June 17, 2022 Revised August 8, 2022

# Traffic Impact Study

4700 Hurstbourne Parkway Apartments 4700 Hurstbourne Parkway Louisville, KY

Prepared for

Louisville Metro Planning Commission Kentucky Transportation Cabinet



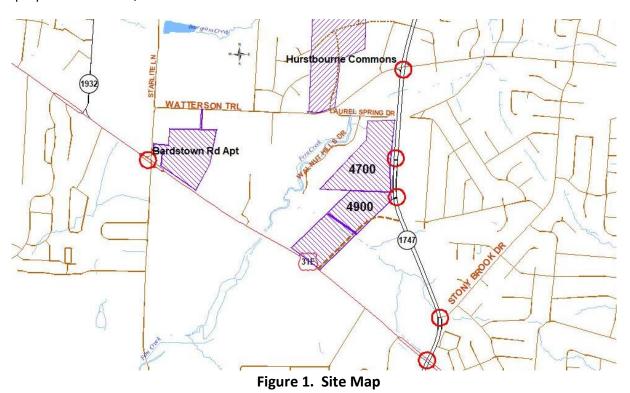


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#### INTRODUCTION

The development plan for 4700 Hurstbourne Parkway shows 384 apartment units. The adjacent 4900 Hurstbourne Parkway shows 216 apartment units. The community will total 600 units. **Figure 1** displays a map of the site. Access to the development will be from the two existing access points on Hurstbourne Parkway and a connection to Bardstown Road. An emergency only, gated access is available at Laurel Spring Drive. 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 Hurstbourne Parkway intersections with Watterson Trail, Stony Brook Drive, Bardstown Road and the proposed entrances; Bardstown intersection with Watterson Trail.



#### **EXISTING CONDITIONS**

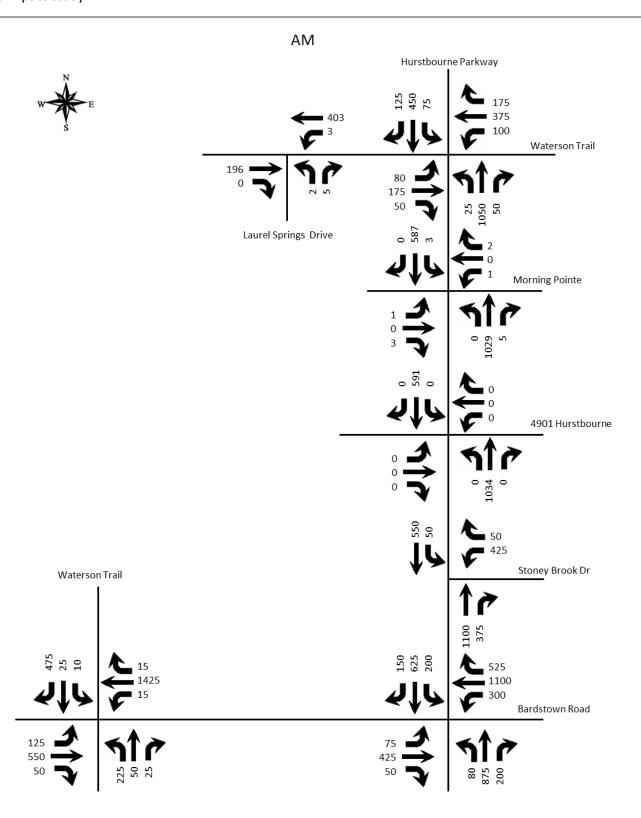
Hurstbourne Parkway (KY 1747) is maintained by the Kentucky Transportation Cabinet an estimated 2020 Average Annual Daily Traffic (AADT) volume of 20,000 vehicles per day between Bardstown Road and Waterson Trail, as estimated at the Kentucky Transportation Cabinet count station M12. The road has four lanes of twelve feet with a thirty-six-foot median and curbs through study area. The speed limit is 45 mph. There are sidewalks where development has occurred. The intersections with Bardstown Road, Stony Brook Drive, and Watterson Trail are controlled with a traffic signal.

Bardstown Road is a state-maintained road (US 31E) with an estimated 2022 ADT of 25,500 vehicles per day between Watterson Trail and Hurstbourne Parkway, as estimated from the Kentucky Transportation Cabinet 2021 count at station P80. The road is a four-lane highway with twelve-foot lanes, four-foot paved shoulders, and a two-way left turn lane through the study area. The speed limit is 45 mph. There are no sidewalks. The intersection with

Apartments 4700 Hurstbourne Parkway Traffic Impact Study

Watterson Trail is controlled with traffic signal and is part of a coordinated signal system. The intersection with Watterson Trail has left lanes and free-flow right-turn lanes to and from Watterson Trail. The Watterson Trail approach has a shared left and thru. TARC provides service along Bardstown Road.

Peak hour traffic count for the intersections were obtained from Metro Traffic Engineering Synchro models. The entrance to Morning Point (opposite 4700) was counted March 16, 2022. The peak hours occurred between 7:15 to 8:15 am and 4:15 to 5:15 pm. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes. The Appendix contains the full count data.



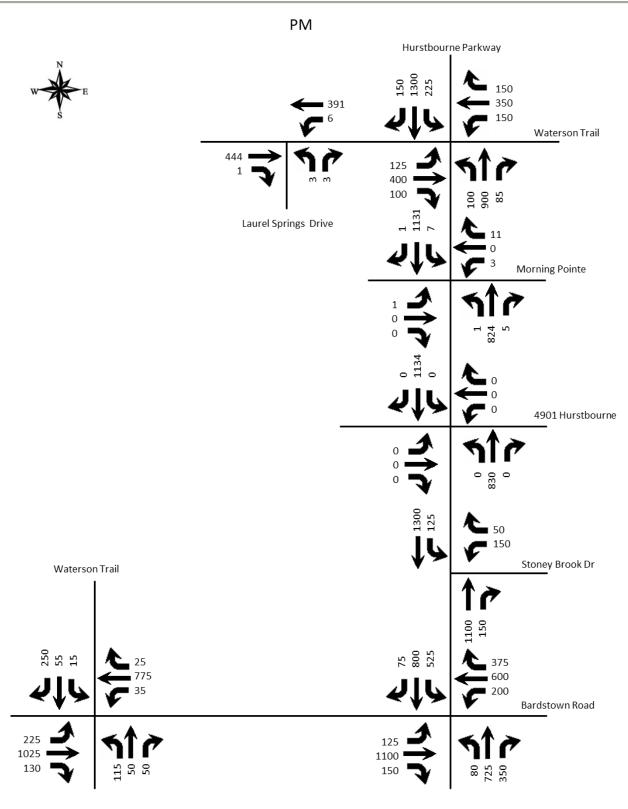
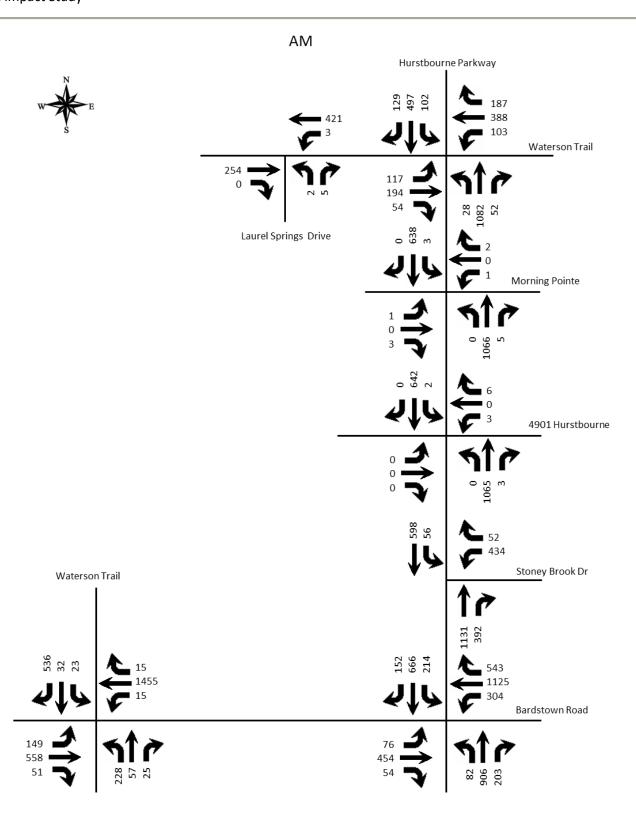


Figure 2. Existing Peak Hour Volumes

## **FUTURE CONDITIONS**

The project completion date is 2025. An annual growth rate of 0.5 percent was applied to the volumes. This was determined by the historical growth at KYTC station P80. Additionally, trip generation for the Bardstown Road Apartments, Hurstbourne Commons, 4901 Hurstbourne Senior Apartments, and an office building at 5206 Stony Brook Drive were also included. **Figure 3** displays the 2025 No Build peak hour volumes.



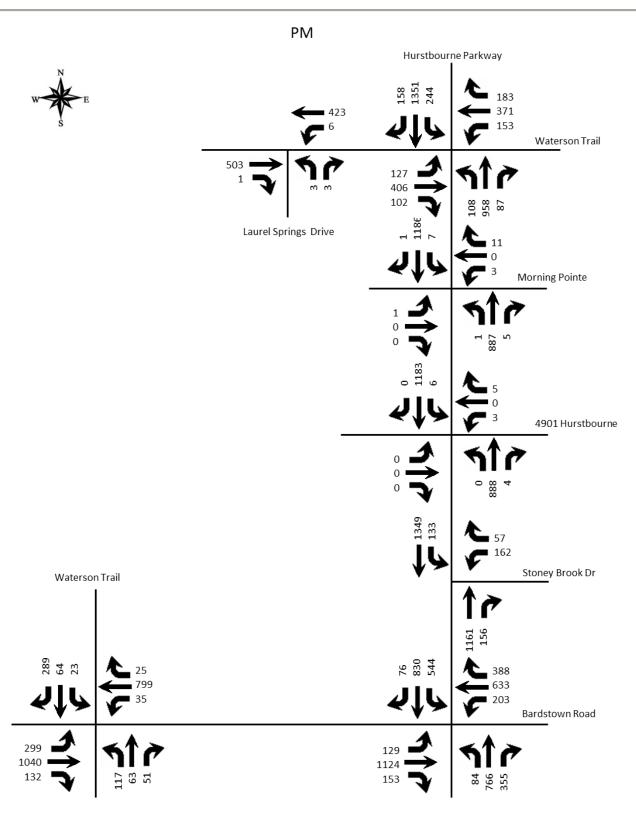


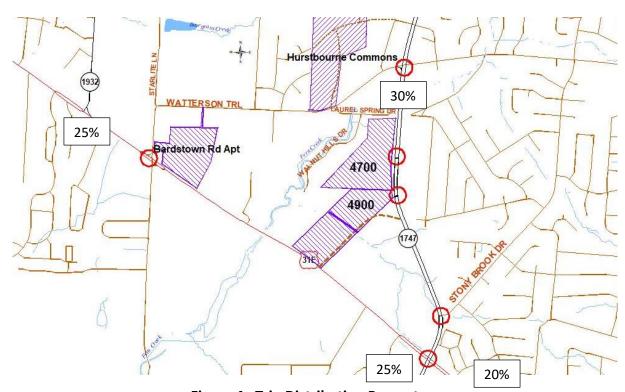
Figure 3. 2025 No Build Peak Hour Volumes

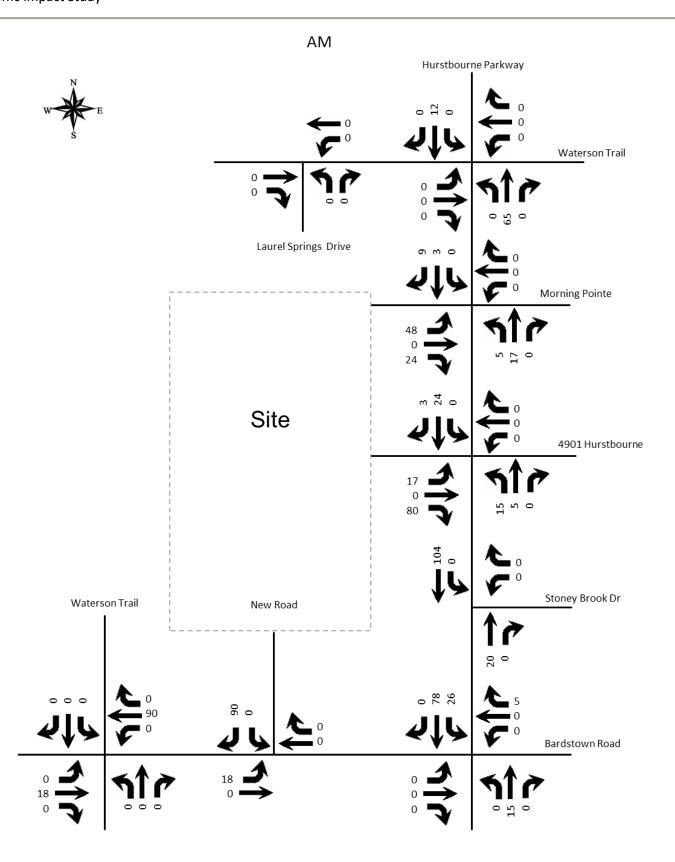
## **TRIP GENERATION**

The Institute of Transportation Engineers <u>Trip Generation Manual</u>, 11<sup>th</sup> Edition contains trip generation rates for a wide range of developments. The land use of "Multi-family (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

	A.M. I	Peak	Hour	P.M. F	P.M. Peak Hour				
Land Use	Trips	In	Out	Trips	In	Out			
Multi-family (Low-Rise) 600 units	209	50	159	279	176	103			





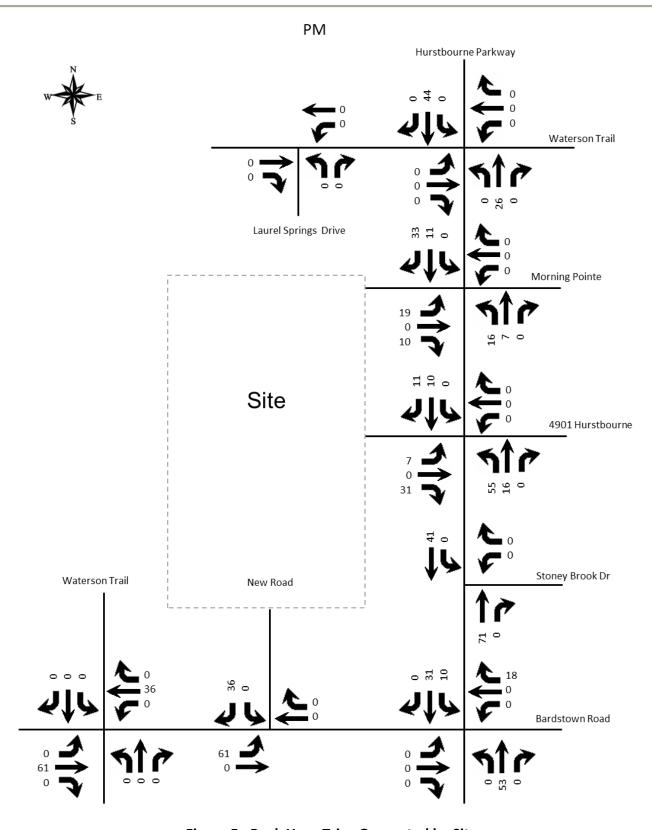
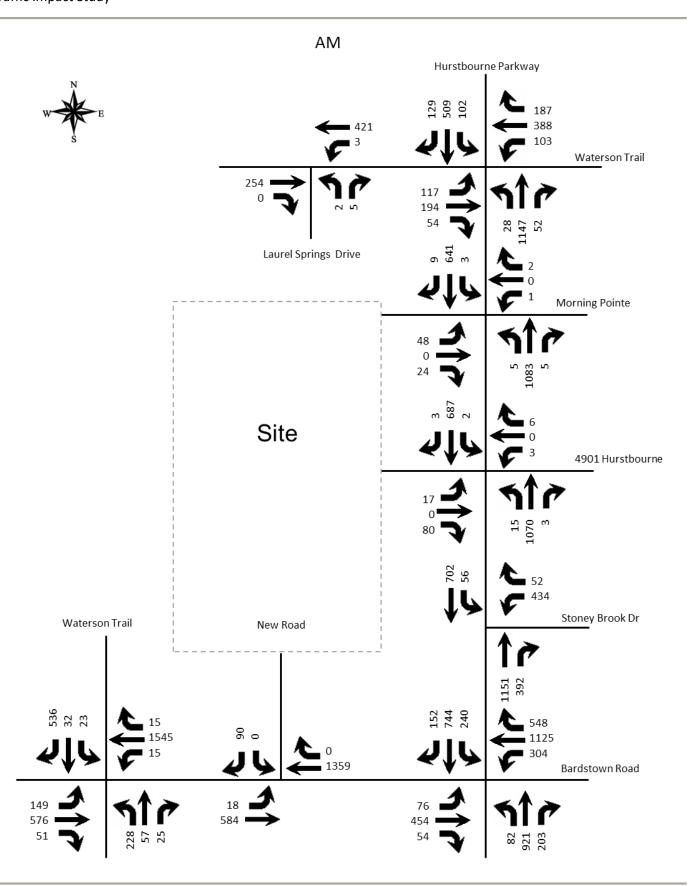


Figure 5. Peak Hour Trips Generated by Site



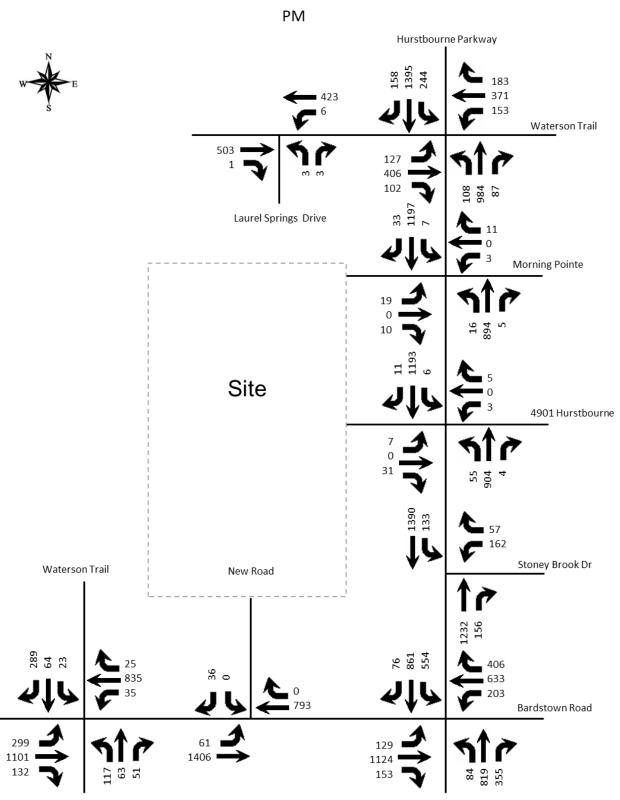


Figure 6. 2025 Build Peak Hour Volumes

#### **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 for lanes at stop-controlled intersections.

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the <u>Highway Capacity Manual</u>, 6<sup>th</sup> edition. Future delays and Level of Service were determined for the intersections using the Synchro (version 11) software. The initial Synchro models were provided by Louisville Metro Traffic Engineering. The delays and Level of Service are summarized in **Table 2**.

**Table 2. Peak Hour Level of Service** 

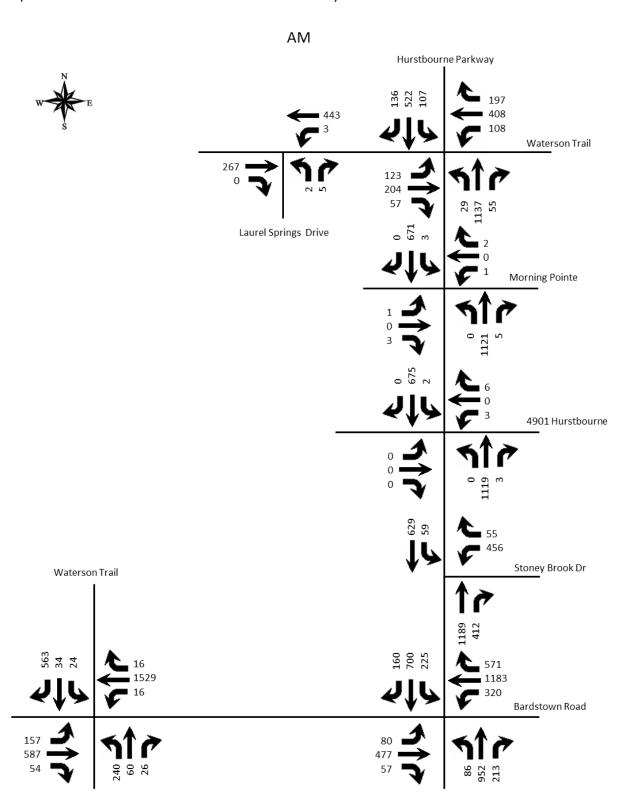
		A.M.			P.M.	
Annanaah	2022	2025	2025	2022	2025	2025
Approach	Existing	No Build	Build	Existing	No Build	Build
Hurstbourne Pkwy at Watterson Tr	D	D	D	D	D	D
Truisibourne rkwy at Watterson in	44.8	45.7	45.7	44.9	46.0	48.2
Watterson Tr Eastbound	D	D	D	F	F	F
Walterson in Lastbound	52.4	50.9	50.9	80.4	80.9	80.9
Watterson Tr Westbound	Е	Е	Е	Е	Е	Е
wallerson in westbound	59.0	59.2	59.2	59.3	60.3	60.3
Hurstbourne Pkwy Northbound	Е	Е	Е	Е	Е	Е
Hurstbourne Fkwy Northbourna	57.8	60.9	60.9	62.8	62.8	68.2
Hurstbourne Pkwy Southbound	Α	Α	Α	В	В	В
Transibourne Fkwy Southbourna	4.6	6.5	6.5	14.4	17.1	18.8
Hurstbourne Pkwy at Stoney Brook Dr	С	С	С	В	В	В
Hurstbourne Fkwy at Stoney Brook Dr	33.6	34.7	33.9	17.0	18.0	18.1
Stoney Brook Dr Westbound	F	F	F	Е	Е	Е
Storiey Brook Dr Westbourid	102.8	108.3	108.3	76.9	75.9	75.9
Hurathaurna Dkwy Narthhaund	В	В	В	В	В	В
Hurstbourne Pkwy Northbound	17.9	18.1	18.3	12.5	13.8	14.3
Hurstbourne Pkwy Southbound	В	В	В	В	В	В
Transibourne Fkwy Southbourna	17.7	18.4	18.0	12.5	13.3	13.2
Hurstbourne Pkwy at Bardstown Rd	E	E	F	E	E	F
Hurstbourne Fkwy at Barustown Ku	64.2	69.0	73.1	73.2	79.3	88.2
Hurathaurna Dkwy Narthhaund	F	F	F	F	F	F
Hurstbourne Pkwy Northbound	95.3	106.3	111.9	93.2	107.9	129.4
Hursthourna Plany Southhound	D	Е	Е	Е	Е	F
Hurstbourne Pkwy Southbound	53.6	58.8	71.0	70.0	72.4	86.3
Bardstown Rd Eastbound	D	D	D	Е	F	F
Daiusiowii Ku Easibouilu	46.5	47.0	47.4	79.6	87.0	87.0

		A.M.			P.M.	
Approach	2022 Existing	2025 No Build	2025 Build	2022 Existing	2025 No Build	2025 Build
Bardstown Rd Westbound	E 56.0	E 58.4	E 58.3	D 49.8	D 50.3	D 49.9
Bardstown Road at Watterson Trail	D 45.3	D 48.6	D 48.6	D 38.7	D 40.8	D 42.4
Watterson Trail Northbound	F 96.3	F 97.5	F 97.5	F 86.8	F 87.9	F 87.9
Watterson Trail Southbound	E 75.0	E 76.1	E 76.1	E 78.1	F 82.8	F 82.8
Bardstown Rd Eastbound	D 36.3	D 38.4	D 38.4	D 41.4	D 41.8	D 44.6
Bardstown Rd Westbound	D 39.4	D 43.4	D 43.4	C 21.3	C 25.1	C 25.6
Hurstbourne Pkwy at 4700 Entrance						
4700 Hurstbourne Eastbound			C 18.8			D 27.3
Morning Point Westbound			C 17.5			B 14.7
Hurstbourne Pkwy Northbound			A 9.0			B 11.6
Hurstbourne Pkwy Southbound			B 10.9			A 9.8
Hurstbourne Pkwy at 4900 Entrance						
4900 Hurstbourne Eastbound			B 13.1			C 18.2
Morning Point Westbound			C 18.1			C 19.4
Hurstbourne Pkwy Northbound			A 9.1			B 12.4
Hurstbourne Pkwy Southbound			B 10.8			B 10.1
Bardstown Road at Entrance						
Bardstown Road Eastbound (left)			B 13.1			A 10.0
Entrance Southbound			C 18.5			B 11.7

Key: Level of Service, Delay in seconds per vehicle

The entrances were evaluated for turn lanes using the Kentucky Transportation Cabinet <u>Highway Design Guidance</u> <u>Manual</u> dated July, 2020. The traffic impact policy requires using volumes for ten years beyond opening date, or 2035. The 2035 volumes were determined applying a 0.5 percent annual growth rate from 2025. Figure 7 illustrates

the 2035 No Build volumes. Figure 8 illustrates the 2035 Build Volumes. Using the volumes in Figure 8, no turn lanes will be required at the entrances. **Table 3** summarizes the delay and Level of Service for 2035.



