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TOWN HOMES AT FAIRFAX PRESBYTERIAN CHURCH TRAFFIC IMPACT STUDY

CITY OF FAIRFAX, VIRGINIA

FEBURARY 8, 2020

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TRAFFIC IMPACT STUDY
CITY OF FAIRFAX, VIRGINIA**

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SECTION 1 INTRODUCTION

This report presents the results of a traffic impact study conducted in support of the Townhouses at Fairfax Presbyterian Church (FPC) located in the City of Fairfax, Virginia. FPC in partnership with Habitat for Humanity of Northern Virginia (HabitatNOVA), Homestretch, and HomeAid is proposing to construct ten affordable town homes on the FPC site.

The FPC site is located at 10723 Main Street and composed of two parcels with a combined total of approximately 8.3 acres. The site is currently the location of FPC building and parking area. The building and associated parking will remain. The town homes would be built on two acres of the site and have access to Main Street by Presbyterian Way as shown on Figure 1-1.

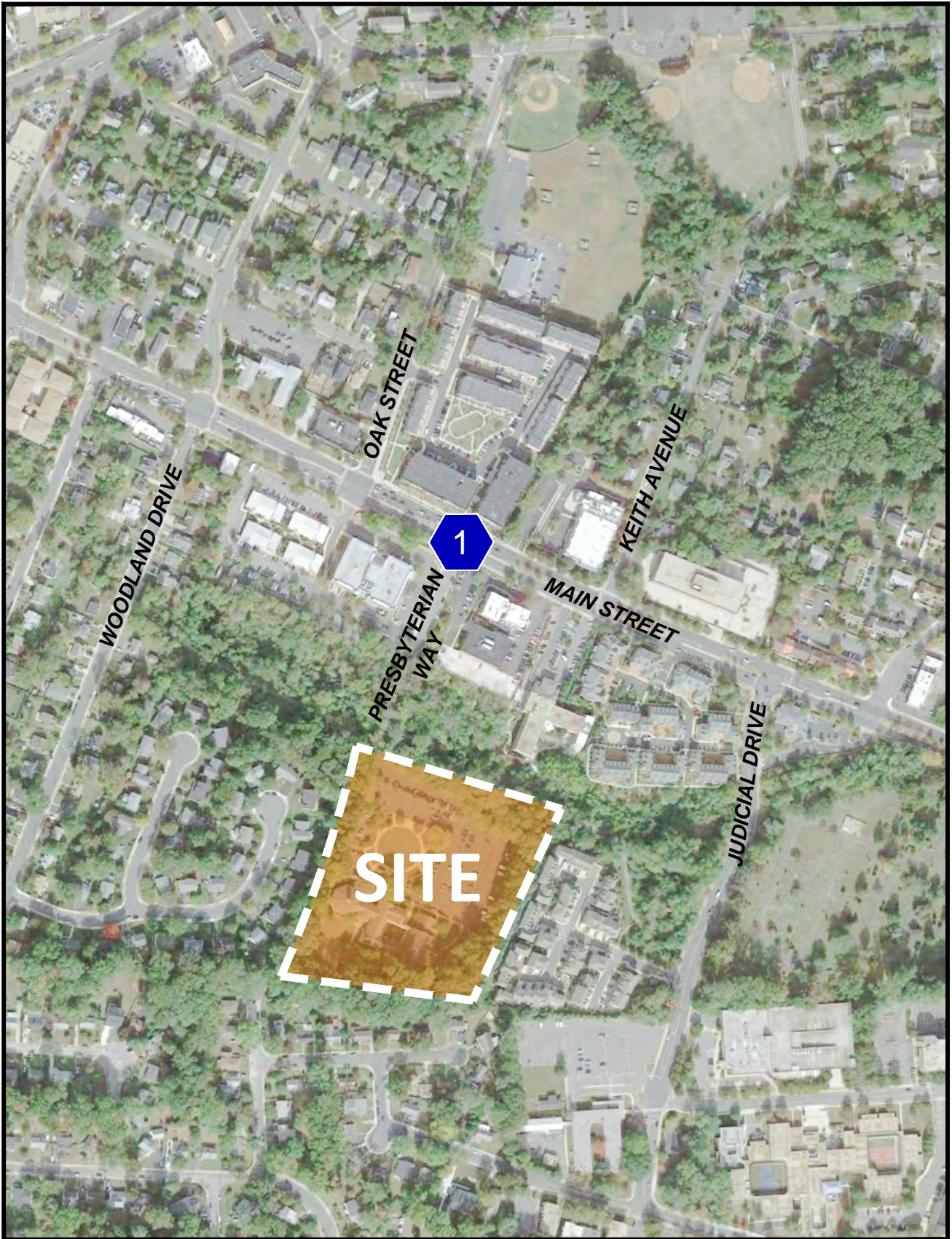
Based on the trips anticipated to be generated by the project, the project would not require a Virginia Department of Transportation (VDOT) Chapter 870 compliant traffic study.

