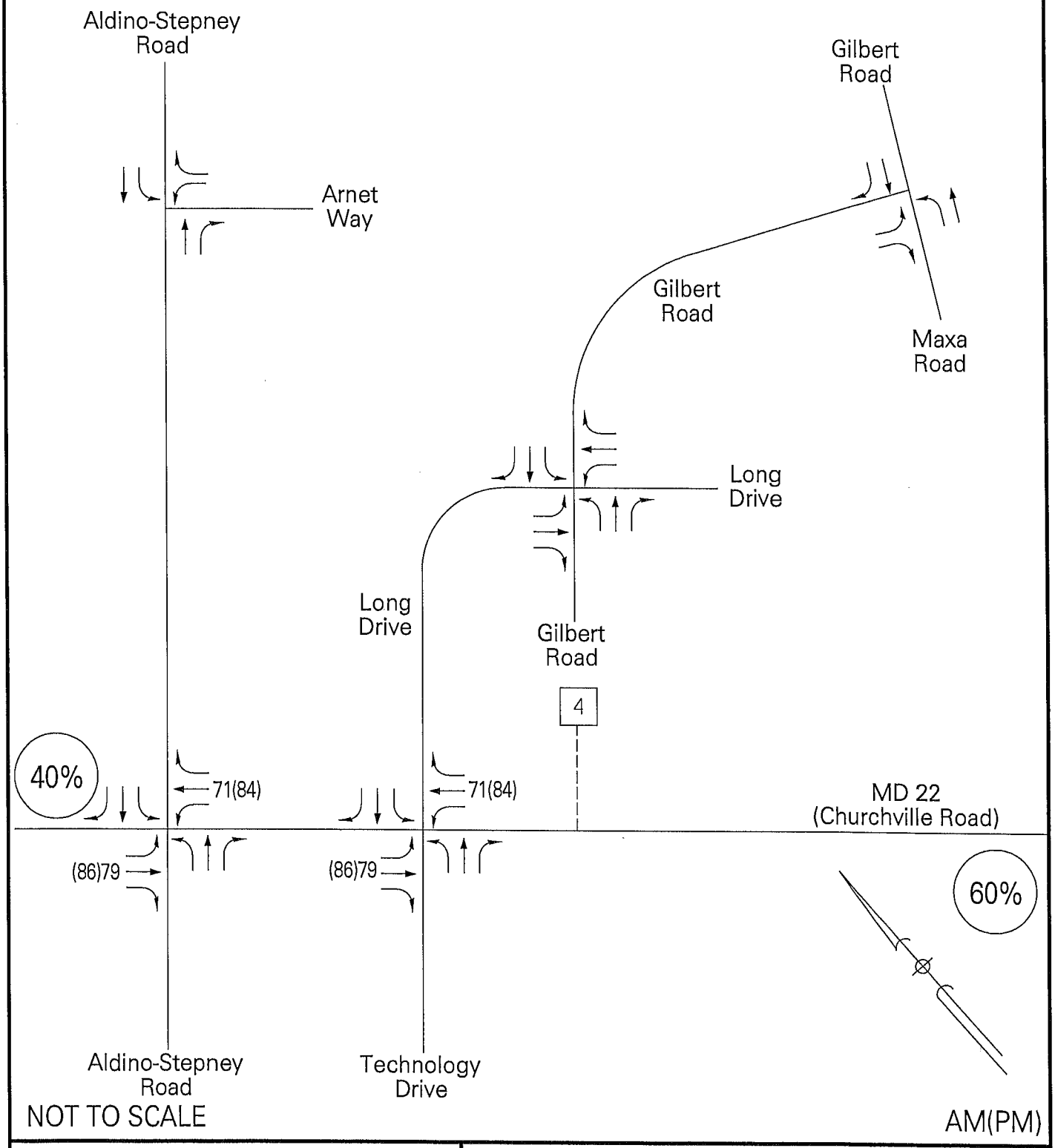

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BACKGROUND 4

Stadium Towne Center - New Trips

TC # 2810

COPIED FROM STADIUM TOWNE CENTER TIS

FUTURE CONDITION

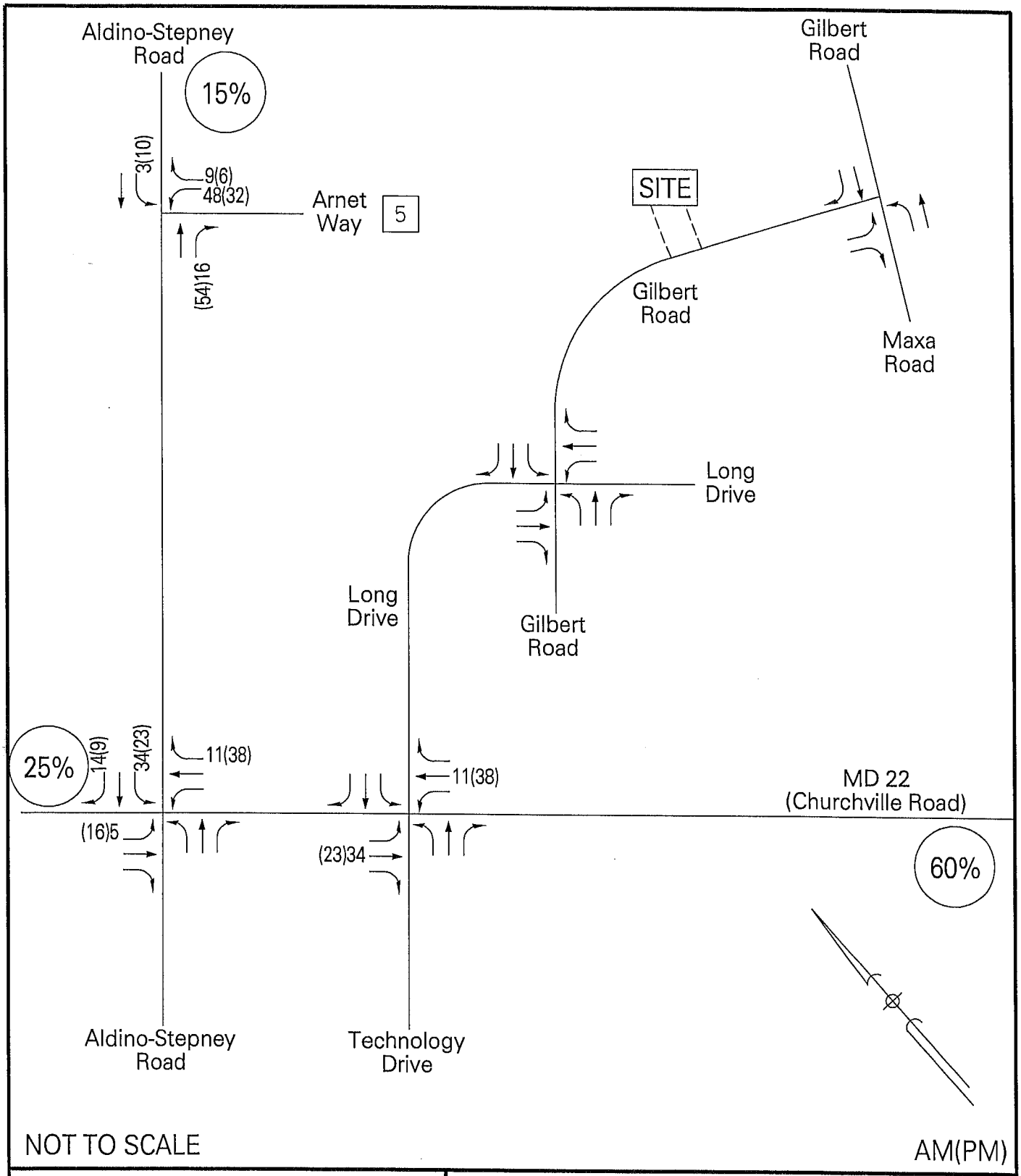
The future traffic conditions evaluated the key intersections with the addition of trips generated by the proposed Stadium Town Center. As mentioned previously, approximately 80,000 gross square feet of various commercial uses are proposed for construction on the site. We have consulted the Institute of Transportation Engineers' (ITE), Trip Generation Manual, 8th Edition to determine trip generation rates for this development. The new site generated peak hour trips are shown below. Detailed ITE trip data is included in Appendix IV.

	AM		PM		SAT		
	IN	OUT	IN	OUT	IN	OUT	ADT
Free-Standing Discount Superstore							
ITE Land Use Code 813							
Per ksf	0.94	0.73	2.26	2.35	2.82	2.82	53.13
60,000 gsf	56	44	136	141	169	169	3188
Less 10% Internal Capture	- 6	- 4	- 14	- 14	- 17	- 17	- 319
External Trips	50	40	122	127	152	152	2869
Less Pass-by Trips			- 34	- 36	- 43	- 43	
Net New Trips	50	40	88	91	109	109	
Drive-in Bank							
ITE Land Use Code 912							
Per ksf	6.92	5.43	12.91	12.91	13.80	12.73	148.15
3,500 gsf	24	19	45	45	48	45	519
Less 10% Internal Capture	- 2	- 2	- 4	- 4	- 5	- 4	- 52
External Trips	22	17	41	41	43	41	467
Less Pass-by Trips			- 19	- 19	- 20	- 19	
Net New Trips	22	17	22	22	23	22	
Fast Food with Drive-thru							
ITE Land Use Code 934							
Per ksf	25.17	24.18	17.60	16.24	30.29	29.10	496.12
4,500 gsf	113	109	79	73	136	131	2233
Less 10% Internal Capture	- 11	- 11	- 8	- 7	- 14	- 13	- 223
External Trips	102	98	71	66	122	118	2010
Less Pass-by Trips	- 50	- 48	- 35	- 33	- 60	- 58	
Net New Trips	52	50	36	33	62	60	

