

final report

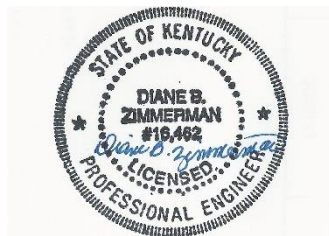
October 14, 2021

Traffic Impact Study

*Apartments
3223 & 3325 Freys Hill Road
Louisville, KY*

Prepared for

Louisville Metro Planning Commission



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INTRODUCTION

The development plan for an apartment community on Freys Hill Road in Louisville, KY shows 312 apartment units. **Figure 1** displays a map of the site. Access to the community will be from two entrances on Freys Hill Road. The northern entrance is a shared access and will primarily provide emergency access to the development. The purpose of this study is to examine the traffic impacts of the development upon the adjacent highway system. For this study, the impact area was defined to be the intersections of Freys Hill Road with Westport Road and the proposed entrances on Freys Hill Road.



Figure 1. Site Map

EXISTING CONDITIONS

Freys Hill Road is a Metro-maintained road with an estimated 2021 ADT of 4,500 vehicles per day between the Wemberley Hill Boulevard and Westport Road, as estimated from the turning movement count at Wemberley Hill Boulevard. The road has two nine-foot lanes and a one-foot shoulder. The speed limit is 35 mph. There is a sidewalk on the east side. The intersection with Westport Road is controlled with a traffic signal. There are left turn lanes on each approach at the intersection.

Peak hour traffic count for the intersections were obtained on August 24, 2021. The a.m. peak was 7:45 to 8:45 and the p.m. peak hour was 4:45 to 5:45 p.m. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes. The Appendix contains the full count data.

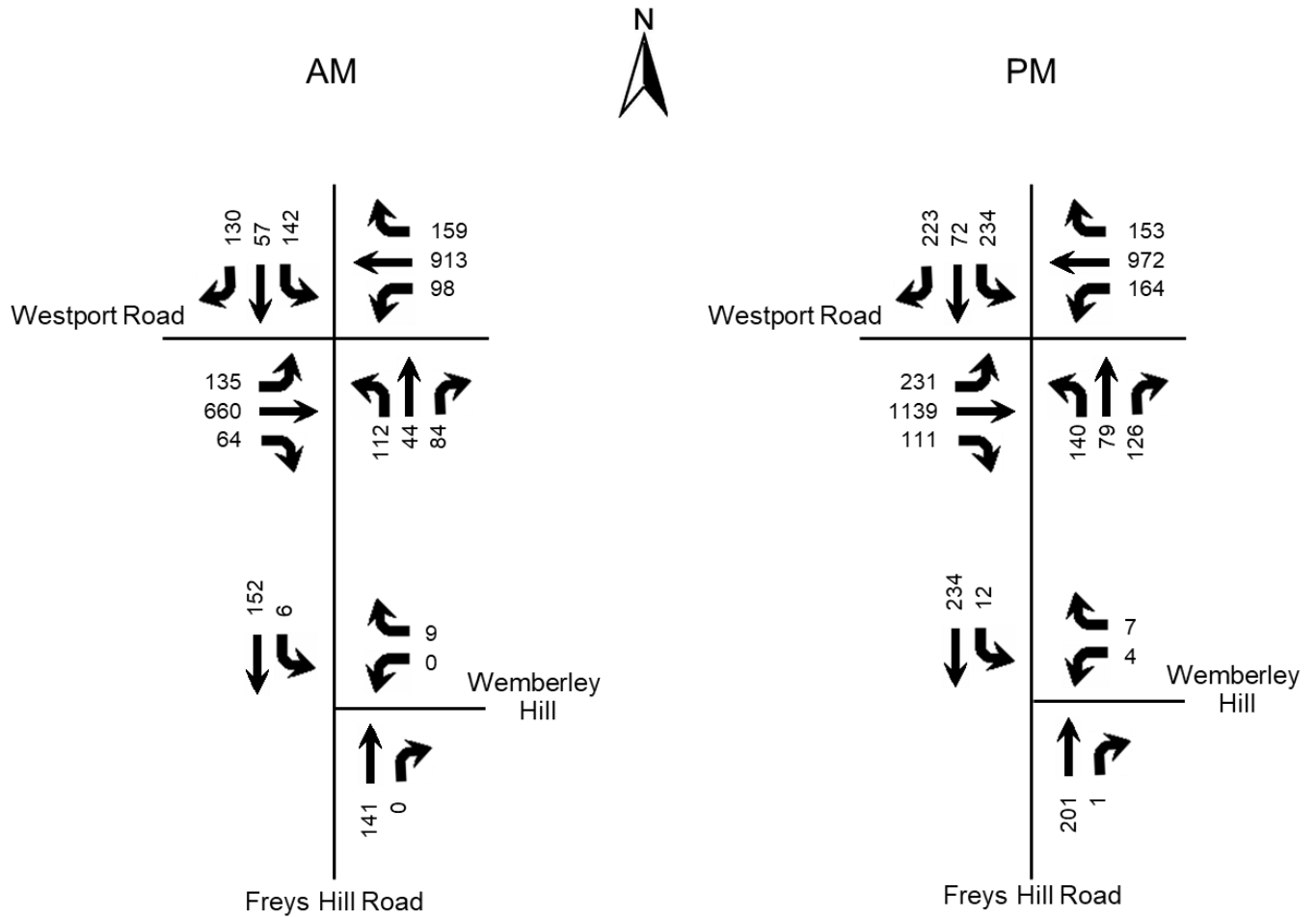


Figure 2. Existing Peak Hour Volumes

FUTURE CONDITIONS

The project completion date is 2024. A review of the Kentucky Transportation Cabinet count stations in the vicinity (095 and 096) revealed moderate growth had occurred. An annual growth rate of 1.5% was selected and applied. Trip generation for 45,764 square feet of mini-warehouse storage has been included on the existing driveway serving 3331 Freys Hill Road. This access driveway is exit only for the storage facility. **Figure 3** illustrates the 2024 traffic volumes without the development.