This traffic study was completed in accordance with the City of Fairfax policies and guidelines and is intended to address the following issues:

1. Estimation of the number of new vehicle trips generated by the planned land use for the AM and PM commuter peak hours.
2. Determination of the effects of the proposed development on the surrounding local roadway network.

Tasks undertaken to prepare this study included the following:

1. A review of the concept plans for the project.
2. A field review of the study area to determine existing roadway and intersection geometrics and traffic controls, access opportunities and/or constraints, and general traffic conditions.
3. Peak hour turning movement counts at the Main Street and Presbyterian Way intersection.
4. Calculation of existing AM and PM commuter peak hour intersection levels of service at the study intersection.
5. Identification of the number of new peak hour trips that would be generated by the ten town homes based on standard Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition equations and rates.
6. Calculation of future levels of service at the study intersection with the project.




 Study Intersection

Figure 1-1
Site Location


NORTH

Town Homes at Fairfax Presbyterian Church
City of Fairfax, Virginia

SECTION 2 BACKGROUND INFORMATION

Location and Surrounding Uses

The site is regionally located a little over a 1/2 mile west of downtown Fairfax. Regional Access is provided by I-66 and I-495 (the Capital Beltway) via Fairfax Boulevard, Main Street and Chain Bridge Road.

Properties immediately south, west and east of the site are generally residential while commercial uses are predominantly located south of Main Street, north of the property.

Existing Transportation Network

Main Street is classified by the City's Comprehensive Plan as an arterial roadway and is constructed as a four-lane, median-divided roadway with a posted speed limit of 35 miles per hour. Based on 2018 VDOT AADT data, Main Street east of the Kamp Washington intersection carries approximately 38,000 vpd.

Presbyterian Way is a two-lane north-south undivided roadway providing access to commercial properties south of Main Street and then to FPC and the proposed town homes. The Main Street and Presbyterian Way intersection is an unsignalized, T-intersection.

Existing lane use and traffic controls at the study intersection is shown on Figure 2-1.

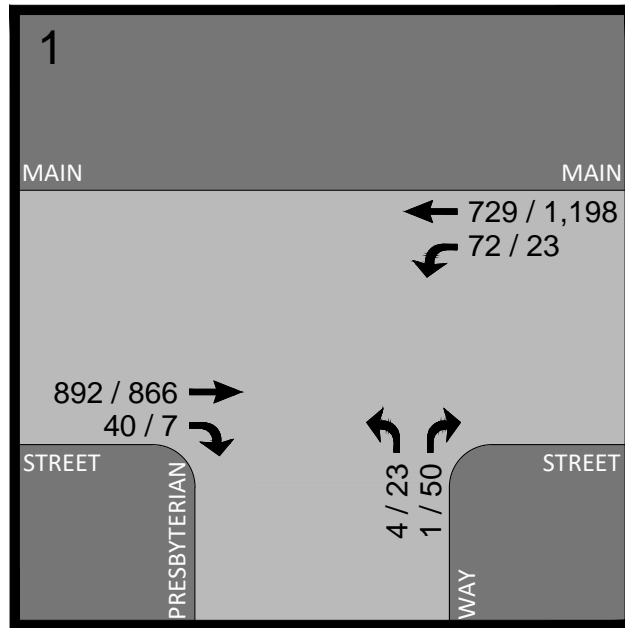
Public Transit Service. The site is served by the City of Fairfax's City-University Energysaver (CUE) Bus "Gold Route" along Main Street. This service provides access between the George Mason University (GMU) campus and the Vienna/Fairfax-GMU metrorail station, via University Drive, Chain Bridge Road, West Street, Main Street, Lee Highway, Jermantown Road, Orchard Street, Bevan Drive, Warwick Avenue and Fairfax Boulevard.

