# final report

March 7, 2022

# Traffic Impact Study

\*With traffic assigned through the City of Hurstbourne

Apartments Oxmoor Partial Lot 4B and 5 Louisville, KY

Prepared for

Louisville Metro Planning Commission



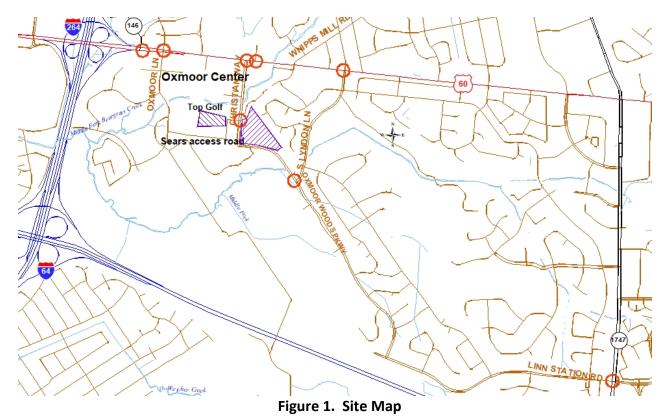


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### INTRODUCTION

The development plan for an apartment community on Christian Way in Louisville, KY shows 345 apartment units. **Figure 1** displays a map of the site. Access to the community will be from two entrances on the Christian Way. The purpose of this study is to examine the traffic impacts of the development upon the adjacent highway system. For this study, the impact area was defined to be the intersections of Shelbyville Road with New LaGrange Road, Oxmoor Lane, Christian Way, and Lyndon Lane and Hurstbourne Parkway at Linn Station Road.



### **EXISTING CONDITIONS**

Christian Way is maintained by Louisville Metro. The road has four lanes with a twenty-two-foot median with an estimated 2021 AADT of 8,500 vehicles per day. There is a sidewalk on the east side between Shelbyville Road and Christian Court. The speed limit is 25 mph. The intersection of the Oxmoor Center is controlled with a stop sign on the driveway.

Peak hour traffic counts for the intersections adjacent to Oxmoor Center were obtained on May 17, 2018. The Shelbyville Road and Hurstbourne Parkway intersections were obtained from the Metro Traffic Engineering Synchro model 2021 counts. **Figure 2** illustrate the a.m. and p.m. peak hour traffic volumes.

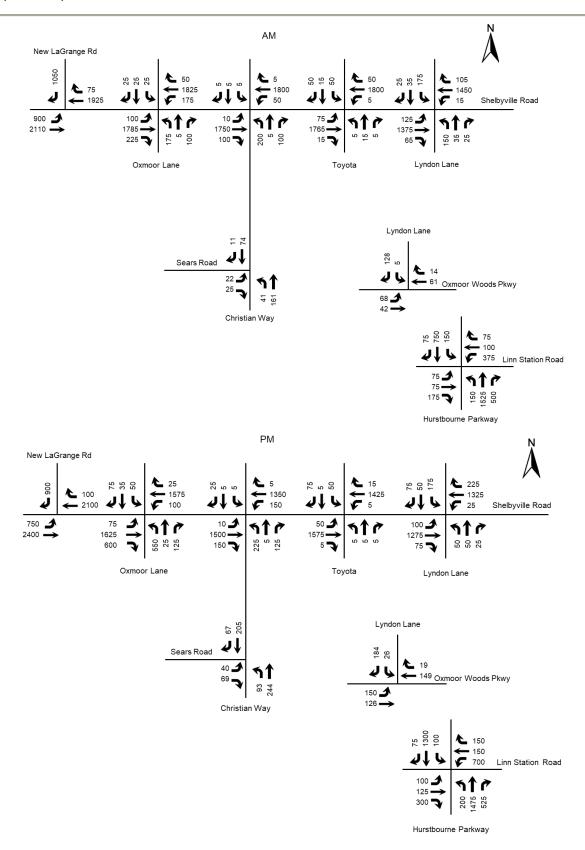


Figure 2. Existing Peak Hour Volumes

### **FUTURE CONDITIONS**

The estimated project completion date is 2024. The annual growth rate for the area has been determined in other studies in the vicinity to be 0.5%. Additionally, trip generation for Top Golf and the restaurants in front of Oxmoor Center was also included. The Oxmoor Farm will be developed in stages and each stage will be required to submit a traffic study reflecting the current traffic and the development proposed. Therefore, additional traffic from the Oxmoor Farm has not been included. The No Build volumes are shown in **Figure 3**.

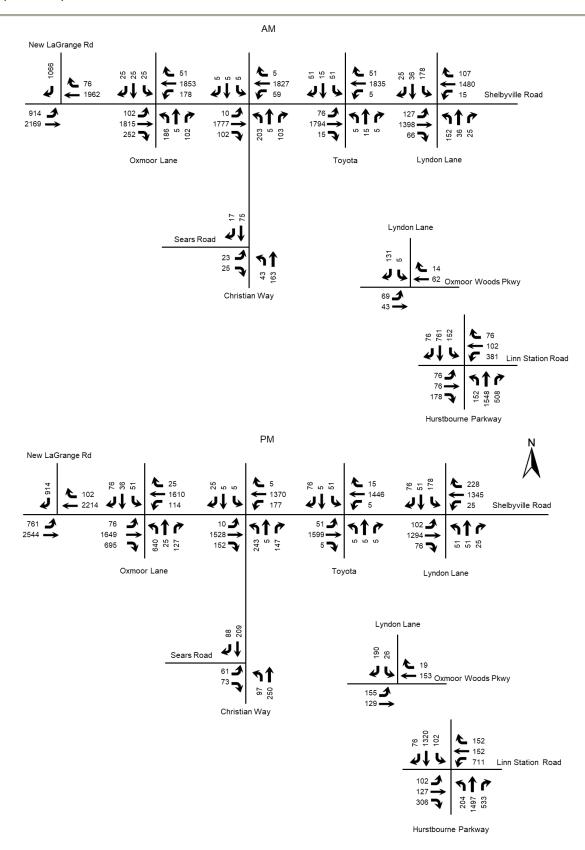


Figure 3. 2024 No Build Peak Hour Volumes

### **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 "Multifamily Housing Low-Rise (220)" was reviewed and determined to be the best match. The trip generation results are listed in **Table 1**. The trips were assigned to the highway network with the percentages shown in **Figure 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.

	A.M. I	Peak	Hour	P.M. Peak Hour			
Land Use	Trips	In	Out	Trips	In	Out	
Multifamily Housing Mid-Rise (345 units)	130	31	99	169	106	63	

Table 1. Peak Hour Trips Generated by Site

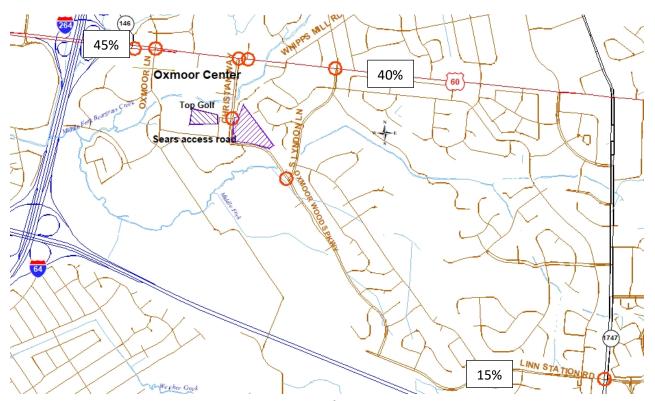


Figure 4. Trip Distribution Percentages

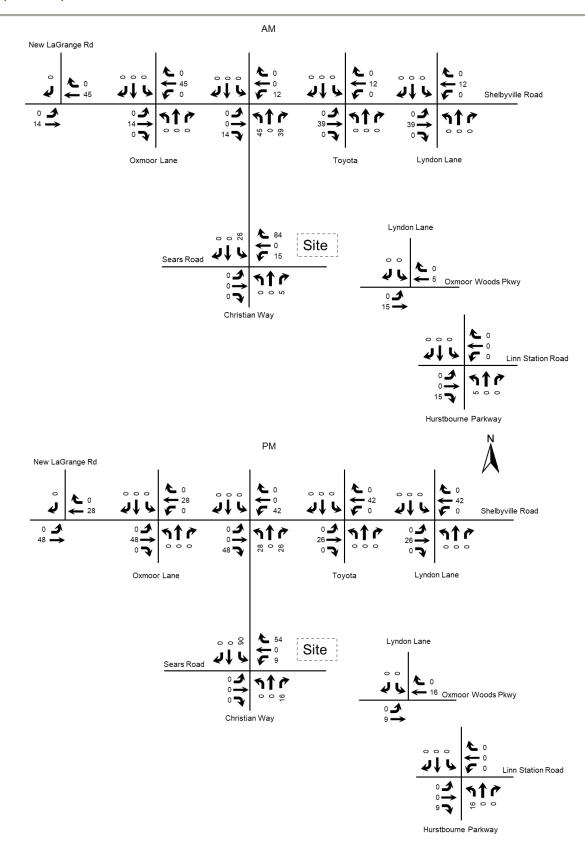


Figure 5. Peak Hour Trips Generated by Site

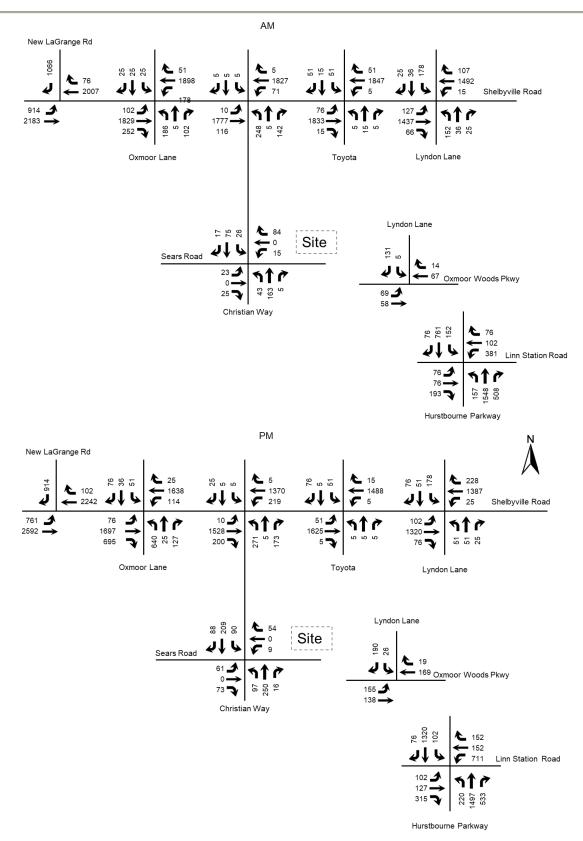


Figure 6. Build Peak Hour Volumes

### **ANALYSIS**

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

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the <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 delays and Level of Service are summarized in **Table 2**.