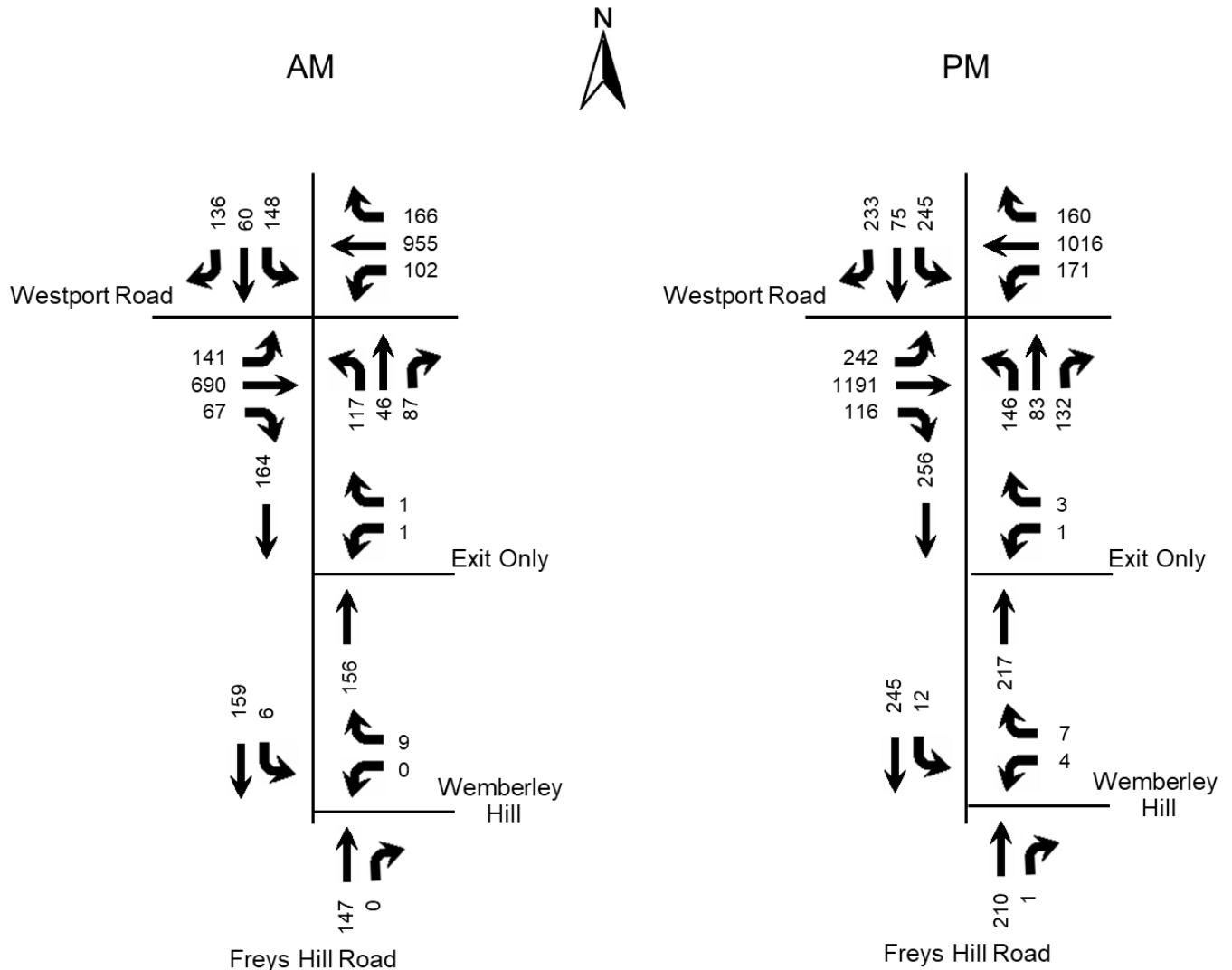


Figure 3. 2024 Peak Hour No Build Volumes

TRIP GENERATION

The Institute of Transportation Engineers [Trip Generation Manual](#), 11th Edition contains trip generation rates for a wide range of developments. The land use of “Multifamily Housing Low-Rise (220)” was reviewed and determined to be the best match. The trip generation results are listed in **Table 1**. The trips were assigned to the highway network with the percentages shown in **Figure 4**. **Figure 5** shows the trips generated by this development and distributed throughout the road network during the peak hours. **Figure 6** displays the individual turning movements for the peak hours when the development is completed.

Table 1. Peak Hour Trips Generated by Site

Land Use	A.M. Peak Hour			P.M. Peak Hour		
	Trips	In	Out	Trips	In	Out
Multifamily Housing Low-Rise (312 units)	120	29	91	155	98	57