TC # 2810

COPIED FROM STADIUM TOWNE CENTER TIS

	AM		PM		SAT		
	IN	OUT	IN	OUT	IN	OUT	ADT
Convenience Market with Gasoline Pumps							
ITE Land Use Code 853							
Per ksf	21.95	21.95	29.85	29.85	23.43	22.51	845.60
5,000 gsf	110	110	149	149	117	113	4228
Less 10% Internal Capture	- 11	- 11	- 15	- 15	- 12	- 11	- 423
External Trips	99	99	134	134	105	102	3805
Less Pass-by Trips	- 62	- 62	- 88	- 88	- 66	- 64	
Net New Trips	37	37	46	46	39	38	
High Turnover Sit-Down Restaurant							
ITE Land Use Code 932							
Per ksf	5.99	5.53	6.58	4.57	7.46	6.61	127.15
7,000 gsf	42	39	46	32	52	46	890
Less 10% Internal Capture	- 4	- 4	- 5	- 3	- 5	- 5	- 89
External Trips	38	35	41	29	47	41	801
Less Pass-by Trips			- 18	- 12	- 20	- 18	
Net New Trips	38	35	23	17	27	23	
TOTAL NEW TRIPS	**199**	**179**	**215**	**209**	**260**	**252**	
TOTAL PASS-BY TRIPS	**112**	**110**	**194**	**188**	**209**	**202**	



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410-760-2911

BACKGROUND 5

Eagle's Rest - Phase C & Phase II

Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 173
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Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

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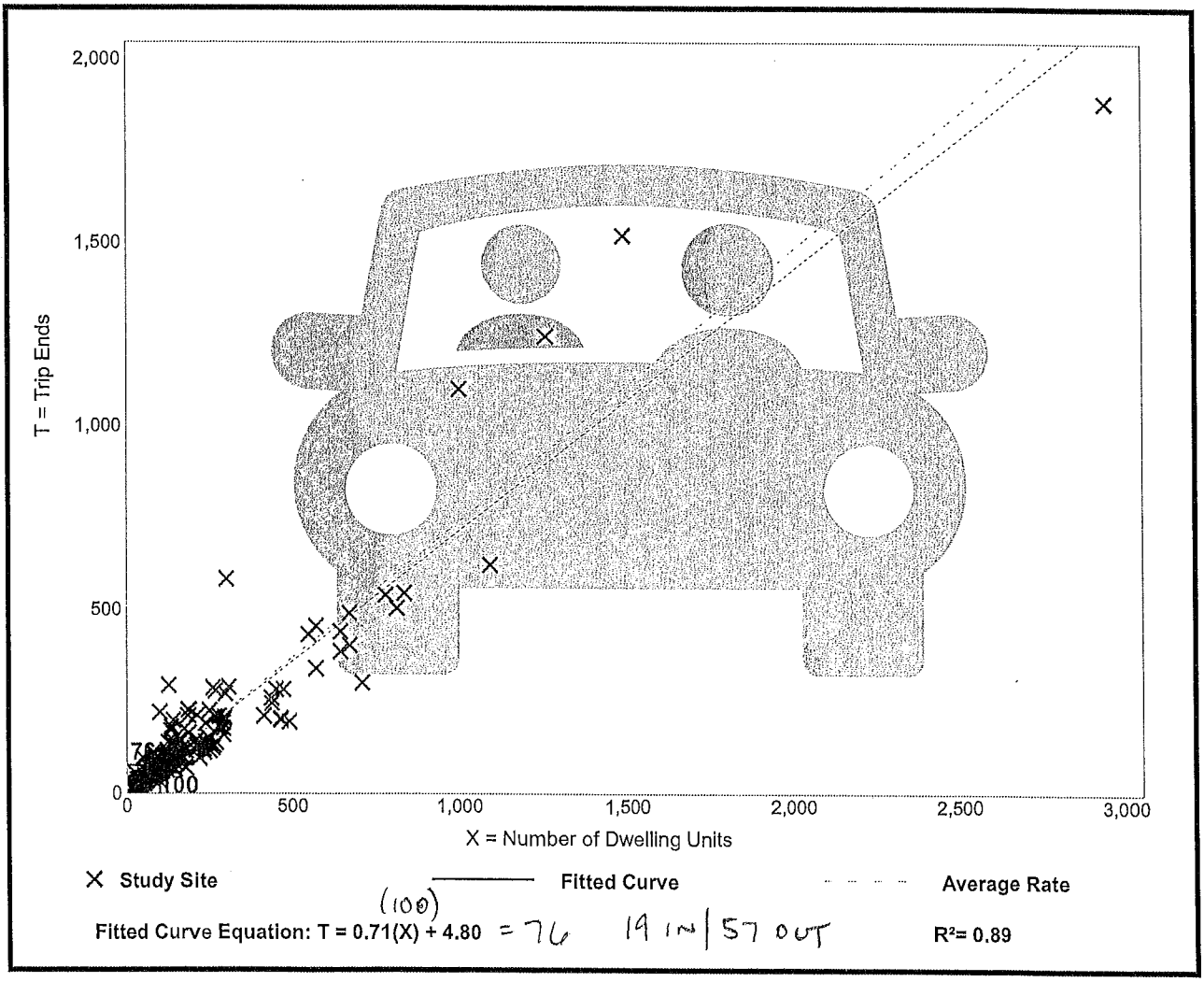
Data Plot and Equation



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Single-Family Detached Housing
(210)

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

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
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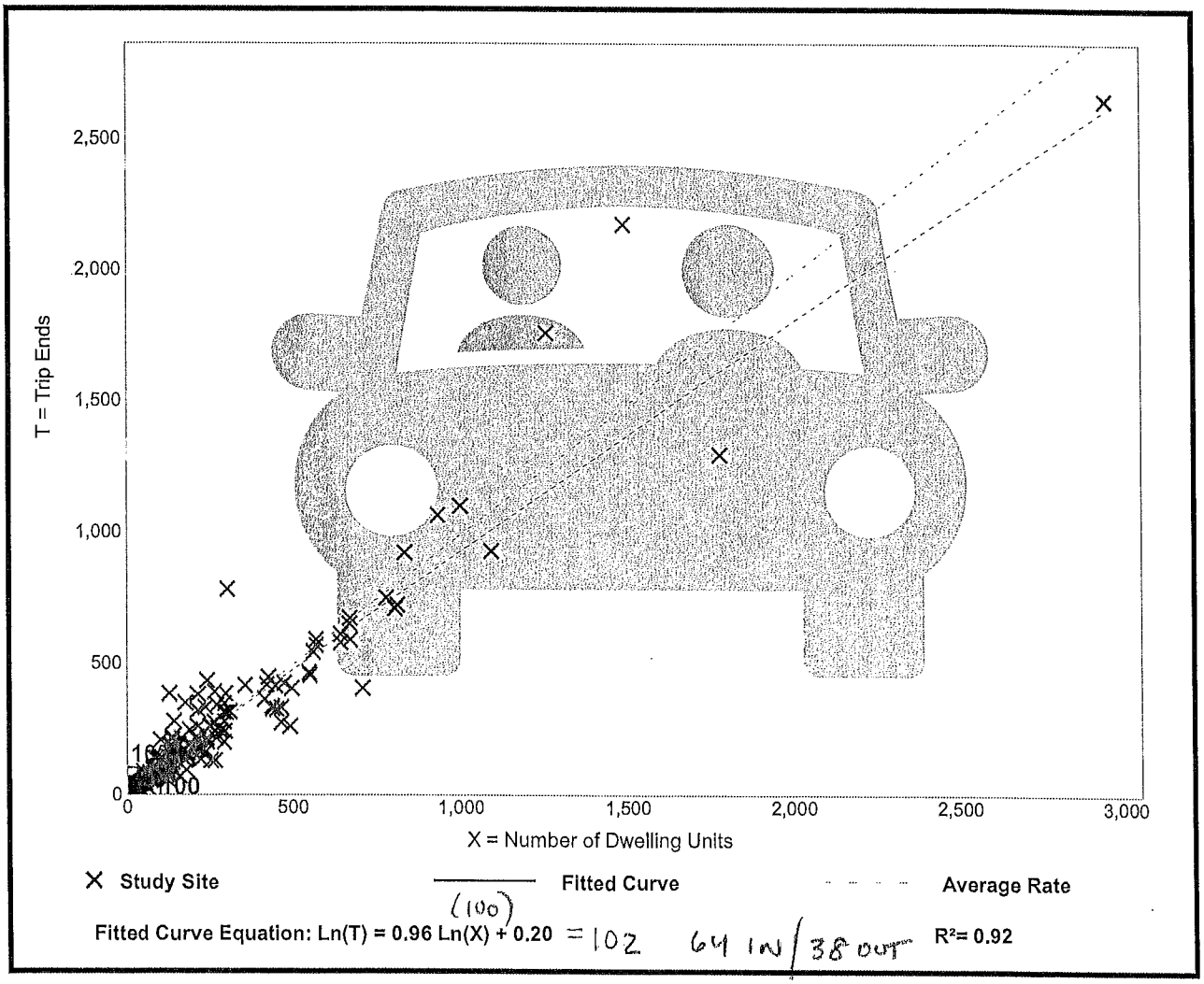
Data Plot and Equation



(100) = 102 64 in / 38 out

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APPENDIX III

TRAFFIC COUNTS
& SKETCHES

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 22 @ LONG DR / TECHNOLOGY DR