Table 2. Peak Hour Level of Service

		A.M.			P.M.	
Annuach		2024	2024		2024	2024
Approach	2021	No Build	Build	2021	No Build	Build
	С	С	С	В	В	В
Shelbyville Road at New LaGrange Road	25.0	25.1	25.1	16.5	16.6	16.1
Shelbyville Road Eastbound (Left)	С	С	С	Α	Α	Α
Shelbyville Road Eastboulld (Left)	25.5	25.5	25.3	8.8	8.5	7.8
Shelbyville Road Westbound	В	В	В	Α	В	В
Offerbyville Road Westbodild	16.6	16.6	16.8	9.9	10.2	10.1
New LaGrange Road Southbound	E	Е	E	Е	E	Е
New Lacrange Road Southbound	63.7	65.4	65.4	66.8	69.1	69.1
Challes villa Bood at Company Lanc	С	С	С	D	D	D
Shelbyville Road at Oxmoor Lane	31.0	31.9	32.2	42.7	49.2	48.9
Shelbyville Road Eastbound		D	D	С	D	D
Cholby ville Road Edolbourid	37.0 B	37.6	37.7	32.1	41.6	40.5
Shelbyville Road Westbound		В	В	D	D	D
Cholby ville Road Westboaria	15.8	16.9	17.9	43.7	48.3	49.2
Oxmoor Lane Northbound	F	F	F	E	E	E
CAMOOF Earle Northboard	84.8	84.6	84.6	66.4	67.3	67.3
Norwood Drive Southbound	E	E	Е	F	F	F
THOIWOOD Brive Coulinbouria	75.4	75.4	75.4	81.9	82.2	82.2
Chalbywille Dood at Christian Way	С	С	С	С	С	С
Shelbyville Road at Christian Way	21.4	22.3	24.3	20.7	21.2	23.2
Shelbyville Road Fastbound	C 23.8	С	С	В	В	В
Shelbyville Road Eastbound		24.8	25.8	16.0	15.1	16.6
Shelbyville Road Westbound		В	В	Α	В	В
Shelbyville Road Westbound		10.7	12.2	9.3	10.5	12.2
Christian Way Northbound		E	E	F	F	F
Similari Way Hornibound	74.6	74.5	73.9	84.8	84.1	83.3
Entrance Southbound	F	F	F	F	F	F
Zimanoo oodanoodiid	80.4	80.4	80.4	83.9	83.9	83.9

		A.M.			P.M.	
Approach	2021	2024 No Build	2024 Build	2021	2024 No Build	2024 Build
Shelbyville Road at Toyota	B	B	B	A	A	B
	11.9	12.9	13.7	9.7	9.9	10.3
Shelbyville Road Eastbound	A	A	A	A	A	A
	4.6	5.1	6.5	4.6	4.6	5.0
Shelbyville Road Westbound	B	B	B	A	A	A
	14.8	16.3	16.8	8.3	8.7	9.3
Entrance Northbound	E	E	E	E	E	E
	69.4	69.4	69.4	78.2	78.1	78.1
Entrance Southbound	E	E	E	F	F	F
	72.0	72.0	72.0	81.4	81.5	81.5
Shelbyville Road at Lyndon Lane	C	C	C	C	C	C
	26.3	27.4	27.9	31.0	32.3	33.6
Shelbyville Road Eastbound	C	C	C	B	B	B
	30.0	31.6	32.5	13.8	15.1	16.1
Shelbyville Road Westbound	B	B	B	C	C	D
	10.3	11.3	11.7	33.0	34.7	36.7
Lyndon Laney Northbound	E 58.5	E 58.7	E 58.7	D 53.4	D 53.1	D 53.1
Lyndon Lane Southbound	F 80.0	E 79.9	E 79.9	F 93.8	F 94.7	F 94.7
Christian Way at Sears Entrance	00.0	70.0	70.0	00.0	0 1.7	0 1.7
Sears Entrance Eastbound	B	B	B	B	B	C
	10.2	10.3	11.3	12.2	13.6	19.2
Site Entrance Westbound			B 10.7			B 11.8
Christian Way Northbound (left)	A	A	A	A	A	A
	7.6	7.6	7.6	8.4	8.5	8.5
Christian Way Southbound (left)			A 7.8			A 8.3
Lyndon Lane at Oxmoor Woods Parkway	A	A	A	A	A	A
	8.5	8.5	8.6	9.6	9.7	9.9
Oxmoor Woods Parkway Eastbound	A	A	A	A	A	B
	8.9	9.0	9.0	9.9	10.0	10.1
Oxmoor Woods Parkway Westbound	A	A	A	A	A	A
	8.4	8.4	8.5	9.5	9.6	9.9
Lyndon Lane Southbound	A	A	A	A	A	A
	8.2	8.2	8.3	9.4	9.5	9.6
Hurstbourne Parkway at Linn Station Rd		C	C	E	E	E
		29.5	29.8	60.2	60.8	61.3
Linn Station Road Eastbound	<b>29.1</b> E 71.7	E 71.7	E 71.6	F 86.5	F 88.5	F 91.0
Linn Station Road Westbound	D	D	D	F	F	F
	41.3	41.7	41.7	118.7	120.0	120.0

		A.M.			P.M.			
Approach	2021	2024 No Build	2024 Build	2021	2024 No Build	2024 Build		
Hurstbourne Parkway Northbound	C	C	C	D	D	D		
	24.0	24.4	24.6	44.8	44.7	44.9		
Hurstbourne Parkway Southbound	B	B	B	C	C	C		
	19.5	19.9	20.0	34.0	34.8	35.4		

Key: Level of Service, Delay in seconds per vehicle

The entrance was evaluated for turn lanes using the Kentucky Transportation Cabinet <u>Highway Design Guidance</u> <u>Manual</u> dated September, 2020. Using the volumes in Figure 6, a left turn lane is required at the entrance.

### **CONCLUSIONS**

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

## **APPENDIX**

**Synchro Reports** 

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

03/07/2022

	٠	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>\</b>	<b>+</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1,4	ተተተ			4111				76			77
Traffic Volume (vph)	900	1100	0	0	1925	75	0	0	1010	0	0	1050
Future Volume (vph)	900	1100	0	0	1925	75	0	0	1010	0	0	1050
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6372				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6372				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	978	1196	0	0	2092	82	0	0	1098	0	0	1141
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	978	1196	0	0	2170	0	0	0	1098	0	0	1141
Turn Type	Prot	NA			NA				Perm			Over
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	160.0			77.7				160.0			68.4
Effective Green, g (s)	68.4	160.0			77.7				160.0			68.4
Actuated g/C Ratio	0.43	1.00			0.49				1.00			0.43
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1467	5085			3094				2787			1191
v/s Ratio Prot	0.28	0.24			c0.34				2101			c0.41
v/s Ratio Perm	0.20	0.21							0.39			
v/c Ratio	0.67	0.24			0.70				0.39			0.96
Uniform Delay, d1	36.7	0.0			32.1				0.0			44.4
Progression Factor	1.52	1.00			0.49				1.00			1.38
Incremental Delay, d2	0.7	0.1			1.0				0.2			2.6
Delay (s)	56.6	0.1			16.6				0.2			63.7
Level of Service	E	Α			В				Α			E
Approach Delay (s)	_	25.5			16.6			0.2			63.7	_
Approach LOS		C			В			A			E	
Intersection Summary												
HCM 2000 Control Delay			25.0	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.82	11	OWI ZUUU	LCVCI UI	JOI VICE		0			
Actuated Cycle Length (s)	iony rano		160.0	S	um of los	t time (e)			13.9			
Intersection Capacity Utiliza	ation		77.5%			of Service			D			
Analysis Period (min)			15	10	O LOVOI (	J. OCI VIOC			U			
(IIIII)			10									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak (120-sec & 160-sec cycle}ynchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis
2503: Oxmoor Ln & US-60

Movement         EBL         EBT         EBR         WBL         WBT         WBR         NBL         NBT         NBR           Lane Configurations         1         111         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1<		*	4
Traffic Volume (vph)         100         1785         225         175         1825         50         175         5         100           Future Volume (vph)         100         1785         225         175         1825         50         175         5         100           Ideal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         19	SBL	SBT	SBR
Traffic Volume (vph)         100         1785         225         175         1825         50         175         5         100           Future Volume (vph)         100         1785         225         175         1825         50         175         5         100           Ideal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         19		4	7
Ideal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900 <td>25</td> <td>25</td> <td>25</td>	25	25	25
Ideal Flow (vphpl)         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900         1900 <td>25</td> <td>25</td> <td>25</td>	25	25	25
Total Lost time (s)         7.0         7.0         7.0         7.0         7.0         6.6         6.6           Lane Util. Factor         1.00         0.81         0.81         1.00         0.91         0.91         0.91           Frt         1.00         1.00         0.85         1.00         1.00         1.00         0.88           Flt Protected         0.95         1.00         1.00         0.95         1.00         0.99	1900	1900	1900
Frt         1.00         1.00         0.85         1.00         1.00         1.00         0.88           Fit Protected         0.95         1.00         1.00         0.95         1.00         0.99		6.6	6.6
Flt Protected 0.95 1.00 1.00 0.95 1.00 0.95 0.99		1.00	1.00
		1.00	0.85
Satd Flow (prot) 1770 6024 1282 1770 5065 3221 1476		0.98	1.00
Cara		1817	1583
Flt Permitted 0.95 1.00 1.00 0.95 1.00 0.95 0.99		0.98	1.00
Satd. Flow (perm) 1770 6024 1282 1770 5065 3221 1476		1817	1583
Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	0.92	0.92	0.92
Adj. Flow (vph) 109 1940 245 190 1984 54 190 5 109	27	27	27
RTOR Reduction (vph) 0 1 70 0 1 0 97 0	0	0	25
Lane Group Flow (vph) 109 1964 150 190 2037 0 171 36 0	0	54	2
Turn Type Prot NA Perm Prot NA Split NA	Split	NA	Perm
Protected Phases 5 2 1 6 4 4	8	8	
Permitted Phases 2			8
Actuated Green, G (s) 17.0 83.3 83.3 23.0 89.3 16.9 16.9		9.6	9.6
Effective Green, g (s) 17.0 83.3 83.3 23.0 89.3 16.9 16.9		9.6	9.6
Actuated g/C Ratio 0.11 0.52 0.52 0.14 0.56 0.11 0.11		0.06	0.06
Clearance Time (s) 7.0 7.0 7.0 7.0 6.6 6.6		6.6	6.6
Vehicle Extension (s) 5.0 3.0 3.0 5.0 3.0 6.0 6.0		4.0	4.0
Lane Grp Cap (vph) 188 3136 667 254 2826 340 155		109	94
v/s Ratio Prot 0.06 c0.33 0.11 c0.40 c0.05 0.02		c0.03	
v/s Ratio Perm 0.12			0.00
v/c Ratio 0.58 0.63 0.22 0.75 0.72 0.50 0.23		0.50	0.02
Uniform Delay, d1 68.1 27.3 20.8 65.7 26.1 67.6 65.6		72.9	70.8
Progression Factor 1.02 1.25 1.64 0.73 0.41 1.07 1.44		1.00	1.00
Incremental Delay, d2 6.5 0.9 0.8 9.8 1.1 3.3 2.1		4.8	0.1
Delay (s) 75.9 35.1 34.9 57.7 11.9 75.8 96.3		77.6	70.9
Level of Service E D C E B E F		Е	Е
Approach Delay (s) 37.0 15.8 84.8		75.4	
Approach LOS D B F		Е	
Intersection Summary			
HCM 2000 Control Delay 31.0 HCM 2000 Level of Service C			
HCM 2000 Volume to Capacity ratio 0.69			
Actuated Cycle Length (s) 160.0 Sum of lost time (s) 27.2			
Intersection Capacity Utilization 72.2% ICU Level of Service C			
Analysis Period (min) 15			