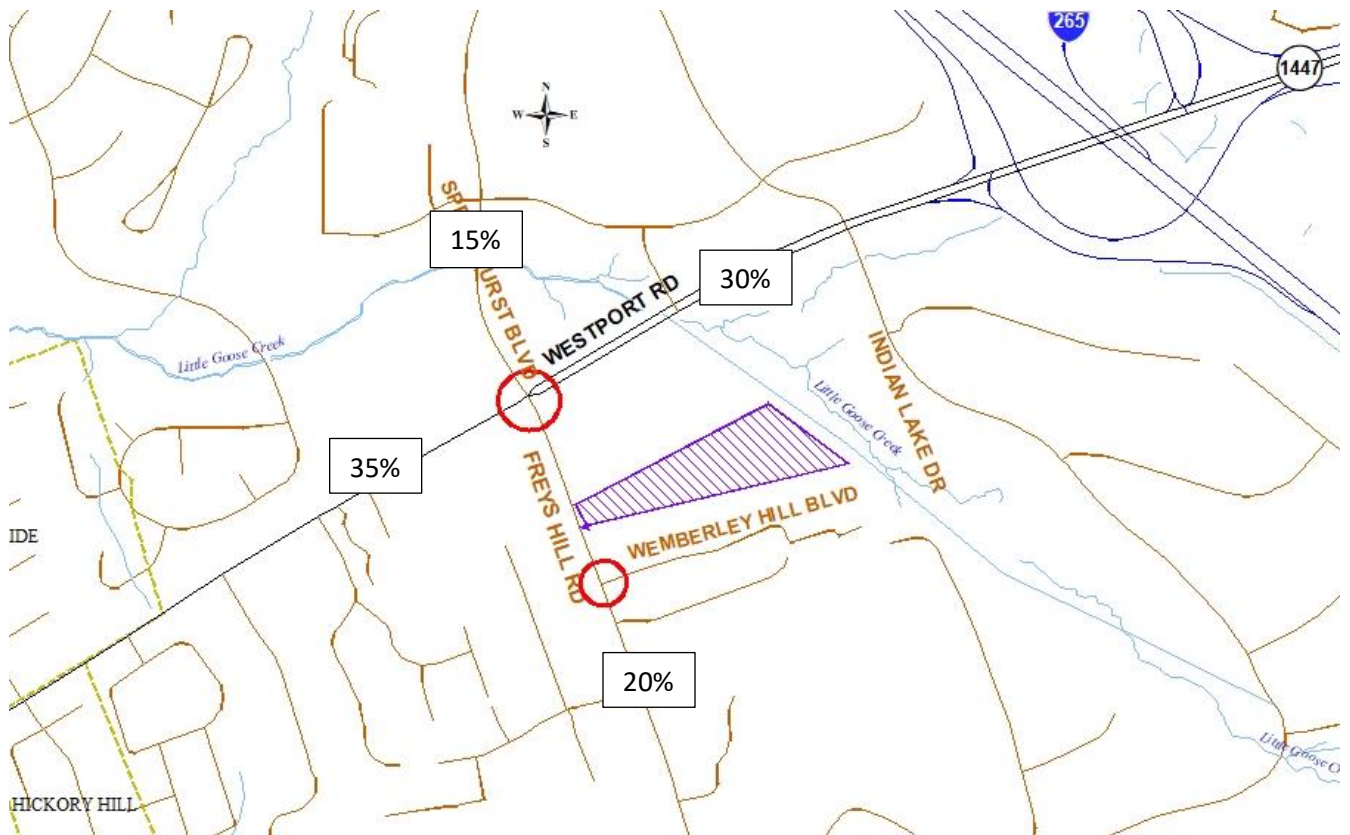


Figure 4. Trip Distribution Percentages

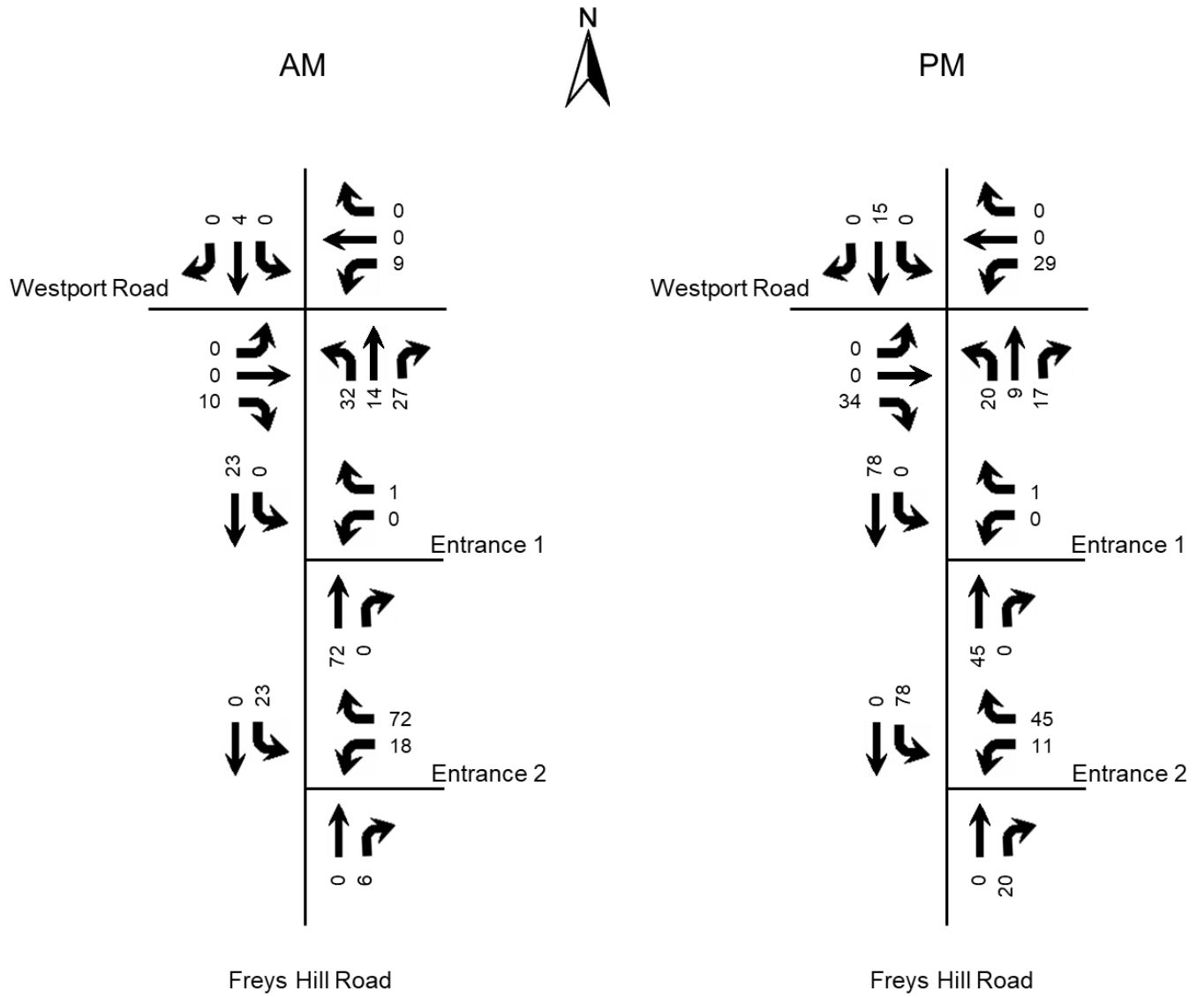


Figure 5. Peak Hour Trips Generated by Site

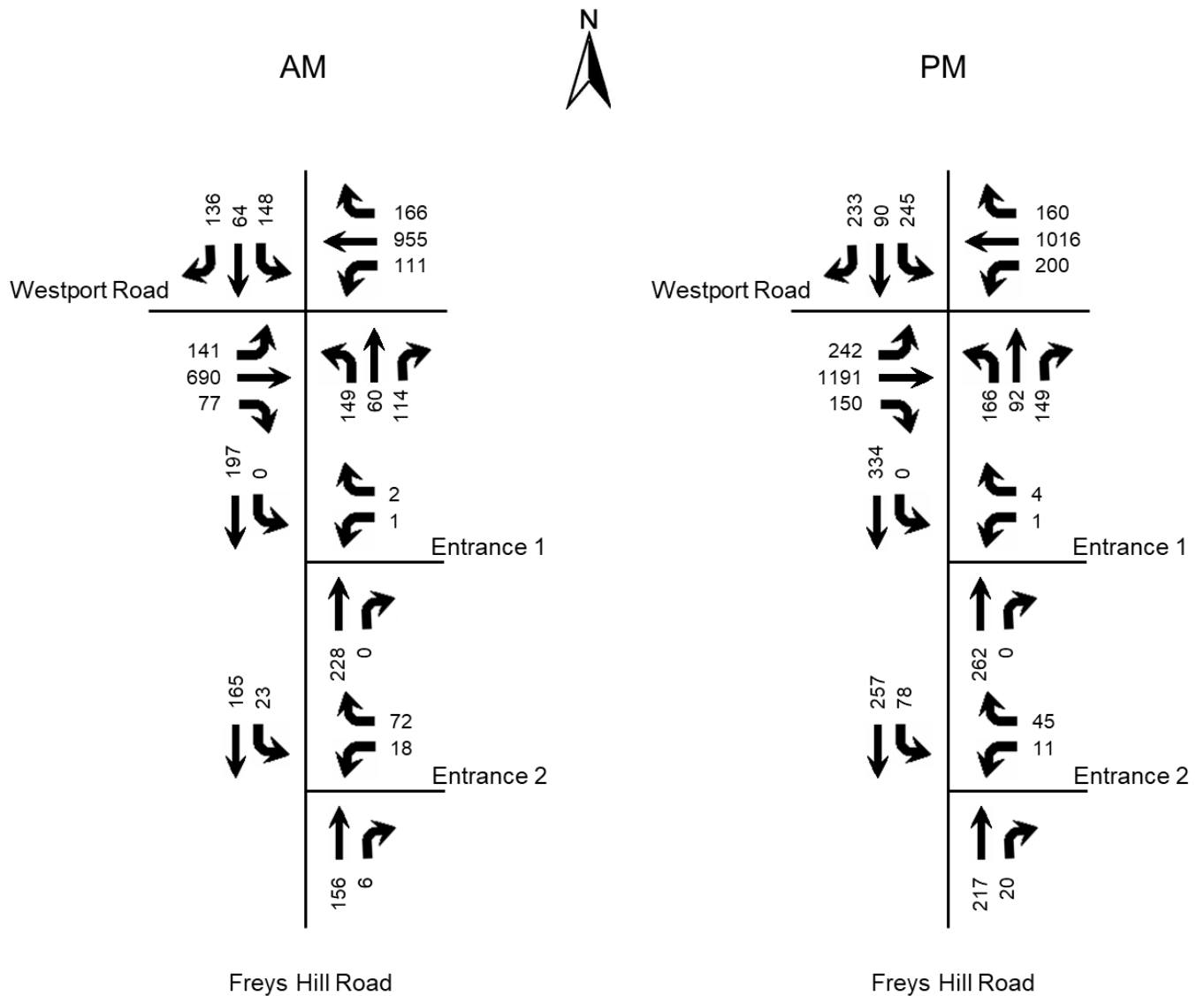


Figure 6. Build Peak Hour Volumes

ANALYSIS

The qualitative measure of operation for a roadway facility or intersection is evaluated by assigning a “Level of Service”. Level of Service is a ranking scale from A through F, “A” is the best operating condition and “F” is the worst. Level of Service results depend upon the facility that is analyzed. In this case, the Level of Service is based upon the total delay experienced at an intersection.

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the Highway Capacity Manual, 6th edition. Future delays and Level of Service were determined for the intersections using the HCS Streets (version 7.9.5) software. The delays and Level of Service are summarized in **Table 2**. The a.m. build results reflect an additional 2 seconds of green time for the Freys Hill approach.

Table 2. Peak Hour Level of Service

Approach	A.M.			P.M.		
	2021 Existing	2024 No Build	2024 Build	2021 Existing	2024 No Build	2024 Build
Westport Road at Freys Hill Road	C 29.1	C 30.3	D 35.1	D 35.2	D 37.3	D 41.3
Westport Road Eastbound	B 17.7	B 18.7	C 21.6	C 28.8	C 30.9	C 32.6
Westport Road Westbound	B 14.4	B 15.8	C 21.6	B 18.5	C 21.2	C 27.8
Freys Hill Road Northbound	E 76.6	E 77.4	E 79.1	E 72.9	E 73.9	E 76.8
Springhurst Boulevard Southbound	E 67.2	E 66.7	E 66.8	E 69.2	E 68.9	E 70.7
Freys Hill Road at Entrance 1						
Entrance Westbound			B 10.4			B 10.8
Freys Hill Road Southbound			A 7.8			A 7.9
Freys Hill Road at Entrance 2						
Entrance Westbound			B 10.3			B 11.5
Freys Hill Road Southbound			A 7.6			A 8.0

Key: Level of Service, Delay in seconds per vehicle

The entrance was evaluated for turn lanes using the Kentucky Transportation Cabinet [Highway Design Guidance Manual](#) dated July, 2020. Using the volumes in Figure 6, the volume warrant is met for a left turn lane.