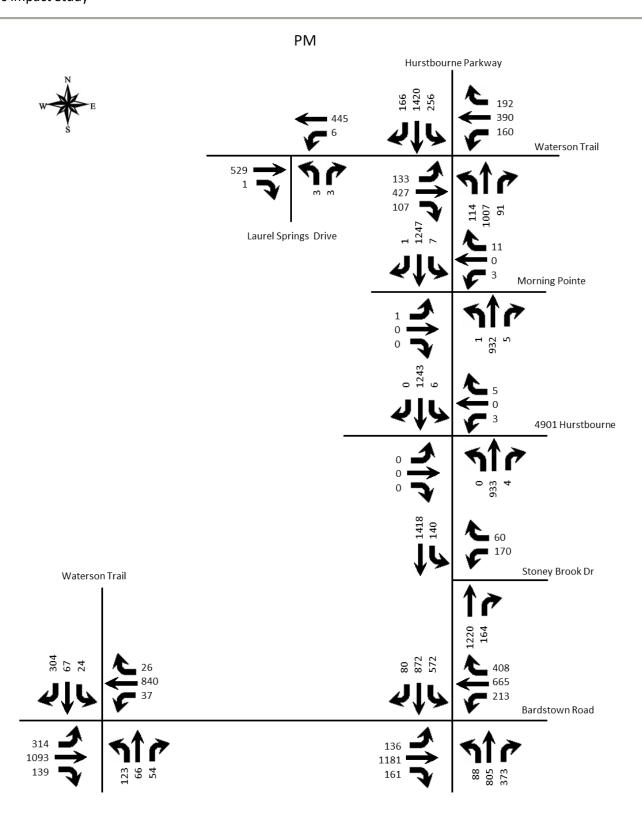
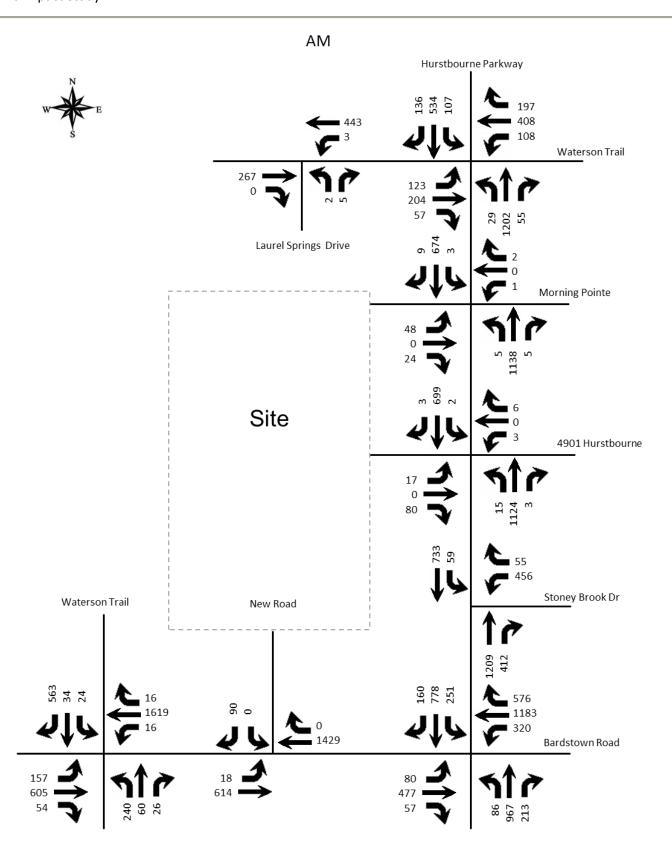


Figure 7. 2035 No Build Peak Hour Volumes



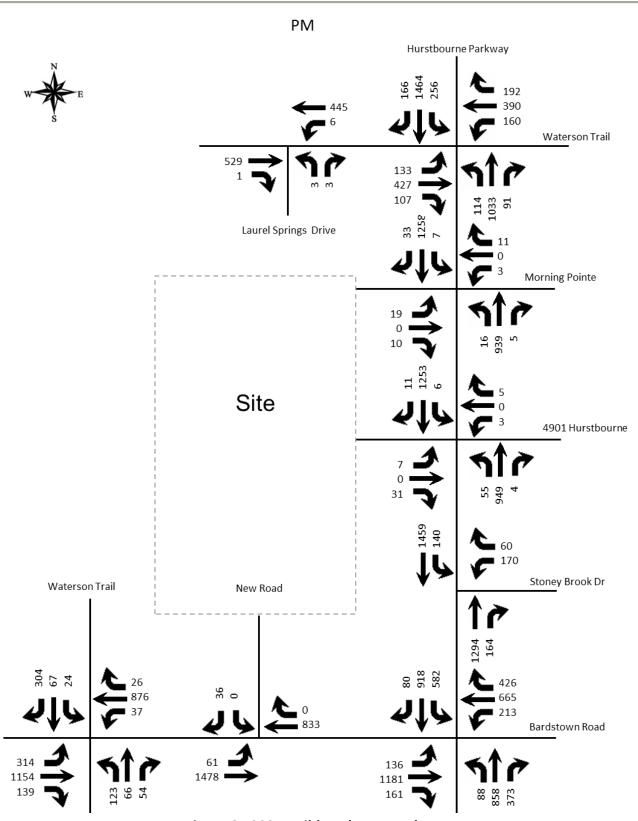


Figure 8. 2035 Build Peak Hour Volumes

Table 3. Peak Hour Level of Service (2035)

		A.M.			P.M.	
Approach	2022	2035	2035	2022	2035	2035
Approach	Existing	No Build	Build	Existing	No Build	Build
Hurstbourne Pkwy at Watterson Tr	D	D	D	D	D	Е
Thurstoodine I kwy at Watterson II	44.8	49.2	54.8	44.9	54.5	57.7
Watterson Tr Eastbound	D	D	D	F	F	F
	52.4	50.6 E	50.6 E	80.4 E	83.2 E	83.2
Watterson Tr Westbound	E 59.0	59.9	59.9	59.3	61.9	E 61.9
	59.0 E	59.9 E	59.9 F	59.5 E	61.9 E	61.9 E
Hurstbourne Pkwy Northbound	57.8	68.4	81.7	62.8	70.9	73.8
	A	A	A	B	C	D
Hurstbourne Pkwy Southbound	4.6	7.8	7.8	14.4	30.3	36.5
Howeth arrange Planer at Ctamper Proper Dr.	С	D	D	В	В	В
Hurstbourne Pkwy at Stoney Brook Dr	33.6	37.8	37.0	17.0	18.8	18.9
Stoney Brook Dr Westbound	F	F	F	Е	Е	Е
Storiey Brook Br Westbourid	102.8	123.8	123.8	76.9	75.7	75.7
Hurstbourne Pkwy Northbound	В	В	В	В	В	В
,	17.9	18.6	18.8	12.5	14.7	15.4
Hurstbourne Pkwy Southbound	B	B	B	B	B	B
	17.7 <b>E</b>	18.7 <b>E</b>	18.3 <b>F</b>	12.5 <b>E</b>	13.9 <b>F</b>	13.9 <b>F</b>
Hurstbourne Pkwy at Bardstown Rd	64.2	78.9	83.4	73.2	98.6	100.6
	F	F	F	F	F	F
Hurstbourne Pkwy Northbound	95.3	123.4	129.4	93.2	145.6	145.6
Hurathaurna Dkwy Sauthhaund	D	Е	Е	Е	F	F
Hurstbourne Pkwy Southbound	53.6	65.5	79.5	70.0	91.7	100.3
Bardstown Rd Eastbound	D	D	D	Е	F	F
Barastown Na Eastbouria	46.5	47.7	48.3	79.6	109.4	109.4
Bardstown Rd Westbound	E	Е	Е	D	D	D
	56.0	68.2	68.0	49.8	46.0	45.7
Bardstown Road at Watterson Trail	D 45.3	E 56.2	E 66.4	D 38.7	D 43.1	D 45.2
	43.3 F	50.2 F	F	56.7 F	F	+3.2 F
Watterson Trail Northbound	96.3	101.1	101.1	86.8	88.7	88.7
	E	E	E	E	F	F
Watterson Trail Southbound	75.0	76.4	76.4	78.1	84.2	84.2
Pardatawa Pd Faathawad	D	D	D	D	D	D
Bardstown Rd Eastbound	36.3	42.2	43.2	41.4	44.5	48.2
Bardstown Rd Westbound	D	D	Е	С	С	С
	39.4	53.9	71.2	21.3	27.0	27.6
Hurstbourne Pkwy at 4700 Entrance						
4700 Hurstbourne Eastbound			C			D
			19.8			29.6

		A.M.			P.M.	
Approach	2022	2035	2035	2022	2035	2035
Арргоаст	Existing	No Build	Build	Existing	No Build	Build
Morning Point Westbound			С			С
Wieming Fount Weetsboard			18.3			15.2
Hurstbourne Pkwy Northbound			Α			В
Transissame r kwy rteransoana			9.1			12.0
Hurstbourne Pkwy Southbound			В			В
			11.2			10.0
Hurstbourne Pkwy at 4900 Entrance						
4900 Hurstbourne Eastbound			В			С
4900 Hursibourne Lasibourid			10.7			18.2
Morning Point Westbound			С			C
Worling Foint Westboard			18.2			19.4
Hursthourne Dkwy Northhound			Α			В
Hurstbourne Pkwy Northbound			7.8			12.4
Hurathaurna Dkwy Sauthhaund			В			В
Hurstbourne Pkwy Southbound			11.1			10.1
Bardstown Road at Entrance						
Pardatawa Boad Faathaund (loft)			В			В
Bardstown Road Eastbound (left)			13.7			10.2
Entrance Southbound			С			В
Entrance Southbound			19.6			11.9

Key: Level of Service, Delay in seconds per vehicle

The intersection of Hurstbourne Parkway at Bardstown Road will experience Level of Service F in both peak hours. The connection to Bardstown Road will provide an improvement to the intersection. Due to right-of-way constraints and locations of utilities at the intersection, there are not cost-effective mitigation options for the intersection.

#### **CONCLUSIONS**

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2025 and 2035, there will be an impact to the existing highway network. No additional improvements are recommended.

# **APPENDIX**

#### **Traffic Counts**

#### Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION www.marrtraffic.com

19524 Jefferson County, KY

Site 1 of 2

KY-1747 S Hurstbourne Pkwy (South) KY-1747 S Hurstbourne Pkwy (North) Driveway (West) Driveway (East)

Date

Wednesday, March 16, 2022

Weather

Mostly Cloudy 58°F

Lat/Long 38.178940°, -85.607194°

0700 - 0900 (Weekday 2h Session) (03-16-2022)

All vehicles

		Northbound Southbound								Eastbound						14	/estbou	ad			
	KV-17/			e Pkwy (	South)	KV-17/			e Pkwy (	North)			eway (W					vestbou veway (E			1
	Left	Thru		U-Turn		Left	Thru		U-Turn	App	Left	Thru		U-Turn	App	Left	Thru		U-Turn	App	Int
TIME	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	Tota
0700 - 0715	0	186	1	0	187	0	114	0	0	114	0	0	0	0	0	3	0	0	0	3	304
0715 - 0730	0	228	2	0	230	0	165	0	0	165	0	0	2	0	2	0	0	2	0	2	399
0730 - 0745	0	267	1	0	268	1	160	0	1	162	1	0	1	0	2	1	0	0	0	1	433
0745 - 0800	0	267	1	0	268	1	139	0	0	140	0	0	0	0	0	0	0	0	0	0	408
Hourly Total	0	948	5	0	953	2	578	0	1	581	1	0	3	0	4	4	0	2	0	6	1544
0800 - 0815	0	267	1	0	268	0	123	0	0	123	0	0	0	0	0	0	0	0	0	0	391
0815 - 0830	0	200	1	0	201	2	123	0	0	125	0	0	0	0	0	0	0	1	0	1	327
0830 - 0845	0	264	3	0	267	4	131	0	0	135	0	0	0	0	0	1	0	0	0	1	403
0845 - 0900	0	236	1	0	237	3	150	0	0	153	0	0	0	0	0	0	0	0	0	0	390
Hourly Total	0	967	6	0	973	9	527	0	0	536	0	0	0	0	0	1	0	1	0	2	1511
Grand Total	0	1915	11	0	1926	11	1105	0	1	1117	1	0	3	0	4	5	0	3	0	8	3055
Approach %	0.00	99.43	0.57	0.00	-	0.98	98.93	0.00	0.09	-	25.00	0.00	75.00	0.00	-	62.50	0.00	37.50	0.00	-	
Intersection %	0.00	62.68	0.36	0.00	63.04	0.36	36.17	0.00	0.03	36.56	0.03	0.00	0.10	0.00	0.13	0.16	0.00	0.10	0.00	0.26	
PHF	0.00	0.96	0.63	0.00	0.96	0.50	0.89	0.00	0.25	0.89	0.25	0.00	0.38	0.00	0.50	0.25	0.00	0.25	0.00	0.38	0.94

#### 1600 - 1800 (Weekday 2h Session) (03-16-2022)

All vehicles

		No	orthbou	nd			So	uthbou	nd			E	astboun	ıd			W	/estboui	nd		1
	KY-174	17 S Hur	stbourne	e Pkwy (	South)	KY-174	7 S Hur	stbourn	e Pkwy (	North)		Driv	eway (W	/est)			Driv	eway (E	ast)		
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	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	Total
1600 - 1615	1	205	0	0	206	0	232	0	0	232	1	0	0	0	1	0	0	0	0	0	439
1615 - 1630	0	202	2	1	205	0	294	1	0	295	1	0	0	0	1	0	0	2	0	2	503
1630 - 1645	0	206	1	0	207	1	289	0	1	291	0	0	0	0	0	1	0	2	0	3	501
1645 - 1700	0	204	1	0	205	2	262	0	0	264	0	0	0	0	0	0	0	3	0	3	472
Hourly Total	1	817	4	1	823	3	1077	1	1	1082	2	0	0	0	2	1	0	7	0	8	1915
1700 - 1715	0	212	1	0	213	1	286	0	2	289	0	0	0	0	0	2	0	4	0	6	508
1715 - 1730	0	230	0	0	230	1	253	3	0	257	0	0	1	0	1	2	0	2	0	4	492
1730 - 1745	0	228	0	0	228	1	277	0	0	278	0	0	0	0	0	0	0	3	0	3	509
1745 - 1800	0	166	0	0	166	0	240	0	0	240	1	0	0	0	1	0	0	0	0	0	407
Hourly Total	0	836	1	0	837	3	1056	3	2	1064	1	0	1	0	2	4	0	9	0	13	1916
Grand Total	1	1653	5	1	1660	6	2133	4	3	2146	3	0	1	0	4	5	0	16	0	21	3831
Approach %	0.06	99.58	0.30	0.06	-	0.28	99.39	0.19	0.14	-	75.00	0.00	25.00	0.00	-	23.81	0.00	76.19	0.00	-	
Intersection %	0.03	43.15	0.13	0.03	43.33	0.16	55.68	0.10	0.08	56.02	0.08	0.00	0.03	0.00	0.10	0.13	0.00	0.42	0.00	0.55	
PHF	0.00	0.97	0.63	0.25	0.97	0.50	0.96	0.25	0.38	0.97	0.25	0.00	0.00	0.00	0.25	0.38	0.00	0.69	0.00	0.58	0.98
·																					

#### 



www.marrtraffic.com

Site 2 of 2

Laurel Spring Dr

Watterson Trail (West) Watterson Trail (East)

19524 Jefferson County, KY

Date

Wednesday, March 16, 2022

Weather Mostly Cloudy

58°F

Lat/Long 38.181397°, -85.611134°

30.101337 , 03.011134

0700 - 0900 (Weekday 2h Session) (03-16-2022)

All vehicles

		No	orthbou	nd	
		Laui	el Sprin	g Dr	
	Left		Right	U-Turn	App
TIME	2.1		2.2	2.3	Total
0700 - 0715	1		2	0	3
0715 - 0730	2		4	0	6
0730 - 0745	0		0	0	0
0745 - 0800	0		1	0	1
Hourly Total	3		7	0	10
0800 - 0815	0		0	0	0
0815 - 0830	0		0	0	0
0830 - 0845	0		0	0	0
0845 - 0900	0		0	0	0
Hourly Total	0		0	0	0
Grand Total	3		7	0	10
Approach %	30.00		70.00	0.00	-
Intersection %	0.26		0.61	0.00	0.87
PHF	0.25		0.31	0.00	0.29
		•			

Ea	astbour	ıd			W	estboui	nd		
Watters	on Trai	l (West)			Watter	son Trai	il (East)		
Thru	Right	U-Turn	App	Left	Thru		U-Turn	App	Int
2.4	2.5	2.6	Total	2.7	2.8		2.9	Total	Total
35	0	0	35	1	95		0	96	134
44	0	0	44	0	98		0	98	148
59	0	0	59	1	112		0	113	172
48	0	0	48	2	99		0	101	150
186	0	0	186	4	404		0	408	604
45	0	0	45	0	94		0	94	139
45	0	0	45	2	61		0	63	108
62	0	0	62	0	87		0	87	149
58	1	0	59	0	94		0	94	153
210	1	0	211	2	336		0	338	549
396	1	0	397	6	740		0	746	1153
99.75	0.25	0.00	-	0.80	99.20		0.00	-	
34.35	0.09	0.00	34.43	0.52	64.18		0.00	64.70	
0.83	0.00	0.00	0.83	0.38	0.90		0.00	0.90	0.89
-					-		-		

1600 - 1800 (Weekday 2h Session) (03-16-2022)

All vehicles

	Northbound										
		Laui	rel Sprin	g Dr							
	Left		Right	U-Turn	App						
TIME	2.1		2.2	2.3	Total						
1600 - 1615	0		1	0	1						
1615 - 1630	0		1	0	1						
1630 - 1645	1		1	0	2						
1645 - 1700	0		2	0	2						
Hourly Total	1		5	0	6						
1700 - 1715	0		0	0	0						
1715 - 1730	2		0	0	2						
1730 - 1745	0		1	0	1						
1745 - 1800	0		0	0	0						
Hourly Total	2		1	0	3						
Grand Total	3		6	0	9						
Approach %	33.33		66.67	0.00	-						
Intersection %	0.19		0.37	0.00	0.56						
PHF	0.38		0.38	0.00	0.75						

E	astbour	ıd			W	estboui	nd		
Watters	son Trai	l (West)			Watter	son Trai	il (East)		
Thru	Right	U-Turn	App	Left	Thru		U-Turn	App	Int
2.4	2.5	2.6	Total	2.7	2.8		2.9	Total	Total
85	0	0	85	1	102		0	103	189
82	2	0	84	2	109		0	111	196
110	0	0	110	1	111		0	112	224
104	0	0	104	1	91		0	92	198
381	2	0	383	5	413		0	418	807
106	0	0	106	1	90		0	91	197
124	1	0	125	3	99		0	102	229
87	0	0	87	1	106		0	107	195
87	0	0	87	0	97		0	97	184
404	1	0	405	5	392		0	397	805
785	3	0	788	10	805		0	815	1612
99.62	0.38	0.00	-	1.23	98.77		0.00	-	
48.70	0.19	0.00	48.88	0.62	49.94		0.00	50.56	
						-			
0.90	0.25	0.00	0.89	0.50	0.88		0.00	0.89	0.93
						-			

#### **HCS Reports**

HCM 6th Signalized Intersection Summary	y
2216: KY-1747 & US-31E	

06/17/2022

22 10. KT-1747 & 00	-01L										001	IIIZUZZ
	ኘ	<b>†</b>	۴	Ļ	ţ	×	•	$\mathbf{x}$	>	₹	×	•
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	7	<b>^</b>	7	1,1	<b>∱</b> }		ň	<b>^</b>	7	7	<b>^</b>	7
Traffic Volume (veh/h)	80	875	200	200	625	150	75	425	50	300	1100	525
Future Volume (veh/h)	80	875	200	200	625	150	75	425	50	300	1100	525
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	951	217	217	679	163	82	462	54	326	1196	571
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	882	658	295	776	186	220	1127	503	297	1282	707
Arrive On Green	0.06	0.25	0.25	0.17	0.55	0.55	0.12	0.32	0.32	0.22	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	3456	2843	682	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	87	951	217	217	424	418	82	462	54	326	1196	571
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1728	1777	1748	1781	1777	1585	1781	1777	1585
Q Serve(g s), s	7.7	39.7	9.2	9.5	33.2	33.3	6.8	16.3	3.9	26.7	50.7	31.4
Cycle Q Clear(g_c), s	7.7	39.7	9.2	9.5	33.2	33.3	6.8	16.3	3.9	26.7	50.7	31.4
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	882	658	295	485	477	220	1127	503	297	1282	707
V/C Ratio(X)	0.81	1.08	0.33	0.74	0.87	0.88	0.37	0.41	0.11	1.10	0.93	0.81
Avail Cap(c a), veh/h	175	882	658	425	485	477	220	1127	503	297	1282	707
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	74.3	60.2	13.8	64.7	33.9	33.9	64.4	42.9	38.6	62.2	39.8	29.5
Incr Delay (d2), s/veh	18.2	53.8	1.3	4.1	15.6	15.9	1.3	1.1	0.4	64.7	7.3	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	24.1	3.4	4.0	12.7	12.5	3.1	7.3	1.6	16.7	21.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.5	113.9	15.1	68.7	49.5	49.8	65.7	44.0	39.0	127.0	47.1	34.1
LnGrp LOS	F	F	В	Е	D	D	Е	D	D	F	D	С
Approach Vol, veh/h		1255			1059			598			2093	
Approach Delay, s/veh		95.3			53.6			46.5			56.0	
Approach LOS		F			D			D			Е	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.9	47.0	27.1	65.0	16.9	51.0	34.0	58.1				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	19.7	39.7	13.7	57.7	15.7	43.7	26.7	44.7				
Max Q Clear Time (g c+l1), s	11.5	0.0	8.8	52.7	9.7	0.0	28.7	18.3				
Green Ext Time (p c), s	0.7	0.0	0.1	4.3	0.1	0.0	0.0	4.4				
4 = 77	0.1	0.0	0.1	4.0	0.1	0.0	0.0	7.7				
Intersection Summary			0.1.0									
HCM 6th Ctrl Delay			64.2									
HCM 6th LOS			E									
Notes												

Note:

User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak M. Brandon Shelley, PE

**HCM 6th Signalized Intersection Summary** 2217: S Watterson Trail & US-31E 06/17/2022 ٧J ٠ Ļ × t ጮ × SEL Movement **NBL** NBT **NBR** SBL SBT SBR SET SER NWL NWT NWR Lane Configurations 4 4 ٦ 44 ኘ **^** 225 Traffic Volume (veh/h) 50 25 25 475 125 550 50 1425 15 15 15 Future Volume (veh/h) 225 50 25 15 25 475 125 550 50 15 1425 15 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0 0 0 Ped-Bike Adj(A\_pbT) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach Nο No Nο No Adi Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 245 136 598 54 1549 54 16 27 0 16 16 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Peak Hour Factor 0.92 0.92 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 Cap, veh/h 263 58 44 74 221 1393 621 596 1808 806 0.18 0.00 0.06 0.06 0.00 0.07 0.39 0.39 0.51 0.51 Arrive On Green 0.18 0.19 Sat Flow, veh/h 1472 324 1585 683 1153 1585 1781 3554 1585 1781 3554 1585 299 Grp Volume(v), veh/h 0 0 43 0 0 136 598 54 16 1549 16 1585 Grp Sat Flow(s), veh/h/ln 1797 0 1585 1836 0 1585 1781 1777 1781 1777 1585 Q Serve(g\_s), s 26.2 0.0 0.0 36 0.0 0.0 55 197 34 0.0 60.7 0.8 Cycle Q Clear(g\_c), s 26.2 0.0 3.6 0.0 0.0 5.5 19.7 3.4 0.0 60.7 0.8 Prop In Lane 0.82 1.00 0.37 1.00 1.00 1.00 1.00 1.00 1393 1808 Lane Grp Cap(c), veh/h 321 117 221 621 596 806 0.00 0.00 V/C Ratio(X) 0.93 0.37 0.62 0.43 0.03 0.86 0.02 0.09 Avail Cap(c\_a), veh/h 341 0 303 374 1393 621 596 1808 806 0 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 0.00 0.00 1.00 0.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 64.7 0.0 0.0 71.8 0.0 0.0 32.5 35.6 30.6 23.8 34.2 19.5 Incr Delay (d2), s/veh 31.6 0.0 0.0 3.3 0.0 0.0 4.7 1.0 0.3 0.0 5.5 0.0 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln 14.8 0.0 8.6 0.3 26.5 0.3 0.0 0.0 1.8 0.0 2.9 1.4 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 96.3 0.0 0.0 75.0 0.0 0.0 37.2 36.5 30.9 23.8 39.7 19.6 LnGrp LOS D С D В Α E Α D Approach Vol, veh/h 299 43 788 1581 39.4 Approach Delay, s/veh 96.3 75.0 36.3 Approach LOS D D Timer - Assigned Phs Phs Duration (G+Y+Rc), s 19.3 88.7 35.2 38.0 70.0 16.8 Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6 Max Green Setting (Gmax), s 49.7 30.4 12.7 62.7 26.4 25.7 Max Q Clear Time (g c+l1), s 0.0 28.2 2.0 0.0 5.6 7.5 Green Ext Time (p\_c), s 0.6 0.0 0.4 0.0 0.0 0.1 Intersection Summary 45.3 HCM 6th Ctrl Delay HCM 6th LOS D User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak M. Brandon Shelley, PE