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak (120-sec & 160-sec cycle) Synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	4	†	<i>&gt;</i>	<b>/</b>	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	<b>^</b>	7	1,1	<b>∱</b> }		J.	र्स	7		ર્ન	7
Traffic Volume (vph)	10	1750	100	50	1800	5	200	5	100	5	5	5
Future Volume (vph)	10	1750	100	50	1800	5	200	5	100	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3538		1681	1689	1583		1817	1583
FIt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3538		1681	1689	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1902	109	54	1957	5	217	5	109	5	5	5
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	98	0	0	5
Lane Group Flow (vph)	11	1902	71	54	1962	0	111	111	11	0	10	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	4.4	104.0	104.0	9.1	108.7		15.9	15.9	15.9		3.8	3.8
Effective Green, g (s)	4.4	104.0	104.0	9.1	108.7		15.9	15.9	15.9		3.8	3.8
Actuated g/C Ratio	0.03	0.65	0.65	0.06	0.68		0.10	0.10	0.10		0.02	0.02
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	48	2300	1028	195	2403		167	167	157		43	37
v/s Ratio Prot	0.01	c0.54		0.02	c0.55		c0.07	0.07			c0.01	
v/s Ratio Perm			0.04						0.01			0.00
v/c Ratio	0.23	0.83	0.07	0.28	0.82		0.66	0.66	0.07		0.23	0.00
Uniform Delay, d1	76.1	21.2	10.3	72.3	18.5		69.5	69.5	65.3		76.7	76.3
Progression Factor	0.50	1.05	0.00	1.34	0.30		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	2.9	0.1	1.3	1.9		9.6	9.6	0.2		5.7	0.1
Delay (s)	40.5	25.1	0.1	98.1	7.4		79.0	79.0	65.5		82.4	76.3
Level of Service	D	С	Α	F	Α		Е	Е	Е		F	Е
Approach Delay (s)		23.8			9.8			74.6			80.4	
Approach LOS		С			Α			Е			F	
Intersection Summary												
HCM 2000 Control Delay			21.4	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.82									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			27.2			
Intersection Capacity Utiliza	tion		77.6%	IC	CU Level o	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak (120-sec & 160-sec cycle) Synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/07/2022

	٠	<b>→</b>	•	•	<b>—</b>	•	•	<b>†</b>	~	<b>/</b>	Ţ	-√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		ሻ	<b>↑</b> ↑			4		ሻ	<b>1</b>	
Traffic Volume (vph)	75	1765	15	5	1800	50	5	15	5	50	15	50
Future Volume (vph)	75	1765	15	5	1800	50	5	15	5	50	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.97		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3525			1797		1770	1647	
Flt Permitted	0.95	1.00		0.95	1.00			0.93		0.74	1.00	
Satd. Flow (perm)	1770	3535		1770	3525			1691		1379	1647	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1918	16	5	1957	54	5	16	5	54	16	54
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	50	0
Lane Group Flow (vph)	82	1934	0	5	2010	0	0	21	0	54	20	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Effective Green, g (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Actuated g/C Ratio	0.13	0.78		0.01	0.66			0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	227	2763		17	2337			134		109	130	
v/s Ratio Prot	0.05	c0.55		0.00	c0.57						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.36	0.70		0.29	0.86			0.16		0.50	0.16	
Uniform Delay, d1	63.7	8.4		78.6	21.1			68.7		70.6	68.7	
Progression Factor	0.58	0.27		1.29	0.54			1.00		1.00	1.00	
Incremental Delay, d2	0.9	1.0		9.0	3.2			8.0		4.8	8.0	
Delay (s)	37.6	3.2		110.4	14.5			69.4		75.3	69.4	
Level of Service	D	Α		F	В			Е		Е	Е	
Approach Delay (s)		4.6			14.8			69.4			72.0	
Approach LOS		Α			В			Е			Е	
Intersection Summary												
HCM 2000 Control Delay			11.9	Н	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capaci	ty ratio		0.82									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utilization	on		82.1%	IC	CU Level	of Service			Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak (120-sec & 160-sec cycle}ynchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

	٤	<b>→</b>	•	•	<b>←</b>	4	•	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b>+</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ŋ.	<b>↑</b> ↑		*	<b>∱</b> }		*	ĵ,			4	
Traffic Volume (vph)	125	1375	65	15	1450	105	150	35	25	175	35	25
Future Volume (vph)	125	1375	65	15	1450	105	150	35	25	175	35	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.94			0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	
Satd. Flow (prot)	1770	3515		1770	3503		1770	1747			1770	
Flt Permitted	0.05	1.00		0.10	1.00		0.67	1.00			0.74	
Satd. Flow (perm)	85	3515		191	3503		1252	1747			1357	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1495	71	16	1576	114	163	38	27	190	38	27
RTOR Reduction (vph)	0	2	0	0	3	0	0	16	0	0	3	0
Lane Group Flow (vph)	136	1564	0	16	1687	0	163	49	0	0	252	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	110.9	100.9		94.5	91.5		35.5	35.5			35.5	
Effective Green, g (s)	110.9	100.9		94.5	91.5		35.5	35.5			35.5	
Actuated g/C Ratio	0.69	0.63		0.59	0.57		0.22	0.22			0.22	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	189	2216		142	2003		277	387			301	
v/s Ratio Prot	c0.06	c0.44		0.00	c0.48			0.03				
v/s Ratio Perm	0.44			0.06			0.13				c0.19	
v/c Ratio	0.72	0.71		0.11	0.84		0.59	0.13			0.84	
Uniform Delay, d1	44.9	19.7		17.2	28.3		55.7	49.8			59.5	
Progression Factor	1.12	1.32		0.44	0.25		1.00	1.00			1.00	
Incremental Delay, d2	10.2	1.5		0.3	3.1		6.0	0.4			20.5	
Delay (s)	60.3	27.4		8.0	10.3		61.7	50.2			80.0	
Level of Service	Е	С		Α	В		Е	D			F	
Approach Delay (s)		30.0			10.3			58.5			80.0	
Approach LOS		С			В			Е			F	
Intersection Summary												
HCM 2000 Control Delay			26.3	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Cap	acity ratio		0.84									
Actuated Cycle Length (s)			160.0	S	um of lost	t time (s)			20.6			
Intersection Capacity Utiliz	ation		87.2%	IC	CU Level	of Service	!		E			
Analysis Period (min)			15									
- O-HII O												

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak (120-sec & 160-sec cycle}ynchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	<i>&gt;</i>	<b>/</b>	ţ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	44	ተተተ			4111				76.56			77
Traffic Volume (vph)	750	1450	0	0	2100	100	0	0	850	0	0	900
Future Volume (vph)	750	1450	0	0	2100	100	0	0	850	0	0	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6364				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6364				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	815	1576	0	0	2283	109	0	0	924	0	0	978
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	815	1576	0	0	2388	0	0	0	924	0	0	978
Turn Type	Prot	NA			NA				Perm			Over
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	180.0			97.7				180.0			68.4
Effective Green, g (s)	68.4	180.0			97.7				180.0			68.4
Actuated g/C Ratio	0.38	1.00			0.54				1.00			0.38
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1304	5085			3454				2787			1059
v/s Ratio Prot	0.24	0.31			c0.38							c0.35
v/s Ratio Perm									0.33			
v/c Ratio	0.62	0.31			0.69				0.33			0.92
Uniform Delay, d1	45.4	0.0			30.1				0.0			53.3
Progression Factor	0.54	1.00			0.30				1.00			1.00
Incremental Delay, d2	1.0	0.1			8.0				0.1			13.5
Delay (s)	25.6	0.1			9.9				0.1			66.8
Level of Service	С	Α			Α				Α			Е
Approach Delay (s)		8.8			9.9			0.1			66.8	
Approach LOS		Α			А			Α			Е	
Intersection Summary												
HCM 2000 Control Delay			16.5	Н	CM 2000	Level of S	Service		В			
HCM 2000 Volume to Capac	city ratio		0.79									
Actuated Cycle Length (s)			180.0		um of lost				13.9			
Intersection Capacity Utiliza	tion		75.2%	IC	U Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak (120-sec & 180-sec cycle}synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2503: Oxmoor Ln & US-60

03/07/2022

	٠	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	<b>/</b>	<b>/</b>	ţ	<b>√</b>
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4111	7	ň	<b>↑</b> ↑		14.54	₩			र्स	7
Traffic Volume (vph)	75	1625	600	100	1575	25	550	25	125	50	35	75
Future Volume (vph)	75	1625	600	100	1575	25	550	25	125	50	35	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Lane Util. Factor	1.00	0.81	0.81	1.00	0.91		0.91	0.91			1.00	1.00
Frt	1.00	0.98	0.85	1.00	1.00		1.00	0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (prot)	1770	5934	1282	1770	5073		3221	1527			1810	1583
FIt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (perm)	1770	5934	1282	1770	5073		3221	1527			1810	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1766	652	109	1712	27	598	27	136	54	38	82
RTOR Reduction (vph)	0	10	215	0	1	0	0	27	0	0	0	75
Lane Group Flow (vph)	82	1978	215	109	1738	0	520	214	0	0	92	7
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2									8
Actuated Green, G (s)	19.0	80.8	80.8	17.2	79.0		39.6	39.6			15.2	15.2
Effective Green, g (s)	19.0	80.8	80.8	17.2	79.0		39.6	39.6			15.2	15.2
Actuated g/C Ratio	0.11	0.45	0.45	0.10	0.44		0.22	0.22			0.08	0.08
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0		6.0	6.0			4.0	4.0
Lane Grp Cap (vph)	186	2663	575	169	2226		708	335			152	133
v/s Ratio Prot	0.05	c0.33		0.06	c0.34		c0.16	0.14			c0.05	
v/s Ratio Perm			0.17									0.00
v/c Ratio	0.44	0.74	0.37	0.64	0.78		0.73	0.64			0.61	0.05
Uniform Delay, d1	75.5	41.0	32.8	78.5	43.1		65.3	63.7			79.5	75.8
Progression Factor	0.82	0.65	1.22	0.89	0.91		0.94	0.93			1.00	1.00
Incremental Delay, d2	3.3	1.9	1.8	9.6	2.4		5.3	6.4			7.7	0.2
Delay (s)	65.0	28.6	41.9	79.6	41.5		66.8	65.4			87.2	76.0
Level of Service	Е	С	D	Е	D		Е	Е			F	Е
Approach Delay (s)		32.1			43.7			66.4			81.9	
Approach LOS		С			D			Е			F	
Intersection Summary												
HCM 2000 Control Delay			42.7	Н	CM 2000	Level of S	Service		D			
HCM 2000 Volume to Capac	ity ratio		0.76									
Actuated Cycle Length (s)			180.0	S	um of lost	time (s)			27.2			
Intersection Capacity Utilizati	ion		78.1%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak (120-sec & 180-sec cycle) Synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	4	<b>†</b>	<i>&gt;</i>	<b>/</b>	ţ	<b>√</b>
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	1,1	<b>↑</b> ↑		7	र्स	7		र्स	7
Traffic Volume (vph)	10	1500	150	150	1350	5	225	5	125	5	5	25
Future Volume (vph)	10	1500	150	150	1350	5	225	5	125	5	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3537		1681	1689	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3537		1681	1689	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1630	163	163	1467	5	245	5	136	5	5	27
RTOR Reduction (vph)	0	0	46	0	0	0	0	0	122	0	0	26
Lane Group Flow (vph)	11	1630	117	163	1472	0	125	125	14	0	10	1
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	3.5	99.8	99.8	27.2	123.5		18.7	18.7	18.7		7.1	7.1
Effective Green, g (s)	3.5	99.8	99.8	27.2	123.5		18.7	18.7	18.7		7.1	7.1
Actuated g/C Ratio	0.02	0.55	0.55	0.15	0.69		0.10	0.10	0.10		0.04	0.04
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	34	1962	877	518	2426		174	175	164		71	62
v/s Ratio Prot	0.01	c0.46		0.05	c0.42		c0.07	0.07			c0.01	
v/s Ratio Perm			0.07						0.01			0.00
v/c Ratio	0.32	0.83	0.13	0.31	0.61		0.72	0.71	0.09		0.14	0.02
Uniform Delay, d1	87.1	33.1	19.3	68.1	15.2		78.1	78.1	72.9		83.5	83.1
Progression Factor	1.57	0.41	0.00	0.66	0.29		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.4	3.1	0.2	0.8	0.9		13.2	12.9	0.2		1.9	0.2
Delay (s)	141.8	16.8	0.2	45.7	5.3		91.3	91.0	73.2		85.4	83.3
Level of Service	F	В	Α	D	Α		F	F	Е		F	F
Approach Delay (s)		16.0			9.3			84.8			83.9	
Approach LOS		В			Α			F			F	
Intersection Summary												
HCM 2000 Control Delay			20.7	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capac	city ratio		0.75									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			27.2			
Intersection Capacity Utilizat	tion		78.3%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak (120-sec & 180-sec cycle) Synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		Ŋ	<b>∱</b> }			4		ň	<b>1</b>	
Traffic Volume (vph)	50	1575	5	5	1425	15	5	5	5	50	5	75
Future Volume (vph)	50	1575	5	5	1425	15	5	5	5	50	5	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3538		1770	3534			1750		1770	1599	
Flt Permitted	0.95	1.00		0.95	1.00			0.88		0.75	1.00	
Satd. Flow (perm)	1770	3538		1770	3534			1573		1393	1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1712	5	5	1549	16	5	5	5	54	5	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	76	0
Lane Group Flow (vph)	54	1717	0	5	1565	0	0	10	0	54	11	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	10.3	144.5		1.6	135.8			13.3		13.3	13.3	
Effective Green, g (s)	10.3	144.5		1.6	135.8			13.3		13.3	13.3	
Actuated g/C Ratio	0.06	0.80		0.01	0.75			0.07		0.07	0.07	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	101	2840		15	2666			116		102	118	
v/s Ratio Prot	c0.03	c0.49		0.00	0.44						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.53	0.60		0.33	0.59			0.09		0.53	0.09	
Uniform Delay, d1	82.5	6.8		88.7	9.7			77.7		80.3	77.7	
Progression Factor	1.31	0.08		0.82	0.76			1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.6		12.2	0.7			0.5		6.3	0.5	
Delay (s)	112.5	1.2		84.5	8.0			78.2		86.7	78.2	
Level of Service	F	Α		F	Α			Е		F	Е	
Approach Delay (s)		4.6			8.3			78.2			81.4	
Approach LOS		Α			Α			Е			F	
Intersection Summary												
HCM 2000 Control Delay			9.7	Н	CM 2000	Level of	Service		Α			
HCM 2000 Volume to Capa	acity ratio		0.61									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			20.6			
Intersection Capacity Utiliza	ation		62.0%	IC	CU Level	of Service			В			
Analysis Period (min)			15									
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c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak (120-sec & 180-sec cycle}synchro 11 Report M. Brandon Shelley, PE Page 4