CONCLUSIONS

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2024, there will be a minimal impact to the existing highway network, with the signalized intersection continuing to operate at acceptable levels of service. A left turn lane will be provided at the entrance.

APPENDIX

Traffic Counts

Classified Turn Movement Count || All vehicles



Jefferson County, KY

www.marrtraffic.com

Site 1 of 2
Freys Hill Rd
Springhurst Blvd
KY-1447 Westport Rd (West)
KY-1447 Westport Rd (East)

Date
Tuesday, August 24, 2021

Weather
Fair
87°F

Lat/Long
38.293693°, -85.559210°

0700 - 0900 (Weekday 2h Session) (08-24-2021)

All vehicles

TIME	Northbound Freys Hill Rd					Southbound Springhurst Blvd					Eastbound KY-1447 Westport Rd (West)					Westbound KY-1447 Westport Rd (East)					Int Total
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	
	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	
0700 - 0715	14	3	12	0	29	12	3	9	0	24	13	131	12	0	156	13	247	7	0	267	476
0715 - 0730	17	5	22	0	44	19	3	25	0	47	24	118	10	0	152	14	235	14	0	263	506
0730 - 0745	9	8	19	0	36	14	2	13	0	29	29	173	11	0	213	17	217	33	0	267	545
0745 - 0800	24	19	23	0	66	46	12	48	0	106	40	203	16	0	259	29	249	70	0	348	779
Hourly Total	64	35	76	0	175	91	20	95	0	206	106	625	49	0	780	73	948	124	0	1145	2306
0800 - 0815	34	9	13	0	56	43	16	37	0	96	32	161	14	0	207	20	200	27	0	247	606
0815 - 0830	25	8	30	0	63	25	13	23	0	61	33	145	23	0	201	29	244	30	0	303	628
0830 - 0845	29	8	18	0	55	28	16	22	0	66	30	151	11	0	192	20	220	32	0	272	585
0845 - 0900	23	11	20	0	54	27	12	24	0	63	48	145	20	0	213	24	255	43	0	322	652
Hourly Total	111	36	81	0	228	123	57	106	0	286	143	602	68	0	813	93	919	132	0	1144	2471
Grand Total	175	71	157	0	403	214	77	201	0	492	249	1227	117	0	1593	166	1867	256	0	2289	4777
Approach %	43.42	17.62	38.96	0.00	-	43.50	15.65	40.85	0.00	-	15.63	77.02	7.34	0.00	-	7.25	81.56	11.18	0.00	-	
Intersection %	3.66	1.49	3.29	0.00	8.44	4.48	1.61	4.21	0.00	10.30	5.21	25.69	2.45	0.00	33.35	3.47	39.08	5.36	0.00	47.92	
PHF	0.82	0.58	0.70	0.00	0.91	0.77	0.89	0.68	0.00	0.78	0.84	0.81	0.70	0.00	0.83	0.84	0.92	0.57	0.00	0.84	0.83

1600 - 1800 (Weekday 2h Session) (08-24-2021)

All vehicles

TIME	Northbound Freys Hill Rd					Southbound Springhurst Blvd					Eastbound KY-1447 Westport Rd (West)					Westbound KY-1447 Westport Rd (East)					Int Total
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	
	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	
1600 - 1615	23	13	25	0	61	56	17	59	0	132	52	260	23	0	335	27	221	33	0	281	809
1615 - 1630	25	20	32	0	77	51	20	61	0	132	47	259	25	0	331	41	230	36	2	309	849
1630 - 1645	16	20	37	0	73	50	20	42	0	112	56	303	23	0	382	36	238	34	0	308	875
1645 - 1700	43	14	28	0	85	49	16	58	0	123	59	292	32	0	383	39	254	37	0	330	921
Hourly Total	107	67	122	0	296	206	73	220	0	499	214	1114	103	0	1431	143	943	140	2	1228	3454
1700 - 1715	41	17	38	0	96	73	18	68	0	159	49	276	17	0	342	40	258	35	0	333	930
1715 - 1730	30	23	30	0	83	51	17	54	0	122	67	279	30	0	376	34	219	43	1	297	878
1730 - 1745	26	25	30	0	81	61	21	43	0	125	56	292	32	0	380	49	241	38	1	329	915
1745 - 1800	35	25	39	0	99	54	20	43	0	117	47	270	34	0	351	52	206	44	0	302	869
Hourly Total	132	90	137	0	359	239	76	208	0	523	219	1117	113	0	1449	175	924	160	2	1261	3592
Grand Total	239	157	259	0	655	445	149	428	0	1022	433	2231	216	0	2880	318	1867	300	4	2489	7046
Approach %	36.49	23.97	39.54	0.00	-	43.54	14.58	41.88	0.00	-	15.03	77.47	7.50	0.00	-	12.78	75.01	12.05	0.16	-	
Intersection %	3.39	2.23	3.68	0.00	9.30	6.32	2.11	6.07	0.00	14.50	6.15	31.66	3.07	0.00	40.87	4.51	26.50	4.26	0.06	35.33	
PHF	0.81	0.79	0.83	0.00	0.90	0.80	0.86	0.82	0.00	0.83	0.86	0.98	0.87	0.00	0.97	0.83	0.94	0.89	0.50	0.97	0.98

Freys Hill Road Apartments
Traffic Impact Study



Classified Turn Movement Count || All vehicles

Jefferson County, KY

Site 2 of 2

Freys Hill Rd (South)
Freys Hill Rd (North)

Wemberley Hill Blvd

Date

Tuesday, August 24, 2021

Lat/Long

38.291004°, -85.557874°

Weather

Fair
87°F

0700 - 0900 (Weekday 2h Session) (08-24-2021)

All vehicles

TIME	Northbound				Southbound				Westbound				
	Freys Hill Rd (South)				Freys Hill Rd (North)				Wemberley Hill Blvd				
	Thru	Right	U-Turn	App Total	Left	Thru	U-Turn	App Total	Left	Right	U-Turn	App Total	Int Total
0700 - 0715	25	1	0	26	0	20	0	20	0	2	0	2	48
0715 - 0730	21	0	0	21	0	21	0	21	0	0	0	0	42
0730 - 0745	12	0	0	12	1	27	0	28	0	2	0	2	42
0745 - 0800	47	0	0	47	2	40	0	42	0	1	0	1	90
Hourly Total	105	1	0	106	3	108	0	111	0	5	0	5	222
0800 - 0815	28	0	0	28	1	35	0	36	0	2	0	2	66
0815 - 0830	30	0	0	30	2	47	0	49	0	3	0	3	82
0830 - 0845	37	0	0	37	1	30	0	31	0	3	0	3	71
0845 - 0900	28	0	0	28	1	44	0	45	0	1	0	3	76
Hourly Total	123	0	0	123	5	156	0	161	2	9	0	11	295
Grand Total	228	1	0	229	8	264	0	272	2	14	0	16	517
Approach %	99.56	0.44	0.00	-	2.94	97.06	0.00	-	12.50	87.50	0.00	-	-
Intersection %	44.10	0.19	0.00	44.29	1.55	51.06	0.00	52.61	0.39	2.71	0.00	3.09	-
PHF	0.76	0.00	0.00	0.76	0.75	0.81	0.00	0.81	0.00	0.75	0.00	0.75	0.86

1600 - 1800 (Weekday 2h Session) (08-24-2021)