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	4	†	~	<b>/</b>	Ţ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	*	<b>^</b>
Traffic Volume (veh/h)	425	50	1100	375	50	550
Future Volume (veh/h)	425	50	1100	375	50	550
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	462	54	1196	408	54	598
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	450	400	2024	1303	81	2348
Arrive On Green	0.25	0.25	0.57	0.57	0.05	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	462	54	1196	408	54	598
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	40.4	4.2	34.9	9.9	4.8	11.0
Cycle Q Clear(g_c), s	40.4	4.2	34.9	9.9	4.8	11.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	450	400	2024	1303	81	2348
V/C Ratio(X)	1.03	0.13	0.59	0.31	0.67	0.25
Avail Cap(c_a), veh/h	450	400	2024	1303	164	2348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.32	0.32	1.00	1.00
Uniform Delay (d), s/veh	59.8	46.3	22.3	3.4	75.2	11.1
Incr Delay (d2), s/veh	49.6	0.3	0.4	0.2	12.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	4.2	14.1	8.6	2.4	4.2
Unsig. Movement Delay, s/veh				- 5.5		
LnGrp Delay(d),s/veh	109.4	46.6	22.8	3.6	87.8	11.3
LnGrp LOS	F	D	C	Α.	67.0	В
Approach Vol. veh/h	516		1604			652
Approach Delay, s/veh	102.8		17.9			17.7
11 //						17.7 B
Approach LOS	F		В			В
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.6	98.4		47.0		113.0
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	14.7	83.7		40.4		105.7
Max Q Clear Time (g c+l1), s	6.8	0.0		42.4		0.0
Green Ext Time (p c), s	0.1	0.0		0.0		0.0
4 - 7	0.7	0.5				0.5
Intersection Summary			00.0			
HCM 6th Ctrl Delay			33.6			
HCM 6th LOS			С			

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak M. Brandon Shelley, PE

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	٠	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>↑</b>	7	7	<b>↑</b>	7	**	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	80	175	50	100	375	175	25	1050	50	75	450	125
Future Volume (veh/h)	80	175	50	100	375	175	25	1050	50	75	450	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	190	54	109	408	190	27	1141	54	82	489	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	426	361	310	445	377	54	1270	567	430	1862	830
Arrive On Green	0.05	0.23	0.23	0.06	0.24	0.24	0.03	0.36	0.36	0.40	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	87	190	54	109	408	190	27	1141	54	82	489	136
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.9	14.0	4.4	7.4	34.0	10.5	2.4	48.6	2.9	0.0	0.0	0.0
Cycle Q Clear(g c), s	5.9	14.0	4.4	7.4	34.0	10.5	2.4	48.6	2.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	426	361	310	445	377	54	1270	567	430	1862	830
V/C Ratio(X)	0.57	0.45	0.15	0.35	0.92	0.50	0.50	0.90	0.10	0.19	0.26	0.16
Avail Cap(c a), veh/h	230	514	436	368	514	436	127	1270	567	430	1862	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	46.8	53.1	49.4	44.0	59.4	21.1	76.3	48.6	21.3	36.7	0.0	0.0
Incr Delay (d2), s/veh	3.3	1.0	0.3	0.7	20.4	1.5	9.6	10.2	0.3	0.3	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.7	1.8	3.4	18.6	4.1	1.2	22.8	1.5	2.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	54.2	49.7	44.7	79.8	22.6	85.9	58.9	21.7	37.0	0.3	0.4
LnGrp LOS	D	D	D	D	Е	С	F	Е	С	D	Α	Α
Approach Vol, veh/h		331			707			1222			707	
Approach Delay, s/veh		52.4			59.0			57.8			4.6	
Approach LOS		D			E			E			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.8	63.0	15.8	42.4	11.5	90.3	14.1	44.1				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
		57.2										
Max Green Setting (Gmax), s	* 20	0.0	* 15 9.4	44.0 16.0	11.4 4.4	* 65 0.0	* 15 7.9	44.0 36.0				
Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s	2.0 0.3	0.0	0.1	1.2	0.0	0.0	0.1	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			44.8									
HCM 6th LOS			44.0 D									
Notes			D									

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak M. Brandon Shelley, PE

HCM 6th Signalized Intersection Summary
2216: KY-1747 & US-31E

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	7	<b>^</b>	7	ሻሻ	<b>∱</b> ⊅		7	<b>^</b>	7	*	<b>^</b>	7
Traffic Volume (veh/h)	82	906	203	214	666	152	76	454	54	304	1125	543
Future Volume (veh/h)	82	906	203	214	666	152	76	454	54	304	1125	543
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	985	221	233	724	165	83	493	59	330	1223	590
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	882	658	299	785	179	218	1123	501	297	1282	709
Arrive On Green	0.06	0.25	0.25	0.17	0.55	0.55	0.12	0.32	0.32	0.22	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	3456	2874	655	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	89	985	221	233	447	442	83	493	59	330	1223	590
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1752	1781	1777	1585	1781	1777	1585
Q Serve(g s), s	7.9	39.7	9.4	10.3	36.8	36.9	6.9	17.6	4.2	26.7	52.8	34.0
Cycle Q Clear(g c), s	7.9	39.7	9.4	10.3	36.8	36.9	6.9	17.6	4.2	26.7	52.8	34.0
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	882	658	299	485	479	218	1123	501	297	1282	709
V/C Ratio(X)	0.81	1.12	0.34	0.78	0.92	0.92	0.38	0.44	0.12	1.11	0.95	0.83
Avail Cap(c a), veh/h	175	882	658	425	485	479	218	1123	501	297	1282	709
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	74.2	60.2	13.8	64.7	34.7	34.8	64.6	43.5	38.9	62.2	40.4	29.9
Incr Delay (d2), s/veh	18.7	67.8	1.4	5.7	20.9	21.2	1.3	1.2	0.5	69.6	9.3	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	25.8	3.5	4.4	14.6	14.4	3.2	7.9	1.7	17.1	22.4	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.9	128.0	15.2	70.4	55.6	55.9	66.0	44.7	39.4	131.8	49.7	35.3
LnGrp LOS	F	F	В	Е	Е	Е	Е	D	D	F	D	D
Approach Vol, veh/h		1295			1122			635			2143	
Approach Delay, s/veh		106.3			58.8			47.0			58.4	
Approach LOS		F			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.1	47.0	26.9	65.0	17.1	51.0	34.0	57.9				
	7.3	7.3	7.3	7.3	7.3		7.3	7.3				
Change Period (Y+Rc), s			13.7	57.7	15.7	7.3 43.7	26.7	44.7				
Max Green Setting (Gmax), s	19.7	39.7	8.9	54.8		0.0						
Max Q Clear Time (g_c+l1), s	12.3	0.0		2.6	9.9		28.7	19.6				
Green Ext Time (p_c), s	0.7	0.0	0.1	2.0	0.1	0.0	0.0	4.6				
Intersection Summary			20.5									
HCM 6th Ctrl Delay			69.0									
HCM 6th LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) 1 2025 No Build 4:47 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

**HCM 6th Signalized Intersection Summary** 2217: S Watterson Trail & US-31E 06/17/2022 ٧J ٠ Ļ × t ጮ × SEL Movement **NBL** NBT **NBR** SBL SBT SBR SET SER NWL NWT NWR Lane Configurations 4 4 44 ኘ **^** 228 Traffic Volume (veh/h) 57 25 23 32 536 149 558 1455 15 51 15 Future Volume (veh/h) 228 57 25 23 32 536 149 558 51 15 1455 15 0 0 0 0 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 Ped-Bike Adj(A\_pbT) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach Nο No Nο No Adi Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 248 35 162 607 55 1582 62 25 0 16 16 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Peak Hour Factor 0.92 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 Cap, veh/h 265 66 53 75 209 1393 621 573 1768 789 0.18 0.00 0.07 0.07 0.00 0.07 0.39 0.39 0.50 0.50 Arrive On Green 0.18 0.18 Sat Flow, veh/h 1439 360 1585 763 1069 1585 1781 3554 1585 1781 3554 1585 310 Grp Volume(v), veh/h 0 0 60 0 0 162 607 55 16 1582 16 Grp Sat Flow(s), veh/h/ln 1798 0 1585 1832 1585 1781 1777 1585 1781 1777 1585 Q Serve(g\_s), s 27.2 0.0 0.0 5.0 0.0 0.0 74 20.0 3.5 0.0 64.5 0.8 Cycle Q Clear(g\_c), s 27.2 0.0 5.0 0.0 0.0 7.4 20.0 3.5 0.0 64.5 0.8 Prop In Lane 0.80 1.00 0.42 1.00 1.00 1.00 1.00 1.00 1393 1768 Lane Grp Cap(c), veh/h 331 128 209 621 573 789 0.94 0.00 0.00 V/C Ratio(X) 0.47 0.78 0.44 0.03 0.89 0.02 0.09 Avail Cap(c\_a), veh/h 342 0 302 361 1393 621 573 1768 789 0 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Upstream Filter(I) 1.00 0.00 0.00 1.00 0.00 0.00 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 64.4 0.0 0.0 71.6 0.0 0.0 37.1 35.7 30.6 25.0 36.4 20.4 Incr Delay (d2), s/veh 33.1 0.0 0.0 4.5 0.0 0.0 10.1 1.0 0.3 0.0 7.5 0.0 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln 2.5 0.0 8.8 0.3 28.6 0.3 15.5 0.0 0.0 0.0 3.6 1.4 Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh 97.5 0.0 0.0 76.1 0.0 0.0 47.2 36.7 30.9 25.0 43 9 20.4 LnGrp LOS D С С D С Α Е Α Approach Vol, veh/h 310 60 824 1614 Approach Delay, s/veh 97.5 76.1 38.4 43.4 Approach LOS D D Timer - Assigned Phs Phs Duration (G+Y+Rc), s 19.3 86.9 36.0 36.2 70.0 17.8 Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6 Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4 Max Q Clear Time (g c+l1), s 0.0 29.2 2.0 0.0 7.0 9.4 0.2 Green Ext Time (p\_c), s 0.7 0.0 0.2 0.0 0.0 Intersection Summary 48.6 HCM 6th Ctrl Delay HCM 6th LOS D User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay

Pattern 10 (Weekday AM Peak) 1 2025 No Build 4:47 pm 06/17/2022 4700 Hurstbourne Pkwy

DBZ

Synchro 11 Report

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HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	4	<b>†</b>	~	<b>/</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	ሻ	<b>^</b>
Traffic Volume (veh/h)	434	52	1131	392	56	598
Future Volume (veh/h)	434	52	1131	392	56	598
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	472	57	1229	426	61	650
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	450	400	2020	1301	83	2348
Arrive On Green	0.25	0.25	0.57	0.57	0.05	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	472	57	1229	426	61	650
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	40.4	4.5	36.5	10.5	5.4	12.2
Cycle Q Clear(g_c), s	40.4	4.5	36.5	10.5	5.4	12.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	450	400	2020	1301	83	2348
V/C Ratio(X)	1.05	0.14	0.61	0.33	0.73	0.28
Avail Cap(c_a), veh/h	450	400	2020	1301	164	2348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.26	0.26	1.00	1.00
Uniform Delay (d), s/veh	59.8	46.4	22.8	3.5	75.3	11.3
Incr Delay (d2), s/veh	56.0	0.3	0.4	0.2	16.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.1	4.5	14.8	9.2	2.8	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	115.8	46.7	23.1	3.7	91.5	11.6
LnGrp LOS	F	D	С	Α	F	В
Approach Vol, veh/h	529		1655			711
Approach Delay, s/veh	108.3		18.1			18.4
Approach LOS	F		В			В
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.8	98.2		47.0		113.0
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	14.7	83.7		40.4		105.7
Max Q Clear Time (q c+l1), s	7.4	0.0		42.4		0.0
Green Ext Time (p c), s	0.1	0.0		0.0		0.0
u = //	0.1	0.0		0.0		0.0
Intersection Summary						
HCM 6th Ctrl Delay			34.7			
HCM 6th LOS			С			

Pattern 10 (Weekday AM Peak) 1 2025 No Build 4:47 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	7	<b>↑</b>	7	ሻ	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	117	194	54	103	388	187	28	1082	52	102	497	129
Future Volume (veh/h)	117	194	54	103	388	187	28	1082	52	102	497	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	211	59	112	422	203	30	1176	57	111	540	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	471	399	324	458	388	57	1270	567	380	1771	790
Arrive On Green	0.07	0.25	0.25	0.06	0.24	0.24	0.03	0.36	0.36	0.36	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	127	211	59	112	422	203	30	1176	57	111	540	140
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.5	15.2	4.6	7.4	35.2	11.7	2.7	50.8	3.0	0.9	0.1	0.1
Cycle Q Clear(g_c), s	8.5	15.2	4.6	7.4	35.2	11.7	2.7	50.8	3.0	0.9	0.1	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	471	399	324	458	388	57	1270	567	380	1771	790
V/C Ratio(X)	0.70	0.45	0.15	0.35	0.92	0.52	0.52	0.93	0.10	0.29	0.30	0.18
Avail Cap(c_a), veh/h	229	514	436	382	514	436	127	1270	567	380	1771	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	45.4	50.5	46.5	41.4	58.9	22.8	76.2	49.4	21.4	41.9	0.1	0.1
Incr Delay (d2), s/veh	6.6	1.0	0.2	0.6	21.5	1.6	10.1	12.8	0.4	0.6	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	7.3	1.9	3.3	19.3	4.6	1.4	24.2	1.5	2.9	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	51.4	46.8	42.0	80.5	24.4	86.3	62.1	21.8	42.5	0.6	0.6
LnGrp LOS	D	D	D	D	F	С	F	Е	С	D	Α	Α
Approach Vol, veh/h		397			737			1263			791	
Approach Delay, s/veh		50.9			59.2			60.9			6.5	
Approach LOS		D			Е			Е			Α	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	63.0	15.7	46.3	11.8	86.2	16.8	45.2				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 20	57.2	* 15	44.0	11.4	* 65	* 15	44.0				
Max Q Clear Time (g_c+l1), s	2.9	0.0	9.4	17.2	4.7	0.0	10.5	37.2				
Green Ext Time (p_c), s	0.4	0.0	0.1	1.4	0.0	0.0	0.1	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			45.7									
HCM 6th LOS			D									
Notes												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 10 (Weekday AM Peak) 1 2025 No Build 4:47 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

Pattern 10 (Weekday AM Peak) 25 Build 2216: KY-1747 & US-31E

08/08/2022

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ķ	<b>^</b>	7	44	<b>∱</b> ∱		7	<b>^</b>	7	ň	<b>^</b>	7
Traffic Volume (veh/h)	82	921	203	240	744	152	76	454	54	304	1125	548
Future Volume (veh/h)	82	921	203	240	744	152	76	454	54	304	1125	548
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1001	221	261	809	165	83	493	59	330	1223	596
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	882	658	310	812	166	212	1112	496	297	1282	714
Arrive On Green	0.06	0.25	0.25	0.18	0.55	0.55	0.12	0.31	0.31	0.22	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	3456	2940	600	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	89	1001	221	261	489	485	83	493	59	330	1223	596
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1762	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.9	39.7	9.3	11.7	43.8	43.8	6.9	17.7	4.3	26.7	52.8	33.9
Cycle Q Clear(g_c), s	7.9	39.7	9.3	11.7	43.8	43.8	6.9	17.7	4.3	26.7	52.8	33.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	882	658	310	491	487	212	1112	496	297	1282	714
V/C Ratio(X)	0.81	1.14	0.34	0.84	1.00	1.00	0.39	0.44	0.12	1.11	0.95	0.83
Avail Cap(c_a), veh/h	175	882	658	425	491	487	212	1112	496	297	1282	714
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	74.2	60.2	13.6	64.5	35.7	35.7	65.1	43.9	39.2	62.2	40.4	29.7
Incr Delay (d2), s/veh	18.7	74.8	1.4	9.6	34.4	34.5	1.4	1.3	0.5	69.6	9.3	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	26.7	3.4	5.1	18.6	18.4	3.2	7.9	1.7	17.1	22.4	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.9	134.9	15.0	74.2	70.1	70.2	66.5	45.2	39.7	131.8	49.7	35.1
LnGrp LOS	F	F	В	Е	Е	Е	Е	D	D	F	D	D
Approach Vol, veh/h		1311			1235			635			2149	
Approach Delay, s/veh		111.9			71.0			47.4			58.3	
Approach LOS		F			Е			D			Е	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.7	47.0	26.3	65.0	17.1	51.5	34.0	57.3				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	19.7	39.7	13.7	57.7	15.7	43.7	26.7	44.7				
Max Q Clear Time (g_c+l1), s	13.7	0.0	8.9	54.8	9.9	0.0	28.7	19.7				
Green Ext Time (p_c), s	0.7	0.0	0.1	2.6	0.1	0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			73.1									
HCM 6th LOS			73.1 E									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) 25 Build 2025 Build 12:58 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NW
Lane Configurations	HUL	4	7	OBL	4	7	<u> </u>	<b>^</b>	7	ሻ	<b>^</b>	
Traffic Volume (veh/h)	228	57	25	23	32	536	149	576	51	15	1545	1
Future Volume (veh/h)	228	57	25	23	32	536	149	576	51	15	1545	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	-	1.00	1.00	_	1.00	1.00	-	1.00	1.00	_	1.0
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	187
Adj Flow Rate, veh/h	248	62	0	25	35	0	162	626	55	16	1679	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.9
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	265	66		53	75		192	1393	621	566	1768	78
Arrive On Green	0.18	0.18	0.00	0.07	0.07	0.00	0.07	0.39	0.39	0.18	0.50	0.5
Sat Flow, veh/h	1439	360	1585	763	1069	1585	1781	3554	1585	1781	3554	158
Grp Volume(v), veh/h	310	0	0	60	0	0	162	626	55	16	1679	1
Grp Sat Flow(s), veh/h/ln	1798	0	1585	1832	0	1585	1781	1777	1585	1781	1777	158
Q Serve(g s), s	27.2	0.0	0.0	5.0	0.0	0.0	9.0	20.8	3.5	0.0	72.0	0.
Cycle Q Clear(g_c), s	27.2	0.0	0.0	5.0	0.0	0.0	9.0	20.8	3.5	0.0	72.0	0.
Prop In Lane	0.80		1.00	0.42		1.00	1.00		1.00	1.00		1.0
Lane Grp Cap(c), veh/h	331	0		128	0		192	1393	621	566	1768	78
V/C Ratio(X)	0.94	0.00		0.47	0.00		0.84	0.45	0.09	0.03	0.95	0.0
Avail Cap(c_a), veh/h	342	0		302	0		345	1393	621	566	1768	78
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.0
Uniform Delay (d), s/veh	64.4	0.0	0.0	71.6	0.0	0.0	45.8	35.9	30.6	25.4	38.3	20.
Incr Delay (d2), s/veh	33.1	0.0	0.0	4.5	0.0	0.0	15.3	1.1	0.3	0.0	12.4	0.
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
%ile BackOfQ(50%),veh/ln	15.5	0.0	0.0	2.5	0.0	0.0	7.2	9.1	1.4	0.4	32.9	0.
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.5	0.0	0.0	76.1	0.0	0.0	61.1	37.0	30.9	25.4	50.7	20.
LnGrp LOS	F	Α		E	Α		E	D	С	С	D	(
Approach Vol, veh/h		310			60			843			1711	
Approach Delay, s/veh		97.5			76.1			41.2			50.1	
Approach LOS		F			Е			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3	86.9		36.0	36.2	70.0		17.8				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g_c+l1), s	11.0	0.0		29.2	2.0	0.0		7.0				
Green Ext Time (p_c), s	0.7	0.0		0.2	0.0	0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			53.1									
HCM 6th LOS			D									
Notes												

Pattern 10 (Weekday AM Peak) 25 Build 2025 Build 5:20 pm 06/17/2022 4700 Hurstbourne Pkwy

DBZ

Pattern 10 (Weekday AM Peak) 25 Build 3003: KY-1747 & S Stony Brook Dr

08/08/2022

	•	4	<b>†</b>	~	<b>/</b>	ţ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	*	<b>^</b>
Traffic Volume (veh/h)	434	52	1151	392	56	702
Future Volume (veh/h)	434	52	1151	392	56	702
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	472	57	1251	426	61	763
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	450	400	2020	1301	83	2348
Arrive On Green	0.25	0.25	0.57	0.57	0.05	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	472	57	1251	426	61	763
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	40.4	4.5	37.5	10.5	5.4	14.8
Cycle Q Clear(g_c), s	40.4	4.5	37.5	10.5	5.4	14.8
Prop In Lane	1.00	1.00	0000	1.00	1.00	00.40
Lane Grp Cap(c), veh/h	450	400	2020	1301	83	2348
V/C Ratio(X)	1.05	0.14	0.62	0.33	0.73	0.33
Avail Cap(c_a), veh/h	450	400	2020	1301	164	2348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.22	0.22	1.00	1.00
Uniform Delay (d), s/veh	59.8	46.4	23.0	3.5	75.3	11.7
Incr Delay (d2), s/veh	56.0	0.3	0.3	0.1	16.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.1	4.5	15.2	9.1	2.8	5.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	115.8	46.7	23.3	3.7	91.5	12.1
LnGrp LOS	F	D	С	Α	F	В
Approach Vol. veh/h	529		1677			824
Approach Delay, s/veh	108.3		18.3			18.0
Approach LOS	F		B			В
Approdon EOO			D			_
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.8	98.2		47.0		113.0
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	14.7	83.7		40.4		105.7
Max Q Clear Time (g_c+l1), s	7.4	0.0		42.4		0.0
Green Ext Time (p_c), s	0.1	0.0		0.0		0.0
Intersection Summary						
			22.0			
HCM 6th Ctrl Delay			33.9			
HCM 6th LOS			С			

Pattern 10 (Weekday AM Peak) 25 Build 2025 Build 12:58 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ť	<b>^</b>	7	7	<b>^</b>	7	7	<b>^</b>	7	*	<b>^</b>	7
Traffic Volume (veh/h)	117	194	54	103	388	187	28	1147	52	102	509	129
Future Volume (veh/h)	117	194	54	103	388	187	28	1147	52	102	509	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	211	59	112	422	203	30	1247	57	111	553	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	471	399	324	458	388	57	1270	567	366	1771	790
Arrive On Green	0.07	0.25	0.25	0.06	0.24	0.24	0.03	0.36	0.36	0.36	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	127	211	59	112	422	203	30	1247	57	111	553	140
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.5	15.2	4.6	7.4	35.2	11.7	2.7	55.6	3.0	2.3	0.1	0.1
Cycle Q Clear(g_c), s	8.5	15.2	4.6	7.4	35.2	11.7	2.7	55.6	3.0	2.3	0.1	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	471	399	324	458	388	57	1270	567	366	1771	790
V/C Ratio(X)	0.70	0.45	0.15	0.35	0.92	0.52	0.52	0.98	0.10	0.30	0.31	0.18
Avail Cap(c_a), veh/h	229	514	436	382	514	436	127	1270	567	366	1771	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	45.4	50.5	46.5	41.4	58.9	22.8	76.2	50.9	21.4	42.5	0.1	0.1
Incr Delay (d2), s/veh	6.6	1.0	0.2	0.6	21.5	1.6	10.1	21.2	0.4	0.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	7.3	1.9	3.3	19.3	4.6	1.4	27.7	1.5	3.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	51.4	46.8	42.0	80.5	24.4	86.3	72.1	21.8	43.2	0.6	0.6
LnGrp LOS	D	D	D	D	F	С	F	Е	С	D	Α	Α
Approach Vol, veh/h		397			737			1334			804	
Approach Delay, s/veh		50.9			59.2			70.3			6.5	
Approach LOS		D			Е			Е			Α	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	63.0	15.7	46.3	11.8	86.2	16.8	45.2				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 20	57.2	* 15	44.0	11.4	* 65	* 15	44.0				
Max Q Clear Time (g_c+l1), s	4.3	0.0	9.4	17.2	4.7	0.0	10.5	37.2				
Green Ext Time (p_c), s	0.4	0.0	0.1	1.4	0.0	0.0	0.1	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			49.7									
HCM 6th LOS			D									
Nistan												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 10 (Weekday AM Peak) 25 Build 2025 Build 5:20 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary
2216: KV-1747 & US-31F