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		*	<b>↑</b> ↑		*	<b>1</b>			4	
Traffic Volume (vph)	100	1275	75	25	1325	225	50	50	25	175	50	75
Future Volume (vph)	100	1275	75	25	1325	225	50	50	25	175	50	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1770	3510		1770	3462		1770	1770			1749	
Flt Permitted	0.04	1.00		0.11	1.00		0.57	1.00			0.77	
Satd. Flow (perm)	78	3510		200	3462		1069	1770			1394	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1386	82	27	1440	245	54	54	27	190	54	82
RTOR Reduction (vph)	0	2	0	0	7	0	0	10	0	0	7	0
Lane Group Flow (vph)	109	1466	0	27	1678	0	54	71	0	0	319	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	120.9	107.9		107.1	101.0		45.4	45.4			45.4	
Effective Green, g (s)	120.9	107.9		107.1	101.0		45.4	45.4			45.4	
Actuated g/C Ratio	0.67	0.60		0.59	0.56		0.25	0.25			0.25	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	174	2104		172	1942		269	446			351	
v/s Ratio Prot	c0.05	c0.42		0.01	c0.48			0.04				
v/s Ratio Perm	0.38			0.09			0.05				c0.23	
v/c Ratio	0.63	0.70		0.16	0.86		0.20	0.16			0.91	
Uniform Delay, d1	47.1	24.8		19.9	33.7		53.0	52.4			65.3	
Progression Factor	1.78	0.26		0.69	0.90		1.00	1.00			1.00	
Incremental Delay, d2	6.6	1.6		0.3	3.2		1.0	0.5			28.5	
Delay (s)	90.3	8.2		14.2	33.3		54.0	52.9			93.8	
Level of Service	F	Α		В	С		D	D			F	
Approach Delay (s)		13.8			33.0			53.4			93.8	
Approach LOS		В			С			D			F	
Intersection Summary												
HCM 2000 Control Delay			31.0	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.87									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			20.6			
Intersection Capacity Utiliz	ation		90.1%	IC	CU Level	of Service			Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak (120-sec & 180-sec cycle}synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ተተተ			<b>4111</b>				77			77
Traffic Volume (vph)	914	1117	0	0	1962	76	0	0	1052	0	0	1066
Future Volume (vph)	914	1117	0	0	1962	76	0	0	1052	0	0	1066
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6372				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6372				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	993	1214	0	0	2133	83	0	0	1143	0	0	1159
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	993	1214	0	0	2213	0	0	0	1143	0	0	1159
Turn Type	Prot	NA			NA				Perm			Over
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	160.0			77.7				160.0			68.4
Effective Green, g (s)	68.4	160.0			77.7				160.0			68.4
Actuated g/C Ratio	0.43	1.00			0.49				1.00			0.43
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1467	5085			3094				2787			1191
v/s Ratio Prot	0.29	0.24			c0.35							c0.42
v/s Ratio Perm									0.41			
v/c Ratio	0.68	0.24			0.72				0.41			0.97
Uniform Delay, d1	36.9	0.0			32.4				0.0			44.9
Progression Factor	1.51	1.00			0.48				1.00			1.37
Incremental Delay, d2	0.8	0.1			1.1				0.2			3.7
Delay (s)	56.5	0.1			16.6				0.2			65.4
Level of Service	Е	Α			В				Α			Е
Approach Delay (s)		25.5			16.6			0.2			65.4	
Approach LOS		С			В			Α			Е	
Intersection Summary												
HCM 2000 Control Delay			25.1	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capac	ity ratio		0.84									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			13.9			
Intersection Capacity Utilizat	ion		78.6%	IC	CU Level	of Service			D			
Analysis Period (min)			15									
- O-TII O												

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2503: Oxmoor Ln & US-60

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*5	4111	7	*	<b>↑</b> ↑₽		14.14	<b></b>			र्स	7
Traffic Volume (vph)	102	1815	252	178	1853	51	186	5	102	25	25	25
Future Volume (vph)	102	1815	252	178	1853	51	186	5	102	25	25	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Lane Util. Factor	1.00	0.81	0.81	1.00	0.91		0.91	0.91			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99			0.98	1.00
Satd. Flow (prot)	1770	6023	1282	1770	5065		3221	1477			1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99			0.98	1.00
Satd. Flow (perm)	1770	6023	1282	1770	5065		3221	1477			1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	1973	274	193	2014	55	202	5	111	27	27	27
RTOR Reduction (vph)	0	1	79	0	1	0	0	99	0	0	0	25
Lane Group Flow (vph)	111	1999	168	193	2068	0	182	37	0	0	54	2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2									8
Actuated Green, G (s)	17.2	82.6	82.6	23.0	88.4		17.6	17.6			9.6	9.6
Effective Green, g (s)	17.2	82.6	82.6	23.0	88.4		17.6	17.6			9.6	9.6
Actuated g/C Ratio	0.11	0.52	0.52	0.14	0.55		0.11	0.11			0.06	0.06
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0		6.0	6.0			4.0	4.0
Lane Grp Cap (vph)	190	3109	661	254	2798		354	162			109	94
v/s Ratio Prot	0.06	c0.33		0.11	c0.41		c0.06	0.03			c0.03	
v/s Ratio Perm			0.13									0.00
v/c Ratio	0.58	0.64	0.25	0.76	0.74		0.51	0.23			0.50	0.02
Uniform Delay, d1	68.0	28.0	21.6	65.8	27.1		67.2	65.0			72.9	70.8
Progression Factor	1.01	1.24	1.60	0.73	0.43		1.08	1.45			1.00	1.00
Incremental Delay, d2	6.7	1.0	0.9	10.5	1.3		3.3	2.0			4.8	0.1
Delay (s)	75.0	35.8	35.4	58.8	13.0		75.6	96.6			77.6	70.9
Level of Service	Е	D	D	Е	В		Е	F			Е	Е
Approach Delay (s)		37.6			16.9			84.6			75.4	
Approach LOS		D			В			F			Е	
Intersection Summary												
HCM 2000 Control Delay			31.9	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	city ratio		0.70									
Actuated Cycle Length (s)	160.0			S	um of lost	t time (s)			27.2			
Intersection Capacity Utiliza	tion		73.0%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	<b>^</b>	7	1,1	<b>∱</b> 1>		7	र्स	7		र्स	7
Traffic Volume (vph)	10	1777	102	59	1827	5	203	5	103	5	5	5
Future Volume (vph)	10	1777	102	59	1827	5	203	5	103	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3538		1681	1689	1583		1817	1583
FIt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3538		1681	1689	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1932	111	64	1986	5	221	5	112	5	5	5
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	101	0	0	5
Lane Group Flow (vph)	11	1932	72	64	1991	0	113	113	11	0	10	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	4.4	103.4	103.4	9.5	108.5		16.1	16.1	16.1		3.8	3.8
Effective Green, g (s)	4.4	103.4	103.4	9.5	108.5		16.1	16.1	16.1		3.8	3.8
Actuated g/C Ratio	0.03	0.65	0.65	0.06	0.68		0.10	0.10	0.10		0.02	0.02
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	48	2287	1023	203	2399		169	169	159		43	37
v/s Ratio Prot	0.01	c0.55		0.02	c0.56		c0.07	0.07			c0.01	
v/s Ratio Perm			0.05						0.01			0.00
v/c Ratio	0.23	0.84	0.07	0.32	0.83		0.67	0.67	0.07		0.23	0.00
Uniform Delay, d1	76.1	22.0	10.5	72.1	19.0		69.4	69.4	65.2		76.7	76.3
Progression Factor	0.50	1.04	0.00	1.33	0.31		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	3.3	0.1	1.4	2.0		9.6	9.6	0.2		5.7	0.1
Delay (s)	40.5	26.2	0.1	97.7	7.9		79.0	79.0	65.4		82.4	76.3
Level of Service	D	С	Α	F	Α		Е	Е	Е		F	Е
Approach Delay (s)		24.8			10.7			74.5			80.4	
Approach LOS		С			В			Е			F	
Intersection Summary												
HCM 2000 Control Delay			22.3	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.83									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			27.2			
Intersection Capacity Utiliza	ition		78.3%	IC	CU Level o	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	<b>↑</b> ↑		ň	<b>∱</b> }			4		ň	4	
Traffic Volume (vph)	76	1794	15	5	1835	50	5	15	5	50	15	50
Future Volume (vph)	76	1794	15	5	1835	50	5	15	5	50	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.97		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3525			1797		1770	1647	
Flt Permitted	0.95	1.00		0.95	1.00			0.93		0.74	1.00	
Satd. Flow (perm)	1770	3535		1770	3525			1691		1379	1647	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1950	16	5	1995	54	5	16	5	54	16	54
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	50	0
Lane Group Flow (vph)	83	1966	0	5	2048	0	0	21	0	54	20	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Effective Green, g (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Actuated g/C Ratio	0.13	0.78		0.01	0.66			0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	227	2763		17	2337			134		109	130	
v/s Ratio Prot	0.05	c0.56		0.00	c0.58						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.37	0.71		0.29	0.88			0.16		0.50	0.16	
Uniform Delay, d1	63.7	8.6		78.6	21.7			68.7		70.6	68.7	
Progression Factor	0.58	0.32		1.27	0.58			1.00		1.00	1.00	
Incremental Delay, d2	8.0	1.0		9.0	3.6			0.8		4.8	8.0	
Delay (s)	37.9	3.7		109.2	16.0			69.4		75.3	69.4	
Level of Service	D	Α		F	В			Е		Е	Е	
Approach Delay (s)		5.1			16.3			69.4			72.0	
Approach LOS		Α			В			Е			Е	
Intersection Summary												
HCM 2000 Control Delay			12.9	Н	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capaci	ty ratio		0.83									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utilization	on		83.1%	IC	CU Level	of Service			Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	~	<b>&gt;</b>	<del> </del>	<b>√</b>
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	<b>∱</b> 1>		7	<b>∱</b> }		ň	1}			4	
Traffic Volume (vph)	127	1398	66	15	1480	107	152	26	25	178	36	25
Future Volume (vph)	127	1398	66	15	1480	107	152	26	25	178	36	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	
Satd. Flow (prot)	1770	3515		1770	3504		1770	1726			1771	
FIt Permitted	0.04	1.00		0.10	1.00		0.67	1.00			0.75	
Satd. Flow (perm)	76	3515		181	3504		1251	1726			1369	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	1520	72	16	1609	116	165	28	27	193	39	27
RTOR Reduction (vph)	0	2	0	0	3	0	0	21	0	0	3	0
Lane Group Flow (vph)	138	1590	0	16	1722	0	165	34	0	0	256	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	110.7	100.7		94.1	91.1		35.7	35.7			35.7	
Effective Green, g (s)	110.7	100.7		94.1	91.1		35.7	35.7			35.7	
Actuated g/C Ratio	0.69	0.63		0.59	0.57		0.22	0.22			0.22	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	185	2212		136	1995		279	385			305	
v/s Ratio Prot	c0.06	c0.45		0.00	c0.49			0.02				
v/s Ratio Perm	0.46			0.07			0.13				c0.19	
v/c Ratio	0.75	0.72		0.12	0.86		0.59	0.09			0.84	
Uniform Delay, d1	48.8	20.1		17.8	29.2		55.6	49.3			59.4	
Progression Factor	1.09	1.35		0.45	0.26		1.00	1.00			1.00	
Incremental Delay, d2	12.4	1.6		0.4	3.7		6.1	0.3			20.5	
Delay (s)	65.8	28.7		8.4	11.4		61.7	49.5			79.9	
Level of Service	Е	С		А	В		Е	D			Е	
Approach Delay (s)		31.6			11.3			58.7			79.9	
Approach LOS		С			В			Е			Е	
Intersection Summary												
HCM 2000 Control Delay			27.4	Н	ICM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.86									
Actuated Cycle Length (s)			160.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utiliz	ation		88.5%	IC	CU Level o	of Service	:		Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