COUNTY: HARFORD

COUNT BY: A.NEUSE / B.PAGE

DATE: JANUARY 29, 2020

WEATHER: CLEAR

DAY: WEDNESDAY

	TECHNOLOGY DRIVE NORTHBOUND			LONG DRIVE SOUTHBOUND			MD 22 EASTBOUND			MD 22 WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	2	0	2	21	0	10	1	195	1	5	70	11	318
7:15-7:30	0	0	2	29	0	4	1	213	0	9	77	7	342
7:30-7:45	0	0	3	45	1	4	1	220	9	13	89	7	392
7:45-8:00	0	1	2	26	2	4	3	189	7	10	82	7	333
8:00-8:15	0	0	6	34	2	7	2	172	1	16	93	12	345
8:15-8:30	1	0	1	17	1	3	2	140	4	15	80	7	271
8:30-8:45	0	0	1	25	1	2	5	172	1	18	69	14	308
8:45-9:00	1	2	0	19	0	4	1	153	1	8	83	11	283
PEAK HR 7:15-8:15 TOTALS	**0**	**1**	**13**	**134**	**5**	**19**	**7**	**794**	**17**	**48**	**341**	**33**	**PHF 0.90**
PM													
4:00-4:15	4	0	10	10	0	8	2	117	2	3	207	11	374
4:15-4:30	2	0	7	8	2	2	7	119	1	4	222	29	403
4:30-4:45	9	0	22	8	0	3	6	104	4	1	218	24	399
4:45-5:00	2	3	11	18	0	5	4	103	1	6	233	24	410
5:00-5:15	4	0	13	11	0	4	9	119	1	3	228	27	419
5:15-5:30	1	0	11	8	1	4	5	104	1	6	230	38	409
5:30-5:45	1	0	7	33	0	5	9	87	0	4	161	30	337
5:45-6:00	3	1	13	22	0	5	5	92	0	4	178	33	356
PEAK HR 4:30-5:30 TOTALS	**16**	**3**	**57**	**45**	**1**	**16**	**24**	**430**	**7**	**16**	**909**	**113**	**PHF 0.98**

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7525 CONNELLEY DRIVE, SUITE B
HANOVER, MARYLAND 21076
410 760 2911 (FAX) 410 760 2915
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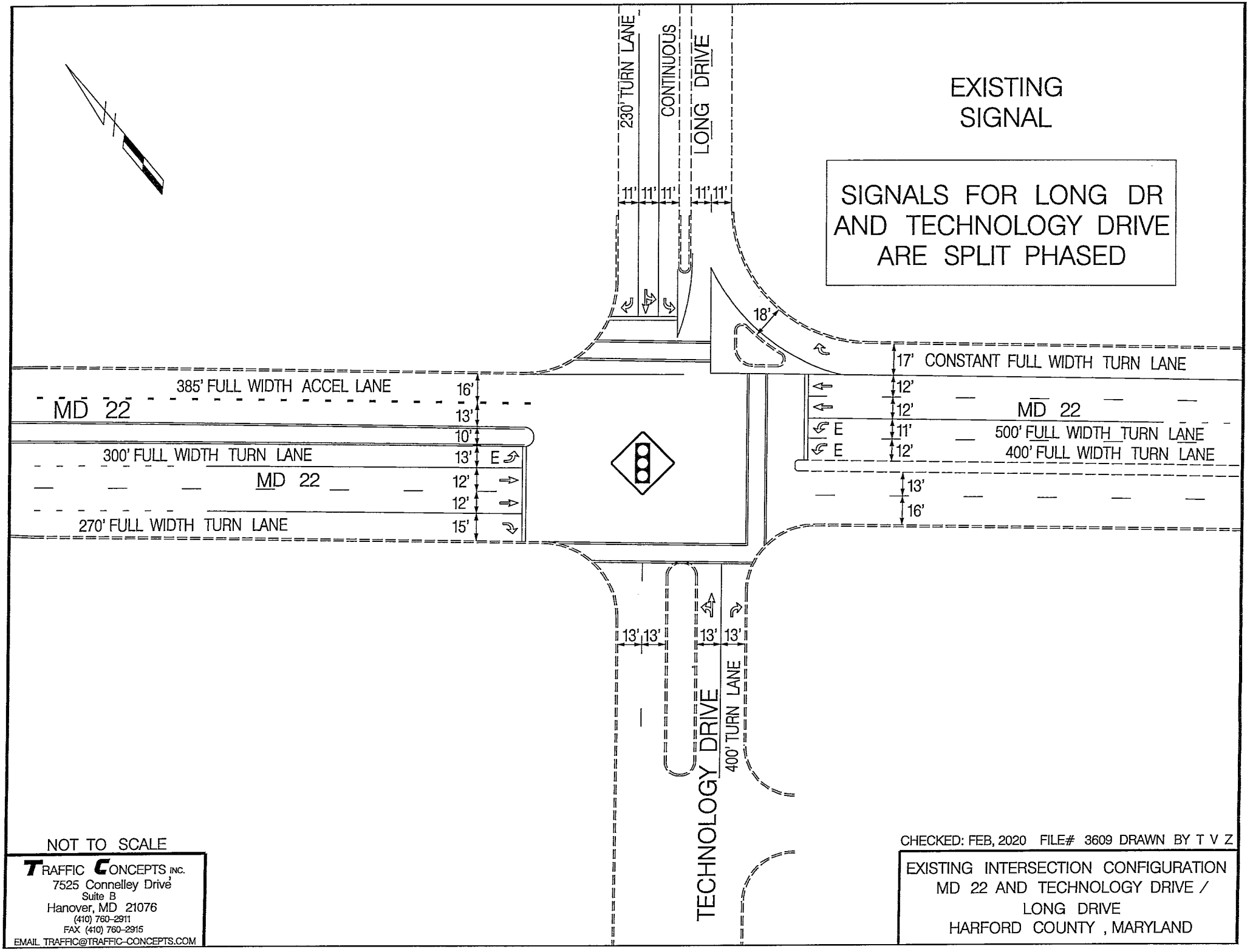
M:\3609


EXISTING
SIGNAL
SIGNALS FOR LONG DR AND TECHNOLOGY DRIVE ARE SPLIT PHASED
230' TURN LANE
CONTINUOUS
LONG DRIVE
11' 11' 11' 11' 11'
18'
17' CONSTANT FULL WIDTH TURN LANE
385' FULL WIDTH ACCEL LANE
MD 22
16'
13'
10'
300' FULL WIDTH TURN LANE
13' E
MD 22
12'
12'
270' FULL WIDTH TURN LANE
15'
12'
12'
MD 22
E 11'
E 12'
500' FULL WIDTH TURN LANE
400' FULL WIDTH TURN LANE
13'
16'
13' 13' 13' 13'
TECHNOLOGY DRIVE
400' TURN LANE
NOT TO SCALE
TRAFFIC CONCEPTS INC.
7525 Connelley Drive
Suite B
Hanover, MD 21076
(410) 760-2911
FAX (410) 760-2915
EMAIL TRAFFIC@TRAFFIC-CONCEPTS.COM
CHECKED: FEB, 2020 FILE# 3609 DRAWN BY T V Z
EXISTING INTERSECTION CONFIGURATION
MD 22 AND TECHNOLOGY DRIVE / LONG DRIVE
HARFORD COUNTY , MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 22 @ ALDINO STEPNEY RD **COUNTY:** HARFORD

COUNT BY: P. PIRMANN **DATE:** JANUARY 29, 2020

WEATHER: CLEAR **DAY:** WEDNESDAY

	ALDINO STEPNEY RD. NORTHBOUND			ALDINO STEPNEY RD. SOUTHBOUND			MD 22 EASTBOUND			MD 22 WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	0	1	0	13	2	0	0	179	1	3	77	5	281
7:15-7:30	1	2	4	10	2	3	2	181	0	2	80	2	289
7:30-7:45	2	0	0	14	1	3	0	203	1	2	90	5	321
7:45-8:00	1	1	4	18	2	1	0	187	2	5	93	4	318
8:00-8:15	0	1	1	8	3	2	0	149	0	1	80	4	249
8:15-8:30	0	0	5	8	0	0	1	144	2	1	61	3	225
8:30-8:45	0	3	2	9	1	3	2	150	1	0	78	5	254
8:45-9:00	0	0	4	10	1	3	2	92	1	2	73	6	194
PEAK HR 7:00-8:00 TOTALS	**4**	**4**	**8**	**55**	**7**	**7**	**2**	**750**	**4**	**12**	**340**	**16**	**PHF 0.94**
PM													
4:00-4:15	0	5	4	5	1	3	5	98	0	3	204	17	345
4:15-4:30	0	5	3	6	3	1	1	117	0	1	224	11	372
4:30-4:45	0	5	6	9	0	1	5	93	1	2	212	20	354
4:45-5:00	2	4	5	6	1	2	5	93	1	3	229	16	367
5:00-5:15	2	4	6	4	0	1	2	118	1	1	235	13	387
5:15-5:30	0	6	6	10	1	2	2	93	0	6	212	18	356
5:30-5:45	0	3	1	3	1	1	0	90	1	1	169	12	282
5:45-6:00	1	2	3	5	1	1	2	75	2	0	165	14	271
PEAK HR 4:15-5:15 TOTALS	**4**	**18**	**20**	**25**	**4**	**5**	**13**	**421**	**3**	**7**	**900**	**60**	**PHF 0.96**

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HANOVER, MARYLAND 21076
410 760 2911 (FAX FAX (410) 923-6473
E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