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWF
Lane Configurations	٦	<b>^</b>	7	ሻሻ	<b>∱</b> ⊅		7	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	86	952	213	225	700	160	80	477	57	320	1183	571
Future Volume (veh/h)	86	952	213	225	700	160	80	477	57	320	1183	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	C
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	1035	232	245	761	174	87	518	62	348	1286	621
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	882	658	307	784	179	214	1115	497	297	1282	712
Arrive On Green	0.06	0.25	0.25	0.18	0.55	0.55	0.12	0.31	0.31	0.22	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	3456	2872	657	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	93	1035	232	245	471	464	87	518	62	348	1286	621
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1728	1777	1752	1781	1777	1585	1781	1777	1585
Q Serve(q s), s	8.3	39.7	9.9	10.9	40.9	40.9	7.2	18.7	4.5	26.7	57.7	38.4
Cycle Q Clear(g c), s	8.3	39.7	9.9	10.9	40.9	40.9	7.2	18.7	4.5	26.7	57.7	38.4
Prop In Lane	1.00	00.1	1.00	1.00	10.0	0.37	1.00	10.1	1.00	1.00	01.1	1.00
Lane Grp Cap(c), veh/h	114	882	658	307	485	479	214	1115	497	297	1282	712
V/C Ratio(X)	0.82	1.17	0.35	0.80	0.97	0.97	0.41	0.46	0.12	1.17	1.00	0.87
Avail Cap(c a), veh/h	175	882	658	425	485	479	214	1115	497	297	1282	712
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	74.0	60.2	13.8	64.4	35.7	35.7	65.1	44.1	39.2	62.2	41.6	30.6
Incr Delay (d2), s/veh	20.1	90.2	1.5	6.5	28.3	28.5	1.5	1.4	0.5	92.7	17.9	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	28.5	3.6	4.6	16.9	16.7	3.3	8.4	1.8	19.1	25.8	12.2
Unsig. Movement Delay, s/veh		20.0	0.0	4.0	10.0	10.7	0.0	0.4	1.0	10.1	20.0	12.2
LnGrp Delay(d),s/veh	94.1	150.3	15.3	70.9	64.0	64.2	66.6	45.5	39.7	154.9	59.5	37.7
LnGrp LOS	F	100.5 F	В	70.5 E	04.0 E	04.2 E	00.0 E	40.0 D	D	F	55.5 F	D
Approach Vol, veh/h	'	1360			1180			667		'	2255	
		123.4			65.5			47.7			68.2	
Approach LOS		123.4 F			00.0 E			47.7 D			00.Z	
Approach LOS											E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.5	47.0	26.5	65.0	17.5	51.0	34.0	57.5				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	19.7	39.7	13.7	57.7	15.7	43.7	26.7	44.7				
Max Q Clear Time (g_c+l1), s	12.9	0.0	9.2	59.7	10.3	0.0	28.7	20.7				
Green Ext Time (p_c), s	0.7	0.0	0.1	0.0	0.1	0.0	0.0	4.8				
Intersection Summary												
HCM 6th Ctrl Delay			78.9									
HCM 6th LOS			Е									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) 35 No Build 2035 No Build 5:27 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

**HCM 6th Signalized Intersection Summary** 2217: S Watterson Trail & US-31E 06/17/2022 ٧J ٠ Ļ × t ጮ × SEL Movement **NBL** NBT **NBR** SBL SBT SBR SET SER NWL NWT **NWR** Lane Configurations 4 44 ኘ **^** 240 Traffic Volume (veh/h) 60 26 34 563 157 587 54 16 1529 16 Future Volume (veh/h) 240 60 26 24 34 563 157 587 54 16 1529 16 Initial Q (Qb), veh 0 0 0 0 0 0 0 0 0 0 0 0 1.00 Ped-Bike Adj(A\_pbT) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Parking Bus, Adj 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Work Zone On Approach No No No No Adi Sat Flow, veh/h/ln 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 1870 Adj Flow Rate, veh/h 261 26 37 171 638 59 1662 17 65 0 17 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 Peak Hour Factor 0.92 Percent Heavy Veh, % 2 2 2 2 2 2 2 2 2 2 2 2 Cap, veh/h 1393 548 769 274 68 53 76 198 621 1724 Arrive On Green 0.19 0.19 0.00 0.07 0.07 0.00 0.08 0.39 0.39 0.17 0.49 0.49 1585 Sat Flow, veh/h 1440 359 1585 756 1076 1585 1781 3554 1585 1781 3554 Grp Volume(v), veh/h 326 0 0 63 0 0 171 638 59 17 1662 17 Grp Sat Flow(s), veh/h/ln 1798 0 1585 1833 0 1585 1781 1777 1585 1781 1777 1585 Q Serve(g\_s), s 28.7 0.0 0.0 5.3 0.0 0.0 10.2 21.3 3.8 0.0 72.4 0.9 Cycle Q Clear(g\_c), s 5.3 0.0 28.7 0.0 0.0 10.2 21.3 3.8 72.4 0.9 Prop In Lane 0.80 1.00 0.41 1.00 1.00 1.00 1.00 1.00 1393 548 1724 Lane Grp Cap(c), veh/h 342 129 198 621 769 0.95 0.00 0.49 0.00 0.86 V/C Ratio(X) 0.46 0.09 0.03 0.96 0.02 Avail Cap(c\_a), veh/h 342 0 302 341 1393 621 548 1724 769 0 HCM Platoon Ratio 1.00 1.00 1 00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1 00 1 00 Upstream Filter(I) 1.00 0.00 0.00 1.00 0.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 Uniform Delay (d), s/veh 36.1 26.3 21.4 64.1 0.0 0.0 71.6 0.0 0.0 48.3 30.7 39.8 Incr Delay (d2), s/veh 37.0 0.0 0.0 4.8 0.0 0.0 16.7 1.1 0.3 0.0 14.7 0.1 Initial Q Delay(d3),s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 %ile BackOfQ(50%),veh/ln 16.6 0.0 0.0 0.0 0.0 9.3 0.4 33.7 0.3 2.7 7.7 1.5 Unsig. Movement Delay, s/veh 37.1 LnGrp Delay(d),s/veh 101.1 0.0 0.0 764 0.0 0.0 65.0 310 26.4 54 5 215 LnGrp LOS Ε Α D С D С Α Approach Vol, veh/h 63 326 868 1696 Approach Delay, s/veh 76.4 42.2 53.9 101.1 Approach LOS D D Timer - Assigned Phs Phs Duration (G+Y+Rc), s 20.2 84.9 37.0 35.1 70.0 17.9 Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6 49.7 12.7 62.7 26.4 Max Green Setting (Gmax), s 25.7 30.4 12.2 0.0 30.7 2.0 0.0 7.3 Max Q Clear Time (g\_c+l1), s 0.0 0.2 Green Ext Time (p\_c), s 0.7 0.0 0.0 0.0 Intersection Summary 56.2 HCM 6th Ctrl Delay HCM 6th LOS Ε User approved pedestrian interval to be less than phase max green. Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Pattern 10 (Weekday AM Peak) 35 No Build 2035 No Build 5:27 pm 06/17/2022 4700 Hurstbourne Pkwy

Synchro 11 Report

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HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	•	<b>†</b>	<i>&gt;</i>	<b>/</b>	ļ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	*	<b>^</b>
Traffic Volume (veh/h)	456	55	1189	412	59	629
Future Volume (veh/h)	456	55	1189	412	59	629
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	496	60	1292	448	64	684
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	450	400	2018	1300	84	2348
Arrive On Green	0.25	0.25	0.57	0.57	0.05	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	496	60	1292	448	64	684
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g s), s	40.4	4.7	39.5	11.3	5.7	12.9
Cycle Q Clear(q c), s	40.4	4.7	39.5	11.3	5.7	12.9
Prop In Lane	1.00	1.00	38.0	1.00	1.00	IZ.8
			2040	1300	84	22.40
Lane Grp Cap(c), veh/h	450	400	2018			2348
V/C Ratio(X)	1.10	0.15	0.64	0.34	0.76	0.29
Avail Cap(c_a), veh/h	450	400	2018	1300	164	2348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.15	0.15	1.00	1.00
Uniform Delay (d), s/veh	59.8	46.5	23.5	3.6	75.3	11.4
Incr Delay (d2), s/veh	73.3	0.4	0.2	0.1	18.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.3	4.7	15.9	9.8	3.0	5.0
Unsig. Movement Delay, s/veh	1					
LnGrp Delay(d),s/veh	133.1	46.8	23.7	3.7	93.5	11.7
LnGrp LOS	F	D	С	Α	F	В
Approach Vol, veh/h	556		1740			748
Approach Delay, s/veh	123.8		18.6			18.7
Approach LOS	F		В			В
						_
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.8	98.2		47.0		113.0
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	14.7	83.7		40.4		105.7
Max Q Clear Time (g_c+l1), s	7.7	0.0		42.4		0.0
Green Ext Time (p_c), s	0.1	0.0		0.0		0.0
Intersection Summary						
			27.0			
HCM 6th Ctrl Delay			37.8			
HCM 6th LOS			D			

Pattern 10 (Weekday AM Peak) 35 No Build 2035 No Build 5:27 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	<u></u>	<b>→</b>	•	•	<b>—</b>	•	•	<u>†</u>	~	<b>\</b>	<b></b>	<b>√</b>
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	*	<b>†</b>	7	7	<b>^</b>	7	7	<b>^</b>	7
Traffic Volume (veh/h)	123	204	57	108	408	197	29	1137	55	107	522	136
Future Volume (veh/h)	123	204	57	108	408	197	29	1137	55	107	522	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	222	62	117	443	214	32	1236	60	116	567	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	490	415	331	476	403	59	1270	567	348	1726	770
Arrive On Green	0.07	0.26	0.26	0.06	0.25	0.25	0.03	0.36	0.36	0.33	0.97	0.97
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	134	222	62	117	443	214	32	1236	60	116	567	148
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.8	15.9	4.8	7.6	37.0	12.5	2.8	54.8	3.2	2.7	1.1	0.5
Cycle Q Clear(g_c), s	8.8	15.9	4.8	7.6	37.0	12.5	2.8	54.8	3.2	2.7	1.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	490	415	331	476	403	59	1270	567	348	1726	770
V/C Ratio(X)	0.73	0.45	0.15	0.35	0.93	0.53	0.54	0.97	0.11	0.33	0.33	0.19
Avail Cap(c_a), veh/h	226	514	436	387	514	436	127	1270	567	348	1726	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	44.6	49.4	45.4	40.2	58.3	23.2	76.1	50.6	21.3	44.8	1.2	1.2
Incr Delay (d2), s/veh	8.8	0.9	0.2	0.6	23.5	1.5	10.5	19.5	0.4	0.8	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.6	1.9	3.4	20.5	4.9	1.5	27.1	1.6	3.2	0.4	0.3
Unsig. Movement Delay, s/veh		F0.4	45.0	40.0	04.0	040	00.7	70.0	04.7	45.5	4.7	
LnGrp Delay(d),s/veh	53.4	50.4	45.6	40.8	81.8	24.8	86.7	70.2	21.7	45.5	1.7	1.7
LnGrp LOS	D	D	D	D	F	С	F	E	С	D	A	A
Approach Vol, veh/h		418			774			1328			831	
Approach Delay, s/veh		50.6			59.9			68.4			7.8	
Approach LOS		D			Е			Е			А	
Timer - Assigned Phs	1	2	3	47.0	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.1	63.0	16.0	47.9	11.9	84.2	17.2	46.7				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 20	57.2	* 15	44.0	11.4	* 65	* 15	44.0				
Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s	4.7 0.4	0.0	9.6 0.1	17.9 1.4	4.8 0.0	0.0	10.8 0.1	39.0 1.7				
"-"	0.4	0.0	0.1	1.4	0.0	0.0	0.1	1.7				
Intersection Summary			15.5									
HCM 6th Ctrl Delay			49.2									
HCM 6th LOS			D									
NI=4==												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 10 (Weekday AM Peak) 35 No Build 2035 No Build 5:27 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

Pattern 10 (Weekday AM Peak) 35 Build 1 2216: KY-1747 & US-31E

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ሻ	<b>^</b>	7	ሻሻ	<b>∱</b> ₽		**	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	86	967	213	251	778	160	80	477	57	320	1183	576
Future Volume (veh/h)	86	967	213	251	778	160	80	477	57	320	1183	576
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	1051	232	273	846	174	87	518	62	348	1286	626
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	882	658	321	814	167	206	1100	491	297	1282	719
Arrive On Green	0.06	0.25	0.25	0.19	0.55	0.55	0.12	0.31	0.31	0.22	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	3456	2935	604	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	93	1051	232	273	512	508	87	518	62	348	1286	626
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1762	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.3	39.7	9.7	12.2	44.4	44.4	7.3	18.9	4.5	26.7	57.7	37.9
Cycle Q Clear(g_c), s	8.3	39.7	9.7	12.2	44.4	44.4	7.3	18.9	4.5	26.7	57.7	37.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	882	658	321	493	489	206	1100	491	297	1282	719
V/C Ratio(X)	0.82	1.19	0.35	0.85	1.04	1.04	0.42	0.47	0.13	1.17	1.00	0.87
Avail Cap(c_a), veh/h	175	882	658	425	493	489	206	1100	491	297	1282	719
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	74.0	60.2	13.6	64.0	35.6	35.6	65.8	44.7	39.7	62.2	41.6	30.3
Incr Delay (d2), s/veh	20.1	97.6	1.5	10.1	45.3	45.5	1.7	1.4	0.5	92.7	17.9	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	29.5	3.6	5.3	20.2	20.1	3.4	8.4	1.8	19.1	25.8	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.1	157.7	15.1	74.1	80.9	81.1	67.4	46.1	40.2	154.9	59.5	37.2
LnGrp LOS	F	F	В	E	F	F	E	D	D	F	F	<u>D</u>
Approach Vol, veh/h		1376			1293			667			2260	
Approach Delay, s/veh		129.4			79.5			48.3			68.0	
Approach LOS		F			Е			D			Е	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.2	47.0	25.8	65.0	17.5	51.7	34.0	56.8				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	19.7	39.7	13.7	57.7	15.7	43.7	26.7	44.7				
Max Q Clear Time (g_c+l1), s	14.2	0.0	9.3	59.7	10.3	0.0	28.7	20.9				
Green Ext Time (p_c), s	0.7	0.0	0.1	0.0	0.1	0.0	0.0	4.8				
Intersection Summary												
HCM 6th Ctrl Delay			83.4									
HCM 6th LOS			F									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 10 (Weekday AM Peak) 35 Build 1 2035 Build 1:02 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWF
Lane Configurations		4	7		4	7	ሻ	<b>†</b> †	7	*1	<b>^</b>	7
Traffic Volume (veh/h)	240	60	26	24	34	563	157	605	54	16	1619	1
Future Volume (veh/h)	240	60	26	24	34	563	157	605	54	16	1619	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	(
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.0
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	261	65	0	26	37	0	171	658	59	17	1760	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	68		53	76		198	1393	621	541	1705	76
Arrive On Green	0.19	0.19	0.00	0.07	0.07	0.00	0.09	0.39	0.39	0.17	0.48	0.48
Sat Flow, veh/h	1440	359	1585	756	1076	1585	1781	3554	1585	1781	3554	158
Grp Volume(v), veh/h	326	0	0	63	0	0	171	658	59	17	1760	17
Grp Sat Flow(s),veh/h/ln	1798	0	1585	1833	0	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	28.7	0.0	0.0	5.3	0.0	0.0	11.1	22.1	3.8	0.0	76.8	0.0
Cycle Q Clear(g_c), s	28.7	0.0	0.0	5.3	0.0	0.0	11.1	22.1	3.8	0.0	76.8	0.0
Prop In Lane	0.80		1.00	0.41		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	0		129	0		198	1393	621	541	1705	761
V/C Ratio(X)	0.95	0.00		0.49	0.00		0.86	0.47	0.09	0.03	1.03	0.02
Avail Cap(c_a), veh/h	342	0		302	0		331	1393	621	541	1705	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	0.0	71.6	0.0	0.0	52.2	36.3	30.7	26.8	41.6	21.9
Incr Delay (d2), s/veh	37.0	0.0	0.0	4.8	0.0	0.0	17.5	1.2	0.3	0.0	30.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	0.0	0.0	2.7	0.0	0.0	7.8	9.7	1.5	0.4	39.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.1	0.0	0.0	76.4	0.0	0.0	69.7	37.5	31.0	26.9	72.1	21.9
LnGrp LOS	F	A		E	A		E	D	С	С	F	(
Approach Vol, veh/h		326			63			888			1794	
Approach Delay, s/veh		101.1			76.4			43.2			71.2	
Approach LOS		F			Е			D			Е	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	84.1		37.0	35.1	70.0		17.9				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g c+l1), s	13.1	0.0		30.7	2.0	0.0		7.3				
Green Ext Time (p_c), s	0.7	0.0		0.0	0.0	0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			66.4									
HCM 6th LOS			E									
			_									
Notes User approved pedestrian inter												

Pattern 10 (Weekday AM Peak) 35 Build 1 2035 Build 5:33 pm 06/17/2022 4700 Hurstbourne Pkwy

DBZ

Synchro 11 Report

Page 2

Pattern 10 (Weekday AM Peak) 35 Build 1 3003: KY-1747 & S Stony Brook Dr

	•	4	<b>†</b>	<i>&gt;</i>	<b>/</b>	ļ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	ሻ	<b>^</b>
Traffic Volume (veh/h)	456	55	1209	412	59	733
Future Volume (veh/h)	456	55	1209	412	59	733
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	496	60	1314	448	64	797
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	450	400	2018	1300	84	2348
Arrive On Green	0.25	0.25	0.57	0.57	0.05	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	496	60	1314	448	64	797
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(q s), s	40.4	4.7	40.6	11.3	5.7	15.7
Cycle Q Clear(g c), s	40.4	4.7	40.6	11.3	5.7	15.7
Prop In Lane	1.00	1.00	10.0	1.00	1.00	10.1
Lane Grp Cap(c), veh/h	450	400	2018	1300	84	2348
V/C Ratio(X)	1.10	0.15	0.65	0.34	0.76	0.34
Avail Cap(c a), veh/h	450	400	2018	1300	164	2348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.12	0.12	1.00	1.00
Uniform Delay (d), s/veh	59.8	46.5	23.7	3.6	75.3	11.9
Incr Delay (d2), s/veh	73.3	0.4	0.2	0.1	18.2	0.4
Initial Q Delay(d3),s/veh	0.0		0.2		0.0	0.4
		0.0		0.0		
%ile BackOfQ(50%),veh/ln	27.3	4.7	16.4	9.8	3.0	6.1
Unsig. Movement Delay, s/veh		40.0	00.0	0.7	00.5	40.0
LnGrp Delay(d),s/veh	133.1	46.8	23.9	3.7	93.5	12.3
LnGrp LOS	F	D	C	Α	F	В
Approach Vol, veh/h	556		1762			861
Approach Delay, s/veh	123.8		18.8			18.3
Approach LOS	F		В			В
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.8	98.2		47.0		113.0
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	14.7	83.7		40.4		105.7
Max Q Clear Time (g c+l1), s	7.7	0.0		42.4		0.0
Green Ext Time (p c), s	0.1	0.0		0.0		0.0
Intersection Summary						
			27.0			
HCM 6th Ctrl Delay			37.0			
HCM 6th LOS			D			

Pattern 10 (Weekday AM Peak) 35 Build 1 2035 Build 1:02 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	۶	<b>→</b>	•	•	<b>←</b>	4	1	<b>†</b>	<i>&gt;</i>	<b>/</b>	Ţ	√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	*	<b>↑</b>	7	7	<b>^</b>	7	*5	<b>^</b>	7
Traffic Volume (veh/h)	123	204	57	108	408	197	29	1202	55	107	534	136
Future Volume (veh/h)	123	204	57	108	408	197	29	1202	55	107	534	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	222	62	117	443	214	32	1307	60	116	580	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	490	415	331	476	403	59	1270	567	341	1726	770
Arrive On Green	0.07	0.26	0.26	0.06	0.25	0.25	0.03	0.36	0.36	0.33	0.97	0.97
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	134	222	62	117	443	214	32	1307	60	116	580	148
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.8	15.9	4.8	7.6	37.0	12.5	2.8	57.2	3.2	3.3	1.1	0.5
Cycle Q Clear(g_c), s	8.8	15.9	4.8	7.6	37.0	12.5	2.8	57.2	3.2	3.3	1.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	490	415	331	476	403	59	1270	567	341	1726	770
V/C Ratio(X)	0.73	0.45	0.15	0.35	0.93	0.53	0.54	1.03	0.11	0.34	0.34	0.19
Avail Cap(c_a), veh/h	226	514	436	387	514	436	127	1270	567	341	1726	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	44.6	49.4	45.4	40.2	58.3	23.2	76.1	51.4	21.3	45.0	1.2	1.2
Incr Delay (d2), s/veh	8.8	0.9	0.2	0.6	23.5	1.5	10.5	32.9	0.4	0.8	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.6	1.9	3.4	20.5	4.9	1.5	30.5	1.6	3.2	0.4	0.3
Unsig. Movement Delay, s/veh		50.4	45.0	40.0	04.0	040	00.7	040	04.7	45.0	4.7	4.7
LnGrp Delay(d),s/veh	53.4	50.4	45.6	40.8	81.8	24.8	86.7	84.3	21.7	45.8	1.7	1.7
LnGrp LOS	D	D	D	D	F	С	F	F	С	D	A	A
Approach Vol, veh/h		418			774			1399			844	
Approach Delay, s/veh		50.6			59.9			81.7			7.8	
Approach LOS		D			Е			F			Α	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.1	63.0	16.0	47.9	11.9	84.2	17.2	46.7				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 20	57.2	* 15	44.0	11.4	* 65	* 15	44.0				
Max Q Clear Time (g_c+l1), s	5.3	0.0	9.6	17.9	4.8	0.0	10.8	39.0				
Green Ext Time (p_c), s	0.4	0.0	0.1	1.4	0.0	0.0	0.1	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			54.8									
HCM 6th LOS			D									

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 10 (Weekday AM Peak) 35 Build 1 2035 Build 5:33 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary
2216: KY-1747 & US-31E

06/19/2022

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ķ	<b>^</b>	7	44	<b>∱</b> ∱		7	<b>^</b>	7	*	<b>^</b>	7
Traffic Volume (veh/h)	80	725	350	525	800	75	125	1100	150	200	600	375
Future Volume (veh/h)	80	725	350	525	800	75	125	1100	150	200	600	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	755	365	547	833	78	130	1146	156	208	625	391
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	704	522	569	935	88	210	1106	493	234	1154	776
Arrive On Green	80.0	0.20	0.20	0.22	0.38	0.38	0.12	0.31	0.31	0.04	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	3456	3284	308	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	83	755	365	547	451	460	130	1146	156	208	625	391
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1728	1777	1815	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.8	29.7	29.7	23.5	35.7	35.7	10.4	46.7	8.4	17.4	25.0	13.1
Cycle Q Clear(q c), s	6.8	29.7	29.7	23.5	35.7	35.7	10.4	46.7	8.4	17.4	25.0	13.1
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	704	522	569	506	517	210	1106	493	234	1154	776
V/C Ratio(X)	0.60	1.07	0.70	0.96	0.89	0.89	0.62	1.04	0.32	0.89	0.54	0.50
Avail Cap(c a), veh/h	139	704	522	569	506	517	210	1106	493	270	1154	776
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	66.9	60.1	43.8	58.1	44.4	44.4	62.9	51.7	21.9	70.7	56.4	12.3
Incr Delay (d2), s/veh	8.1	55.2	7.6	25.2	17.7	17.4	5.9	36.8	1.7	22.2	1.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	18.5	12.7	11.6	16.9	17.2	5.0	25.8	3.3	9.8	12.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.0	115.4	51.4	83.3	62.1	61.9	68.8	88.4	23.6	92.8	57.8	14.0
LnGrp LOS	Е	F	D	F	Е	Е	Е	F	С	F	Е	В
Approach Vol, veh/h		1203			1458			1432			1224	
Approach Delay, s/veh		93.2			70.0			79.6			49.8	
Approach LOS		F			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	37.0	25.0	56.0	19.0	50.0	27.0	54.0				
							7.3	7.3				
Change Period (Y+Rc), s Max Green Setting (Gmax), s	7.3	7.3 29.7	7.3 17.7	7.3 48.7	7.3 11.7	7.3 42.7	22.7	43.7				
							19.4					
Max Q Clear Time (g_c+l1), s	25.5	0.0	12.4 0.2	27.0 8.7	8.8 0.1	0.0	0.3	48.7 0.0				
Green Ext Time (p_c), s	0.0	0.0	U.Z	Ö.1	U. I	0.0	0.3	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			73.2									
HCM 6th LOS			Е									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy) 4:51 pm 03/15/2021 Weekday PM Peak M. Brandon Shelley, PE