Pedestrian Facilities. Concrete sidewalks are provided along both sides of Main Street and Presbyterian Way up to the driveway for the church property. Marked crosswalks are provided across the north, south, and west legs of the Main Street at the Oak Street traffic signal. An uncontrolled crosswalk is provided on Main Street at Keith Avenue east of Presbyterian Way.

Future Transportation Network

The City of Fairfax's Comprehensive Plan provides recommended strategies for the improvement of the City's transportation network. In general, the Plan recommends that the City should strive to achieve a balance between allowing for the efficient movement of traffic and providing safe and convenient access to City businesses and residences for vehicles, pedestrians, bicycles, and other modes of transport.

EXISTING PEAK HOUR TRAFFIC VOLUMES



LANE USE AND TRAFFIC CONTROL

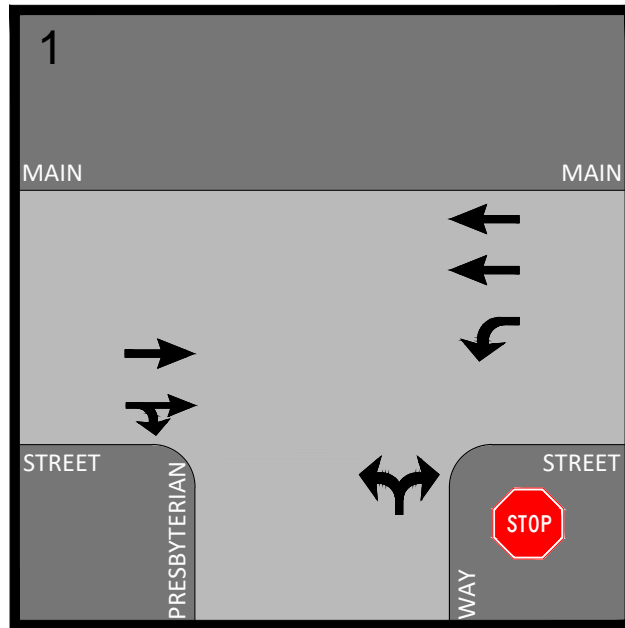


Figure 2-1
Existing Traffic Volumes and Lane Use

← Represents One Travel Lane
 Stop Sign

AM PEAK HOUR
 000 / 000 PM PEAK HOUR

NORTH

Town Homes at Fairfax Presbyterian Church
 City of Fairfax, Virginia

SECTION 3

STUDY SCOPE AND ANALYSIS PARAMETERS

Overview

The project is located south of Main Street on Presbyterian Way consisting of ten (10) town homes within the Fairfax Presbyterian Church property.

The primary objective of this study is to evaluate any potential impacts of the project on the surrounding street system, specifically the Main Street and Presbyterian Way unsignalized intersection.

Site Development Program

The proposal is to develop two (2) acres of vacant land with ten (10) affordable town homes. Some of the parking associated with the church will be replaced for the existing church.

Analysis Study Periods

The study intersection was analyzed under AM and PM commuter peak hour conditions.

Existing Traffic Volumes

Existing AM and PM commuter peak hour turning movement and pedestrian counts were conducted on Tuesday, March 17, 2020 from 6:00 AM to 9:00 AM and from 4:00 PM to 7:00 PM.

The existing peak hour traffic volumes are shown on Figure 2-1 and the count data included in Appendix A.