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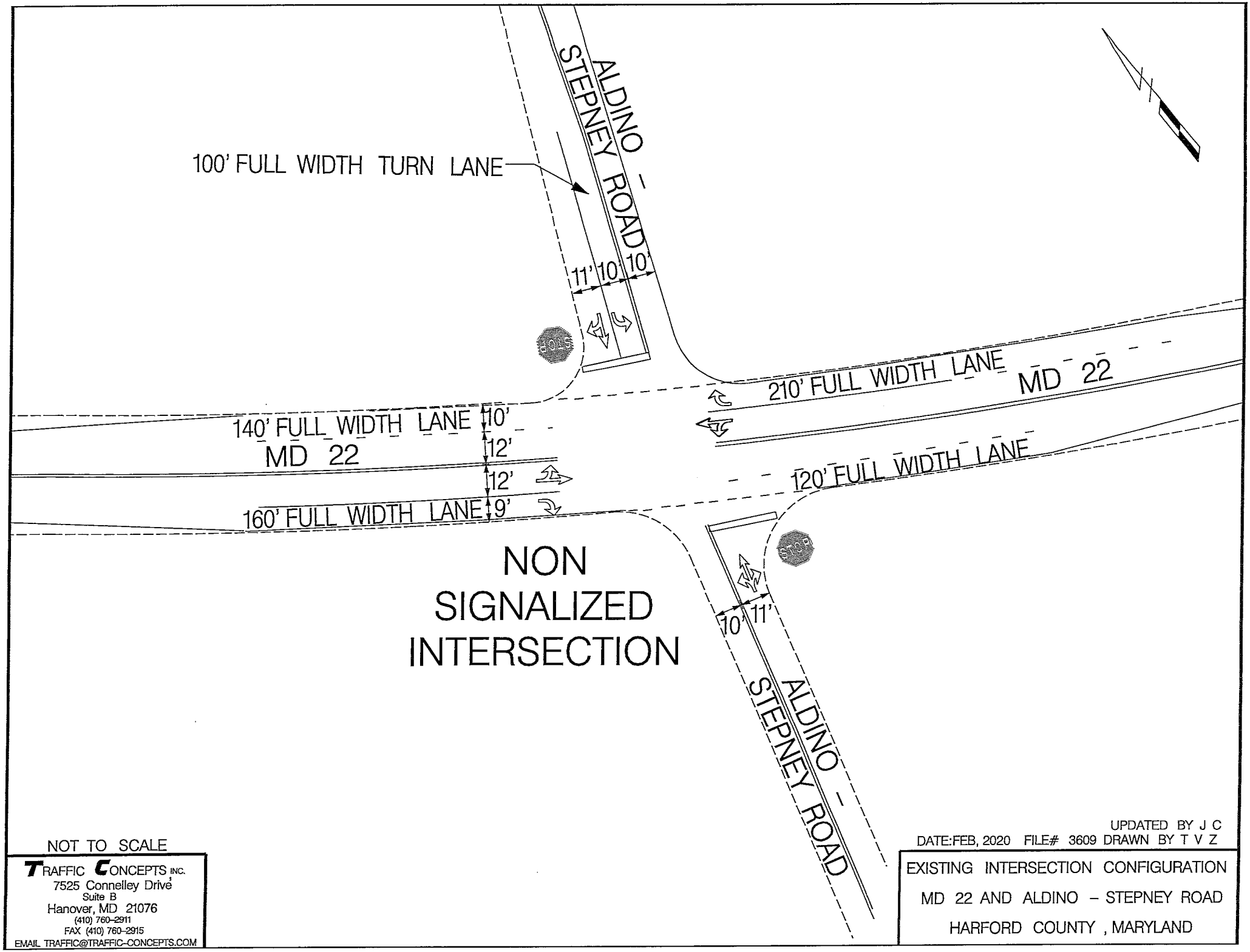

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UPDATED BY J C
DATE:FEB, 2020 FILE# 3609 DRAWN BY T V Z

EXISTING INTERSECTION CONFIGURATION
MD 22 AND ALDINO – STEPNEY ROAD
HARFORD COUNTY , MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: ALDINO STEPNEY RD @ ARNET WAY **CITY:** HARFORD

COUNT BY: A. NEUSE **DATE:** JANUARY 21, 2020

WEATHER: CLEAR **DAY:** TUESDAY

	ALDINO STEPNEY RD NORTHBOUND			ALDINO STEPNEY RD SOUTHBOUND			EASTBOUND			ARNET WAY WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15		1	3	0	9					10		0	23
7:15-7:30		3	7	1	2					7		0	20
7:30-7:45		7	5	1	4					11		5	33
7:45-8:00		4	3	0	4					8		2	21
8:00-8:15		3	4	0	3					14		0	24
8:15-8:30		1	1	0	1					7		2	12
8:30-8:45		5	2	1	2					12		0	22
8:45-9:00		1	3	0	3					9		1	17
PEAK HR 7:15-8:15 TOTALS		**17**	**19**	**2**	**13**					**40**		**7**	**PHF 0.74**
PM													
4:00-4:15		9	10	0	4					7		1	31
4:15-4:30		10	9	1	2					3		0	25
4:30-4:45		8	9	0	4					8		0	29
4:45-5:00		4	8	1	3					6		0	22
5:00-5:15		12	8	2	2					4		0	28
5:15-5:30		5	15	3	5					6		2	36
5:30-5:45		5	13	0	1					5		0	24
5:45-6:00		6	9	0	5					1		0	21
PEAK HR 4:30-5:30 TOTALS		**29**	**40**	**6**	**14**					**24**		**2**	**PHF 0.80**

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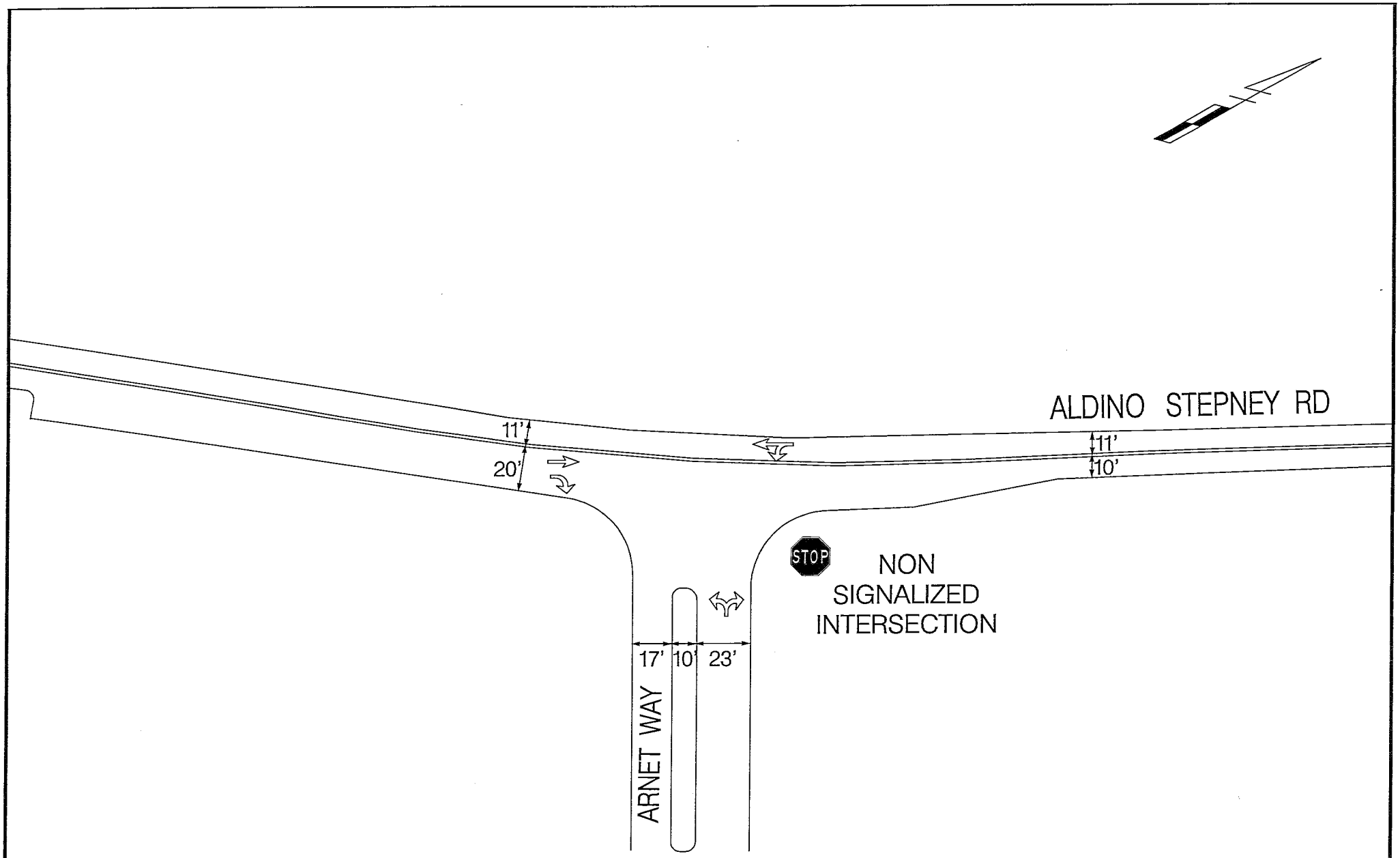

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EMAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

DATE:FEB, 2020 FILE# 3609 DRAWN BY JC

EXISTING INTERSECTION CONFIGURATION
ALDINO STEPNEY ROAD @ ARNET WAY
CITY OF ABERDEEN , MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: GILBERT RD @ LONG DR **COUNTY:** HARFORD

COUNT BY: B.PAGE **DATE:** JANUARY 21, 2020

WEATHER: CLEAR **DAY:** TUESDAY

	GILBERT RD NORTHBOUND			GILBERT RD SOUTHBOUND			LONG DR EASTBOUND			LONG DR WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	3	0	0	0	0	7	2	3	0	0	19	0	34
7:15-7:30	0	0	0	0	0	7	1	7	0	0	25	3	43
7:30-7:45	0	0	0	1	0	9	3	4	1	0	27	2	47
7:45-8:00	2	0	0	0	0	6	3	10	0	0	19	0	40
8:00-8:15	1	0	0	0	0	7	0	6	0	0	22	0	36
8:15-8:30	0	0	0	0	0	5	4	13	0	0	12	0	34
8:30-8:45	0	0	0	0	0	3	2	13	0	0	17	0	35
8:45-9:00	0	0	0	2	0	6	7	8	0	0	12	0	35
AM PEAK HR 7:15-8:15 TOTALS	**3**	**0**	**0**	**1**	**0**	**29**	**7**	**27**	**1**	**0**	**93**	**5**	**PHF 0.88**
PM													
4:00-4:15	0	0	0	0	0	5	7	18	0	0	9	1	40
4:15-4:30	0	0	0	0	0	5	9	22	0	0	8	2	46
4:30-4:45	1	0	0	2	0	3	4	24	0	1	9	1	45
4:45-5:00	0	0	0	1	0	6	11	32	0	0	8	1	59
5:00-5:15	0	1	0	1	0	3	7	24	0	0	12	0	48
5:15-5:30	0	0	0	2	0	2	4	32	0	0	16	1	57
5:30-5:45	1	0	0	0	1	5	6	17	0	0	20	2	52
5:45-6:00	0	1	0	0	0	6	10	18	0	0	13	1	49
PM PEAK HR 4:45-5:45 TOTALS	**1**	**1**	**0**	**4**	**1**	**16**	**28**	**105**	**0**	**0**	**56**	**4**	**PHF 0.92**