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M	NDI				ODT		٥٢١	OFT.	<b>▼</b>	NIVA/I	NIMIT	N IVA
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWI
Lane Configurations	11E	4	<b>7</b>	4.5	4	750	225	<b>^</b>	420	<b>ሻ</b>	<b>^</b>	1
Traffic Volume (veh/h)	115	50	50	15	55	250	225	1025	130	35	775	2
Future Volume (veh/h)	115 0	50 0	50 0	15 0	55 0	250 0	225 0	1025 0	130	35 0	775 0	2
Initial Q (Qb), veh Ped-Bike Adj(A pbT)	1.00	U	1.00	1.00	U	1.00	1.00	U	1.00	1.00	U	1.0
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Work Zone On Approach	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00	1.00	No	1.00
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	54	0	16	60	0	245	1114	141	38	842	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	0.0
Cap, veh/h	145	62	2	28	106		454	1393	621	536	1996	890
Arrive On Green	0.11	0.11	0.00	0.07	0.07	0.00	0.08	0.39	0.39	0.25	0.56	0.56
Sat Flow, veh/h	1262	545	1585	390	1461	1585	1781	3554	1585	1781	3554	158
· · · · · · · · · · · · · · · · · · ·	179	0	0	76	0	0	245	1114	141	38	842	2
Grp Volume(v), veh/h Grp Sat Flow(s),veh/h/ln	1807	0	1585	1851	0	1585	1781	1777	1585	1781	1777	158
	15.6	0.0	0.0	6.4	0.0	0.0	9.2	44.4	9.5	0.0	21.8	1.2
Q Serve(g_s), s	15.6	0.0	0.0	6.4	0.0	0.0	9.2	44.4	9.5	0.0	21.8	1.2
Cycle Q Clear(g_c), s	0.70	0.0	1.00	0.4	0.0	1.00	1.00	44.4		1.00	21.0	1.00
Prop In Lane	207	0	1.00	134	0	1.00	454	1393	1.00 621	536	1996	890
Lane Grp Cap(c), veh/h V/C Ratio(X)	0.86	0.00		0.57	0.00		0.54	0.80	0.23	0.07	0.42	0.03
Avail Cap(c_a), veh/h	343	0.00		305	0.00		602	1393	621	536	1996	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.6	0.00	0.00	71.8	0.00	0.0	14.5	43.1	32.5	35.7	20.1	15.6
Incr Delay (d2), s/veh	17.2	0.0	0.0	6.3	0.0	0.0	1.7	4.9	0.8	0.1	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.0	3.3	0.0	0.0	3.8	20.0	3.8	1.0	9.0	0.0
Unsig. Movement Delay, s/veh		0.0	0.0	0.0	0.0	0.0	5.0	20.0	3.0	1.0	9.0	0.0
LnGrp Delay(d),s/veh	86.8	0.0	0.0	78.1	0.0	0.0	16.2	48.0	33.3	35.8	20.8	15.7
LnGrp LOS	60.6 F	Α	0.0	70.1 E	Α	0.0	10.2 B	40.0 D	33.3 C	55.0 D	20.0 C	10.1
Approach Vol, veh/h	<u>'</u>	179		<u> </u>	76		ь	1500		U	907	
Approach Vol, ven/n Approach Delay, s/veh		86.8			78.1			41.4			21.3	
Approach LOS		60.6 F			70.1 E			41.4 D			21.3 C	
Approacificos		'			L			D			U	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.7	97.2		24.9	46.9	70.0		18.2				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g_c+l1), s	11.2	0.0		17.6	2.0	0.0		8.4				
Green Ext Time (p_c), s	1.2	0.0		0.8	0.1	0.0		0.3				
Intersection Summary												
			38.7									
HCM 6th Ctrl Delay HCM 6th LOS			38.7 D									
I IOIVI UIII LUO			U									
Notes												

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy)  $4:51~\mathrm{pm}$  03/15/2021 Weekday PM Peak M. Brandon Shelley, PE

HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	•	<b>†</b>	~	<b>/</b>	Ţ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7*	ሻ	<b>^</b>
Traffic Volume (veh/h)	150	50	1100	150	125	1300
Future Volume (veh/h)	150	50	1100	150	125	1300
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	54	1196	163	136	1413
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	198	176	2334	1217	162	2829
Arrive On Green	0.11	0.11	0.66	0.66	0.09	0.80
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	163	54	1196	163	136	1413
						1777
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	
Q Serve(g_s), s	13.4	4.7	26.1	4.0	11.3	20.2
Cycle Q Clear(g_c), s	13.4	4.7	26.1	4.0	11.3	20.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	198	176	2334	1217	162	2829
V/C Ratio(X)	0.82	0.31	0.51	0.13	0.84	0.50
Avail Cap(c_a), veh/h	361	321	2334	1217	281	2829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.35	0.35	1.00	1.00
Uniform Delay (d), s/veh	65.2	61.3	13.3	4.5	67.1	5.2
Incr Delay (d2), s/veh	16.2	2.1	0.3	0.1	15.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	4.3	9.8	2.0	5.7	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	81.4	63.4	13.6	4.6	82.2	5.8
LnGrp LOS	F	Е	В	Α	F	Α
Approach Vol, veh/h	217		1359			1549
Approach Delay, s/veh	76.9		12.5			12.5
Approach LOS	F		12.0 B			B
			U			
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.9	105.8		23.3		126.7
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	23.7	74.7		30.4		105.7
Max Q Clear Time (g_c+l1), s	13.3	0.0		15.4		0.0
Green Ext Time (p c), s	0.4	0.0		1.3		0.0
Intersection Summary						
			17.0			
HCM 6th Ctrl Delay			17.0			
HCM 6th LOS			В			

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy) 4:51 pm 03/15/2021 Weekday PM Peak M. Brandon Shelley, PE

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>↑</b>	7	**	<b>↑</b>	7	**	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	125	400	100	150	350	150	100	900	85	225	1300	150
Future Volume (veh/h)	125	400	100	150	350	150	100	900	85	225	1300	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	435	109	163	380	163	109	978	92	245	1413	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	458	388	196	481	407	129	1189	530	363	1641	732
Arrive On Green	0.07	0.24	0.24	0.08	0.26	0.26	0.07	0.33	0.33	0.41	0.92	0.92
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	136	435	109	163	380	163	109	978	92	245	1413	163
Grp Sat Flow(s), veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	41.2	10.0	12.2	34.1	9.7	10.9	45.5	5.7	20.2	26.8	1.8
Cycle Q Clear(g_c), s	10.0	41.2	10.0	12.2	34.1	9.7	10.9	45.5	5.7	20.2	26.8	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	458	388	196	481	407	129	1189	530	363	1641	732
V/C Ratio(X)	0.62	0.95	0.28	0.83	0.79	0.40	0.85	0.82	0.17	0.67	0.86	0.22
Avail Cap(c_a), veh/h	293	478	405	249	481	407	192	1189	530	363	1641	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	48.2	66.9	55.1	50.4	62.4	22.1	82.5	55.0	25.6	48.4	4.7	3.8
Incr Delay (d2), s/veh	2.8	28.8	0.6	16.8	9.2	0.9	23.1	6.5	0.7	3.7	4.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	23.3	4.1	6.4	17.5	3.8	5.8	21.1	3.0	8.0	3.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	95.7	55.7	67.2	71.5	23.0	105.6	61.5	26.4	52.1	9.0	4.3
LnGrp LOS	D	F	Ε	Е	Е	С	F	Е	С	D	Α	Α
Approach Vol, veh/h		680			706			1179			1821	
Approach Delay, s/veh		80.4			59.3			62.8			14.4	
Approach LOS		F			Е			Е			В	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	43.2	66.0	20.7	50.0	19.6	89.6	18.5	52.3				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 30	60.2	* 20	46.0	19.4	* 70	* 20	46.0				
Max Q Clear Time (g_c+l1), s	22.2	0.0	14.2	43.2	12.9	0.0	12.0	36.1				
Green Ext Time (p_c), s	0.7	0.0	0.2	0.8	0.2	0.0	0.2	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			44.9									
HCM 6th LOS			D									
Mataa												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy) 4:51 pm 03/15/2021 Weekday PM Peak M. Brandon Shelley, PE

HCM 6th Signalized Intersection Summary	
2216: KY-1747 & US-31F	

06/19/2022

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ሻ	<b>^</b>	7	ሻሻ	<b>∱</b> ⊅		7	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	84	766	355	525	830	76	129	1124	153	203	633	388
Future Volume (veh/h)	84	766	355	525	830	76	129	1124	153	203	633	388
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	C
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	798	370	547	865	79	134	1171	159	211	659	404
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	704	525	569	937	86	210	1101	491	237	1154	776
Arrive On Green	0.08	0.20	0.20	0.22	0.38	0.38	0.12	0.31	0.31	0.04	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	3456	3292	301	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	88	798	370	547	467	477	134	1171	159	211	659	404
Grp Sat Flow(s), veh/h/ln	1781	1777	1585	1728	1777	1816	1781	1777	1585	1781	1777	1585
Q Serve(g s), s	7.2	29.7	29.7	23.5	37.6	37.6	10.8	46.5	8.6	17.7	26.5	13.6
Cycle Q Clear(g c), s	7.2	29.7	29.7	23.5	37.6	37.6	10.8	46.5	8.6	17.7	26.5	13.6
Prop In Lane	1.00	20.1	1.00	1.00	01.0	0.17	1.00	10.0	1.00	1.00	20.0	1.00
Lane Grp Cap(c), veh/h	139	704	525	569	506	517	210	1101	491	237	1154	776
V/C Ratio(X)	0.63	1.13	0.71	0.96	0.92	0.92	0.64	1.06	0.32	0.89	0.57	0.52
Avail Cap(c a), veh/h	139	704	525	569	506	517	210	1101	491	270	1154	776
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	67.1	60.1	43.8	58.1	45.0	45.0	63.1	51.8	22.1	70.6	57.0	12.4
Incr Delay (d2), s/veh	10.4	77.3	7.8	24.8	21.4	21.0	6.7	45.8	1.7	22.6	1.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	20.6	12.9	11.6	18.2	18.5	5.2	27.1	3.4	10.0	12.9	5.8
Unsig. Movement Delay, s/veh		20.0	12.0	11.0	10.2	10.0	U.L	21.1	0.4	10.0	12.0	0.0
LnGrp Delay(d),s/veh	77.4	137.4	51.6	82.9	66.4	66.1	69.8	97.6	23.8	93.2	58.6	14.3
LnGrp LOS	E	F	D	02.0 F	E	E	E	F	20.0 C	F	E	В
Approach Vol, veh/h		1256		<u> </u>	1491			1464			1274	
Approach Delay, s/veh		107.9			72.4			87.0			50.3	
Approach LOS		F			12. <del>4</del>			67.0 F			50.5 D	
											U	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	37.0	25.0	56.0	19.0	50.0	27.2	53.8				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	24.7	29.7	17.7	48.7	11.7	42.7	22.7	43.7				
Max Q Clear Time (g_c+l1), s	25.5	0.0	12.8	28.5	9.2	0.0	19.7	48.5				
Green Ext Time (p_c), s	0.0	0.0	0.2	8.9	0.1	0.0	0.3	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			79.3									
HCM 6th LOS			Е									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 50 (Weekday PM Peak) 1 2025 No Build 5:19 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

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	1		Lar.	*	*			*	*	₹		
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWF
Lane Configurations		4	7		र्स	7	ሻ	<b>^</b>	*	ሻ	<b>^</b>	ř
Traffic Volume (veh/h)	117	63	51	23	64	289	299	1040	132	35	799	25
Future Volume (veh/h)	117	63	51	23	64	289	299	1040	132	35	799	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	4.00
Ped-Bike Adj(A_pbT)	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	1070	No	1870	1070	No	1070	1070	No	1070	4070	No	4070
Adj Sat Flow, veh/h/ln	1870	1870 68		1870	1870	1870	1870	1870	1870	1870 38	1870 868	1870
Adj Flow Rate, veh/h Peak Hour Factor	127 0.92	0.92	0.92	25 0.92	70 0.92	0.92	325 0.92	1130 0.92	143 0.92	0.92	0.92	0.92
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, % Cap, veh/h	145	78	Z	36	101	Z	462	1393	621	515	1866	832
Arrive On Green	0.12	0.12	0.00	0.07	0.07	0.00		0.39	0.39	0.24	0.52	0.52
	1180	632	1585	486	1360	1585	0.10 1781	3554	1585	1781	3554	1585
Sat Flow, veh/h												
Grp Volume(v), veh/h	195	0	0	95	0	0	325	1130	143	38	868	27
Grp Sat Flow(s),veh/h/ln	1811	0	1585	1846	0	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	16.9	0.0	0.0	8.0	0.0	0.0	13.2	45.4	9.6	0.0	24.6	1.3
Cycle Q Clear(g_c), s	16.9	0.0	0.0	8.0	0.0	0.0	13.2	45.4	9.6	0.0	24.6	1.3
Prop In Lane	0.65	٥	1.00	0.26	0	1.00	1.00	1202	1.00	1.00	1000	1.00
Lane Grp Cap(c), veh/h	223	0.00		136 0.70	0.00		462	1393	621	515	1866	832
V/C Ratio(X)	0.87	0.00		305	0.00		0.70 562	0.81	0.23	0.07 515	0.47	0.03
Avail Cap(c_a), veh/h	344	1.00	4.00			1.00		1393	621	1.00	1866	832
HCM Platoon Ratio	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	68.9		0.00	72.3	0.00	0.00		43.4		37.5	23.9	18.4
Uniform Delay (d), s/veh		0.0	0.0	10.4	0.0	0.0	17.4 4.2	5.2	32.5 0.9	0.1	0.8	
Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh	19.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
7	9.0	0.0	0.0	4.2	0.0	0.0	5.7	20.4	3.8	1.1	10.3	0.6
%ile BackOfQ(50%),veh/ln		0.0	0.0	4.2	0.0	0.0	0.1	20.4	3.0	1.1	10.5	0.0
Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh	87.9	0.0	0.0	82.8	0.0	0.0	21.6	48.6	33.4	37.6	24.7	18.4
LnGrp LOS	67.8 F	Α	0.0	02.0 F	Α	0.0	21.0 C	40.0 D	33.4 C	37.0 D	24.7 C	10.4 E
	<u> </u>	195		<u> </u>	95			1598			933	
Approach Vol, veh/h		87.9			82.8			41.8			25.1	
Approach LOS		67.8 F			02.0 F			41.0 D			20.1 C	
Approach LOS		Г			Г			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.0	91.3		26.3	45.3	70.0		18.4				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g_c+l1), s	15.2	0.0		18.9	2.0	0.0		10.0				
Green Ext Time (p_c), s	1.4	0.0		0.8	0.1	0.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			40.8									
HCM 6th LOS			D									
Notes User approved pedestrian inter												

Pattern 50 (Weekday PM Peak) 1 2025 No Build 5:19 pm 06/17/2022 4700 Hurstbourne Pkwy

DBZ

Synchro 11 Report

Page 2

HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	•	<b>†</b>	<b>/</b>	<b>&gt;</b>	ļ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ř	7	<b>^</b>	7	Ŋ	<b>^</b>
Traffic Volume (veh/h)	162	57	1161	156	133	1349
Future Volume (veh/h)	162	57	1161	156	133	1349
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	62	1262	170	145	1466
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	212	189	2288	1209	171	2802
Arrive On Green	0.12	0.12	0.64	0.64	0.10	0.79
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	176	62	1262	170	145	1466
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	14.5	5.4	29.4	4.3	12.0	22.3
Cycle Q Clear(g c), s	14.5	5.4	29.4	4.3	12.0	22.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	212	189	2288	1209	171	2802
V/C Ratio(X)	0.83	0.33	0.55	0.14	0.85	0.52
Avail Cap(c a), veh/h	361	321	2288	1209	281	2802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.25	0.25	1.00	1.00
Uniform Delay (d), s/veh	64.6	60.6	14.8	4.7	66.7	5.7
Incr Delay (d2), s/veh	15.9	2.1	0.2	0.1	15.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	5.0	11.1	2.2	6.1	6.8
Unsig. Movement Delay, s/veh		3.0			3.1	5.0
LnGrp Delay(d),s/veh	80.5	62.7	15.0	4.8	82.6	6.4
LnGrp LOS	F	E	В	Α.	62.0 F	Α
Approach Vol, veh/h	238		1432	,,		1611
Approach Delay, s/veh	75.9		13.8			13.3
Approach LOS	7 U.U		В			В
••			U			_
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.7	103.9		24.4		125.6
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	23.7	74.7		30.4		105.7
Max Q Clear Time (g_c+l1), s	14.0	0.0		16.5		0.0
Green Ext Time (p_c), s	0.4	0.0		1.4		0.0
Intersection Summary						
HCM 6th Ctrl Delay			18.0			
HCM 6th LOS			16.0 B			
HOW OUT LOS			Б			

Pattern 50 (Weekday PM Peak) 1 2025 No Build 5:19 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	*	<b>↑</b>	7	ሻ	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	127	406	102	153	371	183	100	900	85	244	1351	158
Future Volume (veh/h)	127	406	102	153	371	183	100	900	85	244	1351	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	441	111	166	403	199	109	978	92	265	1468	172
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	462	392	197	486	412	129	1189	530	357	1628	726
Arrive On Green	0.07	0.25	0.25	0.08	0.26	0.26	0.07	0.33	0.33	0.40	0.92	0.92
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	138	441	111	166	403	199	109	978	92	265	1468	172
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g s), s	10.2	41.8	10.2	12.4	36.6	12.2	10.9	45.5	5.7	22.8	35.8	2.1
Cycle Q Clear(g c), s	10.2	41.8	10.2	12.4	36.6	12.2	10.9	45.5	5.7	22.8	35.8	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	462	392	197	486	412	129	1189	530	357	1628	726
V/C Ratio(X)	0.66	0.95	0.28	0.84	0.83	0.48	0.85	0.82	0.17	0.74	0.90	0.24
Avail Cap(c a), veh/h	281	478	405	248	486	412	192	1189	530	357	1628	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	48.5	66.7	54.8	50.2	62.8	22.8	82.5	55.0	25.5	50.0	5.6	4.2
Incr Delay (d2), s/veh	3.6	29.6	0.6	18.4	11.9	1.3	23.1	6.5	0.7	5.9	6.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	23.7	4.2	6.6	19.0	4.8	5.8	21.1	3.0	9.2	4.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	96.3	55.4	68.6	74.7	24.0	105.6	61.5	26.3	55.9	11.6	4.7
LnGrp LOS	D	F	E	E	E	C	F	E	C	E	В	Α
Approach Vol, veh/h		690			768			1179			1905	
Approach Delay, s/veh		80.9			60.3			62.8			17.1	
Approach LOS		F			00.0 E			02.0 E			В	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.6	66.0	20.9	50.5	19.6	89.0	18.6	52.8				
						* 6.5						
Change Period (Y+Rc), s	* 6.5 * 30	5.8 60.2	* 6.3 * 20	6.0	6.6	* 70	* 6.3 * 20	6.0 46.0				
Max Green Setting (Gmax), s				46.0	19.4			38.6				
Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s	24.8 0.5	0.0	14.4 0.2	43.8 0.7	12.9 0.2	0.0	12.2 0.2	2.0				
Intersection Summary	3.0	3.0	J.L	0.1	J.2	0.0	0.2	2.0				
			40.0									
HCM 6th Ctrl Delay			46.0									
HCM 6th LOS			D									
NI=4==												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 50 (Weekday PM Peak) 1 2025 No Build 5:19 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

Pattern 50 (Weekday PM Peak) 25 B
2216: KY-1747 & US-31E

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ľ	<b>^</b>	7	44	<b>∱</b> 1>		7	<b>^</b>	7	ň	<b>^</b>	7
Traffic Volume (veh/h)	84	819	355	554	861	76	129	1124	153	203	633	406
Future Volume (veh/h)	84	819	355	554	861	76	129	1124	153	203	633	406
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	853	370	577	897	79	134	1171	159	211	659	423
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	704	525	569	940	83	210	1101	491	237	1154	776
Arrive On Green	0.08	0.20	0.20	0.16	0.28	0.28	0.12	0.31	0.31	0.04	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	3456	3304	291	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	88	853	370	577	482	494	134	1171	159	211	659	423
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1818	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.2	29.7	29.7	24.7	40.0	40.0	10.8	46.5	8.6	17.7	26.5	14.3
Cycle Q Clear(g_c), s	7.2	29.7	29.7	24.7	40.0	40.0	10.8	46.5	8.6	17.7	26.5	14.3
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	704	525	569	506	518	210	1101	491	237	1154	776
V/C Ratio(X)	0.63	1.21	0.71	1.01	0.95	0.95	0.64	1.06	0.32	0.89	0.57	0.55
Avail Cap(c_a), veh/h	139	704	525	569	506	518	210	1101	491	270	1154	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	67.1	60.1	43.8	62.7	52.7	52.7	63.1	51.8	22.1	70.6	57.0	12.6
Incr Delay (d2), s/veh	10.4	108.4	7.8	37.1	25.9	25.5	6.7	45.8	1.7	22.6	1.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	23.7	12.9	13.6	21.0	21.4	5.2	27.1	3.4	10.0	12.9	6.2
Unsig. Movement Delay, s/veh		400.0	E4.0	00.7	70 F	70.0	00.0	07.0	00.0	00.0	F0.0	447
LnGrp Delay(d),s/veh	77.4	168.6	51.6	99.7	78.5	78.2	69.8	97.6	23.8	93.2	58.6	14.7
LnGrp LOS	E	F 4044	D	F	E	E	E	F 4404	С	F	E 4000	В
Approach Vol, veh/h		1311			1553			1464			1293	
Approach Delay, s/veh		129.4			86.3			87.0			49.9	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	37.0	25.0	56.0	19.0	50.0	27.2	53.8				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	24.7	29.7	17.7	48.7	11.7	42.7	22.7	43.7				
Max Q Clear Time (g_c+l1), s	26.7	0.0	12.8	28.5	9.2	0.0	19.7	48.5				
Green Ext Time (p_c), s	0.0	0.0	0.2	9.0	0.1	0.0	0.3	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			88.2									
HCM 6th LOS			F									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 50 (Weekday PM Peak) 25 B 2025 Build 1:05 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWF
Lane Configurations		4	7		र्स	7	ሻ	<b>^</b>	ř	7	<b>^</b>	7
Traffic Volume (veh/h)	117	63	51	23	64	289	299	1101	132	35	835	2
Future Volume (veh/h)	117	63	51	23	64	289	299	1101	132	35	835	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	(
Ped-Bike Adj(A_pbT)	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00	1.00	4.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	4070	No	4070	4070	No	4070	4070	No	4070	4070	No	407
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	68	0	25	70	0	325	1197	143	38	908	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	78	0.00	36	101	0.00	447	1393	621	501	1866	832
Arrive On Green	0.12	0.12	0.00	0.07	0.07	0.00	0.10	0.39	0.39	0.24	0.52	0.52
Sat Flow, veh/h	1180	632	1585	486	1360	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	195	0	0	95	0	0	325	1197	143	38	908	27
Grp Sat Flow(s),veh/h/ln	1811	0	1585	1846	0	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	16.9	0.0	0.0	8.0	0.0	0.0	13.2	49.4	9.6	0.0	26.1	1.3
Cycle Q Clear(g_c), s	16.9	0.0	0.0	8.0	0.0	0.0	13.2	49.4	9.6	0.0	26.1	1.3
Prop In Lane	0.65	^	1.00	0.26	0	1.00	1.00	1000	1.00	1.00	4000	1.00
Lane Grp Cap(c), veh/h	223	0		136	0		447	1393	621	501	1866	832
V/C Ratio(X)	0.87	0.00		0.70	0.00		0.73	0.86	0.23	0.08	0.49	0.03
Avail Cap(c_a), veh/h	344	0	4.00	305	0	4.00	548	1393	621	501	1866	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.9	0.0	0.0	72.3 10.4	0.0	0.0	18.1	44.6 7.1	32.5	40.8 0.1	24.2	18.4
Incr Delay (d2), s/veh	19.0	0.0			0.0	0.0	5.0		0.9			0.1
Initial Q Delay(d3),s/veh	0.0 9.0	0.0	0.0	0.0 4.2	0.0	0.0	0.0 5.8	0.0 22.5	0.0 3.8	0.0 1.1	0.0 11.0	0.0
%ile BackOfQ(50%),veh/ln		0.0	0.0	4.2	0.0	0.0	0.0	22.0	3.0	1.1	11.0	0.0
Unsig. Movement Delay, s/veh		0.0	0.0	82.8	0.0	0.0	23.1	51.7	33.4	40.9	25.2	18.4
LnGrp Delay(d),s/veh LnGrp LOS	87.9 F	0.0 A	0.0	02.0 F	0.0 A	0.0	23.1 C	51.7 D	33.4 C	40.9 D	20.Z	10.4 E
	<u> </u>	195			95			1665	U	U	973	
Approach Vol, veh/h												
Approach LOS		87.9 F			82.8 F			44.6 D			25.6 C	
Approach LOS		Г			Г			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.0	91.3		26.3	45.3	70.0		18.4				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g_c+l1), s	15.2	0.0		18.9	2.0	0.0		10.0				
Green Ext Time (p_c), s	1.4	0.0		0.8	0.1	0.0		0.4				
Intersection Summary												
			42.4									
HCM 6th Ctrl Delay												
HCM 6th LOS			D									
Notes												

Pattern 50 (Weekday PM Peak) 25 B 2025 Build 6:12 pm 06/17/2022 4700 Hurstbourne Pkwy

DBZ

Synchro 11 Report

Page 2

Pattern 50 (Weekday PM Peak) 25 B 3003: KY-1747 & S Stony Brook Dr

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7	ሻ	<b>^</b>
Traffic Volume (veh/h)	162	57	1232	156	133	1390
Future Volume (veh/h)	162	57	1232	156	133	1390
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adi Flow Rate, veh/h	176	62	1339	170	145	1511
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	212	189	2288	1209	171	2802
Arrive On Green	0.12	0.12	0.64	0.64	0.10	0.79
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	176	62	1339	170	145	1511
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	14.5	5.4	32.3	4.3	12.0	23.5
Cycle Q Clear(g_c), s	14.5	5.4	32.3	4.3	12.0	23.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	212	189	2288	1209	171	2802
V/C Ratio(X)	0.83	0.33	0.59	0.14	0.85	0.54
Avail Cap(c_a), veh/h	361	321	2288	1209	281	2802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.21	0.21	1.00	1.00
Uniform Delay (d), s/veh	64.6	60.6	15.3	4.7	66.7	5.8
Incr Delay (d2), s/veh	15.9	2.1	0.2	0.1	15.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	5.0	12.2	2.2	6.1	7.2
Unsig. Movement Delay, s/veh		0.0	12.2	2.2	0.1	1.2
LnGrp Delay(d),s/veh	80.5	62.7	15.5	4.8	82.6	6.6
LnGrp LOS	60.5 F	02.7 E	В	Α.	02.0 F	Α.
			1509	Α		1656
Approach Vol, veh/h	238					
Approach Delay, s/veh	75.9		14.3			13.2
Approach LOS	Е		В			В
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.7	103.9		24.4		125.6
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	23.7	74.7		30.4		105.7
Max Q Clear Time (g c+l1), s	14.0	0.0		16.5		0.0
Green Ext Time (p c), s	0.4	0.0		1.4		0.0
u = 77	J.,	0.0				0.0
Intersection Summary			40.4			
HCM 6th Ctrl Delay			18.1			
HCM 6th LOS			В			