	•	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b>+</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1,4	ተተተ			4111				77.77			77
Traffic Volume (vph)	761	1580	0	0	2214	102	0	0	863	0	0	914
Future Volume (vph)	761	1580	0	0	2214	102	0	0	863	0	0	914
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6365				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6365				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	827	1717	0	0	2407	111	0	0	938	0	0	993
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	827	1717	0	0	2514	0	0	0	938	0	0	993
Turn Type	Prot	NA			NA				Perm			Ove
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	180.0			97.7				180.0			68.4
Effective Green, g (s)	68.4	180.0			97.7				180.0			68.4
Actuated g/C Ratio	0.38	1.00			0.54				1.00			0.38
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1304	5085			3454				2787			1059
v/s Ratio Prot	0.24	0.34			c0.39							c0.36
v/s Ratio Perm									0.34			
v/c Ratio	0.63	0.34			0.73				0.34			0.94
Uniform Delay, d1	45.6	0.0			31.1				0.0			53.7
Progression Factor	0.54	1.00			0.30				1.00			1.00
Incremental Delay, d2	1.0	0.2			0.8				0.2			15.4
Delay (s)	25.7	0.2			10.2				0.2			69.1
Level of Service	С	Α			В				Α			Е
Approach Delay (s)		8.5			10.2			0.2			69.1	
Approach LOS		Α			В			Α			Е	
Intersection Summary												
HCM 2000 Control Delay			16.6	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	city ratio		0.81									
Actuated Cycle Length (s)			180.0		um of lost				13.9			
Intersection Capacity Utiliza	ation		77.3%	IC	U Level	of Service			D			
Analysis Period (min)			15									
- Onitianal Lamas Onnum												

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2503: Oxmoor Ln & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	1	<b>†</b>	~	<b>/</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*5	4111	7	*	<b>↑</b> ↑₽		14.14	<b></b>			र्स	7
Traffic Volume (vph)	76	1649	695	114	1610	25	640	25	127	50	36	76
Future Volume (vph)	76	1649	695	114	1610	25	640	25	127	50	36	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Lane Util. Factor	1.00	0.81	0.81	1.00	0.91		0.91	0.91			1.00	1.00
Frt	1.00	0.98	0.85	1.00	1.00		1.00	0.93			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (prot)	1770	5905	1282	1770	5074		3221	1537			1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (perm)	1770	5905	1282	1770	5074		3221	1537			1810	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1792	755	124	1750	27	696	27	138	54	39	83
RTOR Reduction (vph)	0	15	258	0	1	0	0	21	0	0	0	76
Lane Group Flow (vph)	83	2079	195	124	1776	0	585	255	0	0	93	7
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2									8
Actuated Green, G (s)	19.0	77.2	77.2	17.7	75.9		42.7	42.7			15.2	15.2
Effective Green, g (s)	19.0	77.2	77.2	17.7	75.9		42.7	42.7			15.2	15.2
Actuated g/C Ratio	0.11	0.43	0.43	0.10	0.42		0.24	0.24			0.08	0.08
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0		6.0	6.0			4.0	4.0
Lane Grp Cap (vph)	186	2532	549	174	2139		764	364			152	133
v/s Ratio Prot	0.05	c0.35		0.07	c0.35		c0.18	0.17			c0.05	
v/s Ratio Perm			0.15									0.00
v/c Ratio	0.45	0.82	0.36	0.71	0.83		0.77	0.70			0.61	0.05
Uniform Delay, d1	75.6	45.3	34.6	78.7	46.3		64.0	62.8			79.6	75.8
Progression Factor	0.83	0.70	1.91	0.88	0.92		0.95	0.95			1.00	1.00
Incremental Delay, d2	3.4	3.0	1.7	13.8	3.4		5.8	8.6			8.1	0.2
Delay (s)	65.9	34.9	68.0	83.1	45.9		66.9	68.2			87.7	76.0
Level of Service	Е	С	Е	F	D		Е	Е			F	Е
Approach Delay (s)		41.6			48.3			67.3			82.2	
Approach LOS		D			D			Е			F	
Intersection Summary												
HCM 2000 Control Delay			49.2	Н	CM 2000	Level of	Service		D			
HCM 2000 Volume to Capa	city ratio		0.81									
Actuated Cycle Length (s)	180.0			S	um of lost	t time (s)			27.2			
Intersection Capacity Utiliza	tion		80.5%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	4	†	<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	1,1	<b>∱</b> 1>		, N	र्स	7		ર્ન	7
Traffic Volume (vph)	10	1528	152	177	1370	5	243	5	147	5	5	25
Future Volume (vph)	10	1528	152	177	1370	5	243	5	147	5	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3537		1681	1688	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3537		1681	1688	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1661	165	192	1489	5	264	5	160	5	5	27
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	142	0	0	26
Lane Group Flow (vph)	11	1661	118	192	1494	0	135	134	18	0	10	1
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	3.5	98.8	98.8	27.1	122.4		19.8	19.8	19.8		7.1	7.1
Effective Green, g (s)	3.5	98.8	98.8	27.1	122.4		19.8	19.8	19.8		7.1	7.1
Actuated g/C Ratio	0.02	0.55	0.55	0.15	0.68		0.11	0.11	0.11		0.04	0.04
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	34	1942	868	516	2405		184	185	174		71	62
v/s Ratio Prot	0.01	c0.47		0.06	c0.42		c0.08	0.08			c0.01	
v/s Ratio Perm			0.07						0.01			0.00
v/c Ratio	0.32	0.86	0.14	0.37	0.62		0.73	0.72	0.10		0.14	0.02
Uniform Delay, d1	87.1	34.5	19.8	68.8	16.0		77.5	77.5	72.1		83.5	83.1
Progression Factor	1.53	0.36	0.00	0.67	0.30		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.9	3.4	0.2	1.1	1.0		14.0	13.1	0.3		1.9	0.2
Delay (s)	138.4	15.8	0.2	47.2	5.8		91.6	90.6	72.3		85.4	83.3
Level of Service	F	В	Α	D	Α		F	F	Е		F	F
Approach Delay (s)		15.1			10.5			84.1			83.9	
Approach LOS		В			В			F			F	
Intersection Summary												
HCM 2000 Control Delay			21.2	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.77									
Actuated Cycle Length (s)			180.0		um of lost	( )			27.2			
Intersection Capacity Utiliza	ation		79.6%	IC	CU Level o	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/07/2022

	٠	<b>→</b>	•	•	<b>←</b>	4	4	<b>†</b>	~	<b>/</b>	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	<b>∱</b> ₽		*	<b>∱</b> 1>			↔		*	<b>₽</b>	
Traffic Volume (vph)	51	1599	5	5	1446	15	5	5	5	51	5	76
Future Volume (vph)	51	1599	5	5	1446	15	5	5	5	51	5	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3538		1770	3534			1750		1770	1599	
Flt Permitted	0.95	1.00		0.95	1.00			0.88		0.75	1.00	
Satd. Flow (perm)	1770	3538		1770	3534			1573		1393	1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1738	5	5	1572	16	5	5	5	55	5	83
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	77	0
Lane Group Flow (vph)	55	1743	0	5	1588	0	0	10	0	55	11	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	10.4	144.4		1.6	135.6			13.4		13.4	13.4	
Effective Green, g (s)	10.4	144.4		1.6	135.6			13.4		13.4	13.4	
Actuated g/C Ratio	0.06	0.80		0.01	0.75			0.07		0.07	0.07	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	102	2838		15	2662			117		103	119	
v/s Ratio Prot	c0.03	c0.49		0.00	0.45						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.54	0.61		0.33	0.60			0.09		0.53	0.09	
Uniform Delay, d1	82.5	6.9		88.7	9.9			77.6		80.3	77.6	
Progression Factor	1.29	0.09		0.81	0.79			1.00		1.00	1.00	
Incremental Delay, d2	4.3	0.6		12.1	0.7			0.4		6.6	0.5	
Delay (s)	110.5	1.2		83.6	8.5			78.1		86.9	78.1	
Level of Service	F	Α		F	Α			Е		F	Е	
Approach Delay (s)		4.6			8.7			78.1			81.5	
Approach LOS		Α			А			Е			F	
Intersection Summary												
HCM 2000 Control Delay			9.9	Н	CM 2000	Level of	Service		Α			
HCM 2000 Volume to Capac	ity ratio		0.62									
Actuated Cycle Length (s)			180.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utilizati	ion		62.8%	IC	CU Level	of Service			В			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