TRAFFIC CONCEPTS, INC.
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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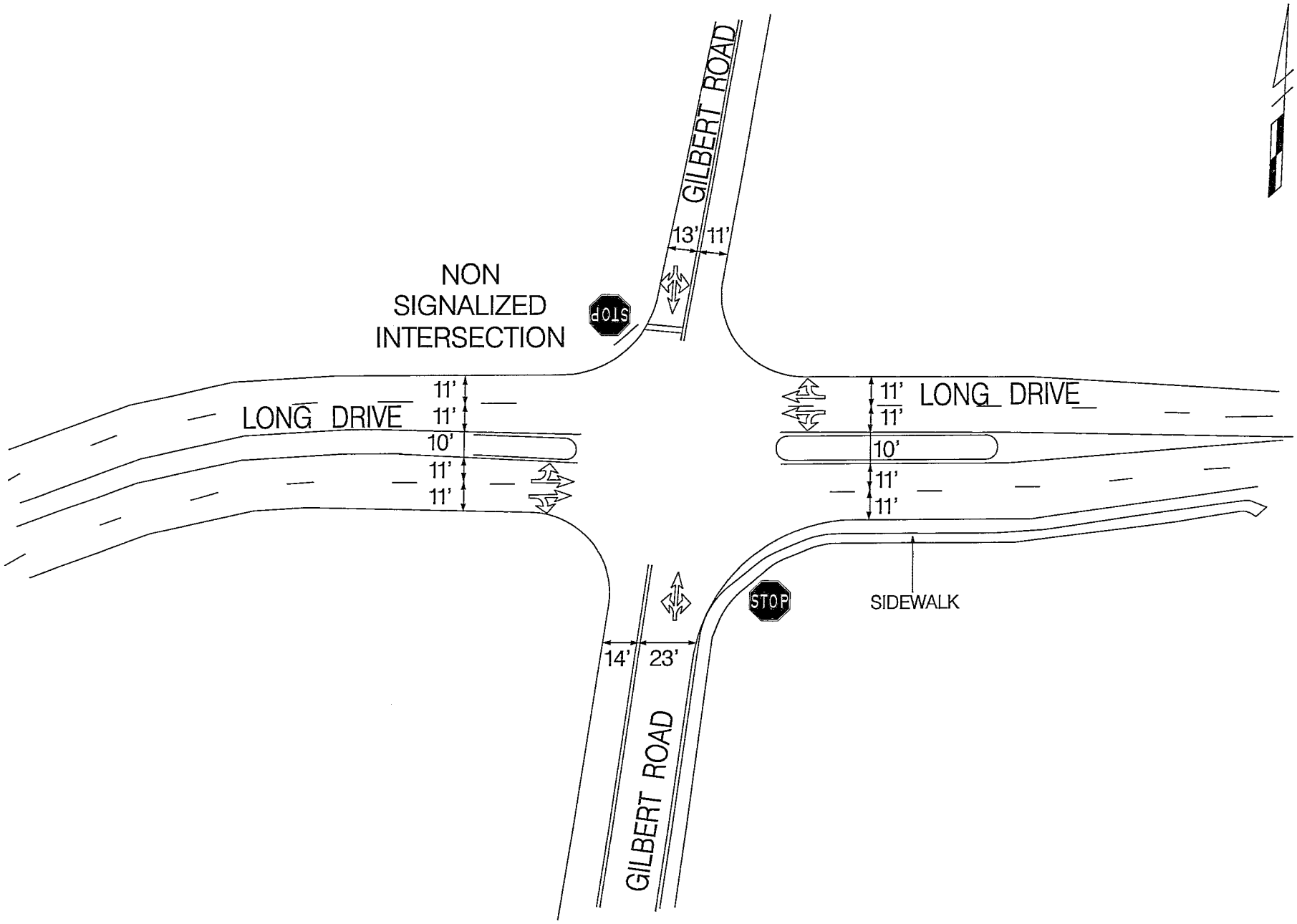

NOT TO SCALE

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DATE:FEB, 2020 FILE# 3609 DRAWN BY JC

EXISTING INTERSECTION CONFIGURATION

LONG DRIVE @ GILBERT ROAD

CITY OF ABERDEEN , MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: GILBERT RD @ MAXA RD

COUNTY: HARFORD

COUNT BY: B.SMITH

DATE: JANUARY 21, 2020

WEATHER: CLEAR

DAY: TUESDAY

	MAXA RD NORTHBOUND			GILBERT RD SOUTHBOUND			GILBERT RD EASTBOUND			WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	7	18			11	10	0		0				46
7:15-7:30	13	14			6	17	0		5				55
7:30-7:45	24	7			9	22	2		3				67
7:45-8:00	29	10			25	26	0		2				92
8:00-8:15	22	15			26	15	0		0				78
8:15-8:30	16	13			26	21	0		1				77
8:30-8:45	22	9			43	25	0		2				101
8:45-9:00	18	13			38	32	6		1				108
AM PEAK HR 8:00-9:00 TOTALS	**78**	**50**			**133**	**93**	**6**		**4**				**PHF 0.84**
PM													
4:00-4:15	5	6			8	3	2		3				27
4:15-4:30	1	13			5	1	5		1				26
4:30-4:45	6	12			5	4	2		3				32
4:45-5:00	3	15			4	0	4		3				29
5:00-5:15	1	7			8	1	2		1				20
5:15-5:30	6	4			9	0	1		3				23
5:30-5:45	7	9			4	1	1		6				28
5:45-6:00	0	6			6	2	4		8				26
PM PEAK HR 4:00-5:00 TOTALS	**15**	**46**			**22**	**8**	**13**		**10**				**PHF 0.89**

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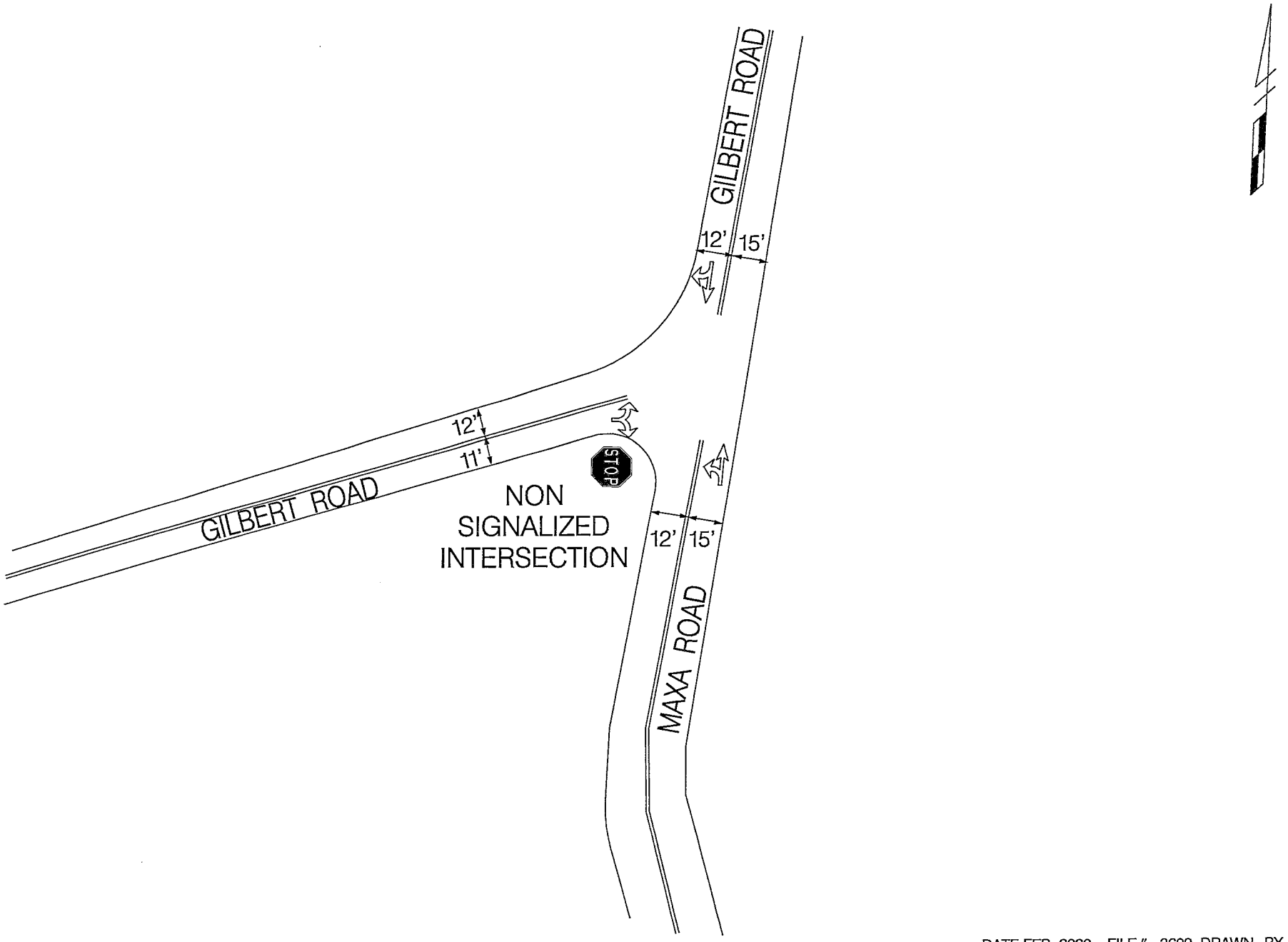

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DATE:FEB, 2020 FILE# 3609 DRAWN BY JC

EXISTING INTERSECTION CONFIGURATION

GILBERT ROAD @ MAXA ROAD

HARFORD COUNTY , MARYLAND

APPENDIX IV

STUDY PARAMETERS & CORRESPONDENCE

TRAFFIC CONCEPTS, INC.