**SECTION 4
EXISTING CONDITIONS ANALYSIS**

Existing Intersection Levels of Service

Peak hour levels of service were calculated for the study intersection based on the existing lane use and traffic controls and traffic volumes shown on Figure 2-1 and the 2000 Highway Capacity Manual (HCM) analysis methodology for unsignalized intersections. The results are presented in Appendix B and summarized on Table 4-1.

The analysis indicates that the unsignalized study intersection northbound movement currently operates at level of service (LOS) “E” during the AM and a LOS “D” PM peak commuter periods. The westbound left turn movement operates at a LOS “B” during the AM and PM peak hours. The volume-to-capacity (v/c) ratio for the side street approach at the intersection are well below 0.85, indicating that the AM peak hour delay is the result of finding sufficient gaps for the left turn movement during the commuter peak hours. The adjacent Main Street and Oak Street signalized intersection will provide additional gaps for Presbyterian Way left turn movements, both in and out of the intersection. In addition, the Oak Street extension to Presbyterian Way provides an alternate route.

**Table 4-1
Fairfax Presbyterian Church Habitat Housing
Level of Service**

Intersection	Control	Movement	Existing		Total Future	
			AM Peak	PM Peak	AM Peak	PM Peak
Main Street at Presbyterian Way	Side Street Stop	WB Left	B (11.0)	B (10.2)	B (11.0)	B (10.2)
		NB Appr (v/c)	E (38.7) (0.04)	D (33.5) (0.39)	D (31.2) (0.06)	D (34.7) (0.41)

**SECTION 5
SITE ANALYSIS**

Overview

Trips anticipated to be generated by the project were forecasted and assigned to the study intersection. The generation, distribution, and assignment of site trips were based on the proposed development plan and program, as well as the site entrances in relation to the surrounding roadway network.

Trip Generation

Trip generation estimates for the AM and PM peak hours, as well as the average daily traffic, were estimated based on standard Institute of Transportation Engineers (ITE) trip generation rates, as published in the Trip Generation Manual, 10th edition. ITE categorizes town homes as “Multi-family Housing – Low-rise” (Land Use Code 220) and the results are shown in Table 5-1.

It should be noted that no reduction in site generated trips due to transit mode split was taken in this analysis. However, it is anticipated that future residents could use public transit opportunities available on Main Street.

**Table 5-1
Fairfax Presbyterian Church Habitat Housing
Trip Generation Analysis¹**

Use	ITE			AM Peak Hour			PM Peak Hour			ADT
	Land Use Code	Amount	Units	In	Out	Total	In	Out	Total	
Town Homes	220	10	DU	1	4	5	5	3	8	35

Notes:

1. Trips based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

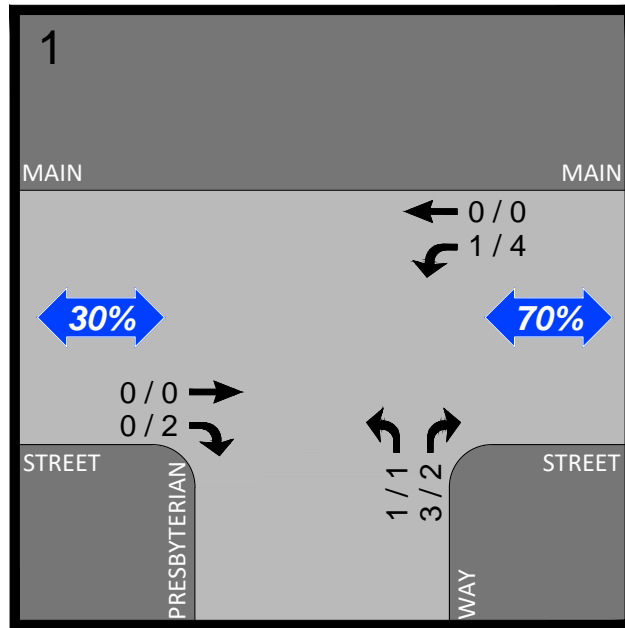
Site Trip Distribution

The distribution of site trips was based on analysis of existing traffic on Oak Street north of Main Street which primarily provides access to residential uses. The analysis indicates approximately 30-percent of the trips would travel to and from the site to the west and the majority of the trips would use Main Street to and from the east.