	۶	<b>→</b>	•	•	<b>←</b>	•	4	†	~	<b>\</b>	<b></b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ŋ.	<b>↑</b> ↑		*	<b>∱</b> }		*	ĵ.			4	
Traffic Volume (vph)	102	1294	76	25	1345	228	51	51	25	178	51	76
Future Volume (vph)	102	1294	76	25	1345	228	51	51	25	178	51	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1770	3510		1770	3462		1770	1771			1749	
FIt Permitted	0.04	1.00		0.10	1.00		0.57	1.00			0.77	
Satd. Flow (perm)	69	3510		190	3462		1067	1771			1393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	1407	83	27	1462	248	55	55	27	193	55	83
RTOR Reduction (vph)	0	2	0	0	7	0	0	10	0	0	7	0
Lane Group Flow (vph)	111	1488	0	27	1703	0	55	72	0	0	324	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	120.6	107.5		106.5	100.4		45.8	45.8			45.8	
Effective Green, g (s)	120.6	107.5		106.5	100.4		45.8	45.8			45.8	
Actuated g/C Ratio	0.67	0.60		0.59	0.56		0.25	0.25			0.25	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	170	2096		165	1931		271	450			354	
v/s Ratio Prot	c0.05	c0.42		0.01	c0.49			0.04				
v/s Ratio Perm	0.39			0.09			0.05				c0.23	
v/c Ratio	0.65	0.71		0.16	0.88		0.20	0.16			0.92	
Uniform Delay, d1	51.8	25.3		20.5	34.6		52.8	52.2			65.2	
Progression Factor	1.63	0.30		0.70	0.90		1.00	1.00			1.00	
Incremental Delay, d2	8.1	1.7		0.4	3.7		1.0	0.5			29.5	
Delay (s)	92.8	9.3		14.8	35.0		53.8	52.6			94.7	
Level of Service	F	Α		В	D		D	D			F	
Approach Delay (s)		15.1			34.7			53.1			94.7	
Approach LOS		В			С			D			F	
Intersection Summary												
HCM 2000 Control Delay			32.3	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.88									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			20.6			
Intersection Capacity Utiliza	ation		91.1%	IC	CU Level o	of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 No Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

	۶	<b>→</b>	•	•	<b>←</b>	4	4	<b>†</b>	~	<b>/</b>	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	16.64	ተተተ			<b>4111</b>				7 7			77
Traffic Volume (vph)	914	1131	0	0	2007	76	0	0	1052	0	0	1066
Future Volume (vph)	914	1131	0	0	2007	76	0	0	1052	0	0	1066
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6373				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6373				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	993	1229	0	0	2182	83	0	0	1143	0	0	1159
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	993	1229	0	0	2262	0	0	0	1143	0	0	1159
Turn Type	Prot	NA			NA				Perm			Over
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	160.0			77.7				160.0			68.4
Effective Green, g (s)	68.4	160.0			77.7				160.0			68.4
Actuated g/C Ratio	0.43	1.00			0.49				1.00			0.43
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1467	5085			3094				2787			1191
v/s Ratio Prot	0.29	0.24			c0.35							c0.42
v/s Ratio Perm									0.41			
v/c Ratio	0.68	0.24			0.73				0.41			0.97
Uniform Delay, d1	36.9	0.0			32.8				0.0			44.9
Progression Factor	1.51	1.00			0.48				1.00			1.37
Incremental Delay, d2	0.8	0.1			1.1				0.2			3.7
Delay (s)	56.5	0.1			16.8				0.2			65.4
Level of Service	Е	Α			В				Α			Е
Approach Delay (s)		25.3			16.8			0.2			65.4	
Approach LOS		С			В			Α			Е	
Intersection Summary												
HCM 2000 Control Delay			25.1	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	city ratio		0.84									
Actuated Cycle Length (s)			160.0	Si	um of lost	t time (s)			13.9			
Intersection Capacity Utiliza	ition		79.2%	IC	CU Level	of Service			D			
Analysis Period (min)			15									
- O-itiII O												

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2503: Oxmoor Ln & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>—</b>	•	•	†	~	<b>/</b>	<b>+</b>	✓
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4111	7	Ŋ	<b>^</b>		44	4			4	7
Traffic Volume (vph)	102	1829	252	178	1898	51	186	5	102	25	25	25
Future Volume (vph)	102	1829	252	178	1898	51	186	5	102	25	25	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Lane Util. Factor	1.00	0.81	0.81	1.00	0.91		0.91	0.91			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99			0.98	1.00
Satd. Flow (prot)	1770	6023	1282	1770	5065		3221	1477			1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99			0.98	1.00
Satd. Flow (perm)	1770	6023	1282	1770	5065		3221	1477			1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	1988	274	193	2063	55	202	5	111	27	27	27
RTOR Reduction (vph)	0	1	78	0	1	0	0	99	0	0	0	25
Lane Group Flow (vph)	111	2014	169	193	2117	0	182	37	0	0	54	2
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2									8
Actuated Green, G (s)	17.2	82.6	82.6	23.0	88.4		17.6	17.6			9.6	9.6
Effective Green, g (s)	17.2	82.6	82.6	23.0	88.4		17.6	17.6			9.6	9.6
Actuated g/C Ratio	0.11	0.52	0.52	0.14	0.55		0.11	0.11			0.06	0.06
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0		6.0	6.0			4.0	4.0
Lane Grp Cap (vph)	190	3109	661	254	2798		354	162			109	94
v/s Ratio Prot	0.06	c0.33		0.11	c0.42		c0.06	0.03			c0.03	
v/s Ratio Perm			0.13									0.00
v/c Ratio	0.58	0.65	0.26	0.76	0.76		0.51	0.23			0.50	0.02
Uniform Delay, d1	68.0	28.1	21.6	65.8	27.5		67.2	65.0			72.9	70.8
Progression Factor	1.00	1.24	1.58	0.74	0.46		1.08	1.45			1.00	1.00
Incremental Delay, d2	6.7	1.0	0.9	10.5	1.4		3.3	2.0			4.8	0.1
Delay (s)	74.9	35.9	35.0	59.5	14.1		75.6	96.6			77.6	70.9
Level of Service	Е	D	D	Е	В		Е	F			Е	Е
Approach Delay (s)		37.7			17.9			84.6			75.4	
Approach LOS		D			В			F			Е	
Intersection Summary												
HCM 2000 Control Delay			32.2	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capacit	y ratio		0.71									
Actuated Cycle Length (s)			160.0	S	um of lost	t time (s)			27.2			
Intersection Capacity Utilization	n		73.9%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	4	†	<i>&gt;</i>	-	Ţ	√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*1	<b>^</b>	7	1,1	<b>∱</b> 1>		7	र्स	7		4	7
Traffic Volume (vph)	10	1777	116	71	1827	5	248	5	142	5	5	5
Future Volume (vph)	10	1777	116	71	1827	5	248	5	142	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3538		1681	1688	1583		1817	1583
FIt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3538		1681	1688	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1932	126	77	1986	5	270	5	154	5	5	5
RTOR Reduction (vph)	0	0	45	0	0	0	0	0	136	0	0	5
Lane Group Flow (vph)	11	1932	81	77	1991	0	138	137	18	0	10	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	4.4	98.7	98.7	11.9	106.2		18.4	18.4	18.4		3.8	3.8
Effective Green, g (s)	4.4	98.7	98.7	11.9	106.2		18.4	18.4	18.4		3.8	3.8
Actuated g/C Ratio	0.03	0.62	0.62	0.07	0.66		0.11	0.11	0.11		0.02	0.02
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	48	2183	976	255	2348		193	194	182		43	37
v/s Ratio Prot	0.01	c0.55		0.02	c0.56		c0.08	0.08			c0.01	
v/s Ratio Perm			0.05						0.01			0.00
v/c Ratio	0.23	0.89	0.08	0.30	0.85		0.72	0.71	0.10		0.23	0.00
Uniform Delay, d1	76.1	25.9	12.4	70.1	20.7		68.3	68.2	63.4		76.7	76.3
Progression Factor	0.49	0.88	0.00	1.32	0.33		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	4.7	0.1	1.0	2.3		11.9	11.1	0.2		5.7	0.1
Delay (s)	40.3	27.4	0.1	93.9	9.0		80.1	79.3	63.6		82.4	76.3
Level of Service	D	C	Α	F	A		F	E	Е		F	Е
Approach Delay (s)		25.8			12.2			73.9			80.4	
Approach LOS		С			В			Е			F	
Intersection Summary												
HCM 2000 Control Delay			24.3	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.87									
Actuated Cycle Length (s)			160.0		um of lost				27.2			
Intersection Capacity Utiliza	tion		78.9%	IC	CU Level of	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/07/2022

	۶	<b>→</b>	•	•	<b>—</b>	•	•	<b>†</b>	~	<b>/</b>	Ţ	-√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>↑</b> ↑		ሻ	<b>↑</b> ↑			4		ሻ	<b>4</b>	
Traffic Volume (vph)	76	1833	15	5	1847	50	5	15	5	50	15	50
Future Volume (vph)	76	1833	15	5	1847	50	5	15	5	50	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.97		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1770	3535		1770	3525			1797		1770	1647	
Flt Permitted	0.95	1.00		0.95	1.00			0.93		0.74	1.00	
Satd. Flow (perm)	1770	3535		1770	3525			1691		1379	1647	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1992	16	5	2008	54	5	16	5	54	16	54
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	50	0
Lane Group Flow (vph)	83	2008	0	5	2061	0	0	21	0	54	20	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Effective Green, g (s)	20.6	125.1		1.6	106.1			12.7		12.7	12.7	
Actuated g/C Ratio	0.13	0.78		0.01	0.66			0.08		0.08	0.08	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	227	2763		17	2337			134		109	130	
v/s Ratio Prot	0.05	c0.57		0.00	c0.58						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.37	0.73		0.29	0.88			0.16		0.50	0.16	
Uniform Delay, d1	63.7	8.8		78.6	21.9			68.7		70.6	68.7	
Progression Factor	0.58	0.48		1.28	0.59			1.00		1.00	1.00	
Incremental Delay, d2	8.0	1.0		9.0	3.7			8.0		4.8	8.0	
Delay (s)	37.6	5.2		109.5	16.6			69.4		75.3	69.4	
Level of Service	D	Α		F	В			Е		Е	Е	
Approach Delay (s)		6.5			16.8			69.4			72.0	
Approach LOS		Α			В			Е			Е	
Intersection Summary												
HCM 2000 Control Delay			13.7	Н	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capac	ity ratio		0.84									
Actuated Cycle Length (s)			160.0		um of lost				20.6			
Intersection Capacity Utilizati	on		83.5%	IC	CU Level of	of Service			Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