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

December 26, 2019

Mr. Alex Rawls
Transportation Planner
Harford County Government
Department of Planning & Zoning
220 South Main Street
Bel Air, MD 21014

RE: Traffic Impact Study Scope of Services
Adams/Siebert Property
City of Aberdeen, MD

Dear Mr. Rawls:

Traffic Concepts, Inc is seeking concurrence on the study limits proposed for the Adams/Siebert residential subdivision. The intersections listed below are the intersections that were originally identified by the City of Aberdeen, as the key intersection for study.

- Gilbert Road @ site access points
- Gilbert Road @ Long Drive
- MD 22 @ Long Drive/Technology Drive.
- Gilbert Rd @ Maxa Rd

The following two intersections listed below were subsequently included into the study area by the City due to a proposed roadway that connects the Adams/Siebert Property to the Eagles Rest subdivision.

- MD 22 @ Aldino-Stepney Road
- Aldino-Stepney @ Arnet Way

The proposed road connection to Eagles Rest is a functional connection for peak hour school bus trips and for overall travel between the neighborhoods. However, this connection is not applicable to peak hour trips from home to work and back, which in this case defines a primary weekday peak hour trip. For the Adams/Siebert Property subdivision, the most direct route of travel for work-based peak hour trips is to use Gilbert Road to access the traffic signal at MD 22 and Long Drive. The City of Aberdeen DPW is in agreement with the stated peak hour travel pattern and is amenable to remove the added intersection, but only with the County's concurrence.

Therefore, we are requesting your concurrence of the original key study intersections that were determined by the City of Aberdeen.

Gilbert Road @ site access points
Gilbert Road @ Long Drive
MD 22 @ Long Drive/Technology Drive.
Gilbert Rd @ Maxa Rd

If you have any questions concerning the study limits, please do not hesitate to contact our office. We look forward to your reply.

Sincerely,

TRAFFIC CONCEPTS, INC.

Mark Keeley

Mark Keeley, PTP
Project Manager
MKeeley@traffic-concepts.com

Attachment: Concept Plan

cc: Mr. Gil Horwitz, President, Sage Ventures, LLC
Ms. Amy DiPietro, P.E., LEED AP, Principal MRA
Ms. Phyllis G. Grover, Director of Planning, City of Aberdeen
Mr. Taylor Whichard, City Engineer, City of Aberdeen
Mr. Rich Zeller, MDOT SHA District 4
Mr. John Vanazo, MDOT SHA District 4

APPENDIX V

SITE TRIP DATA

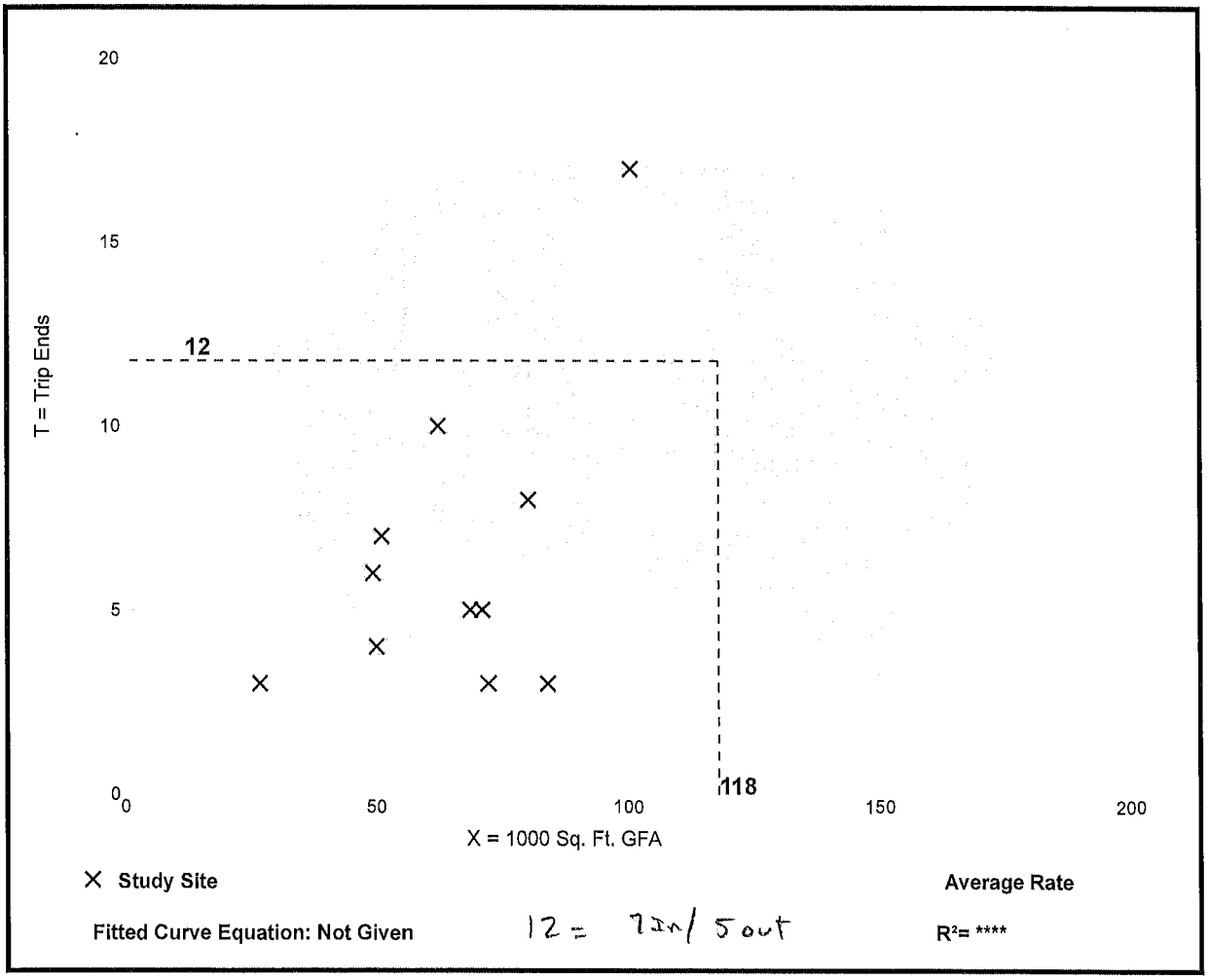
Mini-Warehouse
(151)

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: 11
Avg. 1000 Sq. Ft. GFA: 65
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.10	0.04 - 0.17	0.05

Data Plot and Equation



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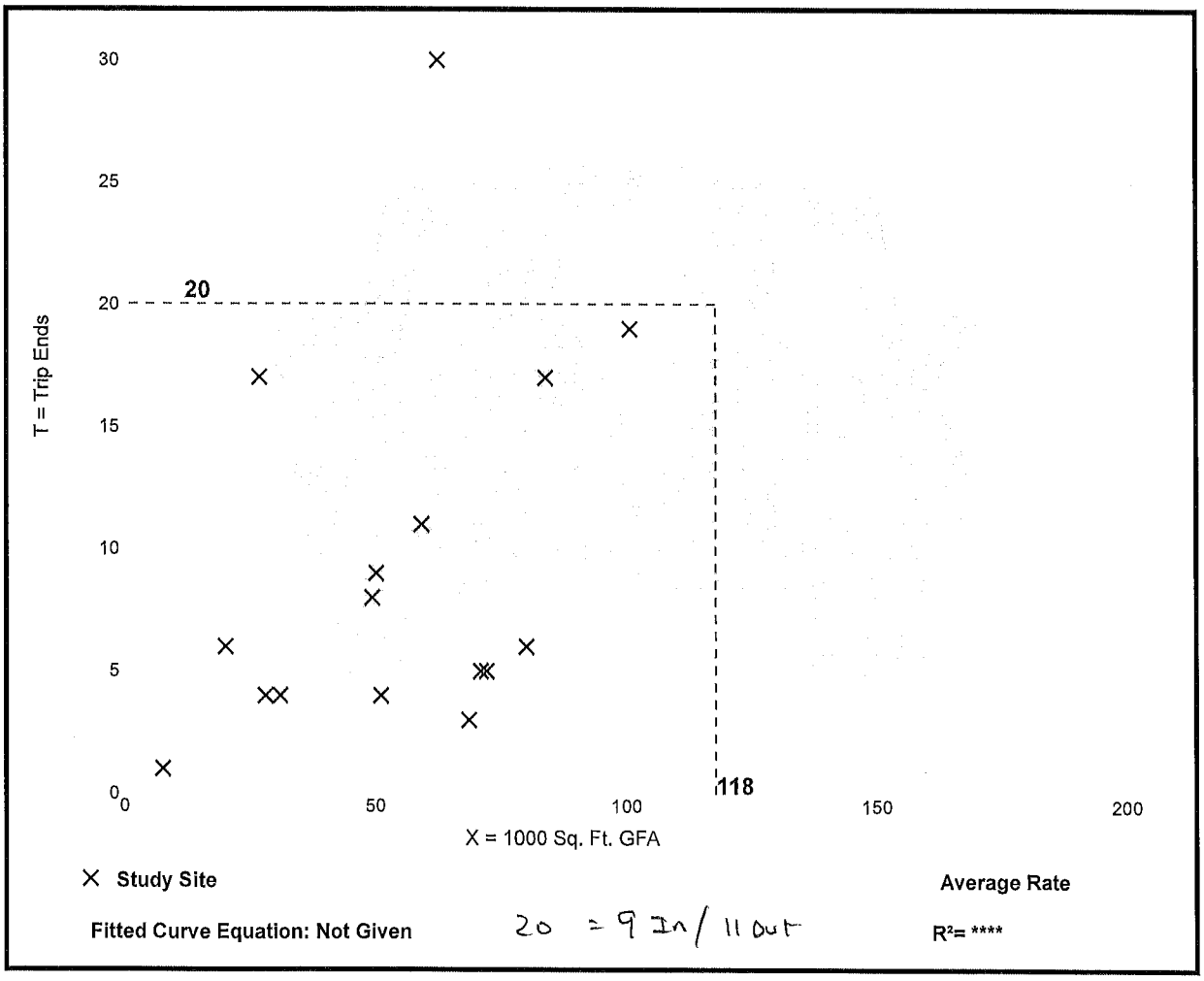
Mini-Warehouse
(151)