All vehicles

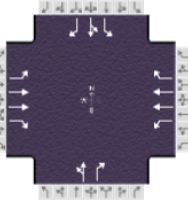
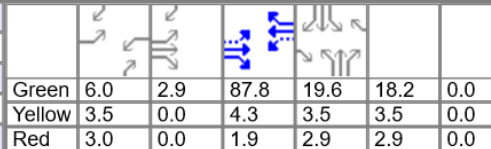
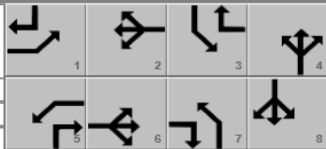
TIME	Northbound				Southbound				Westbound				
	Freys Hill Rd (South)				Freys Hill Rd (North)				Wemberley Hill Blvd				
	Thru	Right	U-Turn	App Total	Left	Thru	U-Turn	App Total	Left	Right	U-Turn	App Total	Int Total
1600 - 1615	21	0	0	21	1	44	0	45	1	5	0	6	72
1615 - 1630	40	2	0	42	2	52	0	54	0	1	0	1	97
1630 - 1645	33	0	0	33	4	46	0	50	0	3	0	3	86
1645 - 1700	39	1	0	40	3	65	0	68	1	2	0	3	111
Hourly Total	133	3	0	136	10	207	0	217	2	11	0	13	366
1700 - 1715	45	0	0	45	2	42	0	44	0	1	0	1	90
1715 - 1730	48	0	0	48	4	47	0	51	1	0	0	1	100
1730 - 1745	52	0	0	52	3	72	0	75	1	4	0	5	132
1745 - 1800	56	1	0	57	3	73	0	76	2	2	0	4	137
Hourly Total	201	1	0	202	12	234	0	246	4	7	0	11	459
Grand Total	334	4	0	338	22	441	0	463	6	18	0	24	825
Approach %	98.82	1.18	0.00	-	4.75	95.25	0.00	-	25.00	75.00	0.00	-	-
Intersection %	40.48	0.48	0.00	40.97	2.67	53.45	0.00	56.12	0.73	2.18	0.00	2.91	-
PHF	0.90	0.25	0.00	0.89	0.75	0.80	0.00	0.81	0.50	0.44	0.00	0.55	0.84

HCS Reports

HCS7 Signalized Intersection Results Summary															
General Information						Intersection Information									
Agency	Diane B. Zimmerman Traffic Engineering					Duration, h	0.250								
Analyst	DBZ	Analysis Date	Oct 11, 2021			Area Type	Other								
Jurisdiction		Time Period	AM Peak			PHF	0.83								
Urban Street	Westport Road		Analysis Year	2021		Analysis Period	1> 7:45								
Intersection	Freys Hill		File Name	AM 21.xus											
Project Description	Apartments														
Demand Information				EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Demand (v), veh/h	135	660	64	98	913	159	112	44	84	142	57	130			
Signal Information															
Cycle, s	160.0	Reference Phase	2	Green	5.9	2.5	89.6	18.9	17.6	0.0					
Offset, s	0	Reference Point	End	Yellow	3.5	0.0	4.3	3.5	3.5	0.0					
Uncoordinated	No	Simult. Gap E/W	On	Red	3.0	0.0	1.9	2.9	2.9	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off												
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase	1		6		5		2		4		8				
Case Number	1.1		3.0		1.1		3.0		11.0		9.0				
Phase Duration, s	14.9		98.3		12.4		95.8		25.3		24.0				
Change Period, (Y+R _c), s	6.5		6.2		6.5		6.2		6.4		6.6				
Max Allow Headway (MAH), s	3.0		0.0		3.0		0.0		3.2		3.2				
Queue Clearance Time (g _s), s	8.2				5.8				18.6		16.7				
Green Extension Time (g _e), s	0.3		0.0		0.1		0.0		0.3		0.7				
Phase Call Probability	1.00				0.99				1.00		1.00				
Max Out Probability	0.00				0.00				0.10		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	163	795	77	97	904	158	188	101	111	129	157				
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1752	1535	1711	1766	1560	1777	1510	1739	1730	1585				
Queue Service Time (g _s), s	6.2	19.9	2.6	3.8	18.8	5.4	16.6	9.7	9.7	11.4	14.7				
Cycle Queue Clearance Time (g _c), s	6.2	19.9	2.6	3.8	18.8	5.4	16.6	9.7	9.7	11.4	14.7				
Green Ratio (g/C)	0.61	0.58	0.69	0.60	0.56	0.56	0.12	0.16	0.11	0.11	0.16				
Capacity (c), veh/h	415	2018	1065	396	1979	874	221	234	189	188	256				
Volume-to-Capacity Ratio (X)	0.392	0.394	0.072	0.245	0.457	0.180	0.851	0.432	0.589	0.684	0.613				
Back of Queue (Q), ft/ln (95 th percentile)	111.4	326.6	40.3	72.1	269.5	84.6	343	180.3	203.6	243.3	254.4				
Back of Queue (Q), veh/ln (95 th percentile)	4.4	12.7	1.5	2.7	10.5	3.3	13.3	6.8	7.8	8.9	10.0				
Queue Storage Ratio (RQ) (95 th percentile)	0.41	0.00	0.18	0.41	0.00	0.34	0.76	0.40	0.45	0.54	0.57				
Uniform Delay (d ₁), s/veh	14.7	18.6	7.9	15.5	14.1	11.1	68.6	61.2	67.9	68.7	62.4				
Incremental Delay (d ₂), s/veh	0.2	0.6	0.1	0.1	0.7	0.4	16.0	0.5	1.1	1.6	0.9				
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	14.9	19.2	8.0	15.6	14.7	11.5	84.6	61.7	69.0	70.3	63.3				
Level of Service (LOS)	B	B	A	B	B	B	F	E	E	E	E				
Approach Delay, s/veh / LOS	17.7	B		14.4	B		76.6	E		67.2	E				
Intersection Delay, s/veh / LOS	29.1						C								
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.90	B		2.10	B		2.48	B		2.49	B				
Bicycle LOS Score / LOS	1.34	A		1.65	B		0.96	A		1.14	A				

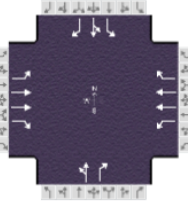
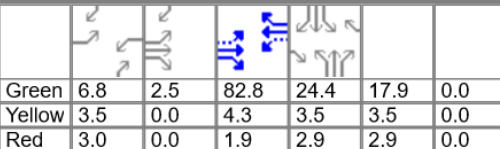
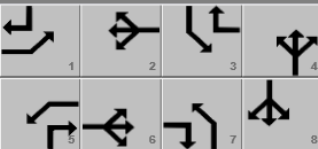
Freys Hill Road Apartments
Traffic Impact Study