Pattern 50 (Weekday PM Peak) 25 B 2025 Build 1:05 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

0001.101 1747 0 770	•				_	•	_	•	_			
		<b>→</b>	*	•	•		7	I		*	+	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b>	7	7	<b>^</b>	7	7	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	127	406	102	153	371	183	100	984	85	244	1395	158
Future Volume (veh/h)	127	406	102	153	371	183	100	984	85	244	1395	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	441	111	166	403	199	109	1070	92	265	1516	172
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	462	392	197	486	412	129	1189	530	357	1628	726
Arrive On Green	0.07	0.25	0.25	0.08	0.26	0.26	0.07	0.33	0.33	0.40	0.92	0.92
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	138	441	111	166	403	199	109	1070	92	265	1516	172
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.2	41.8	10.2	12.4	36.6	12.2	10.9	51.6	5.7	22.8	43.8	2.1
Cycle Q Clear(g_c), s	10.2	41.8	10.2	12.4	36.6	12.2	10.9	51.6	5.7	22.8	43.8	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	208	462	392	197	486	412	129	1189	530	357	1628	726
V/C Ratio(X)	0.66	0.95	0.28	0.84	0.83	0.48	0.85	0.90	0.17	0.74	0.93	0.24
Avail Cap(c_a), veh/h	281	478	405	248	486	412	192	1189	530	357	1628	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	48.5	66.7	54.8	50.2	62.8	22.8	82.5	57.0	25.5	50.0	5.9	4.2
Incr Delay (d2), s/veh	3.6	29.6	0.6	18.4	11.9	1.3	23.1	11.0	0.7	5.9	8.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	23.7	4.2	6.6	19.0	4.8	5.8	24.6	3.0	9.2	4.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	96.3	55.4	68.6	74.7	24.0	105.6	68.0	26.3	55.9	13.9	4.7
LnGrp LOS	D	F	Е	Е	Е	С	F	Е	С	Е	В	Α
Approach Vol, veh/h		690			768			1271			1953	
Approach Delay, s/veh		80.9			60.3			68.2			18.8	
Approach LOS		F			Е			Е			В	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.6	66.0	20.9	50.5	19.6	89.0	18.6	52.8				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 30	60.2	* 20	46.0	19.4	* 70	* 20	46.0				
Max Q Clear Time (g_c+l1), s	24.8	0.0	14.4	43.8	12.9	0.0	12.2	38.6				
Green Ext Time (p_c), s	0.5	0.0	0.2	0.7	0.2	0.0	0.2	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			48.2									
HCM 6th LOS			D									
N-4												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 50 (Weekday PM Peak) 25 B 2025 Build 6:12 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

<b>HCM 6th Signalized Intersection Summary</b>
2216: KY-1747 & US-31E

06/19/2022

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	٦	<b>^</b>	7	44	<b>∱</b> ⊅		7	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	88	858	373	572	872	80	136	1181	161	213	665	408
Future Volume (veh/h)	88	858	373	572	872	80	136	1181	161	213	665	408
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	894	389	596	908	83	142	1230	168	222	693	425
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	704	533	569	937	86	210	1082	483	246	1154	776
Arrive On Green	0.08	0.20	0.20	0.16	0.28	0.28	0.12	0.30	0.30	0.09	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3292	301	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	92	894	389	596	490	501	142	1230	168	222	693	425
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1816	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.5	29.7	29.7	24.7	40.9	40.9	11.5	45.7	9.2	18.5	26.3	14.0
Cycle Q Clear(g_c), s	7.5	29.7	29.7	24.7	40.9	40.9	11.5	45.7	9.2	18.5	26.3	14.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	704	533	569	506	517	210	1082	483	246	1154	776
V/C Ratio(X)	0.66	1.27	0.73	1.05	0.97	0.97	0.68	1.14	0.35	0.90	0.60	0.55
Avail Cap(c_a), veh/h	139	704	533	569	506	517	210	1082	483	270	1154	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	67.2	60.1	43.8	62.7	53.0	53.0	63.4	52.2	22.7	67.1	49.9	10.8
Incr Delay (d2), s/veh	12.5	132.8	8.5	46.4	28.5	28.1	8.8	73.1	2.0	24.8	1.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	26.1	13.7	14.3	21.7	22.2	5.6	30.8	3.7	10.3	12.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	192.9	52.3	109.0	81.5	81.1	72.2	125.2	24.7	91.9	51.7	12.9
LnGrp LOS	Е	F	D	F	F	F	Е	F	С	F	D	В
Approach Vol, veh/h		1375			1587			1540			1340	
Approach Delay, s/veh		145.6			91.7			109.4			46.0	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	37.0	25.0	56.0	19.0	50.0	28.0	53.0				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	24.7	29.7	17.7	48.7	11.7	42.7	22.7	43.7				
Max Q Clear Time (q c+l1), s	26.7	0.0	13.5	28.3	9.5	0.0	20.5	45.7				
Green Ext Time (p_c), s	0.0	0.0	0.2	9.4	0.1	0.0	0.2	0.0				
	0.0	0.0	0.2	0.4	0.1	0.0	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			98.6									
HCM 6th LOS			F									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 50 (Weekday PM Peak) 35 NB 2035 No Build 6:20 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

Movement   NBL   NBT   NBR   SBL   SBT   SBR   SEL   SET   SER   NWL   NWT   NWT   NWT   NWT   NWT   Care Configurations		ሻ	<b>†</b>	٦٩	Ļ	ļ	<b>≽</b> J	•	×	>	€	×	*
Lane Configurations	Movement	NBI		NBR	SBI	SBT	SBR	SFI	SFT	SFR	NWI	NWT	NWI
Traffic Volume (veh/h)		1102			052								7
Future Volume (vehirh)		123			24								2
Initial Q (Qb), veh													2
Ped-Bike Adj(A_pbT)													_
Perking Bus, Adj				1.00	1.00						1.00		1.0
Work Zone On Ápproach		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Adj Sat Flow, veh/h/ln	0 , ,					No			No			No	
Adj Flow Rate, veh/h Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92		1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	187
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92		134	72	0	26	73	0	341	1188	151	40	913	2
Cap, veh/h 152 82 36 101 447 1393 621 492 1820 81 Arrive On Green 0.13 0.13 0.03 0.07 0.07 0.00 0.11 0.39 0.39 0.23 0.51 0.52 82 81 Flow, veh/h 1178 633 1585 485 1386 1585 1781 1585 1781 1585 1781 1585 1781 1777 1585 1781 1781				0.92			0.92	0.92			0.92		0.9
Cap, veh/h 152 82 36 101 447 1393 621 492 1820 81 Arrive On Green 0.13 0.13 0.03 0.07 0.07 0.07 0.00 0.11 0.39 0.39 0.23 0.51 0.58 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 3554 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1785 1585 1781 1777 1580 1781 1781 1777 1580 1781 1781 1777 1580 1781 1781 1777 1580 1781 1781 1777 1580 1781 1781 1777 1580 1781 1781 1777 1785 1581 1781 1777 1580 1781 1781 1777 1785 1581 1781 1777 1785 1581 1781 17	Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	:
Sat Flow, veh/h 1178 633 1585 485 1361 1585 1781 3554 1585 1781 3554 1586 Grp Volume(v), veh/h 206 0 0 99 0 0 341 1188 151 40 913 2 Grp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 158 Grp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 158 Gerp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 158 Gerp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 158 Gerp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1787 1585 1781 1777 158 Gerp Sat Flow(s), veh/h 1581 179 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), veh/h 234 0 137 0 447 1393 621 492 1820 81 Cycle Q Clear(g_c), veh/h 234 0 137 0 447 1393 621 492 1820 81 Cycle Colear(g_a), veh/h 344 0 305 0 536 1393 621 492 1820 81 Cycle Q Clear(g_a), veh/h 344 0 305 0 536 1393 621 492 1820 81 Cycle Q Clear Elevano 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		152	82		36	101		447	1393	621	492	1820	81
Grp Volume(v), veh/h Grp Sat Flow(s), veh/h/n 1811 0 1585 1846 0 1585 1781 1777 1785 1829 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1831 1820 1	Arrive On Green	0.13	0.13	0.00	0.07	0.07	0.00	0.11	0.39	0.39	0.23	0.51	0.5
Grp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 1585 Q Serve(g_s), s 179 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 1.00 1.00 1.00 1.00 1.00 1.00	Sat Flow, veh/h	1178	633	1585	485	1361	1585	1781	3554	1585	1781	3554	158
Grp Sat Flow(s), veh/h/ln 1811 0 1585 1846 0 1585 1781 1777 1585 1781 1777 1585 Q Serve(g_s), s 179 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 14.3 48.9 10.2 0.0 27.0 1 Cycle Q Clear(g_c), s 17.9 0.0 0.0 8.4 0.0 0.0 1.00 1.00 1.00 1.00 1.00 1.00	Grp Volume(v), veh/h	206	0	0	99	0	0		1188		40	913	28
Q Serve(g_s), s				1585			1585				1781		158
Cycle Q Clear(g_c), s													1.4
Prop In Lane							0.0				0.0		1.4
Lane Grp Cap(c), veh/h	, 10- /-			1.00									1.00
V/C Ratio(X)       0.88       0.00       0.72       0.00       0.76       0.85       0.24       0.08       0.50       0.0         Avail Cap(c_a), veh/h       344       0       305       0       536       1393       621       492       1820       81         HCM Platoon Ratio       1.00	•		0			0			1393			1820	812
Avail Cap(c_a), veh/h 344 0 305 0 536 1393 621 492 1820 81 HCM Platoon Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0			0.00		0.72	0.00		0.76	0.85	0.24	0.08	0.50	0.03
HCM Platoon Ratio	. ,	344	0		305	0		536	1393	621	492	1820	812
Upstream Filter(I)         1.00         0.00         0.00         1.00         0.00         1.00         0.00         0.0 </td <td></td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td></td> <td>1.00</td> <td>1.00</td> <td>1.00</td>		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incr Delay (d2), s/veh	Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Q Delay(d3),s/veh	Uniform Delay (d), s/veh	68.4	0.0	0.0	72.5	0.0	0.0	19.4	44.4	32.7	41.3	25.6	19.4
%ile BackOfQ(50%),veh/ln       9.6       0.0       0.0       4.4       0.0       0.0       6.4       22.3       4.1       1.2       11.4       0         Unsig. Movement Delay, s/veh       LnGrp Delay(d),s/veh       88.7       0.0       0.0       84.2       0.0       0.0       26.0       51.2       33.6       41.4       26.6       19         LnGrp LOS       F       A       F       A       C       D       C       D       C         Approach Vol, veh/h       206       99       1680       981         Approach Delay, s/veh       88.7       84.2       44.5       27.0         Approach LOS       F       F       D       C         Timer - Assigned Phs       1       2       4       5       6       8         Phs Duration (G+Y+Rc), s       25.0       89.3       27.3       44.3       70.0       18.5         Change Period (Y+Rc), s       7.3       7.3       6.6       7.3       7.3       6.6         Max Green Setting (Gmax), s       25.7       49.7       30.4       12.7       62.7       26.4         Max Q Clear Time (g_c+I1), s       16.3       0.0       19.9       2.0       0.0 </td <td>Incr Delay (d2), s/veh</td> <td>20.2</td> <td>0.0</td> <td>0.0</td> <td>11.7</td> <td>0.0</td> <td>0.0</td> <td>6.6</td> <td>6.8</td> <td>0.9</td> <td>0.1</td> <td>1.0</td> <td>0.1</td>	Incr Delay (d2), s/veh	20.2	0.0	0.0	11.7	0.0	0.0	6.6	6.8	0.9	0.1	1.0	0.1
Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh	Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh         88.7         0.0         0.0         84.2         0.0         0.0         26.0         51.2         33.6         41.4         26.6         19           LnGrp LOS         F         A         F         A         C         D         C         D         C           Approach Vol, veh/h         206         99         1680         981           Approach Delay, s/veh         88.7         84.2         44.5         27.0           Approach LOS         F         F         D         C           Timer - Assigned Phs         1         2         4         5         6         8           Phs Duration (G+Y+Rc), s         25.0         89.3         27.3         44.3         70.0         18.5           Change Period (Y+Rc), s         7.3         7.3         6.6         7.3         7.3         6.6           Max Green Setting (Gmax), s         25.7         49.7         30.4         12.7         62.7         26.4           Max Q Clear Time (g_c+I1), s         16.3         0.0         19.9         2.0         0.0         10.4           Green Ext Time (p_c), s         1.4         0.0         0.8         0.1         0.0	%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	4.4	0.0	0.0	6.4	22.3	4.1	1.2	11.4	0.8
LnGrp LOS         F         A         F         A         C         D         C         D         C           Approach Vol, veh/h         206         99         1680         981           Approach Delay, s/veh         88.7         84.2         44.5         27.0           Approach LOS         F         F         D         C           Timer - Assigned Phs         1         2         4         5         6         8           Phs Duration (G+Y+Rc), s         25.0         89.3         27.3         44.3         70.0         18.5           Change Period (Y+Rc), s         7.3         7.3         6.6         7.3         7.3         6.6           Max Green Setting (Gmax), s         25.7         49.7         30.4         12.7         62.7         26.4           Max Q Clear Time (g_c+I1), s         16.3         0.0         19.9         2.0         0.0         10.4           Green Ext Time (p_c), s         1.4         0.0         0.8         0.1         0.0         0.4           Intersection Summary         HCM 6th Ctrl Delay         43.1	Unsig. Movement Delay, s/veh												
Approach Vol, veh/h       206       99       1680       981         Approach Delay, s/veh       88.7       84.2       44.5       27.0         Approach LOS       F       F       F       D       C         Timer - Assigned Phs       1       2       4       5       6       8         Phs Duration (G+Y+Rc), s       25.0       89.3       27.3       44.3       70.0       18.5         Change Period (Y+Rc), s       7.3       7.3       6.6       7.3       7.3       6.6         Max Green Setting (Gmax), s       25.7       49.7       30.4       12.7       62.7       26.4         Max Q Clear Time (g_c+I1), s       16.3       0.0       19.9       2.0       0.0       10.4         Green Ext Time (p_c), s       1.4       0.0       0.8       0.1       0.0       0.4         Intersection Summary         HCM 6th Ctrl Delay       43.1	LnGrp Delay(d),s/veh	88.7	0.0	0.0	84.2	0.0	0.0	26.0	51.2	33.6	41.4	26.6	19.8
Approach Delay, s/veh 88.7 84.2 44.5 27.0  Approach LOS F F F D C  Timer - Assigned Phs 1 2 4 5 6 8  Phs Duration (G+Y+Rc), s 25.0 89.3 27.3 44.3 70.0 18.5  Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6  Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4  Max Q Clear Time (g_c+I1), s 16.3 0.0 19.9 2.0 0.0 10.4  Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4  Intersection Summary  HCM 6th Ctrl Delay 43.1	LnGrp LOS	F	Α		F	Α		С	D	С	D	С	E
Approach LOS F F F D C  Timer - Assigned Phs 1 2 4 5 6 8  Phs Duration (G+Y+Rc), s 25.0 89.3 27.3 44.3 70.0 18.5  Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6  Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4  Max Q Clear Time (g_c+l1), s 16.3 0.0 19.9 2.0 0.0 10.4  Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4  Intersection Summary  HCM 6th Ctrl Delay 43.1	Approach Vol, veh/h		206			99			1680			981	
Timer - Assigned Phs 1 2 4 5 6 8  Phs Duration (G+Y+Rc), s 25.0 89.3 27.3 44.3 70.0 18.5  Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6  Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4  Max Q Clear Time (g_c+I1), s 16.3 0.0 19.9 2.0 0.0 10.4  Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4  Intersection Summary  HCM 6th Ctrl Delay 43.1	Approach Delay, s/veh		88.7			84.2			44.5			27.0	
Phs Duration (G+Y+Rc), s 25.0 89.3 27.3 44.3 70.0 18.5 Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6 Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4 Max Q Clear Time (g_c+l1), s 16.3 0.0 19.9 2.0 0.0 10.4 Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4 Intersection Summary HCM 6th Ctrl Delay 43.1	Approach LOS		F			F			D			С	
Phs Duration (G+Y+Rc), s 25.0 89.3 27.3 44.3 70.0 18.5 Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6 Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4 Max Q Clear Time (g_c+l1), s 16.3 0.0 19.9 2.0 0.0 10.4 Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4 Intersection Summary HCM 6th Ctrl Delay 43.1	Timor Assigned Dhe	1	2		1	Б	6		Q				
Change Period (Y+Rc), s 7.3 7.3 6.6 7.3 7.3 6.6  Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4  Max Q Clear Time (g_c+l1), s 16.3 0.0 19.9 2.0 0.0 10.4  Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4  Intersection Summary  HCM 6th Ctrl Delay 43.1		25.0											
Max Green Setting (Gmax), s 25.7 49.7 30.4 12.7 62.7 26.4  Max Q Clear Time (g_c+11), s 16.3 0.0 19.9 2.0 0.0 10.4  Green Ext Time (p_c), s 1.4 0.0 0.8 0.1 0.0 0.4  Intersection Summary  HCM 6th Ctrl Delay 43.1													
Max Q Clear Time (g_c+l1), s       16.3       0.0       19.9       2.0       0.0       10.4         Green Ext Time (p_c), s       1.4       0.0       0.8       0.1       0.0       0.4         Intersection Summary         HCM 6th Ctrl Delay       43.1													
Green Ext Time (p_c), s         1.4         0.0         0.8         0.1         0.0         0.4           Intersection Summary           HCM 6th Ctrl Delay         43.1													
Intersection Summary HCM 6th Ctrl Delay 43.1													
HCM 6th Ctrl Delay 43.1		1.4	0.0		0.0	0.1	0.0		0.4				
,				40.4									
	HCM 6th Ctrl Delay HCM 6th LOS			43.1 D									

Pattern 50 (Weekday PM Peak) 35 NB 2035 No Build 6:20 pm  $06/17/2022\,4700$  Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3003: KY-1747 & S Stony Brook Dr

	•	4	<b>†</b>	~	<b>/</b>	Ţ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7	*	<b>^</b>
Traffic Volume (veh/h)	170	60	1220	164	140	1418
Future Volume (veh/h)	170	60	1220	164	140	1418
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	65	1326	178	152	1541
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	221	197	2256	1203	178	2783
Arrive On Green	0.12	0.12	0.63	0.63	0.10	0.78
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	185	65	1326	178	152	1541
	1781	1585	1777	1585	1781	1777
Grp Sat Flow(s), veh/h/ln						
Q Serve(g_s), s	15.2	5.6	32.6	4.6	12.6	24.9
Cycle Q Clear(g_c), s	15.2	5.6	32.6	4.6	12.6	24.9
Prop In Lane	1.00	1.00	0050	1.00	1.00	0700
Lane Grp Cap(c), veh/h	221	197	2256	1203	178	2783
V/C Ratio(X)	0.84	0.33	0.59	0.15	0.86	0.55
Avail Cap(c_a), veh/h	361	321	2256	1203	281	2783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	64.2	60.0	16.0	4.9	66.4	6.2
Incr Delay (d2), s/veh	16.2	2.1	0.1	0.0	17.2	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	5.2	12.4	2.3	6.5	7.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	80.4	62.1	16.1	4.9	83.6	7.0
LnGrp LOS	F	Е	В	Α	F	Α
Approach Vol, veh/h	250		1504			1693
Approach Delay, s/veh	75.7		14.7			13.9
Approach LOS	F E		В			В
Approach LOS	L		D			D
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.3	102.5		25.2		124.8
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	23.7	74.7		30.4		105.7
Max Q Clear Time (g_c+l1), s	14.6	0.0		17.2		0.0
Green Ext Time (p c), s	0.4	0.0		1.4		0.0
u = 77						
Intersection Summary			10.5			
HCM 6th Ctrl Delay			18.8			
HCM 6th LOS			В			

Pattern 50 (Weekday PM Peak) 35 NB 2035 No Build 6:20 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	٠	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	/	<b>&gt;</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	<b>^</b>	7	*	<b>↑</b>	7	ሻ	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	133	427	107	160	390	192	114	1007	91	256	1420	166
Future Volume (veh/h)	133	427	107	160	390	192	114	1007	91	256	1420	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	464	116	174	424	209	124	1095	99	278	1543	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	478	405	197	502	426	144	1189	530	338	1559	696
Arrive On Green	0.07	0.26	0.26	0.08	0.27	0.27	0.08	0.33	0.33	0.38	0.88	0.88
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	145	464	116	174	424	209	124	1095	99	278	1543	180
Grp Sat Flow(s), veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.5	44.2	10.6	12.9	38.6	12.9	12.4	53.4	6.2	25.4	72.7	3.2
Cycle Q Clear(g_c), s	10.5	44.2	10.6	12.9	38.6	12.9	12.4	53.4	6.2	25.4	72.7	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	478	405	197	502	426	144	1189	530	338	1559	696
V/C Ratio(X)	0.69	0.97	0.29	0.88	0.84	0.49	0.86	0.92	0.19	0.82	0.99	0.26
Avail Cap(c_a), veh/h	278	478	405	243	502	426	192	1189	530	338	1559	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	47.8	66.3	53.8	49.4	62.3	23.1	81.7	57.6	25.4	53.2	10.6	6.4
Incr Delay (d2), s/veh	4.7	33.7	0.5	25.4	12.9	1.2	27.6	13.0	8.0	11.0	16.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	25.5	4.3	7.2	20.1	5.1	6.8	25.7	3.2	10.7	8.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	100.0	54.4	74.8	75.1	24.4	109.3	70.6	26.2	64.2	27.0	7.0
LnGrp LOS	D	F	D	Е	Е	С	F	Е	С	Е	С	Α
Approach Vol, veh/h		725			807			1318			2001	
Approach Delay, s/veh		83.2			61.9			70.9			30.3	
Approach LOS		F			Е			Е			С	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.6	66.0	21.4	52.0	21.1	85.5	19.0	54.3				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 30	60.2	* 20	46.0	19.4	* 70	* 20	46.0				
Max Q Clear Time (g_c+l1), s	27.4	0.0	14.9	46.2	14.4	0.0	12.5	40.6				
Green Ext Time (p_c), s	0.3	0.0	0.2	0.0	0.2	0.0	0.2	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			54.5									
HCM 6th LOS			D									
Natas												

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Pattern 50 (Weekday PM Peak) 35 NB 2035 No Build 6:20 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

Pattern 50 (Weekday PM Peak) 35 B
2216: KY-1747 & US-31E

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	ř	<b>^</b>	7	14.54	<b>∱</b> 1>		7	<b>^</b>	7	*	<b>^</b>	7
Traffic Volume (veh/h)	88	858	373	582	918	80	136	1181	161	213	665	426
Future Volume (veh/h)	88	858	373	582	918	80	136	1181	161	213	665	426
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	894	389	606	956	83	142	1230	168	222	693	444
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	704	533	569	942	82	210	1082	483	246	1154	776
Arrive On Green	0.08	0.20	0.20	0.16	0.28	0.28	0.12	0.30	0.30	0.09	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3308	287	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	92	894	389	606	513	526	142	1230	168	222	693	444
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1819	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.5	29.7	29.7	24.7	42.7	42.7	11.5	45.7	9.2	18.5	26.3	14.8
Cycle Q Clear(g c), s	7.5	29.7	29.7	24.7	42.7	42.7	11.5	45.7	9.2	18.5	26.3	14.8
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	704	533	569	506	518	210	1082	483	246	1154	776
V/C Ratio(X)	0.66	1.27	0.73	1.06	1.02	1.02	0.68	1.14	0.35	0.90	0.60	0.57
Avail Cap(c a), veh/h	139	704	533	569	506	518	210	1082	483	270	1154	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	67.2	60.1	43.8	62.7	53.7	53.7	63.4	52.2	22.7	67.1	49.9	11.0
Incr Delay (d2), s/veh	12.5	132.8	8.5	51.6	38.7	38.3	8.8	73.1	2.0	24.8	1.8	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	26.1	13.7	14.7	24.0	24.5	5.6	30.8	3.7	10.3	12.3	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	192.9	52.3	114.2	92.3	92.0	72.2	125.2	24.7	91.9	51.7	13.3
LnGrp LOS	Е	F	D	F	F	F	Е	F	С	F	D	В
Approach Vol, veh/h		1375			1645			1540			1359	
Approach Delay, s/veh		145.6			100.3			109.4			45.7	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	37.0	25.0	56.0	19.0	50.0	28.0	53.0				
Change Period (Y+Rc), s	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3				
Max Green Setting (Gmax), s	24.7	29.7	17.7	48.7	11.7	42.7	22.7	43.7				
Max Q Clear Time (g_c+l1), s	26.7	0.0	13.5	28.3	9.5	0.0	20.5	47.7				
Green Ext Time (p_c), s	0.0	0.0	0.2	9.6	0.1	0.0	0.2	0.0				
" - "	0.0	0.0	U.L	0.0	0.1	0.0	J.L	0.0				
Intersection Summary			400.0									
HCM 6th Ctrl Delay			100.6									
HCM 6th LOS			F									
Notes												

User approved pedestrian interval to be less than phase max green.