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: 16
Avg. 1000 Sq. Ft. GFA: 54
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.64	0.14

Data Plot and Equation



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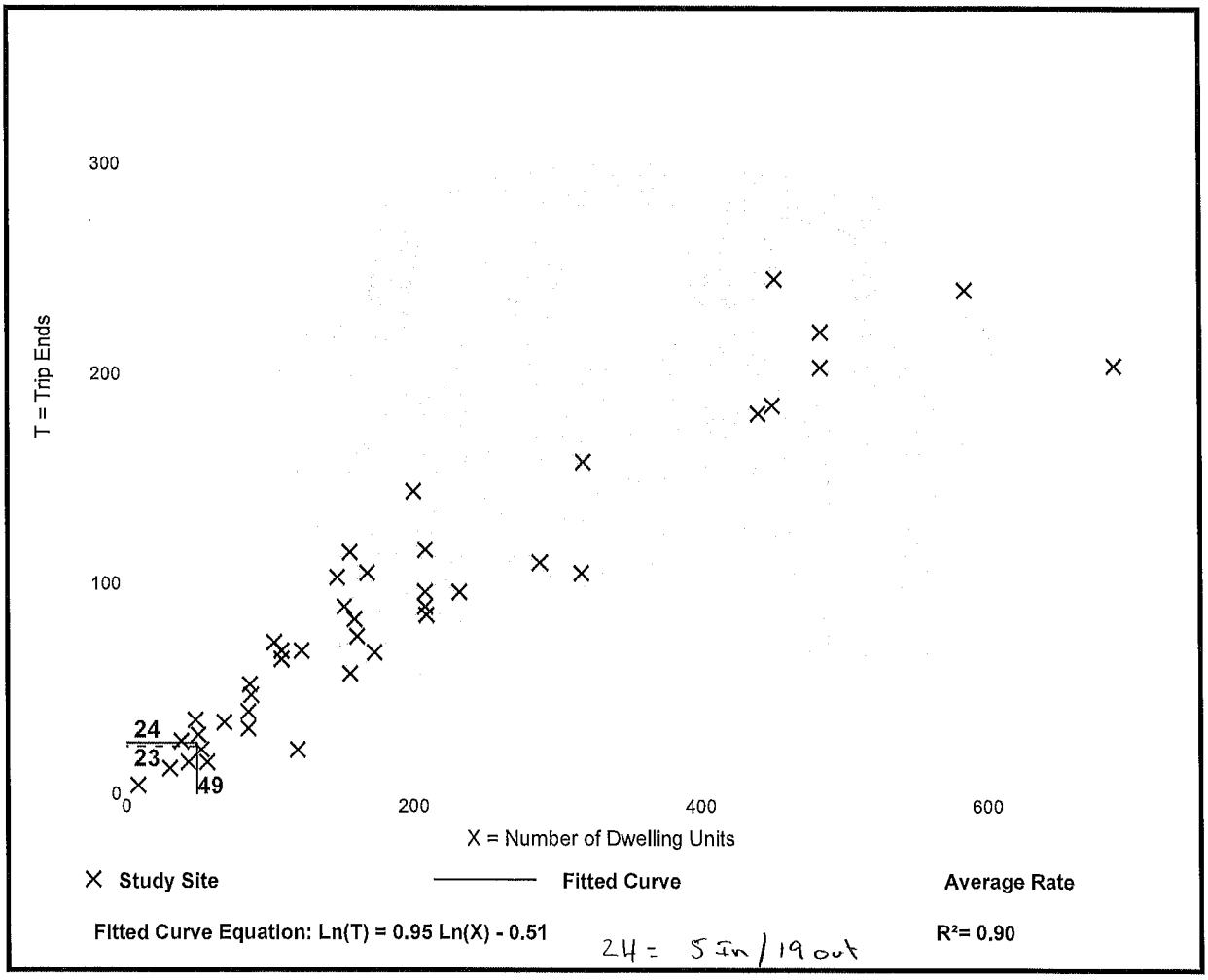
Multifamily Housing (Low-Rise)
(220)

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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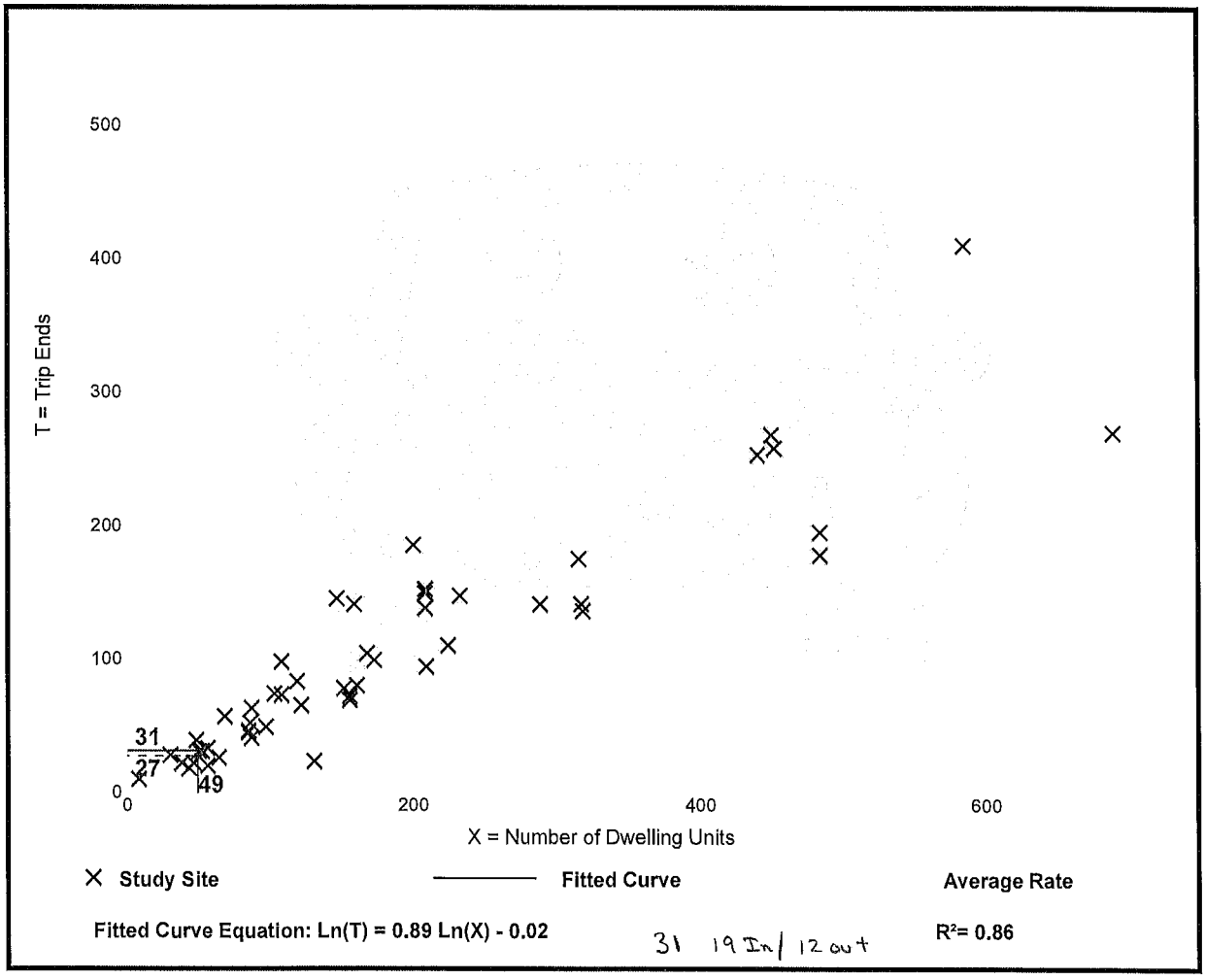
Multifamily Housing (Low-Rise)
(220)