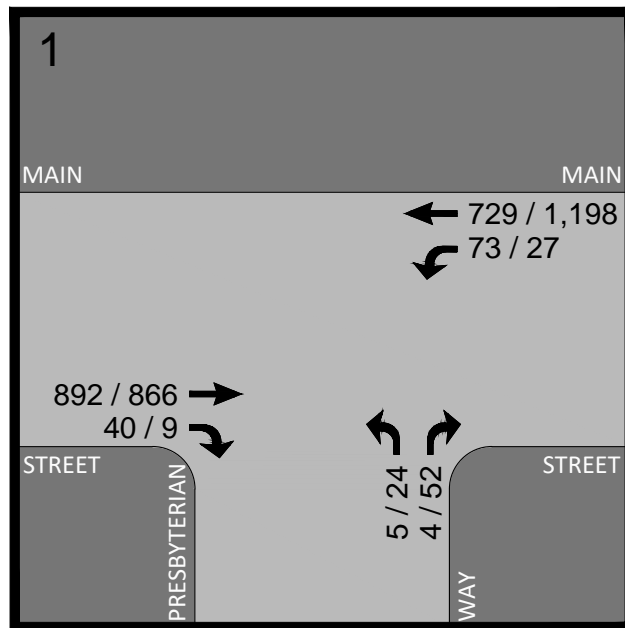
Site Trip Assignments

The assignments of site generated trips at the study intersection is shown on Figure 5-1.

SITE GENERATED TRAFFIC ASSIGNMENTS



TOTAL FUTURE PEAK HOUR TRAFFIC VOLUMES



XX% Site Trip Distribution

AM PEAK HOUR
PM PEAK HOUR
000 / 000



Figure 5-1
Site Generated and Total Future Traffic Volumes

Town Homes at Fairfax Presbyterian Church
City of Fairfax, Virginia



SECTION 6

ANALYSIS OF FUTURE CONDITIONS WITH SITE DEVELOPMENT

Total Future Traffic Forecasts

Site generate trip assignments shown on Figures 5-1 were added to existing peak hour traffic volumes shown on Figure 2-1 to yield Total Future Peak hour traffic forecasts, also shown on Figure 5-1.

Total Future Levels of Service with Proposed Development Plan

Future levels of service (LOS) with the proposed development plan were evaluated at the Main Street and Presbyterian Way intersection based on the future traffic volumes shown on Figure 5-1, the existing lane use and traffic control shown on Figure 2-1 and 2000 HCM unsignalized intersection analysis methodology using the Synchro 10 traffic analysis software. The results of the analyses are provided in Appendix B and summarized in Table 4-1.

As shown in Table 4-1, levels of service under future site development conditions would remain generally consistent with existing conditions demonstrating that the relatively minor addition of project trips will have little to no effect to the roadway network. It should be noted that the change in LOS during the AM peak hour between existing and total future conditions, represents an averaging of movement delays and since the future condition includes more right turns than left turns, the resulting LOS shows a minor decrease in delay. The v/c analysis demonstrates an expected increase with the minor increase in peak hour volume.

SECTION 8 CONCLUSIONS

Based on the results of this traffic impact study, the following may be concluded:

1. The Main Street and Presbyterian Way unsignalized intersection northbound movement currently operates at level of service (LOS) "E" during the AM and a LOS "D" PM peak commuter periods. The volume-to-capacity (v/c) ratio for the side street approach, however, is well below 0.85, indicating that the AM peak hour delay is the result of finding sufficient gaps for the left turn movements during the commuter peak hours. The adjacent Main Street and Oak Street signalized intersection will provide additional gaps for Presbyterian Way left turn movements both in and out of the intersection.
2. The ten (10) town homes proposed with the project are estimated to generate five(5) total AM peak hour trips and eight (8) PM peak hour trips upon buildout.
3. The Main Street and Presbyterian Way intersection LOS under future traffic conditions would remain generally consistent with existing conditions, demonstrating that the relatively minor addition of project trips will have little to no effect to the roadway network.