Pattern 50 (Weekday PM Peak) 35 B 2035 Build 1:07 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NW
Lane Configurations		र्स	7		र्स	7	7	<b>^</b>	7	ሻ	<b>^</b>	i
Traffic Volume (veh/h)	123	66	54	24	67	304	314	1154	139	37	876	2
Future Volume (veh/h)	123	66	54	24	67	304	314	1154	139	37	876	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.0
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	72	0	26	73	0	341	1254	151	40	952	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	:
Cap, veh/h	152	82		36	101		434	1393	621	480	1820	812
Arrive On Green	0.13	0.13	0.00	0.07	0.07	0.00	0.11	0.39	0.39	0.23	0.51	0.5
Sat Flow, veh/h	1178	633	1585	485	1361	1585	1781	3554	1585	1781	3554	158
Grp Volume(v), veh/h	206	0	0	99	0	0	341	1254	151	40	952	28
Grp Sat Flow(s),veh/h/ln	1811	0	1585	1846	0	1585	1781	1777	1585	1781	1777	158
Q Serve(g_s), s	17.9	0.0	0.0	8.4	0.0	0.0	14.3	53.1	10.2	0.0	28.6	1.4
Cycle Q Clear(g_c), s	17.9	0.0	0.0	8.4	0.0	0.0	14.3	53.1	10.2	0.0	28.6	1.4
Prop In Lane	0.65		1.00	0.26		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	0		137	0		434	1393	621	480	1820	812
V/C Ratio(X)	0.88	0.00		0.72	0.00		0.79	0.90	0.24	0.08	0.52	0.0
Avail Cap(c_a), veh/h	344	0		305	0		523	1393	621	480	1820	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.4	0.0	0.0	72.5	0.0	0.0	20.3	45.7	32.7	44.5	26.0	19.4
Incr Delay (d2), s/veh	20.2	0.0	0.0	11.7	0.0	0.0	7.9	9.6	0.9	0.1	1.1	0.
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	4.4	0.0	0.0	6.5	24.6	4.1	1.2	12.1	0.
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.7	0.0	0.0	84.2	0.0	0.0	28.3	55.3	33.6	44.6	27.1	19.
LnGrp LOS	F	Α		F	Α		С	Е	С	D	С	E
Approach Vol, veh/h		206			99			1746			1020	
Approach Delay, s/veh		88.7			84.2			48.2			27.6	
Approach LOS		F			F			D			С	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	89.3		27.3	44.3	70.0		18.5				
Change Period (Y+Rc), s	7.3	7.3		6.6	7.3	7.3		6.6				
Max Green Setting (Gmax), s	25.7	49.7		30.4	12.7	62.7		26.4				
Max Q Clear Time (g_c+l1), s	16.3	0.0		19.9	2.0	0.0		10.4				
Green Ext Time (p_c), s	1.4	0.0		0.8	0.1	0.0		0.4				
Intersection Summary			45.0									
HCM 6th Ctrl Delay HCM 6th LOS			45.2 D									
Notes												
User approved pedestrian inte	11.											

Pattern 50 (Weekday PM Peak) 35 B 2035 Build 6:26 pm 06/17/2022 4700 Hurstbourne Pkwy

Pattern 50 (Weekday PM Peak) 35 B 3003: KY-1747 & S Stony Brook Dr

	•	4	<b>†</b>	<i>&gt;</i>	<b>/</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	۴	7	<b>^</b>	7*	*	<b>^</b>
Traffic Volume (veh/h)	170	60	1294	164	140	1459
Future Volume (veh/h)	170	60	1294	164	140	1459
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No	1100		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adi Flow Rate, veh/h	185	65	1407	178	152	1586
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	221	197	2256	1203	178	2783
Arrive On Green	0.12	0.12	0.63	0.63	0.10	0.78
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	185	65	1407	178	152	1586
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	15.2	5.6	35.9	4.6	12.6	26.2
Cycle Q Clear(g_c), s	15.2	5.6	35.9	4.6	12.6	26.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	221	197	2256	1203	178	2783
V/C Ratio(X)	0.84	0.33	0.62	0.15	0.86	0.57
Avail Cap(c_a), veh/h	361	321	2256	1203	281	2783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.10	0.10	1.00	1.00
Uniform Delay (d), s/veh	64.2	60.0	16.6	4.9	66.4	6.4
Incr Delay (d2), s/veh	16.2	2.1	0.1	0.0	17.2	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	5.2	13.6	2.3	6.5	8.2
Unsig. Movement Delay, s/veh		0.2	10.0	2.0	0.0	U.L
LnGrp Delay(d),s/veh	80.4	62.1	16.7	4.9	83.6	7.2
LnGrp LOS	60.4 F	02.1 E	В	4.9 A	00.0 F	Α.2
	250		1585		<u>'</u>	1738
Approach Vol, veh/h						
Approach Delay, s/veh	75.7		15.4			13.9
Approach LOS	Е		В			В
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.3	102.5		25.2		124.8
Change Period (Y+Rc), s	7.3	7.3		6.6		7.3
Max Green Setting (Gmax), s	23.7	74.7		30.4		105.7
Max Q Clear Time (g c+l1), s	14.6	0.0		17.2		0.0
Green Ext Time (p c), s	0.4	0.0		1.4		0.0
V = 17	J. 1	5.5				0.0
Intersection Summary			40.0			
HCM 6th Ctrl Delay			18.9			
HCM 6th LOS			В			

Pattern 50 (Weekday PM Peak) 35 B 2035 Build 1:07 pm 08/08/2022 4700 Hurstbourne Pkwy DBZ

HCM 6th Signalized Intersection Summary 3004: KY-1747 & Watterson Trail

	٠	<b>→</b>	•	•	<b>←</b>	•	1	<b>†</b>	~	<b>&gt;</b>	Ţ	√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>^</b>	7	*	<b>↑</b>	7	7	<b>^</b>	7	ሻ	<b>^</b>	7
Traffic Volume (veh/h)	133	427	107	160	390	192	114	1033	91	256	1464	166
Future Volume (veh/h)	133	427	107	160	390	192	114	1033	91	256	1464	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	464	116	174	424	209	124	1123	99	278	1591	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	478	405	197	502	426	144	1189	530	338	1559	696
Arrive On Green	0.07	0.26	0.26	0.08	0.27	0.27	0.08	0.33	0.33	0.38	0.88	0.88
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	145	464	116	174	424	209	124	1123	99	278	1591	180
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.5	44.2	10.6	12.9	38.6	12.9	12.4	55.3	6.2	25.4	79.0	3.2
Cycle Q Clear(g_c), s	10.5	44.2	10.6	12.9	38.6	12.9	12.4	55.3	6.2	25.4	79.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	478	405	197	502	426	144	1189	530	338	1559	696
V/C Ratio(X)	0.69	0.97	0.29	0.88	0.84	0.49	0.86	0.94	0.19	0.82	1.02	0.26
Avail Cap(c_a), veh/h	278	478	405	243	502	426	192	1189	530	338	1559	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	47.8	66.3	53.8	49.4	62.3	23.1	81.7	58.3	25.4	53.2	11.0	6.4
Incr Delay (d2), s/veh	4.7	33.7	0.5	25.4	12.9	1.2	27.6	15.8	0.8	11.0	23.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	25.5	4.3	7.2	20.1	5.1	6.8	27.0	3.2	10.7	9.8	1.1
Unsig. Movement Delay, s/veh		400.0	<b>544</b>	740	75.4	04.4	400.0	711	00.0	04.0	05.0	7.0
LnGrp Delay(d),s/veh	52.5	100.0	54.4	74.8	75.1	24.4	109.3	74.1	26.2	64.2	35.0	7.0
LnGrp LOS	D	F 705	D	E	E	С	F	E 4040	С	E	F 00.40	A
Approach Vol, veh/h		725			807			1346			2049	
Approach Delay, s/veh		83.2			61.9			73.8			36.5	
Approach LOS		F			Е			Е			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.6	66.0	21.4	52.0	21.1	85.5	19.0	54.3				
Change Period (Y+Rc), s	* 6.5	5.8	* 6.3	6.0	6.6	* 6.5	* 6.3	6.0				
Max Green Setting (Gmax), s	* 30	60.2	* 20	46.0	19.4	* 70	* 20	46.0				
Max Q Clear Time (g_c+l1), s	27.4	0.0	14.9	46.2	14.4	0.0	12.5	40.6				
Green Ext Time (p_c), s	0.3	0.0	0.2	0.0	0.2	0.0	0.2	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			57.7									
HCM 6th LOS			Е									

Notes

Pattern 50 (Weekday PM Peak) 35 B 2035 Build 6:26 pm 06/17/2022 4700 Hurstbourne Pkwy DBZ

<sup>\*</sup> HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

		H	ICS <sup>-</sup>	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						_
Analyst	Diane	Zimmei	rman				Inters	ection			Hurst	bourne a	at North	Ent		_
Agency/Co.	Diane	B. Zimn	nerman i	Traffic Er	gineerir	ng	Jurisd	iction								
Date Performed	8/8/20	022					East/\	Nest Str	eet		North	Ent/Mo	rning Pt	:		_
Analysis Year	2025						North	/South	Street		Hurst	bourne f	Parkway			
Time Analyzed	AM Pe	eak					Peak	Hour Fac	tor		0.94					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				74 4Y 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	<mark>គ</mark> ាក្	<b>ስ † i</b> <b>ተ ቍ ጕ</b> r Street: Nor	† † † ř	74444								
Vehicle Volumes and Adj	justmei															
Approach	$\bot$				U	Westl	oound			North	bound				bound	_
Movement	U	Eastbound  U L T R  10 11 12				L	T	R	U	L	T	R	U	L	T	F
		10	11	12		7	8	9	1U	1	2	3	4U	4	5	(
Priority	_					_					_					
Number of Lanes		1	0	1		0	1	0	0	1	2	0	0	1	2	-
Number of Lanes Configuration		L	0	R			1 LR			L	Т	TR		L	Т	T
Number of Lanes Configuration Volume (veh/h)		L 48	0	R 24		1	_	2	0	L 5		_	0	L 3	_	-
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)		L	0	R			_			L	Т	TR		L	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked		L 48 0		R 24		1 0	LR	2	0	L 5	Т	TR	0	L 3	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		L 48 0	0	R 24		1 0	_	2	0	L 5	Т	TR	0	L 3	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized		L 48 0		R 24 0	Only	1 0	LR	2	0	L 5	Т	TR 5	0	L 3	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage	leadway	L 48 0	0	R 24 0	Only	1 0	LR	2	0	L 5	Т	TR 5	0	L 3	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized	leadway	L 48 0	0	R 24 0	Only	1 0	LR	2	0	L 5	Т	TR 5	0	L 3	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H	leadway	L 48 0	0	R 24 0	Only	1 0	LR	2 0	0	L 5	Т	TR 5	0	L 3 0	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	leadway	L 48 0 N N N N N N N N N N N N N N N N N N	0	R 24 0	Only	7.5	LR	6.9	0	L 5 0	Т	TR 5	0	L 3 0	Т	Т
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	leadway	L 48 0 (N N N N N N N N N N N N N N N N N N	0	R 24 0 0 Left 6.9 6.90	Only	7.5 7.50	LR	6.9	0	L 5 0	Т	TR 5	0	L 3 0	Т	Т
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)		L 48 0 N N N N N N N N N N N N N N N N N N	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	LR	6.9 6.90 3.3	0	L 5 0 1 4.1 4.10 2.2	Т	TR 5	0	L 3 0	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		L 48 0 N N N N N N N N N N N N N N N N N N	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	LR	6.9 6.90 3.3	0	L 5 0 1 4.1 4.10 2.2	Т	TR 5	0	L 3 0	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an		L 48 0 ( N 7.5 7.50 3.5 3.50   of Se	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	LR	6.9 6.90 3.3	0	4.1 4.10 2.2 2.20	Т	TR 5	0	4.1 4.10 2.2 2.20	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)		L 48 0 ( N )	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	LR 3	6.9 6.90 3.3	0	4.1 4.10 2.2 2.20	Т	TR 5	0	L 3 0 4.1 4.10 2.2 2.20	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		L 48 0 0 N N N N N N N N N N N N N N N N N	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30 26 656	Only	7.5 7.50 3.5	LR 3 292	6.9 6.90 3.3	0	4.1 4.10 2.2 2.20	Т	TR 5	0	4.1 4.10 2.2 2.20	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		L 48 0 0 N N N N N N N N N N N N N N N N N	D)	R 24 0 0	Only	7.5 7.50 3.5	1 LR 3 292 0.01	6.9 6.90 3.3	0	4.1 4.10 2.2 2.20 5 913 0.01	Т	TR 5	0	4.1 4.10 2.2 2.20	Т	T
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)		L 48 0 ( N 5 1 252 0.20 0.7	D)	R 24 0 0 Left 6.9 6.90 3.3 3.30 26 656 0.04 0.1	Only	7.5 7.50 3.5	3 292 0.01	6.9 6.90 3.3	0	4.1 4.10 2.2 2.20 5 913 0.01 0.0	Т	TR 5	0	4.1 4.10 2.2 2.20 3 611 0.01	Т	T
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)  Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		L 48 0 0 N N N N N N N N N N N N N N N N N	D)	R 24 0 0	Only	7.5 7.50 3.5 3.50	3 292 0.01 0.0	6.9 6.90 3.3	0	L 5 0 4.1 4.10 2.2 2.20 5 913 0.01 0.0 9.0 A	Т	TR 5	0	4.1 4.10 2.2 2.20 3 611 0.01 0.0 10.9 B	Т	T

		ŀ	ICS	Iwo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforn	natio	n						
Analyst	Diane	Zimme	rman				Inters	ection			Hurst	bourne a	at North	Ent		
Agency/Co.	Diane	B. Zimn	nerman	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/8/2	022					East/\	West Stre	eet		North	n Ent/Mo	rning Pt	1		
Analysis Year	2035						North	/South S	Street		Hurst	bourne l	Parkway			
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.94					
Intersection Orientation	North	n-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
.anes																
				4 4 7 4 C		1 1 1		74 + A + F C								
/ehicle Volumes and Adj	justme	nts			,											
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	F
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	1	0	0	1	2	0	0	1	2	C
Configuration	_	L		R			LR			L	T	TR		L	T	TI
Volume (veh/h)		48		24		1		2	0	5	1138	5	0	3	674	9
Percent Heavy Vehicles (%)		0		0		0		0	3	0			0	0		╙
Proportion Time Blocked	-															
Percent Grade (%)			)				)									
Right Turn Channelized	+	N	lo	1 -6	Ombo								1			
Median Type   Storage	<u> </u>			Lett	Only								1			
Critical and Follow-up H	eadwa	_														
Base Critical Headway (sec)	_	7.5		6.9		7.5		6.9		4.1				4.1	_	L
Critical Headway (sec)		7.50		6.90		7.50		6.90		4.10				4.10		
Base Follow-Up Headway (sec)		3.5		3.3		3.5		3.3		2.2				2.2		
Follow-Up Headway (sec)	1.	3.50		3.30		3.50		3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	_	rvice	_												
Flow Rate, v (veh/h)	_	51		26			3			5				3		
Capacity, c (veh/h)		237		639			273			886				581		
v/c Ratio		0.22		0.04			0.01			0.01				0.01		
95% Queue Length, Q <sub>95</sub> (veh)		0.8		0.1			0.0			0.0				0.0		
( ontrol Doloy (chuch)		24.3		10.9			18.3			9.1				11.2 B		
Control Delay (s/veh)										Α				. 0		
Level of Service (LOS)  Approach Delay (s/veh)	-	C 10	9.8	В			C 3.3				.0				).0	

		ŀ	ICS -	Two-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforr	natio	1						_
Analyst	Diane	Zimme	rman				Inters	ection			Hurst	bourne a	at North	Ent		
Agency/Co.	Diane	B. Zimn	nerman	Traffic Er	gineerir	ng	Jurisd	iction								
Date Performed	8/8/2	022					East/\	Nest Stre	et		North	Ent/Mo	rning Pt	:		
Analysis Year	2025						North	/South S	Street		Hurst	bourne f	Parkway			
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.98					
Intersection Orientation	North	n-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													_
Lanes																
				74 *Y * F C		ን † 1 ተ ቀ ሦ r Street: Nor		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	_
Movement	U	L	Т	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
		1	0	1		0	1	0	0	1	2	0	0	1	2	C
Number of Lanes	_	_														
Number of Lanes Configuration		L		R			LR			L	T	TR		L	T	_
Configuration Volume (veh/h)		19		10		3	LR	11	0	16	T 894	TR 5	0	7	T 1197	_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)		_		_		3	LR	11	0		-		0			_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked		19 0		10		0				16	-		_	7		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)		19 0	0	10		0	LR			16	-		_	7		33
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized		19 0	0	10		0				16	-	5	0	7		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage		19 0		10	Only	0				16	-	5	_	7		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized	eadwa	19 0		10	Only	0				16	-	5	0	7		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage	eadwa	19 0		10	Only	0				16	-	5	0	7		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H	eadwa	19 0		10 0	Only	0		0		16	-	5	0	7 0		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	leadwa	19 0 N ys		10 0 Left	Only	7.5		6.9		16 0	-	5	0	7 0		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)	leadwa	19 0 N ys 7.5 7.50		10 0 Left 6.9 6.90	Only	7.5 7.50		6.9		16 0 4.1 4.10	-	5	0	7 0 4.1 4.10		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)		19 0 (N 7.5 7.50 3.5 3.50	lo	10 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5		6.9 6.90 3.3		4.1 4.10 2.2	-	5	0	7 0 4.1 4.10 2.2		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)		19 0 (N 7.5 7.50 3.5 3.50	lo	10 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5		6.9 6.90 3.3		4.1 4.10 2.2	-	5	0	7 0 4.1 4.10 2.2		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, and		19 0 N ys 7.5 7.50 3.5 3.50 I of Se	lo	10 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	0	6.9 6.90 3.3		4.1 4.10 2.2 2.20	-	5	0	4.1 4.10 2.2 2.20		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)		7.5 7.50 3.5 3.50 1 of Se	lo	10 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	14	6.9 6.90 3.3		4.1 4.10 2.2 2.20	-	5	0	7 0 4.1 4.10 2.2 2.20		_
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		19 0 N ys 7.5 7.50 3.5 3.50 I of Se 19 141	lo	10 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	14 386	6.9 6.90 3.3		4.1 4.10 2.2 2.20	-	5	0	7 0 4.1 4.10 2.2 2.20		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio		7.5 7.50 3.5 3.50 1 of Se 19 141 0.14	lo	10 0 Left 6.9 6.90 3.3 3.30 10 431 0.02	Only	7.5 7.50 3.5	14 386 0.04	6.9 6.90 3.3		4.1 4.10 2.2 2.20 16 561 0.03	-	5	0	7 0 4.1 4.10 2.2 2.20 7 752 0.01		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)		7.5 7.50 3.5 3.50 I of Se 19 141 0.14 0.5	lo	10 0 Left 6.9 6.90 3.3 3.30 431 0.02 0.1	Only	7.5 7.50 3.5	14 386 0.04 0.1	6.9 6.90 3.3		16 0 4.1 4.10 2.2 2.20 16 561 0.03 0.1	-	5	0	7 0 4.1 4.10 2.2 2.20 7 752 0.01 0.0		_
Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q95 (veh)  Control Delay (s/veh)		7.5 7.50 3.5 3.50 1 of Se 19 141 0.14 0.5 34.6	lo	10 0 Left 6.9 6.90 3.3 3.30 431 0.02 0.1 13.6	Only	7.5 7.50 3.5 3.50	14 386 0.04 0.1 14.7	6.9 6.90 3.3		16 0 4.1 4.10 2.2 2.20 16 561 0.03 0.1 11.6 B	-	5	0	7 0 4.1 4.10 2.2 2.20 7 752 0.01 0.0 9.8 A		_

		ŀ	ICS -	Two-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforr	natio	1						
Analyst	Diane	Zimme	rman				Inters	ection			Hurst	bourne a	at North	Ent		
Agency/Co.	Diane	B. Zimr	nerman	Traffic Er	ngineerir	ng	Juriso	iction								
Date Performed	8/8/2	022					East/	West Stre	et		North	Ent/Mo	rning Pt			
Analysis Year	2035						North	/South S	Street		Hurst	bourne l	Parkway			
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.98					
Intersection Orientation	North	n-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				144441		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		\								
Vehicle Volumes and Adj	justme	nts			,											
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
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	$\perp$	1	0	1		0	1	0	0	1	2	0	0	1	2	0
Configuration	$\bot$	L		R			LR			L	T	TR		L	T	TF
Volume (veh/h)	$\bot$	19		10		3		11	0	16	939	5	0	7	1258	33
Percent Heavy Vehicles (%)	$\perp$	0		0		0		0	3	0			0	0		_
Proportion Time Blocked	+															
Percent Grade (%)	+		0			-	0									
Right Turn Channelized	+-	N	lo	1 -6	0											
Median Type   Storage				Left	Only								1			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	$\bot$	7.5		6.9		7.5		6.9		4.1				4.1		$\vdash$
Critical Headway (sec)	_	7.50		6.90		7.50		6.90		4.10				4.10		_
		3.5		3.3		3.5		3.3		2.2				2.2		L
Base Follow-Up Headway (sec)				3.30		3.50		3.30		2.20				2.20		L
Follow-Up Headway (sec)		3.50														
Follow-Up Headway (sec)	d Leve		ervice												_	_
Follow-Up Headway (sec) <b>Delay, Queue Length, an</b> Flow Rate, v (veh/h)	d Leve	l of So	ervice	10			14			16				7		
Follow-Up Headway (sec) <b>Delay, Queue Length, an</b> Flow Rate, v (veh/h)  Capacity, c (veh/h)	d Leve	19 129	ervice	10 411			366			531				723		
Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio	d Leve	19 129 0.15	ervice	10 411 0.02			366 0.04			531 0.03				723 0.01		
Follow-Up Headway (sec)  Pelay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)	d Leve	19 129 0.15 0.5	ervice	10 411 0.02 0.1			366 0.04 0.1			531 0.03 0.1				723 0.01 0.0		
Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	d Leve	19 129 0.15 0.5 37.7	ervice	10 411 0.02 0.1 14.0			366 0.04 0.1 15.2			531 0.03 0.1 12.0				723 0.01 0.0 10.0		
Follow-Up Headway (sec)  Pelay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Qos (veh)  Control Delay (s/veh)  Level of Service (LOS)	d Leve	19 129 0.15 0.5 37.7		10 411 0.02 0.1			366 0.04 0.1 15.2 C			531 0.03 0.1 12.0 B				723 0.01 0.0 10.0 B		
Follow-Up Headway (sec)  Pelay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	d Leve	19 129 0.15 0.5 37.7 E	p.6	10 411 0.02 0.1 14.0		15	366 0.04 0.1 15.2			531 0.03 0.1 12.0 B	.2			723 0.01 0.0 10.0 B	.1	

		ŀ	ICS	Two-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforn	natio	n						Т
Analyst	Diane	Zimme	rman				Inters	ection			Hurst	bourne a	at South	Ent		
Agency/Co.	Diane	B. Zimn	nerman	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/8/2	022					East/\	West Stre	eet		South	Ent/490	01 Hurst			
Analysis Year	2025						North	/South S	Street		Hurst	bourne f	Parkway			
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.94					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				4 + Y + Y ∩		う † 1 す <b>サ</b> Y		74 + A + F C								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	_
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	-	1	0	1		0	1	0	0	1	2	0	0	1	2	0
		L		R			LR			L	T	TR		L	T	TF
Configuration									0	15	1070	1 2	0		666	3
Volume (veh/h)	-	17		80		3		6		_	1070	3		2		-
Volume (veh/h) Percent Heavy Vehicles (%)		0		0		3 0		0	3	0	1070	3	0	0		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		0		-		0				_	1070	3		_		
Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)		0	0	-		0	)			_	1070	3		_		
Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized		0	0	0	Only	0	0			_	1070		0	_		
Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage		0		0	Only	0				_	1070			_		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H	leadwa	o N		0 Left	Only	0		0		0			0	0		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec)	eadwa	0 N		Left	Only	7.5		6.9		4.1	1070		0	4.1		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	0 N ys 7.5 7.50		0 Left	Only	7.5 7.50		6.9		4.1 4.10			0	4.1 4.10		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	leadwa	7.5 7.50 3.5		0 Left 6.9 6.90 3.3	Only	7.5 7.50 3.5		6.9		4.1 4.10 2.2			0	4.1 4.10 2.2		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.5 7.50 3.5 3.50	lo	6.9 6.90 3.3 3.30	Only	7.5 7.50		6.9		4.1 4.10			0	4.1 4.10		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and		7.5 7.50 3.5 3.50	lo	6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5		6.9		4.1 4.10 2.2 2.20			0	4.1 4.10 2.2 2.20		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h)		7.5 7.50 3.5 3.50 I of So	lo	6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	10	6.9		4.1 4.10 2.2 2.20			0	4.1 4.10 2.2 2.20		
Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, and  Flow Rate, v (veh/h)  Capacity, c (veh/h)		0 ys 7.5 7.50 3.5 3.50 1 of Se 241	lo	6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	10 284	6.9		4.1 4.10 2.2 2.20			0	4.1 4.10 2.2 2.20		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		7.5 7.50 3.5 3.50 1 of So 18 241 0.07	lo	6.9 6.90 3.3 3.30 85 646 0.13	Only	7.5 7.50 3.5	10 284 0.03	6.9		4.1 4.10 2.2 2.20 16 897 0.02			0	4.1 4.10 2.2 2.20 2 619 0.00		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)		7.5 7.50 3.5 3.50 1 of Se 18 241 0.07	lo	6.9 6.90 3.3 3.30 85 646 0.13	Only	7.5 7.50 3.5	10 284 0.03 0.1	6.9		0 4.1 4.10 2.2 2.20 16 897 0.02 0.1			0	4.1 4.10 2.2 2.20 619 0.00 0.0		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		7.5 7.50 3.5 3.50 1 of Se 241 0.07 0.2 21.1	lo	6.9 6.90 3.3 3.30 85 646 0.13 0.5	Only	7.5 7.50 3.5	10 284 0.03 0.1 18.1	6.9		16 897 0.02 0.1 9.1			0	4.1 4.10 2.2 2.20 619 0.00 0.0 10.8		
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)		7.5 7.50 3.5 3.50 1 of So 241 0.07 0.2 21.1	lo	6.9 6.90 3.3 3.30 85 646 0.13	Only	7.5 7.50 3.5	10 284 0.03 0.1 18.1 C	6.9		16 897 0.02 0.1 9.1	.1		0	4.1 4.10 2.2 2.20 619 0.00 0.0 10.8 B	.0	