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information																							
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250																						
Analyst	DBZ	Analysis Date	Oct 11, 2021	Area Type	Other																						
Jurisdiction		Time Period	AM Peak	PHF	0.83																						
Urban Street	Westport Road	Analysis Year	2024 No Build	Analysis Period	1> 7:45																						
Intersection	Freys Hill	File Name	AM 24 NB.xus																								
Project Description	Apartments																										
Demand Information				EB			WB			NB			SB														
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R															
Demand (v), veh/h	141	690	67	102	955	166	117	46	87	148	60	136															
Signal Information																											
Cycle, s	160.0	Reference Phase	2	Green	6.0	2.9	87.8	19.6	18.2	0.0																	
Offset, s	0	Reference Point	End	Yellow	3.5	0.0	4.3	3.5	3.5	0.0																	
Uncoordinated	No	Simult. Gap E/W	On	Red	3.0	0.0	1.9	2.9	2.9	0.0																	
Force Mode	Fixed	Simult. Gap N/S	Off																								
Timer Results				EBL			EBT			WBL			WBT			NBL			NBT			SBL			SBT		
Assigned Phase	1			6			5			2						4						8					
Case Number	1.1			3.0			1.1			3.0			11.0						9.0								
Phase Duration, s	15.4			96.9			12.5			94.0			26.0						24.6								
Change Period, (Y+R _c), s	6.5			6.2			6.5			6.2			6.4						6.6								
Max Allow Headway (MAH), s	3.0			0.0			3.0			0.0			3.2						3.2								
Queue Clearance Time (g _s), s	8.6						5.9						19.3						17.3								
Green Extension Time (g _e), s	0.3			0.0			0.1			0.0			0.3						0.7								
Phase Call Probability	1.00						0.99						1.00						1.00								
Max Out Probability	0.00						0.00						0.19						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	170	831	81	97	905	157		196	105	116	135	164															
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1752	1535	1711	1766	1560		1777	1510	1739	1730	1585															
Queue Service Time (g _s), s	6.6	21.6	2.8	3.9	20.0	5.8		17.3	10.0	10.1	12.0	15.3															
Cycle Queue Clearance Time (g _c), s	6.6	21.6	2.8	3.9	20.0	5.8		17.3	10.0	10.1	12.0	15.3															
Green Ratio (g/C)	0.60	0.57	0.69	0.59	0.55	0.55		0.13	0.17	0.11	0.11	0.17															
Capacity (c), veh/h	408	1986	1058	375	1938	856		229	242	196	195	266															
Volume-to-Capacity Ratio (X)	0.417	0.419	0.076	0.258	0.467	0.184		0.858	0.434	0.592	0.691	0.615															
Back of Queue (Q), ft/ln (95 th percentile)	120.5	350.8	43.1	73.6	290.5	91.6		359.1	185.9	209.9	252.2	262.9															
Back of Queue (Q), veh/ln (95 th percentile)	4.8	13.6	1.6	2.8	11.3	3.5		13.9	7.0	8.1	9.2	10.3															
Queue Storage Ratio (RQ) (95 th percentile)	0.44	0.00	0.19	0.42	0.00	0.37		0.80	0.41	0.47	0.56	0.58															
Uniform Delay (d ₁), s/veh	15.6	19.7	8.2	16.3	15.5	12.2		68.3	60.6	67.5	68.3	61.7															
Incremental Delay (d ₂), s/veh	0.3	0.7	0.1	0.1	0.7	0.4		17.9	0.5	1.1	1.6	0.9															
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	15.8	20.3	8.3	16.4	16.2	12.7		86.1	61.1	68.6	70.0	62.6															
Level of Service (LOS)	B	C	A	B	B	B		F	E	E	E	E															
Approach Delay, s/veh / LOS	18.7			B			15.8			B			77.4			E			66.7			E					
Intersection Delay, s/veh / LOS	30.3						C																				
Multimodal Results				EB			WB			NB			SB														
Pedestrian LOS Score / LOS	1.91			B			2.10			B			2.48			B											
Bicycle LOS Score / LOS	1.38			A			1.70			B			0.98			A											

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information																							
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250																						
Analyst	DBZ	Analysis Date	Oct 11, 2021	Area Type	Other																						
Jurisdiction		Time Period	AM Peak	PHF	0.83																						
Urban Street	Westport Road	Analysis Year	2024 Build	Analysis Period	1> 7:45																						
Intersection	Freys Hill	File Name	AM 24 B IMP.xus																								
Project Description	Apartments																										
Demand Information				EB			WB			NB			SB														
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R															
Demand (v), veh/h	141	690	77	111	955	166	149	60	114	148	64	136															
Signal Information																											
Cycle, s	160.0	Reference Phase	2	Green	6.8	2.5	82.8	24.4	17.9	0.0																	
Offset, s	0	Reference Point	End	Yellow	3.5	0.0	4.3	3.5	3.5	0.0																	
Uncoordinated	No	Simult. Gap E/W	On	Red	3.0	0.0	1.9	2.9	2.9	0.0																	
Force Mode	Fixed	Simult. Gap N/S	Off																								
Timer Results				EBL			EBT			WBL			WBT			NBL			NBT			SBL			SBT		
Assigned Phase	1			6			5			2			4			8											
Case Number	1.1			3.0			1.1			3.0			11.0			9.0											
Phase Duration, s	15.8			91.5			13.3			89.0			30.8			24.3											
Change Period, (Y+R _c), s	6.5			6.2			6.5			6.2			6.4			6.4											
Max Allow Headway (MAH), s	3.0			0.0			3.0			0.0			3.2			3.2											
Queue Clearance Time (g _s), s	9.1						6.7						24.2			17.3											
Green Extension Time (g _e), s	0.3			0.0			0.1			0.0			0.2			0.6											
Phase Call Probability	1.00						0.99						1.00			1.00											
Max Out Probability	0.00						0.00						1.00			0.02											
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	170	831	93	104	898	156		252	137	116	140	164															
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1752	1535	1711	1766	1560		1777	1510	1739	1730	1585															
Queue Service Time (g _s), s	7.1	23.2	3.2	4.7	24.4	7.5		22.2	12.9	10.1	12.5	15.3															
Cycle Queue Clearance Time (g _c), s	7.1	23.2	3.2	4.7	24.4	7.5		22.2	12.9	10.1	12.5	15.3															
Green Ratio (g/C)	0.58	0.53	0.69	0.56	0.52	0.52		0.16	0.20	0.11	0.11	0.17															
Capacity (c), veh/h	378	1869	1053	356	1828	807		283	295	195	194	270															
Volume-to-Capacity Ratio (X)	0.449	0.445	0.088	0.293	0.491	0.193		0.891	0.466	0.595	0.720	0.607															
Back of Queue (Q), ft/ln (95 th percentile)	131.4	377.6	50.6	79.2	373.9	124		456.8	229.3	210.1	260.4	262.2															
Back of Queue (Q), veh/ln (95 th percentile)	5.2	14.6	1.9	3.0	14.6	4.8		17.7	8.6	8.1	9.5	10.3															
Queue Storage Ratio (RQ) (95 th percentile)	0.48	0.00	0.23	0.45	0.00	0.50		1.02	0.51	0.47	0.58	0.58															
Uniform Delay (d ₁), s/veh	18.4	22.8	8.4	17.2	21.9	17.5		65.9	57.0	67.6	68.6	61.4															
Incremental Delay (d ₂), s/veh	0.3	0.8	0.2	0.2	0.9	0.5		25.1	0.4	1.1	1.9	0.8															
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	18.8	23.6	8.6	17.4	22.8	17.9		91.0	57.4	68.7	70.5	62.2															
Level of Service (LOS)	B	C	A	B	C	B		F	E	E	E	E															
Approach Delay, s/veh / LOS	21.6		C	21.6		C		79.1	E	66.8		E															
Intersection Delay, s/veh / LOS	35.1						D																				
Multimodal Results				EB			WB			NB			SB														
Pedestrian LOS Score / LOS	1.91			B			2.11			B			2.48			B											
Bicycle LOS Score / LOS	1.39			A			1.71			B			1.13			A											

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Signalized Intersection Results Summary