03/07/2022

	•	<b>→</b>	•	•	<b>—</b>	•	4	<b>†</b>	~	<b>\</b>	<b></b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	J.	<b>↑</b> ↑		*	<b>∱</b> }		7	î,			4	
Traffic Volume (vph)	127	1437	66	15	1492	107	152	26	25	178	36	25
Future Volume (vph)	127	1437	66	15	1492	107	152	26	25	178	36	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	
Satd. Flow (prot)	1770	3516		1770	3504		1770	1726			1771	
Flt Permitted	0.04	1.00		0.09	1.00		0.67	1.00			0.75	
Satd. Flow (perm)	76	3516		165	3504		1251	1726			1369	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	1562	72	16	1622	116	165	28	27	193	39	27
RTOR Reduction (vph)	0	1	0	0	3	0	0	21	0	0	3	0
Lane Group Flow (vph)	138	1633	0	16	1735	0	165	34	0	0	256	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	110.7	100.7		94.1	91.1		35.7	35.7			35.7	
Effective Green, g (s)	110.7	100.7		94.1	91.1		35.7	35.7			35.7	
Actuated g/C Ratio	0.69	0.63		0.59	0.57		0.22	0.22			0.22	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	185	2212		127	1995		279	385			305	
v/s Ratio Prot	c0.06	c0.46		0.00	c0.50			0.02				
v/s Ratio Perm	0.46			0.07			0.13				c0.19	
v/c Ratio	0.75	0.74		0.13	0.87		0.59	0.09			0.84	
Uniform Delay, d1	49.0	20.5		18.4	29.4		55.6	49.3			59.4	
Progression Factor	1.10	1.36		0.46	0.27		1.00	1.00			1.00	
Incremental Delay, d2	12.4	1.7		0.4	3.9		6.1	0.3			20.5	
Delay (s)	66.3	29.6		8.8	11.7		61.7	49.5			79.9	
Level of Service	Е	С		Α	В		Е	D			Е	
Approach Delay (s)		32.5			11.7			58.7			79.9	
Approach LOS		С			В			Е			Е	
Intersection Summary												
HCM 2000 Control Delay			27.9	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.86									
Actuated Cycle Length (s)			160.0	S	um of lost	t time (s)			20.6			
Intersection Capacity Utiliz	ation		88.8%	IC	CU Level of	of Service	:		Е			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) US-60 Shelbyville Rd 7:53 am 10/21/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2502: I-264 EB to US-60 EB/KY-146 & US-60

03/08/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	44	ተተተ			<b>4111</b>				77			77
Traffic Volume (vph)	761	1729	0	0	2242	102	0	0	863	0	0	914
Future Volume (vph)	761	1729	0	0	2242	102	0	0	863	0	0	914
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	7.3			7.3				7.3			6.6
Lane Util. Factor	0.97	0.91			0.86				0.88			0.88
Frt	1.00	1.00			0.99				0.85			0.85
Flt Protected	0.95	1.00			1.00				1.00			1.00
Satd. Flow (prot)	3433	5085			6366				2787			2787
Flt Permitted	0.95	1.00			1.00				1.00			1.00
Satd. Flow (perm)	3433	5085			6366				2787			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	827	1879	0	0	2437	111	0	0	938	0	0	993
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	827	1879	0	0	2544	0	0	0	938	0	0	993
Turn Type	Prot	NA			NA				Perm			Over
Protected Phases	5	2			6							5
Permitted Phases									256			
Actuated Green, G (s)	68.4	180.0			97.7				180.0			68.4
Effective Green, g (s)	68.4	180.0			97.7				180.0			68.4
Actuated g/C Ratio	0.38	1.00			0.54				1.00			0.38
Clearance Time (s)	6.6	7.3			7.3							6.6
Vehicle Extension (s)	5.0	3.0			3.0							5.0
Lane Grp Cap (vph)	1304	5085			3455				2787			1059
v/s Ratio Prot	0.24	0.37			c0.40							c0.36
v/s Ratio Perm									0.34			
v/c Ratio	0.63	0.37			0.74				0.34			0.94
Uniform Delay, d1	45.6	0.0			31.3				0.0			53.7
Progression Factor	0.53	1.00			0.29				1.00			1.00
Incremental Delay, d2	1.1	0.2			0.9				0.2			15.4
Delay (s)	25.1	0.2			10.1				0.2			69.1
Level of Service	С	Α			В				Α			Е
Approach Delay (s)		7.8			10.1			0.2			69.1	
Approach LOS		Α			В			Α			Е	
Intersection Summary												
HCM 2000 Control Delay			16.1	Н	CM 2000	Level of S	Service		В			
HCM 2000 Volume to Capa	city ratio		0.82									
Actuated Cycle Length (s)			180.0	Si	um of lost	time (s)			13.9			
Intersection Capacity Utiliza	ition		77.7%	IC	U Level	of Service			D			
Analysis Period (min)			15									
- O.TII O												

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2503: Oxmoor Ln & US-60

03/08/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*5	411t	7	ሻ	<b>↑</b> ↑		44	4			र्स	7
Traffic Volume (vph)	76	1697	695	114	1638	25	640	25	127	50	36	76
Future Volume (vph)	76	1697	695	114	1638	25	640	25	127	50	36	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Lane Util. Factor	1.00	0.81	0.81	1.00	0.91		0.91	0.91			1.00	1.00
Frt	1.00	0.98	0.85	1.00	1.00		1.00	0.93			1.00	0.85
FIt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (prot)	1770	5913	1282	1770	5074		3221	1537			1810	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.97	1.00
Satd. Flow (perm)	1770	5913	1282	1770	5074		3221	1537			1810	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1845	755	124	1780	27	696	27	138	54	39	83
RTOR Reduction (vph)	0	14	257	0	1	0	0	21	0	0	0	76
Lane Group Flow (vph)	83	2118	211	124	1806	0	585	255	0	0	93	7
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2									8
Actuated Green, G (s)	19.0	77.2	77.2	17.7	75.9		42.7	42.7			15.2	15.2
Effective Green, g (s)	19.0	77.2	77.2	17.7	75.9		42.7	42.7			15.2	15.2
Actuated g/C Ratio	0.11	0.43	0.43	0.10	0.42		0.24	0.24			0.08	0.08
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6			6.6	6.6
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0		6.0	6.0			4.0	4.0
Lane Grp Cap (vph)	186	2536	549	174	2139		764	364			152	133
v/s Ratio Prot	0.05	c0.36		0.07	c0.36		c0.18	0.17			c0.05	
v/s Ratio Perm			0.16									0.00
v/c Ratio	0.45	0.84	0.38	0.71	0.84		0.77	0.70			0.61	0.05
Uniform Delay, d1	75.6	45.7	35.1	78.7	46.8		64.0	62.8			79.6	75.8
Progression Factor	0.84	0.73	1.48	0.89	0.92		0.95	0.95			1.00	1.00
Incremental Delay, d2	3.4	3.3	1.9	13.7	3.7		5.8	8.6			8.1	0.2
Delay (s)	66.7	36.6	53.8	83.8	46.9		66.9	68.2			87.7	76.0
Level of Service	Е	D	D	F	D		Е	Е			F	Е
Approach Delay (s)		40.5			49.2			67.3			82.2	
Approach LOS		D			D			Е			F	
Intersection Summary												
HCM 2000 Control Delay			48.9	Н	CM 2000	Level of	Service		D			
HCM 2000 Volume to Capa	city ratio		0.82									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			27.2			
Intersection Capacity Utiliza	tion		81.0%	IC	CU Level	of Service	!		D			
Analysis Period (min)			15									
- O-TII O												

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2504: Christian Way & US-60

03/08/2022

	۶	<b>→</b>	•	•	<b>←</b>	4	4	<b>†</b>	<i>&gt;</i>	<b>/</b>	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>^</b>	7	ሻሻ	<b>∱</b> ⊅		7	र्स	7		र्स	7
Traffic Volume (vph)	10	1528	200	219	1370	5	271	5	173	5	5	25
Future Volume (vph)	10	1528	200	219	1370	5	271	5	173	5	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3537		1681	1688	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3537		1681	1688	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1661	217	238	1489	5	295	5	188	5	5	27
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	166	0	0	26
Lane Group Flow (vph)	11	1661	169	238	1494	0	150	150	22	0	10	1
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases			2						4			8
Actuated Green, G (s)	3.5	97.0	97.0	27.2	120.7		21.5	21.5	21.5		7.1	7.1
Effective Green, g (s)	3.5	97.0	97.0	27.2	120.7		21.5	21.5	21.5		7.1	7.1
Actuated g/C Ratio	0.02	0.54	0.54	0.15	0.67		0.12	0.12	0.12		0.04	0.04
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		6.6	6.6	6.6		6.6	6.6
Vehicle Extension (s)	4.0	3.0	3.0	6.0	3.0		3.0	3.0	3.0		5.0	5.0
Lane Grp Cap (vph)	34	1907	853	518	2371		200	201	189		71	62
v/s Ratio Prot	0.01	c0.47		0.07	c0.42		c0.09	0.09			c0.01	
v/s Ratio Perm			0.11						0.01			0.00
v/c Ratio	0.32	0.87	0.20	0.46	0.63		0.75	0.75	0.12		0.14	0.02
Uniform Delay, d1	87.1	36.1	21.4	69.7	16.9		76.7	76.6	70.8		83.5	83.1
Progression Factor	1.53	0.39	0.00	0.68	0.31		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.0	4.0	0.3	1.5	1.1		14.6	14.0	0.3		1.9	0.2
Delay (s)	138.0	17.9	0.4	49.1	6.3		91.2	90.6	71.1		85.4	83.3
Level of Service	F	В	Α	D	Α		F	F	Е		F	F
Approach Delay (s)		16.6			12.2			83.3			83.9	
Approach LOS		В			В			F			F	
Intersection Summary												
HCM 2000 Control Delay			23.2	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capac	city ratio		0.79									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			27.2			
Intersection Capacity Utilizat	ion		80.4%	IC	CU Level o	of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

2505: Oxmoor Toyota & US-60

03/08/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	, N	<b>∱</b> 1>		*	<b>∱</b> 1>			4		*	1>	
Traffic Volume (vph)	51	1625	5	5	1488	15	5	5	5	51	5	76
Future Volume (vph)	51	1625	5	5	1488	15	5	5	5	51	5	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	3538		1770	3534			1750		1770	1599	
FIt Permitted	0.95	1.00		0.95	1.00			0.88		0.75	1.00	
Satd. Flow (perm)	1770	3538		1770	3534			1573		1393	1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1766	5	5	1617	16	5	5	5	55	5	83
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	77	0
Lane Group Flow (vph)	55	1771	0	5	1633	0	0	10	0	55	11	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	10.4	144.4		1.6	135.6			13.4		13.4	13.4	
Effective Green, g (s)	10.4	144.4		1.6	135.6			13.4		13.4	13.4	
Actuated g/C Ratio	0.06	0.80		0.01	0.75			0.07		0.07	0.07	
Clearance Time (s)	7.0	7.0		7.0	7.0			6.6		6.6	6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0			4.0		4.0	4.0	
Lane Grp Cap (vph)	102	2838		15	2662			117		103	119	
v/s Ratio Prot	c0.03	c0.50		0.00	0.46						0.01	
v/s Ratio Perm								0.01		c0.04		
v/c Ratio	0.54	0.62		0.33	0.61			0.09		0.53	0.09	
Uniform Delay, d1	82.5	7.0		88.7	10.2			77.6		80.3	77.6	
Progression Factor	1.26	0.16		0.82	0.81			1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.6		12.1	0.7			0.4		6.6	0.5	
Delay (s)	108.4	1.8		84.6	9.0			78.1		86.9	78.1	
Level of Service	F	Α		F	Α			Е		F	Е	
Approach Delay (s)		5.0			9.3			78.1			81.5	
Approach LOS		Α			А			Е			F	
Intersection Summary												
HCM 2000 Control Delay			10.3	Н	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capac	ity ratio		0.63									
Actuated Cycle Length (s)			180.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utilizat	ion		63.5%	IC	CU Level o	of Service			В			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis 2506: S Lyndon Ln/Lyndon Ln & US-60