		H	ICS <sup>-</sup>	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						_
Analyst	Diane	Zimmei	rman				Inters	ection			Hurst	bourne a	at South	Ent		
Agency/Co.	Diane	B. Zimn	nerman i	Traffic Er	gineerir	ng	Jurisd	liction								
Date Performed	8/8/20	022					East/\	West Str	eet		South	Ent/490	01 Hurst			_
Analysis Year	2035						North	/South	Street		Hurst	bourne l	Parkway			
Time Analyzed	AM Pe	eak					Peak	Hour Fac	tor		0.94					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				74 4Y 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	<mark>គ</mark> ាក្	<b>ገ † i</b> <b>ተ ቍ ጕ</b> Street: Nor	† † † ř	74444								
Vehicle Volumes and Adj	justmei	nts														
Approach	Д.		ound			Westl	oound			North	bound				bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	F
		10	11	12		7	8	9	10	1	2	3	4U	4	5	-6
Priority	+															
Number of Lanes		1	0	1		0	1	0	0	1	2	0	0	1	2	$\vdash$
Number of Lanes Configuration		L	0	R			1 LR			L	Т	TR		L	Т	Т
Number of Lanes Configuration Volume (veh/h)		L 17	0	R 80		3	_	6	0	L 15		-	0	L 2	_	Т
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)		L	0	R			_			L	Т	TR		L	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked		17 0		R 80		3 0	LR	6	0	L 15	Т	TR	0	L 2	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		L 17 0	0	R 80		3 0	_	6	0	L 15	Т	TR	0	L 2	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized		L 17 0		R 80 0	Only	3 0	LR	6	0	L 15	Т	TR 3	0 0	L 2	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage	eadway	L 17 0	0	R 80 0	Only	3 0	LR	6	0	L 15	Т	TR 3	0	L 2	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized	eadway	L 17 0	0	R 80 0	Only	3 0	LR	6	0	L 15 0	Т	TR 3	0 0	L 2	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H	eadway	L 17 0	0	R 80 0	Only	3 0	LR	6 0	0	L 15	Т	TR 3	0 0	L 2 0	Т	3
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	leadway	L 17 0 N N N N N N N N N N N N N N N N N N	0	R 80 0	Only	7.5	LR	6.9	0	L 15 0	Т	TR 3	0 0	L 2 0	Т	Т
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	eadway	L 17 0 (N N N N N N N N N N N N N N N N N N	0	R 80 0	Only	7.5 7.50	LR	6.9 6.90	0	L 15 0	Т	TR 3	0 0	L 2 0	Т	Т
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)		L 17 0 (N N N N N N N N N N N N N N N N N N	D)	R 80 0	Only	7.5 7.50 3.5	LR	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2	Т	TR 3	0 0	L 2 0 1 4.1 4.10 2.2	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		L 17 0 (N N N N N N N N N N N N N N N N N N	D)	R 80 0	Only	7.5 7.50 3.5	LR	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2	Т	TR 3	0 0	L 2 0 1 4.1 4.10 2.2	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an		L 17 0 /s 7.5 7.50 3.5 3.50	D)	R 80 0	Only	7.5 7.50 3.5	LR	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2 2.20	Т	TR 3	0 0	4.1 4.10 2.2 2.20	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)		L 17 0 /s 7.5 7.50 3.5 3.50 l of Se	D)	R 80 0 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	LR	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2 2.20	Т	TR 3	0 0	4.1 4.10 2.2 2.20	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		L 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D)	R 80 0 0 Left 6.9 6.90 3.3 3.30 85 885	Only	7.5 7.50 3.5	LR 10 282	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2 2.20	Т	TR 3	0 0	4.1 4.10 2.2 2.20	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		L 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D)	R 80 0 0	Only	7.5 7.50 3.5	10 282 0.03	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2 2.20 16 1288 0.01	Т	TR 3	0 0	L 2 0 0 4.1 4.10 2.2 2.20 2 589 0.00	Т	Ţ
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)		L 17 0 ( N /s 7.5 7.50 3.5 3.50 of Se 18 334 0.05 0.2	D)	R 80 0 0	Only	7.5 7.50 3.5	10 282 0.03 0.1	6.9 6.9 6.90 3.3	0	4.1 4.10 2.2 2.20 16 1288 0.01 0.0	Т	TR 3	0 0	4.1 4.10 2.2 2.20 2 589 0.00 0.0	Т	Ţ
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)  Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		L 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D)	R 80 0 	Only	7.5 7.50 3.5 3.50	10 282 0.03 0.1 18.2	6.9 6.9 6.90 3.3	0	L 15 0 4.1 4.10 2.2 2.20 16 1288 0.01 0.0 7.8 A	Т	TR 3	0 0	L 2 0 0 4.1 4.10 2.2 2.20 2 589 0.00 0.0 11.1 B	Т	Ţ

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General Information							Site	Inforr	natio	1						_
Analyst	Diane	Zimmei	rman				Inters	ection			Hurst	bourne a	at South	Ent		
Agency/Co.	Diane	B. Zimn	nerman	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/8/2	022					East/\	Nest Stre	eet		South	Ent/490	)1 Hurstl	bourne		
Analysis Year	2025						North	/South S	Street		Hurst	bourne f	Parkway			
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.98					_
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				744747		기 † 1 <b>1 후 Y</b> r Street: Nor		\								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	_
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		1	0	1		0	1	0	0	1	2	0	0	1	2	0
Configuration	$\perp$	L		R			LR			L	T	TR		L	T	TF
		7		31		3		5	0	55	904	4	0	6	1193	11
Volume (veh/h)	_			I 0			ı	0	3	0			0	0		
Percent Heavy Vehicles (%)		0		0		0	_									
Percent Heavy Vehicles (%) Proportion Time Blocked				0												
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		(	0	0			0									
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized		(	) lo				0									
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage		( N			Only		0						1			
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	leadwa	( N			Only		0						1			
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage	leadwa	( N			Only		0	6.9		4.1			1	4.1		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	ys 7.5 7.50		Left 6.9 6.90	Only	7.5 7.50	0	6.90		4.10			1	4.10		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	leadwa	7.5 7.50 3.5		Left 6.9 6.90 3.3	Only	7.5 7.50 3.5	0	6.90 3.3		4.10 2.2			1	4.10 2.2		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.5 7.50 3.5 3.50	lo	Left 6.9 6.90 3.3 3.30	Only	7.5 7.50	0	6.90		4.10			1	4.10		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.5 7.50 3.5 3.50	lo	Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5		6.90 3.3		4.10 2.2			1	4.10 2.2		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.5 7.50 3.5 3.50	lo	Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	8	6.90 3.3		4.10 2.2				4.10 2.2		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and		7.5 7.50 3.5 3.50	lo	Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5		6.90 3.3		4.10 2.2 2.20				4.10 2.2 2.20		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an		7.50 3.50 3.50 1 of Se	lo	Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	8	6.90 3.3		4.10 2.2 2.20				4.10 2.2 2.20		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h)  Capacity, c (veh/h)		7.5 7.50 3.5 3.50 1 of Se	lo	6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	8 275	6.90 3.3		4.10 2.2 2.20 56 574				4.10 2.2 2.20 6 746		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pollow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		7.50 3.5 3.50 1 of Se 7 136 0.05	lo	Left 6.9 6.90 3.3 3.30 32 440 0.07	Only	7.5 7.50 3.5	8 275 0.03	6.90 3.3		4.10 2.2 2.20 56 574 0.10				4.10 2.2 2.20 6 746 0.01		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)		7.50 3.5 3.50 1 of Se 7 136 0.05 0.2	lo	Left 6.9 6.90 3.3 3.30 32 440 0.07 0.2	Only	7.5 7.50 3.5	8 275 0.03 0.1	6.90 3.3		4.10 2.2 2.20 56 574 0.10 0.3				4.10 2.2 2.20 6 746 0.01 0.0		
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q95 (veh) Control Delay (s/veh)		7.5 7.50 3.5 3.50 I of Se 7 136 0.05 0.2 33.0	lo	Left 6.9 6.90 3.3 3.30 32 440 0.07 0.2 13.8	Only	7.5 7.50 3.5 3.50	8 275 0.03 0.1 18.5	6.90 3.3		4.10 2.2 2.20 56 574 0.10 0.3 11.9	.7			4.10 2.2 2.20 6 746 0.01 0.0 9.9 A	.0	

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General Information							Site	Inforr	natio	n						
Analyst	Diane	Zimmer	man				Inters	ection			Hurst	bourne	at South	Ent		
Agency/Co.	Diane	B. Zimn	nerman <sup>†</sup>	Traffic Er	ngineerin	ng	Jurisd	liction								
Date Performed	8/8/20	022					East/\	West Str	eet		South	n Ent/490	01 Hurst	bourne		
Analysis Year	2035						North	/South	Street		Hurst	bourne	Parkway			
Time Analyzed	PM Pe	ak					Peak	Hour Fac	tor		0.98					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700 l	Hurstbo	urne													
Lanes																
				144717	្រាក Major	ን ተ ተ ቀ ነ r Street: Nor	1 1 1	¥ + 7 + 7								
Vehicle Volumes and Adj	justmer															
Approach	_		ound				bound				bound			_	bound	
Movement	ΙUΙ	L	T	R	U	L	T	R	U	L	T	R	U	L	T	L
	- °											I .			I -	
Priority	Ů	10	11	12		7	8	9	1U	1	2	3	4U	4	5	$\vdash$
Priority  Number of Lanes		1	11 0	1		7	1	9	1U 0	1	2	0	4U 0	1	2	
Priority  Number of Lanes  Configuration		1 L		1 R		0	_	0	0	1 L	2 T	0 TR	0	1 L	2 T	1
Priority  Number of Lanes  Configuration  Volume (veh/h)		1 L 7		1 R 31		3	1	5	0	1 L 55	2	0	0	1 L 6	2	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)		1 L		1 R		0	1	0	0	1 L	2 T	0 TR	0	1 L	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked		1 L 7 0	0	1 R 31		3 0	1 LR	5	0	1 L 55	2 T	0 TR	0	1 L 6	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)		1 L 7 0	0	1 R 31		3 0	1	5	0	1 L 55	2 T	0 TR	0	1 L 6	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized		1 L 7 0	0	1 R 31 0	Only	3 0	1 LR	5	0	1 L 55	2 T	0 TR 4	0	1 L 6	2 T	
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)		1 L 7 0	0	1 R 31 0	Only	3 0	1 LR	5	0	1 L 55	2 T	0 TR 4	0 0 0	1 L 6	2 T	
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage		1 L 7 0	0	1 R 31 0	Only	3 0	1 LR	5	0	1 L 55	2 T	0 TR 4	0 0 0	1 L 6	2 T	
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H		1 L 7 0	0	1 R 31 0	Only	3 0	1 LR	5 0	0	1 L 55 0	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)		1 L 7 0 (N	0	1 R 31 0	Only	0 3 0	1 LR	5 0	0	1 L 55 0	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	1
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)		1 L 7 0 ( N N ) S 7.5 7.50	0	1 R 31 0 Left 6.9 6.90	Only	7.5 7.50	1 LR	6.9 6.90	0	1 L 55 0	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)	deadway	1 L 7 0 (N N S 7.5 7.50 3.5 3.50	0	1 R 31 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	1 LR	6.9 6.90 3.3	0	1 L 55 0	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)	deadway	1 L 7 0 (N N S 7.5 7.50 3.5 3.50	0	1 R 31 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	1 LR	6.9 6.90 3.3	0	1 L 55 0	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an	deadway	1 L 7 0 N N N N N N N N N N N N N N N N N N	0	1 R 31 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	1 LR	6.9 6.90 3.3	0	1 L 55 0 4.1 4.10 2.2 2.20	2 T	0 TR 4	0 0 0	1 L 6 0	2 T	-
Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)	deadway	1 L 7 0 N N N N N N N N N N N N N N N N N N	0	1 R 31 0 Left 6.9 6.90 3.3 3.30	Only	7.5 7.50 3.5	1 LR	6.9 6.90 3.3	0	1 L 55 0 4.1 4.10 2.2 2.20	2 T	0 TR 4	0 0 0	1 L 6 0 0 4.1 4.10 2.2 2.20	2 T	1
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)	deadway	1 L 7 0 (N N N N N N N N N N N N N N N N N N	0	1 R 31 0 C F 6.9 6.90 3.3 3.30 32 420	Only	7.5 7.50 3.5	1 LR	6.9 6.90 3.3	0	1 L 55 0 4.1 4.10 2.2 2.20	2 T	0 TR 4	0 0 0	1 L 6 0 0 4.1 4.10 2.2 2.20 6 717	2 T	1
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Pellay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio	deadway	1 L 7 0 N N N N N N N N N N N N N N N N N N	0	1 R 31 0 C C C C C C C C C C C C C C C C C C	Only	7.5 7.50 3.5	1 LR 00 8 258 0.03	6.9 6.90 3.3	0	1 L 555 0 0 4.1 4.10 2.2 2.20 56 544 0.10	2 T	0 TR 4	0 0 0	1 L 6 0 4.1 4.10 2.2 2.20 6 717 0.01	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)	deadway	1 L 7 0 N N N N N N N N N N N N N N N N N N	0	1 R 31 0	Only	7.5 7.50 3.5	1 LR 0 0 8 258 0.03 0.1	6.9 6.90 3.3	0	1 L 555 0 0 4.1 4.10 2.2 2.20 56 544 0.10 0.3	2 T	0 TR 4	0 0 0	1 L 6 0 0 4.1 4.10 2.2 2.20 6 717 0.01 0.0	2 T	-
Priority  Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, an  Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	deadway	1 L 7 0 N N N N N N N N N N N N N N N N N N	0	1 R 31 0	Only	7.5 7.50 3.5 3.50	1 LR 0 0 8 8 258 0.03 0.1 19.4	6.9 6.90 3.3	0	1 L 55 0 0 4.1 4.10 2.2 2.20 56 544 0.10 0.3 12.4 B	2 T	0 TR 4	0 0 0	1 L 6 0 0 4.1 4.10 2.2 2.20 6 717 0.01 0.0 10.1 B	2 T	

		ŀ	ICS T	wo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforr	natio	n						_
Analyst	Diane	Zimme	rman				Inters	ection			Bards	town at	New Roa	ad		
Agency/Co.	Diane	B. Zimr	nerman <sup>*</sup>	Traffic Er	ngineerin	ıg	Jurisd	iction								
Date Performed	8/8/2	.022					East/\	West Stre	eet		Bards	town Rd				
Analysis Year	2025						North	/South :	Street		New i	Road				
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.92					
Intersection Orientation	East-\	West					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				17447177	↑ ↑ Majo	◆ Y 1 or Street: Ea	t t r	7 4 4 4 C 0								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
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	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	18	584				1359	0						0		90
Percent Heavy Vehicles (%)	3	0												0		0
Proportion Time Blocked					l										)	
Percent Grade (%)	$\perp$															
Percent Grade (%) Right Turn Channelized																
Percent Grade (%) Right Turn Channelized Median Type   Storage				Left	Only								1			
Percent Grade (%) Right Turn Channelized Median Type   Storage	eadwa	ys		Left	Only								1			
Percent Grade (%) Right Turn Channelized Median Type   Storage	eadwa	<b>ys</b> 4.1		Left	Only								1	7.5		6.9
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec)  Critical Headway (sec)	eadwa	4.1 4.10		Left	Only								1	6.80		6.90
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	4.1 4.10 2.2		Left	Only								1	6.80 3.5		6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.10 2.2 2.20			Only									6.80		6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.10 2.2 2.20	ervice		Only									6.80 3.5		6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		4.1 4.10 2.2 2.20	ervice		Only									6.80 3.5	98	6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an		4.1 4.10 2.2 2.20	ervice		Only									6.80 3.5	98 365	6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)		4.1 4.10 2.2 2.20 I of Se	ervice		Only									6.80 3.5	$\vdash$	6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		4.1 4.10 2.2 2.20 I of Se 20 462	ervice		Only									6.80 3.5	365	6.90 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		4.1 4.10 2.2 2.20 1 of Se 20 462 0.04 0.1 13.1	ervice		Only									6.80 3.5	365 0.27 1.1 18.5	6.9
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh) Level of Service (LOS)		4.1 4.10 2.2 2.20 1 of Se 20 462 0.04 0.1 13.1 B			Only									6.80 3.5 3.50	365 0.27 1.1 18.5 C	6.9 3.3
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		4.1 4.10 2.2 2.20 1 of Se 20 462 0.04 0.1 13.1 B	ervice		Only									6.80 3.5 3.50	365 0.27 1.1 18.5	6.9 3.3

		ŀ	ICS T	wo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	nforr	natio	1						
Analyst	Diane	Zimme	rman				Inters	ection			Bards	town at	New Roa	ad		
Agency/Co.	Diane	B. Zimr	nerman <sup>*</sup>	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/8/2	022					East/V	Vest Stre	et		Bards	town Rd				
Analysis Year	2035						North	/South S	Street		New	Road				
Time Analyzed	AM P	eak					Peak I	Hour Fac	tor		0.92					
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				5 7 4 4 Y → Y ⊃	The Majo	The street: Ea	T T	7 4 4 4 4 6 G								
Vehicle Volumes and Ad	justme	nts														
Approach	_	Eastb	ound			Westl	oound			North	bound				bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration	+-	L	T				T	TR							LR	
Volume (veh/h)	0	18	614				1429	0						0		90
Percent Heavy Vehicles (%)	3	0												0		0
Proportion Time Blocked	+															
Percent Grade (%)	+													(	0	
Right Turn Channelized	+			Laft	Ombr								1			
Median Type   Storage				Leit	Only								1			
Critical and Follow-up H	eadwa	ı														_
Base Critical Headway (sec)	+	4.1												7.5		6.9
Critical Headway (sec)	+	4.10												6.80		6.9
Base Follow-Up Headway (sec)		2.2												3.5		3.
Follow-Up Headway (sec)		2.20												3.50		3.3
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)		20													98	_
Capacity, c (veh/h)		432													344	
v/c Ratio	1	0.05													0.28	
95% Queue Length, Q <sub>95</sub> (veh)		0.1													1.1	
Control Delay (s/veh)	_	13.7													19.6	
		В													С	
Level of Service (LOS)	_															
Level of Service (LOS)  Approach Delay (s/veh)  Approach LOS			.4 A												9.6 C	

		ŀ	ICS 1	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						
Analyst	Diane	Zimme	rman				Inters	ection			Bards	stown at	New Ro	ad		
Agency/Co.	Diane	B. Zimn	nerman <sup>*</sup>	Traffic Er	ngineerin	ng	Jurisd	liction								
Date Performed	8/8/2					-	East/\	Nest Str	eet		Bards	town Rd	<u> </u>			_
Analysis Year	2025						North	/South	Street		New	Road				
Time Analyzed	PM P	eak					Peak	Hour Fac	tor		0.92					
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				A 7 4 4 7 ↑ 7 7	ን ነ	*Y	1 <b>*</b>   C	7 4 4 4 4 6 6								
Vehicle Volumes and Ad	justme	nts			iviajo	or street, ca	st-west									
Approach		Eastb	ound			Westl	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	T	R
			2	3	4U	4	5	6		7	8	9		10	11	12
Priority	10	1													_	_
Priority  Number of Lanes	1U 0	1	2	0	0	0	2	0		0	0	0		0	1	0
	_	_	_	0	0	0	2 T	0 TR				0		0	1 LR	0
Number of Lanes	_	1	2	0	0	0						0		0		
Number of Lanes Configuration	0	1 L	2 T	0	0	0	Т	TR				0				
Number of Lanes Configuration Volume (veh/h)	0	1 L 61	2 T	0	0	0	Т	TR				0		0		36
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)	0	1 L 61	2 T	0	0	0	Т	TR				0		0		36
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked	0	1 L 61	2 T	0	0	0	Т	TR				0		0	LR	36
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	0	1 L 61	2 T		Only	0	Т	TR					1	0	LR	36
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized	0 0 3	1 L 61 0	2 T			0	Т	TR					1	0	LR	36
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage	0 0 3	1 L 61 0	2 T			0	Т	TR					1	0	LR	36
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H	0 0 3	1 L 61 0	2 T			0	Т	TR					1	0	LR	360
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)	0 0 3	1 L 61 0	2 T			0	Т	TR					1	7.5	LR	366.9 6.9
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up H  Base Critical Headway (sec)  Critical Headway (sec)	0 0 3	1 L 61 0 <b>ys</b> 4.1 4.10	2 T			0	Т	TR					1	7.5 6.80	LR	6.9 6.9
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	0 0 3	1 L 61 0 ys 4.1 4.10 2.2 2.20	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR	6.9 6.9
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	0 0 3	1 L 61 0 ys 4.1 4.10 2.2 2.20	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR	6.9 6.9
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an	0 0 3	1 L 61 0 ys 4.1 4.10 2.2 2.20	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR	6.9 6.9
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)	0 0 3	1 L 61 0 ys 4.1 4.10 2.2 2.20 I of So	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR 00	6.90
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	0 0 3	1 L 61 0 Vys 4.1 4.10 2.2 2.20 I of Se 66 789	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR 00 00 39 578	6.9 6.9 3.3 3.3 6.9
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	0 0 3	1 L 61 0 Vys 4.1 4.10 2.2 2.20 I of Sc 66 789 0.08	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR 00 00 39 578 0.07	6.90
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)	0 0 3	1 L 61 0 Vys 4.1 4.10 2.2 2.20 I of Se 66 789 0.08 0.3	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5	LR 00 00 39 578 0.07 0.2	6.90
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)	0 0 3	1 L 61 0 Vys 4.1 4.10 2.2 2.20 I of Sc 66 789 0.08 0.3 10.0 A	2 T 1406	Left		0	Т	TR					1	7.5 6.80 3.5 3.50	LR 00 00 39 578 0.07 0.2 11.7	6.9 6.9

		ŀ	HCS T	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	1						
Analyst	Diane	Zimme	rman				Inters	ection			Bards	town at	New Roa	ad		
Agency/Co.	Diane	B. Zimr	nerman <sup>-</sup>	Traffic Er	ngineerir	ng	Jurisd	liction								
Date Performed	8/8/2	022					East/\	Nest Str	eet		Bards	town Rd				
Analysis Year	2035						North	/South	Street		New	Road				
Time Analyzed	PM P	eak					Peak	Hour Fac	tor		0.92					
Intersection Orientation	East-\	West					Analy	sis Time	Period (	hrs)	0.25					
Project Description	4700	Hurstbo	urne													
Lanes																
				0 7 4 4 Y → Y C	The H	<b>↑↑</b> ↑	<b>T</b> F C	7 4 4 4 C O								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastl	ound			Westl	oound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration	+-	L	T				T	TR							LR	
Volume (veh/h)	0	61	1478				833	0						0		36
Percent Heavy Vehicles (%)	3	0												0		0
Proportion Time Blocked	+															
Percent Grade (%)	+													(	)	
Right Turn Channelized	+			l aft	Ombr								1			
Median Type   Storage				Leit	Only								1			
Critical and Follow-up H	eadwa	-														_
Base Critical Headway (sec)	+	4.1												7.5		6.9
Critical Headway (sec)	+	4.10												6.80		6.9
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.3
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)		66													39	
Capacity, c (veh/h)		760													560	
v/c Ratio	1	0.09													0.07	
95% Queue Length, Q <sub>95</sub> (veh)		0.3													0.2	
Control Delay (s/veh)	+	10.2													11.9	
Laurel of Compiler (LOC)		В													В	
Level of Service (LOS)														11	. ^	
Approach Delay (s/veh)  Approach LOS	_		1.4 A												1.9 3	