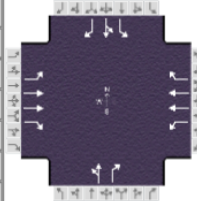
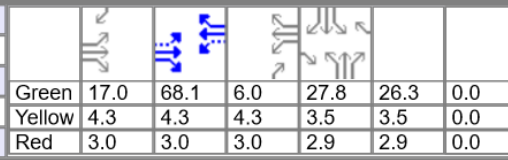
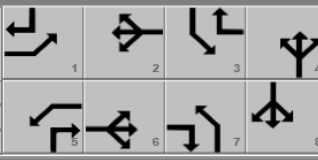
General Information				Intersection Information																							
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250																						
Analyst	DBZ	Analysis Date	6/15/2021	Area Type	Other																						
Jurisdiction		Time Period	PM Peak	PHF	0.98																						
Urban Street	Westport Road	Analysis Year	2021	Analysis Period	1> 4:45																						
Intersection	Freys Hill Road	File Name	PM 21.xus																								
Project Description	Apartments																										
Demand Information				EB			WB			NB			SB														
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R															
Demand (v), veh/h	231	1139	111	164	972	153	140	79	126	234	72	223															
Signal Information																											
Cycle, s	180.0	Reference Phase	2																								
Offset, s	0	Reference Point	End																								
Uncoordinated	No	Simult. Gap E/W	On	Green	15.7	73.7	6.0	24.1	25.8	0.0																	
Force Mode	Fixed	Simult. Gap N/S	Off	Yellow	4.3	4.3	4.3	3.5	3.5	0.0																	
				Red	3.0	3.0	3.0	2.9	2.9	0.0																	
Timer Results				EBL			EBT			WBL			WBT			NBL			NBT			SBL			SBT		
Assigned Phase	1			6			5			2						4						8					
Case Number	1.2			3.0			1.3			3.0						11.0						9.0					
Phase Duration, s	23.0			104.0			13.3			94.3						30.5						32.2					
Change Period, (Y+R c), s	7.3			7.3			7.3			7.3						6.4						6.6					
Max Allow Headway (MAH), s	3.0			0.0			3.0			0.0						3.2						3.2					
Queue Clearance Time (g s), s	15.4						2.0									23.7						24.8					
Green Extension Time (g e), s	0.3			0.0			0.1			0.0						0.4						0.7					
Phase Call Probability	1.00						1.00									1.00						1.00					
Max Out Probability	0.00						0.33									0.14						0.12					
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	236	1162	113	166	986	155		223	129	155	157	228															
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1795	1572	1795	1809	1585		1827	1585	1781	1830	1610															
Queue Service Time (g s), s	13.4	39.9	4.6	0.0	18.4	2.8		21.7	13.2	14.7	14.5	22.8															
Cycle Queue Clearance Time (g c), s	13.4	39.9	4.6	0.0	18.4	2.8		21.7	13.2	14.7	14.5	22.8															
Green Ratio (g/C)	0.51	0.54	0.67	0.43	0.48	0.48		0.13	0.17	0.14	0.14	0.23															
Capacity (c), veh/h	373	1928	1056	248	1749	766		245	265	253	260	369															
Volume-to-Capacity Ratio (X)	0.631	0.603	0.107	0.670	0.564	0.203		0.913	0.485	0.613	0.604	0.616															
Back of Queue (Q), ft/ln (95 th percentile)	244.5	604.7	77.4	299.6	213.9	44.4		443.2	123.9	282.3	282.3	363.8															
Back of Queue (Q), veh/ln (95 th percentile)	9.7	24.0	3.0	11.9	8.6	1.7		17.6	4.9	11.1	11.2	14.6															
Queue Storage Ratio (RQ) (95 th percentile)	0.89	0.00	0.34	1.71	0.00	0.18		0.98	0.28	0.63	0.00	0.81															
Uniform Delay (d 1), s/veh	27.1	28.5	19.2	59.8	11.5	6.2		76.9	22.3	72.6	72.5	62.3															
Incremental Delay (d 2), s/veh	0.7	1.4	0.2	4.5	1.1	0.5		24.9	0.5	0.9	0.8	1.1															
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	27.7	29.9	19.4	64.3	12.6	6.7		101.8	22.8	73.5	73.3	63.4															
Level of Service (LOS)	C	C	B	E	B	A		F	C	E	E	E															
Approach Delay, s/veh / LOS	28.8	C		18.5	B			72.9	E		69.2	E															
Intersection Delay, s/veh / LOS	35.2						D																				
Multimodal Results				EB			WB			NB			SB														
Pedestrian LOS Score / LOS	1.98	B		2.12	B			2.48	B		2.49	B															
Bicycle LOS Score / LOS	1.73	B		1.57	B			1.07	A		1.38	A															

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information															
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250														
Analyst	DBZ	Analysis Date	6/15/2021	Area Type	Other														
Jurisdiction		Time Period	PM Peak	PHF	0.98														
Urban Street	Westport Road	Analysis Year	2024 No Build	Analysis Period	1> 4:45														
Intersection	Freys Hill Road	File Name	PM 24 NB.xus																
Project Description	Apartments																		
Demand Information				EB			WB			NB			SB						
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R							
Demand (v), veh/h	242	1191	116	171	1016	160	146	83	132	245	75	233							
Signal Information																			
Cycle, s	180.0	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	No	Simult. Gap E/W	On	Green	16.7	70.9	6.0	25.1	26.6	0.0									
Force Mode	Fixed	Simult. Gap N/S	Off	Yellow	4.3	4.3	4.3	3.5	3.5	0.0									
				Red	3.0	3.0	3.0	2.9	2.9	0.0									
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase	1		6		5		2				4				8				
Case Number	1.2		3.0		1.3		3.0				11.0				9.0				
Phase Duration, s	24.0		102.2		13.3		91.5				31.5				33.0				
Change Period, (Y+R _c), s	7.3		7.3		7.3		7.3				6.4				6.6				
Max Allow Headway (MAH), s	3.0		0.0		3.0		0.0				3.2				3.2				
Queue Clearance Time (g _s), s	16.4				2.0						24.7				25.7				
Green Extension Time (g _e), s	0.3		0.0		0.1		0.0				0.4				0.7				
Phase Call Probability	1.00				1.00						1.00				1.00				
Max Out Probability	0.00				0.33						0.30				0.34				
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	247	1215	118	166	986	155		234	135	163	164	238							
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1795	1572	1795	1809	1585		1827	1585	1781	1830	1610							
Queue Service Time (g _s), s	14.4	43.5	4.9	0.0	20.3	3.3		22.7	13.8	15.4	15.1	23.7							
Cycle Queue Clearance Time (g _c), s	14.4	43.5	4.9	0.0	20.3	3.3		22.7	13.8	15.4	15.1	23.7							
Green Ratio (g/C)	0.50	0.53	0.67	0.42	0.47	0.47		0.14	0.17	0.15	0.15	0.24							
Capacity (c), veh/h	368	1893	1049	227	1693	742		255	274	261	268	385							
Volume-to-Capacity Ratio (X)	0.670	0.642	0.113	0.731	0.582	0.209		0.918	0.492	0.623	0.612	0.617							
Back of Queue (Q), ft/ln (95 th percentile)	263	655.2	82.5	305.5	232.9	51.6		464.3	130.2	294.3	293.2	376.1							
Back of Queue (Q), veh/ln (95 th percentile)	10.4	26.0	3.2	12.1	9.3	2.0		18.4	5.1	11.6	11.6	15.0							
Queue Storage Ratio (RQ) (95 th percentile)	0.96	0.00	0.37	1.75	0.00	0.21		1.03	0.29	0.65	0.00	0.84							
Uniform Delay (d ₁), s/veh	28.7	30.4	19.2	65.3	13.2	7.5		76.4	22.3	72.1	72.0	61.1							
Incremental Delay (d ₂), s/veh	1.6	1.7	0.2	8.3	1.2	0.5		26.9	0.5	1.6	1.3	1.4							
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	30.3	32.1	19.4	73.6	14.4	8.1		103.4	22.9	73.7	73.3	62.5							
Level of Service (LOS)	C	C	B	E	B	A		F	C	E	E	E							
Approach Delay, s/veh / LOS	30.9	C		21.2	C			73.9	E		68.9	E							
Intersection Delay, s/veh / LOS	37.3						D												
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS	1.98	B		2.12	B			2.48	B		2.49	B							
Bicycle LOS Score / LOS	1.79	B		1.62	B			1.10	A		1.42	A							