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



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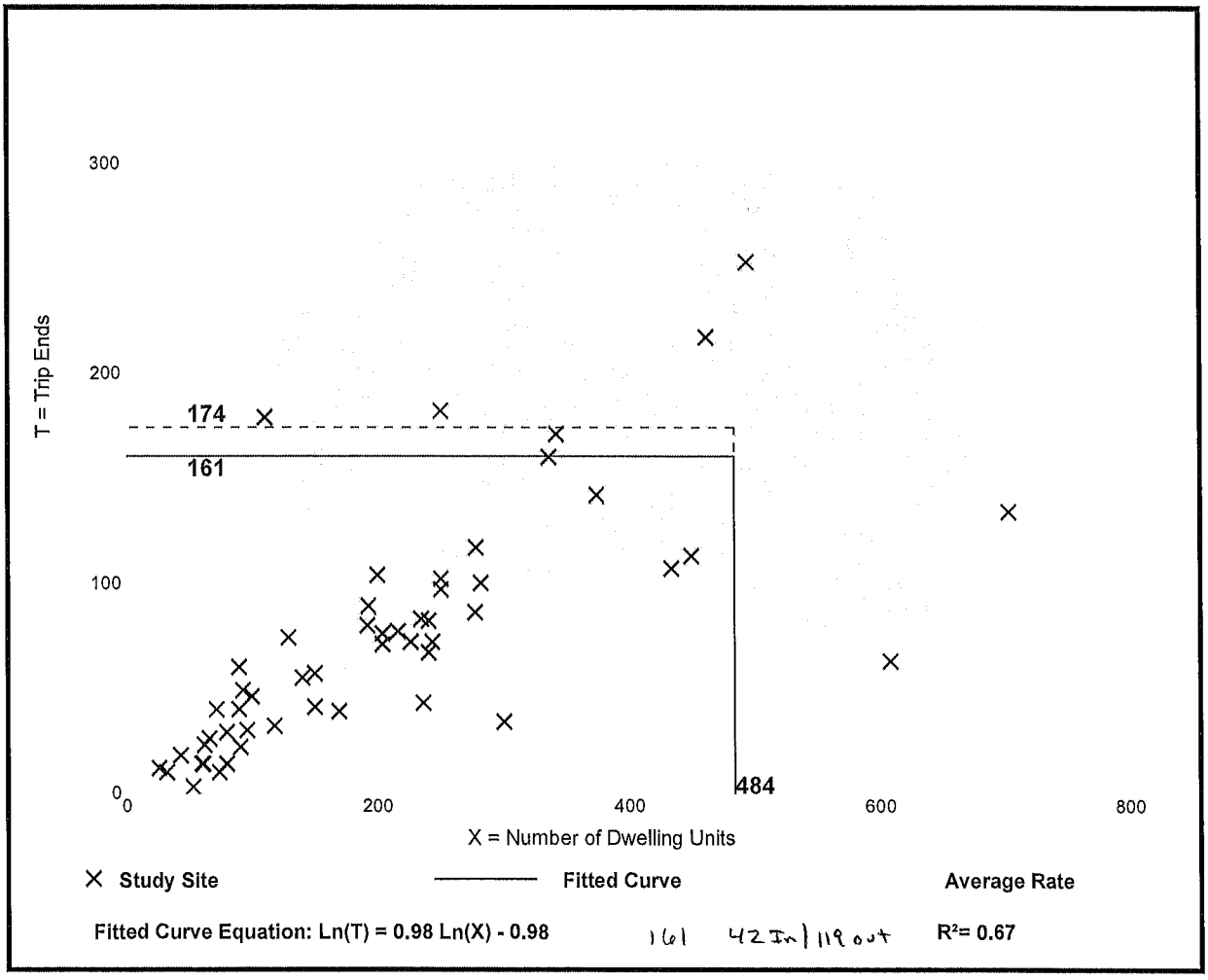
Multifamily Housing (Mid-Rise)
(221)

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: 53
Avg. Num. of Dwelling Units: 207
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



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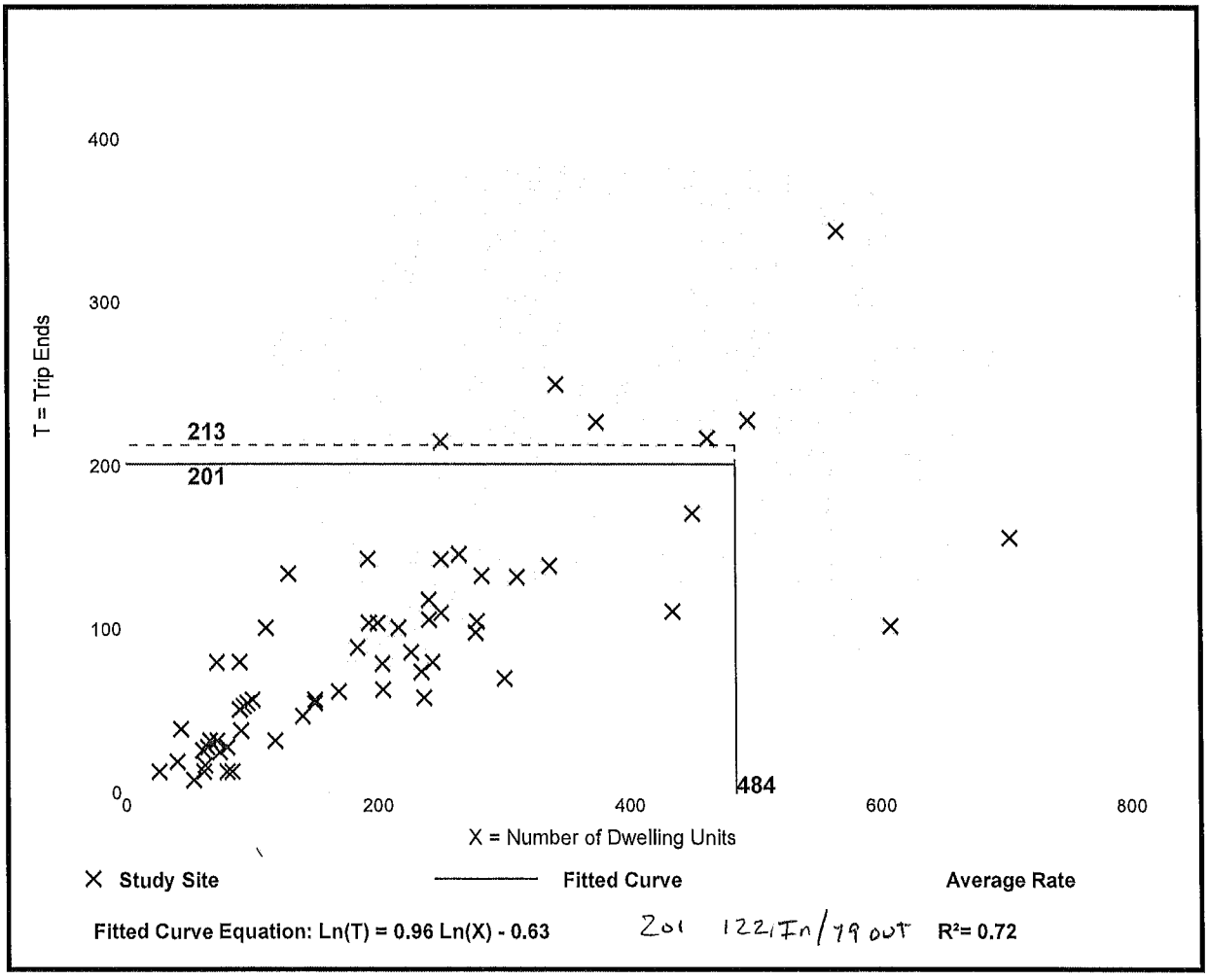
Multifamily Housing (Mid-Rise)
(221)

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: 60
Avg. Num. of Dwelling Units: 208
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



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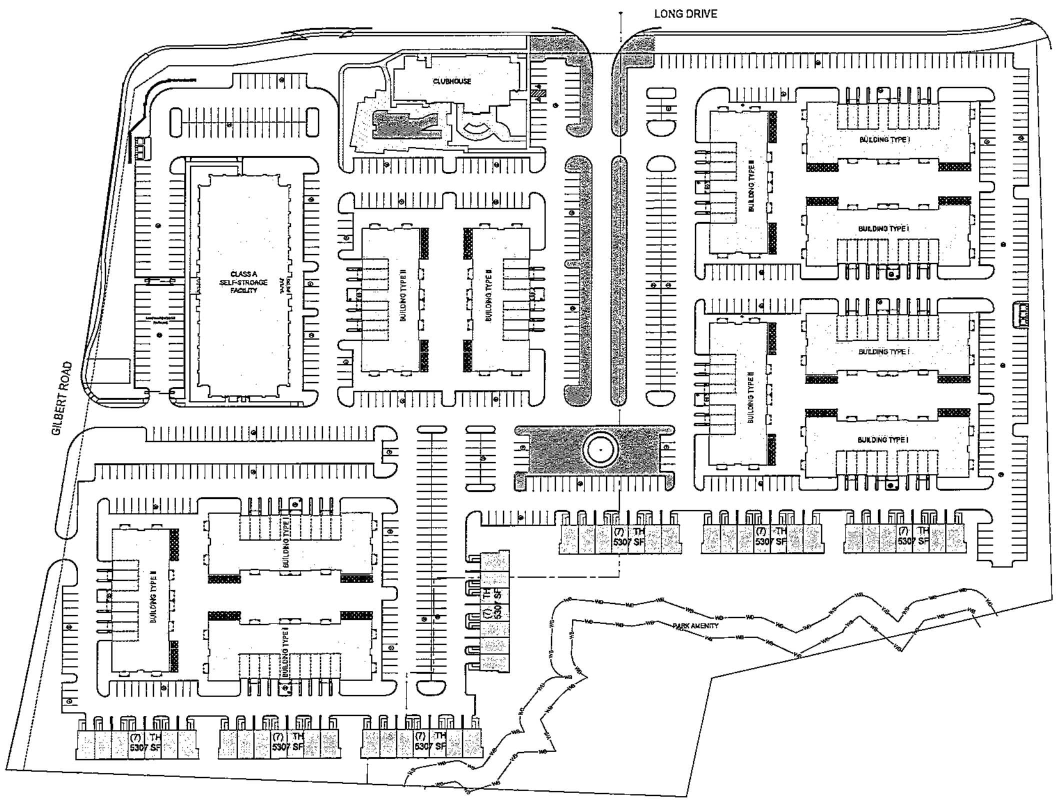

	DWELLING UNITS 1 BR	2 BR	TOTAL
APT BUILDING TYPE I (6)	14 X 6 = 84	30 X 6 = 180	264
APT BUILDING TYPE II (5)	28 X 5 = 140	16 X 5 = 80	220
TOTAL APT UNITS	224	260	484
TH UNITS (3 BR 20X36)	49		533
CLUBHOUSE	8,650 SF		

SELF STORAGE

SS BUILDING	117,792 SF

	PARKING REQ.	PARKING PROVIDED
APARTMENTS	847 (1.75 SP/DU)	912
TH	147 (3/DU)	98 (2/DU)
TOTAL RESIDENTIAL	994	1010
SELF STORAGE	28	

SITE AREAS

TOTAL SITE
GREEN SPACE
BUILDING COVERAGE
PARKING COVERAGE

SCALE 1"=60'

HEFFNER ARCHITECTS PC

CONCEPT PLAN 4b

THE COMMONS AT FIELDSIDE
ABERDEEN, MARYLAND
SAGE VENTURES

Date 11.13.20
Project 20009
Print Date 11.13.20
Revisions 11.25.2020 12.24.2020 12.29.2020

CP-4b