APPENDIX A

Existing Traffic Counts

Wells + Associates, Inc

Tysons, Virginia

Turning Movement Count - Total Vehicles

Time Period		Southbound SB Street				Westbound Main Street - 236				Northbound Presbyterian Way				Eastbound Main Street - 236				North & South	East & West	Total							
		Right	Thru	Left	U-Turn	Total	PHF	Right	Thru	Left	U-Turn	Total	PHF	Right	Thru	Left	U-Turn				Total	PHF					
15 Minute Volumes																											
6:00 AM	- 6:15 AM	0	0	0	0	0	0	45	8	0	53	0.685	2	0	1	0	3	0.75	17	497	0	0	514	0.874	3	925	928
6:15 AM	- 6:30 AM	0	0	0	0	0	0	87	17	0	104	0.827	2	0	2	0	4	0.5	16	554	0	0	570	0.869	4	1066	1070
6:30 AM	- 6:45 AM	0	0	0	0	0	0	100	4	0	104	0.89	3	0	2	0	5	0.625	17	605	0	0	622	0.859	5	1156	1161
6:45 AM	- 7:00 AM	0	0	0	0	0	0	145	5	0	150	0.834	4	0	4	0	8	0.667	28	694	0	0	722	0.785	8	1336	1344
7:00 AM	- 7:15 AM	0	0	0	0	0	0	132	6	0	138	0.782	3	0	5	0	8	0.667	39	790	0	0	829	0.816	8	1511	1519
7:15 AM	- 7:30 AM	0	0	0	0	0	0	139	3	0	142	0.83	2	0	4	0	6	0.5	39	852	0	0	891	0.877	6	1615	1621
7:30 AM	- 7:45 AM	0	0	0	0	0	0	166	18	0	184	0.914	1	0	4	0	5	0.417	40	892	0	0	932	0.917	5	1733	1738
7:45 AM	- 8:00 AM	0	0	0	0	0	0	190	28	0	218	0.903	0	0	4	0	4	0.5	32	898	0	0	930	0.915	4	1721	1725
8:00 AM	- 8:15 AM	0	0	0	0	0	0	167	13	0	180	0.897	2	0	4	0	6	0.5	26	891	0	0	917	0.951	6	1703	1709
8:15 AM	- 8:30 AM	0	0	0	0	0	0	206	13	0	219	0.891	50	0	21	0	71	0.592	9	864	0	0	873	0.929	71	2070	2141
8:30 AM	- 8:45 AM	0	0	0	0	0	0	161	13	0	174	0.908	50	0	23	0	73	0.608	7	866	0	0	873	0.929	73	2094	2167
8:45 AM	- 9:00 AM	0	0	0	0	0	0	201	12	0	213	0.966	42	0	22	0	64	0.533	8	888	0	0	896	0.953	64	2090	2154
4:00 PM	- 4:15 PM	0	0	0	0	0	0	279	4	0	283	0.949	25	0	17	0	42	0.618	8	862	0	0	870	0.926	42	2043	2085
4:15 PM	- 4:30 PM	0	0	0	0	0	0	332	4	0	336	0.922	31	0	13	0	44	0.647	8	847	0	0	855	0.91	44	1995	2039
4:30 PM	- 4:45 PM	0	0	0	0	0	0	281	7	0	288	0.864	28	0	10	0	38	0.864	8	805	0	0	813	0.888	38	1917	1955
4:45 PM	- 5:00 PM	0	0	0	0	0	0	280	10	0	290	0.864	24	0	14	0	38	0.864	5	782	0	0	787	0.969	38	1810	1848
5:00 PM	- 5:15 PM	0	0	0	0	0	0	305	2	0	307	0.889	23	0	13	0	36	0.818	5	774	0	0	779	0.959	36	1743	1779
5:15 PM	- 5:30 PM	0	0	0	0	0	0	305	4	0	309	0.818	23	0	13	0	36	0.818	5	774	0	0	779	0.959	36	1743	1779