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information											
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250										
Analyst	DBZ	Analysis Date	6/15/2021	Area Type	Other										
Jurisdiction		Time Period	PM Peak	PHF	0.98										
Urban Street	Westport Road	Analysis Year	2024 Build	Analysis Period	1> 4:45										
Intersection	Freys Hill Road			File Name	PM 24 B.xus										
Project Description	Apartments														
Demand Information				EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Demand (v), veh/h	242	1191	150	200	1016	160	166	92	149	245	90	233			
Signal Information															
Cycle, s	180.0	Reference Phase	2	Green	17.0	68.1	6.0	27.8	26.3	0.0					
Offset, s	0	Reference Point	End	Yellow	4.3	4.3	4.3	3.5	3.5	0.0					
Uncoordinated	No	Simult. Gap E/W	On	Red	3.0	3.0	3.0	2.9	2.9	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off												
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase				1	6	5	2		4		8				
Case Number				1.2	3.0	1.3	3.0		11.0		9.0				
Phase Duration, s				24.3	99.8	13.3	88.7		34.2		32.7				
Change Period, (Y+R _c), s				7.3	7.3	7.3	7.3		6.4		6.6				
Max Allow Headway (MAH), s				3.0	0.0	3.0	0.0		3.2		3.2				
Queue Clearance Time (g _s), s				16.8		5.0			27.6		25.7				
Green Extension Time (g _e), s				0.2	0.0	0.0	0.0		0.2		0.4				
Phase Call Probability				1.00		1.00			1.00		1.00				
Max Out Probability				0.06		1.00			1.00		1.00				
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	247	1215	153	190	965	152		263	152	163	179	238			
Adjusted Saturation Flow Rate (s), veh/h/ln	1795	1795	1572	1795	1809	1585		1826	1585	1781	1834	1610			
Queue Service Time (g _s), s	14.8	44.8	6.4	3.0	22.4	4.0		25.6	15.5	15.4	16.7	23.7			
Cycle Queue Clearance Time (g _c), s	14.8	44.8	6.4	3.0	22.4	4.0		25.6	15.5	15.4	16.7	23.7			
Green Ratio (g/C)	0.48	0.51	0.67	0.40	0.45	0.45		0.15	0.19	0.14	0.14	0.24			
Capacity (c), veh/h	359	1844	1051	217	1636	717		283	298	258	266	386			
Volume-to-Capacity Ratio (X)	0.688	0.659	0.146	0.875	0.590	0.212		0.932	0.510	0.629	0.674	0.616			
Back of Queue (Q), ft/ln (95 th percentile)	273.3	674.9	149.7	372.6	260.9	62.7		526	148.7	297.5	324.7	377.3			
Back of Queue (Q), veh/ln (95 th percentile)	10.8	26.8	5.8	14.8	10.4	2.5		20.9	5.9	11.7	12.9	15.1			
Queue Storage Ratio (RQ) (95 th percentile)	0.99	0.00	0.67	2.13	0.00	0.25		1.17	0.33	0.66	0.00	0.84			
Uniform Delay (d ₁), s/veh	30.6	32.2	19.7	70.4	16.0	9.8		75.1	22.6	72.4	72.9	61.0			
Incremental Delay (d ₂), s/veh	2.7	1.9	0.3	25.0	1.3	0.5		32.6	0.5	2.7	4.2	1.8			
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	33.4	34.1	20.0	95.3	17.2	10.4		107.8	23.1	75.1	77.1	62.8			
Level of Service (LOS)	C	C	B	F	B	B		F	C	E	E	E			
Approach Delay, s/veh / LOS	32.6		C	27.8		C		76.8		E	70.7	E			
Intersection Delay, s/veh / LOS				41.3							D				
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.98		B	2.12		B	2.48		B	2.49		B			
Bicycle LOS Score / LOS	1.82		B	1.65		B	1.17		A	1.44		A			

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	DBZ							Intersection	Freys Hill at Entrance 1							
Agency/Co.	Diane B Zimmerman Traffic Engineering							Jurisdiction								
Date Performed	10/14/2021							East/West Street	Entrance 1							
Analysis Year	2024							North/South Street	Freys Hill							
Time Analyzed	AM Peak							Peak Hour Factor	0.86							
Intersection Orientation	North-South							Analysis Time Period (hrs)	0.25							
Project Description	Freys Hill Apt															
Lanes																
<p>Major Street: North-South</p>																
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)						1		2			228	0		0	197	
Percent Heavy Vehicles (%)						1		1						1		
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)						6.41		6.21						4.11		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.51		3.31						2.21		
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)							3							0		
Capacity, c (veh/h)							675							1305		
v/c Ratio							0.01							0.00		
95% Queue Length, Q ₉₅ (veh)							0.0							0.0		
Control Delay (s/veh)							10.4							7.8		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)							10.4							0.0		
Approach LOS							B									

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	DBZ							Intersection	Freys Hill at Entrance 1							
Agency/Co.	Diane B Zimmerman Traffic Engineering							Jurisdiction								
Date Performed	10/14/2021							East/West Street	Entrance 1							
Analysis Year	2024							North/South Street	Freys Hill							
Time Analyzed	PM Peak							Peak Hour Factor	0.84							
Intersection Orientation	North-South							Analysis Time Period (hrs)	0.25							
Project Description	Freys Hill Apt															
Lanes																
<p>Major Street: North-South</p>																
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)						1		4			262	0		0	334	
Percent Heavy Vehicles (%)						1		1						1		
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)						6.41		6.21						4.11		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.51		3.31						2.21		
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						6								0		
Capacity, c (veh/h)						628								1254		
v/c Ratio						0.01								0.00		
95% Queue Length, Q ₉₅ (veh)						0.0								0.0		
Control Delay (s/veh)						10.8								7.9		
Level of Service (LOS)						B								A		
Approach Delay (s/veh)						10.8								0.0		
Approach LOS						B										

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	DBZ							Intersection	Freys Hill at Entrance 2							
Agency/Co.	Diane B Zimmerman Traffic Engineering							Jurisdiction								
Date Performed	10/14/2021							East/West Street	Entrance 1							
Analysis Year	2024							North/South Street	Freys Hill							
Time Analyzed	AM Peak							Peak Hour Factor	0.86							
Intersection Orientation	North-South							Analysis Time Period (hrs)	0.25							
Project Description	Freys Hill Apt															
Lanes																
<p>Major Street: North-South</p>																
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	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						18		72			156	6		23	165	
Percent Heavy Vehicles (%)						1		1						1		
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)						6.41		6.21						4.11		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.51		3.31						2.21		
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)								105							27	
Capacity, c (veh/h)								782							1392	
v/c Ratio								0.13							0.02	
95% Queue Length, Q ₉₅ (veh)								0.5							0.1	
Control Delay (s/veh)								10.3							7.6	
Level of Service (LOS)								B							A	
Approach Delay (s/veh)								10.3							0.9	
Approach LOS								B								

Freys Hill Road Apartments
Traffic Impact Study

HCS7 Two-Way Stop-Control Report																
General Information								Site Information								
Analyst	DBZ							Intersection	Freys Hill at Entrance 1							
Agency/Co.	Diane B Zimmerman Traffic Engineering							Jurisdiction								
Date Performed	10/14/2021							East/West Street	Entrance 1							
Analysis Year	2024							North/South Street	Freys Hill							
Time Analyzed	PM Peak							Peak Hour Factor	0.84							
Intersection Orientation	North-South							Analysis Time Period (hrs)	0.25							
Project Description	Freys Hill Apt															
Lanes																
<p>Major Street: North-South</p>																
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	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						11		45			217	20		78	257	
Percent Heavy Vehicles (%)						1		1						1		
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)						6.41		6.21						4.11		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.51		3.31						2.21		
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)								67						93		
Capacity, c (veh/h)								622						1286		
v/c Ratio								0.11						0.07		
95% Queue Length, Q ₉₅ (veh)								0.4						0.2		
Control Delay (s/veh)								11.5						8.0		
Level of Service (LOS)								B						A		
Approach Delay (s/veh)								11.5						1.9		
Approach LOS								B								