5:30 PM	- 5:45 PM	0	0	0	0	0	0	266	1	0	267	0.843	23	0	13	0	36	0.818	5	727	0	0	732	0.901	36	1646	1682
5:45 PM	- 6:00 PM	0	0	0	0	0	0	254	3	0	257																
6:00 PM	- 6:15 PM	0	0	0	0	0	0	271	0	0	271																
6:15 PM	- 6:30 PM	0	0	0	0	0	0	228	0	0	228																
6:30 PM	- 6:45 PM	0	0	0	0	0	0	208	0	0	208																
6:45 PM	- 7:00 PM	0	0	0	0	0	0	204	3	0	207																
Total		0	0	0	0	0	0	4952	178	0	5130		111	0	57	0	168		104	4616	0	0	4720		168	9850	10018
One Hour Volumes																											
6:00 AM	- 7:00 AM	0	0	0	0	0	0	377	34	0	411	0.685	2	0	1	0	3	0.75	17	497	0	0	514	0.874	3	925	928
6:15 AM	- 7:15 AM	0	0	0	0	0	0	464	32	0	496	0.827	2	0	2	0	4	0.5	16	554	0	0	570	0.869	4	1066	1070
6:30 AM	- 7:30 AM	0	0	0	0	0	0	516	18	0	534	0.89	3	0	2	0	5	0.625	17	605	0	0	622	0.859	5	1156	1161
6:45 AM	- 7:45 AM	0	0	0	0	0	0	582	32	0	614	0.834	4	0	4	0	8	0.667	28	694	0	0	722	0.785	8	1336	1344
7:00 AM	- 8:00 AM	0	0	0	0	0	0	627	55	0	682	0.782	3	0	5	0	8	0.667	39	790	0	0	829	0.816	8	1511	1519
7:15 AM	- 8:15 AM	0	0	0	0	0	0	662	62	0	724	0.83	2	0	4	0	6	0.5	39	852	0	0	891	0.877	6	1615	1621
7:30 AM	- 8:30 AM	0	0	0	0	0	0	729	72	0	801	0.914	1	0	4	0	5	0.417	40	892	0	0	932	0.917	5	1733	1738
7:45 AM	- 8:45 AM	0	0	0	0	0	0	724	67	0	791	0.903	0	0	4	0	4	0.5	32	898	0	0	930	0.915	4	1721	1725
8:00 AM	- 9:00 AM	0	0	0	0	0	0	735	51	0	786	0.897	2	0	4	0	6	0.5	26	891	0	0	917	0.951	6	1703	1709
4:00 PM	- 5:00 PM	0	0	0	0	0	0	1172	25	0	1197	0.891	50	0	21	0	71	0.592	9	864	0	0	873	0.929	71	2070	2141
4:15 PM	- 5:15 PM	0	0	0	0	0	0	1198	23	0	1221	0.908	50	0	23	0	73	0.608	7	866	0	0	873	0.929	73	2094	2167
4:30 PM	- 5:30 PM	0	0	0	0	0	0	1171	23	0	1194	0.966	42	0	22	0	64	0.533	8	888	0	0	896	0.953	64	2090	2154
4:45 PM	- 5:45 PM	0	0	0	0	0	0	1156	17	0	1173	0.949	25	0	17	0	42	0.618	8	862	0	0	870	0.926	42	2043	2085
5:00 PM	- 6:00 PM	0	0	0	0	0	0	1130	10	0	1140	0.922	31	0	13	0	44	0.647	8	847	0	0	855	0.91	44	1995	2039
5:15 PM	- 6:15 PM	0	0	0	0	0	0	1096	8	0	1104	0.893	28	0	10	0	38	0.864	8	805	0	0	813	0.888	38	1917	1955
5:30 PM	- 6:30 PM	0	0	0	0	0	0	1019	4	0	1023	0.944	24	0	14	0	38	0.864	5	782	0	0	787	0.969	38	1810	1848
5:45 PM	- 6:45 PM	0	0	0	0	0	0	961	3	0	964	0.889	23	0	13	0	36	0.818	5	774	0	0	779	0.959	36	1743	1779
6:00 PM	- 7:00 PM	0	0	0	0	0	0	911	3	0	914	0.843	23	0	13	0	36	0.818	5	727	0	0	732	0.901	36	1646	1682

APPENDIX B

Existing and Future HCM Analysis Worksheets

HCM Unsignalized Intersection Capacity Analysis

1: Presbyterian Way & Main Street

12/14/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (veh/h)	892	40	72	729	4	1
Future Volume (Veh/h)	892	40	72	729	4	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	970	43	78	792	4	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1013		1544	506
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1013		1544	506
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		96	100
cM capacity (veh/h)			680		93	511
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	647	366	78	396	396	5
Volume Left	0	0	78	0	0	4
Volume Right	0	43	0	0	0	1
cSH	1700	1700	680	1700	1700	112
Volume to Capacity	0.38	0.22	0.11	0.23	0.23	0.04
Queue Length 95th (ft)	0	0	10	0	0	3
Control Delay (s)	0.0	0.0	11.0	0.0	0.0	38.7
Lane LOS	B			E		
Approach Delay (s)	0.0		1.0			38.7
Approach LOS				E		
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			43.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Presbyterian Way & Main Street

12/14/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (veh/h)	866	7	23	1198	23	50
Future Volume (Veh/h)	866	7	23	1198	23	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	941	8	25	1302	25	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			949		1646	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			949		1646	474
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		71	90
cM capacity (veh/h)			719		87	536
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	627	322	25	651	651	79
Volume Left	0	0	25	0	0	25
Volume Right	0	8	0	0	0	54
cSH	1700	1700	719	1700	1700	204
Volume to Capacity	0.37	0.19	0.03	0.38	0.38	0.39
Queue Length 95th (ft)	0	0	3	0	0	43
Control Delay (s)	0.0	0.0	10.2	0.0	0.0	33.5
Lane LOS			B			D
Approach Delay (s)	0.0		0.2			33.5
Approach LOS						D
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			44.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Presbyterian Way & Main Street

12/14/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (veh/h)	892	40	73	729	5	4
Future Volume (Veh/h)	892	40	73	729	5	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	970	43	79	792	5	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1013		1546	506
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1013		1546	506
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		95	99
cM capacity (veh/h)			680		93	511
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	647	366	79	396	396	9
Volume Left	0	0	79	0	0	5
Volume Right	0	43	0	0	0	4
cSH	1700	1700	680	1700	1700	146
Volume to Capacity	0.38	0.22	0.12	0.23	0.23	0.06
Queue Length 95th (ft)	0	0	10	0	0	5
Control Delay (s)	0.0	0.0	11.0	0.0	0.0	31.2
Lane LOS	B			D		
Approach Delay (s)	0.0		1.0			31.2
Approach LOS				D		
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			43.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Presbyterian Way & Main Street

12/14/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Volume (veh/h)	866	9	27	1198	24	52
Future Volume (Veh/h)	866	9	27	1198	24	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	941	10	29	1302	26	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			951			1655 476
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			951			1655 476
tC, single (s)			4.1			6.8 6.9
tC, 2 stage (s)						
tF (s)			2.2			3.5 3.3
p0 queue free %			96			70 89
cM capacity (veh/h)			718			85 536
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	627	324	29	651	651	83
Volume Left	0	0	29	0	0	26
Volume Right	0	10	0	0	0	57
cSH	1700	1700	718	1700	1700	202
Volume to Capacity	0.37	0.19	0.04	0.38	0.38	0.41
Queue Length 95th (ft)	0	0	3	0	0	47
Control Delay (s)	0.0	0.0	10.2	0.0	0.0	34.7
Lane LOS	B			D		
Approach Delay (s)	0.0		0.2			34.7
Approach LOS						D
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			44.3%	ICU Level of Service		A
Analysis Period (min)			15			