03/08/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ĭ,	<b>↑</b> ↑		7	<b>∱</b> }		, N	î,			4	
Traffic Volume (vph)	102	1320	76	25	1387	228	51	51	25	178	51	76
Future Volume (vph)	102	1320	76	25	1387	228	51	51	25	178	51	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1770	3510		1770	3464		1770	1771			1749	
Flt Permitted	0.04	1.00		0.10	1.00		0.57	1.00			0.77	
Satd. Flow (perm)	69	3510		179	3464		1067	1771			1393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	1435	83	27	1508	248	55	55	27	193	55	83
RTOR Reduction (vph)	0	2	0	0	7	0	0	10	0	0	7	0
Lane Group Flow (vph)	111	1516	0	27	1749	0	55	72	0	0	324	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	120.6	107.5		106.5	100.4		45.8	45.8			45.8	
Effective Green, g (s)	120.6	107.5		106.5	100.4		45.8	45.8			45.8	
Actuated g/C Ratio	0.67	0.60		0.59	0.56		0.25	0.25			0.25	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.6	6.6			6.6	
Vehicle Extension (s)	4.0	3.0		4.0	3.0		6.0	6.0			6.0	
Lane Grp Cap (vph)	170	2096		159	1932		271	450			354	
v/s Ratio Prot	c0.05	c0.43		0.01	c0.50			0.04				
v/s Ratio Perm	0.39			0.09			0.05				c0.23	
v/c Ratio	0.65	0.72		0.17	0.91		0.20	0.16			0.92	
Uniform Delay, d1	52.6	25.7		21.1	35.6		52.8	52.2			65.2	
Progression Factor	1.59	0.34		0.71	0.91		1.00	1.00			1.00	
Incremental Delay, d2	8.1	1.9		0.4	4.6		1.0	0.5			29.5	
Delay (s)	91.6	10.5		15.3	37.0		53.8	52.6			94.7	
Level of Service	F	В		В	D		D	D			F	
Approach Delay (s)		16.1			36.7			53.1			94.7	
Approach LOS		В			D			D			F	
Intersection Summary												
HCM 2000 Control Delay			33.6	Н	CM 2000	Level of	Service		С			
HCM 2000 Volume to Capa	acity ratio		0.90									
Actuated Cycle Length (s)			180.0	S	um of lost	time (s)			20.6			
Intersection Capacity Utiliza	ation		92.3%	IC	CU Level o	of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Pattern 50 (Weekday PM Peak) US-60 Shelbyville Rd 2:26 pm 10/21/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

**HCM Signalized Intersection Capacity Analysis** 

03/07/2022

	۶	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	~	<b>/</b>	ţ	<b>√</b>
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	4	7	1,1	र्स	7	14.54	<b>^</b>	7	ሻሻ	<b>↑</b> ↑	
Traffic Volume (vph)	75	75	175	375	100	75	150	1525	500	150	755	75
Future Volume (vph)	75	75	175	375	100	75	150	1525	500	150	755	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6	6.6	6.6	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1762	1583	3221	1664	1583	3433	5085	1583	3433	5016	
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1762	1583	3221	1664	1583	3433	5085	1583	3433	5016	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	82	190	408	109	82	163	1658	543	163	821	82
RTOR Reduction (vph)	0	0	174	0	0	70	0	0	272	0	6	0
Lane Group Flow (vph)	74	90	16	343	174	12	163	1658	272	163	897	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	13.5	13.5	13.5	23.0	23.0	23.0	12.9	80.0	80.0	15.7	82.8	
Effective Green, g (s)	13.5	13.5	13.5	23.0	23.0	23.0	12.9	80.0	80.0	15.7	82.8	
Actuated g/C Ratio	0.08	0.08	0.08	0.14	0.14	0.14	0.08	0.50	0.50	0.10	0.52	
Clearance Time (s)	6.6	6.6	6.6	6.6	6.6	6.6	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	141	148	133	463	239	227	276	2542	791	336	2595	
v/s Ratio Prot	0.04	c0.05		c0.11	0.10		0.05	c0.33		c0.05	0.18	
v/s Ratio Perm			0.01			0.01			0.17			
v/c Ratio	0.52	0.61	0.12	0.74	0.73	0.05	0.59	0.65	0.34	0.49	0.35	
Uniform Delay, d1	70.2	70.7	67.8	65.6	65.5	59.1	71.0	29.7	24.1	68.3	22.7	
Progression Factor	1.00	1.00	1.00	0.48	0.48	1.00	1.10	0.63	0.76	0.88	0.51	
Incremental Delay, d2	3.5	6.9	0.4	5.7	9.5	0.1	3.0	1.2	1.1	1.1	0.4	
Delay (s)	73.7	77.6	68.2	37.2	41.0	59.2	81.1	19.9	19.3	61.3	12.0	
Level of Service	Е	Е	Е	D	D	Е	F	В	В	Е	В	
Approach Delay (s)		71.7			41.3			24.0			19.5	
Approach LOS		Е			D			С			В	
Intersection Summary												
HCM 2000 Control Delay			29.1	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capacity	y ratio		0.64									
Actuated Cycle Length (s)			160.0	Si	um of lost	t time (s)			27.8			
Intersection Capacity Utilizatio	n		66.8%	IC	U Level	of Service			С			
Analysis Period (min)			15									

c Critical Lane Group

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

HCM Signalized Intersection Capacity Analysis

03/07/2022

Movement   EBL   EBT   EBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL   SBT   SBR   Lane Configurations   1		٠	<b>→</b>	•	•	<b>←</b>	4	1	<b>†</b>	<b>/</b>	<b>/</b>	ţ	</th
Traffic Volume (uph)	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)	Lane Configurations	7	र्स	7	14.0	र्स	7	ሽሻ	ተተተ	7	ሻሻ	<b>↑</b> ↑₽	
Ideal Flow (yrphpl)			76	178		102	76	152	1548	508	152	761	
Total Lost time (s) 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 7.3 7.3 7.3 7.3 7.3 7.3 Lane Util. Factor 0.95 0.95 1.00 0.91 0.91 1.00 0.97 0.91 1.00 0.97 0.91 1.00 0.97 0.91 1.00 0.95 0.95 1.00 0.90 0.91 0.00 0.97 0.91 1.00 0.95 0.98 1.00 0.90 0.92 0.92 0.92 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.	Future Volume (vph)			178									
Lane Util. Factor		1900	1900	1900	1900	1900	1900			1900			1900
Fit Protected 0.95 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 0.99   Fit Protected 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 1.00 0.95 1.00   Fit Protected 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 0.95 1.00   Fit Permitted 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 0.95 1.00   Fit Permitted 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 0.95 1.00   Satd. Flow (perm) 1681 1762 1583 3221 1684 1583 3433 5085 1583 3433 5016   Fit Permitted 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 0.95 1.00   Satd. Flow (perm) 1681 1762 1583 3221 1684 1583 3433 5085 1583 3433 5016   Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92													
Fit Protected 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 1.00 0.95 1.00 Satd. Flow (prot) 1681 1762 1583 3221 1664 1583 3433 5085 1583 3433 5016 Fit Permitted 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 1.00 0.95 1.00 Satd. Flow (perm) 1681 1762 1583 3221 1664 1583 3433 5085 1583 3433 5016 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92													
Satd. Flow (prot)         1681         1762         1583         3221         1664         1583         3433         5085         1583         3433         5016           FIP Permitted         0.95         1.00         1.00         0.95         1.00         1.00         0.95         1.00           Satd. Flow (perm)         1681         1762         1583         3221         1664         1583         3433         5085         1583         3433         5016           Peak-hour factor, PHF         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         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         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         0.92         0.92         0.92         0.92         0.92	Frt												
Fit Permitted 0.95 1.00 1.00 0.95 0.98 1.00 0.95 1.00 1.00 0.95 1.00 Satd. Flow (perm) 1681 1762 1583 3221 1664 1583 3433 5085 1583 3433 5016 Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92			1.00	1.00		0.98		0.95		1.00		1.00	
Satd. Flow (perm)         1681         1762         1583         3221         1664         1583         3433         5016           Peak-hour factor, PHF         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         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         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         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         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	Satd. Flow (prot)												
Peak-hour factor, PHF	Flt Permitted												
Adj. Flow (vph) 83 83 193 414 111 83 165 1683 552 165 827 83 RTOR Reduction (vph) 0 0 177 0 0 0 71 0 0 277 0 6 0 0 Lane Group Flow (vph) 75 91 16 348 177 12 165 1683 275 165 904 0 Turn Type Split NA Perm Split NA Perm Prot NA	Satd. Flow (perm)		1762		3221	1664	1583	3433	5085	1583	3433	5016	
RTOR Reduction (vph)	Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Lane Group Flow (vph)   75   91   16   348   177   12   165   1683   275   165   904   0     Turn Type	Adj. Flow (vph)	83			414	111	83	165	1683		165	827	
Turn Type	RTOR Reduction (vph)		0	177	0	0	71		-	277	_	6	0
Protected Phases	Lane Group Flow (vph)	75	91	16	348	177	12	165	1683	275	165	904	0
Permitted Phases	Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Actuated Green, G (s)	Protected Phases	4	4		8	8		5	2		1	6	
Effective Green, g (s)	Permitted Phases			4									
Actuated g/C Ratio 0.08 0.08 0.08 0.05 0.15 0.15 0.15 0.08 0.50 0.50 0.50 0.10 0.52 Clearance Time (s) 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7.3 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0													
Clearance Time (s) 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7.3 Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0											15.7		
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         3.0         252         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2583         2584         2583 <td>Actuated g/C Ratio</td> <td></td> <td>0.08</td> <td></td> <td>0.15</td> <td></td> <td></td> <td></td> <td>0.50</td> <td>0.50</td> <td>0.10</td> <td>0.52</td> <td></td>	Actuated g/C Ratio		0.08		0.15				0.50	0.50	0.10	0.52	
Lane Grp Cap (vph) 142 149 134 469 242 230 276 2529 787 336 2583 v/s Ratio Prot 0.04 c0.05 c0.11 0.11 0.05 c0.33 c0.05 0.18 v/s Ratio Perm 0.01 0.01 0.17 v/c Ratio 0.53 0.61 0.12 0.74 0.73 0.05 0.60 0.67 0.35 0.49 0.35 Uniform Delay, d1 70.1 70.6 67.7 65.5 65.4 58.8 71.0 30.2 24.4 68.4 23.0 Progression Factor 1.00 1.00 1.00 0.49 0.49 1.00 1.10 0.63 0.77 0.88 0.52 Incremental Delay, d2 3.5 7.2 0.4 5.7 9.8 0.1 3.1 1.2 1.1 1.1 0.4 Delay (s) 73.6 77.9 68.1 37.6 41.8 58.9 80.9 20.4 19.9 61.4 12.3 Level of Service E E E D D E F C B E B Approach Delay (s) 71.7 41.7 24.4 19.9 Approach LOS E D C B  Intersection Summary HCM 2000 Control Delay HCM 2000 Control Delay C HCM 2000 Volume to Capacity ratio 0.65	· ,		6.6										
v/s Ratio Prof         0.04         c0.05         c0.11         0.11         0.05         c0.33         c0.05         0.18           v/s Ratio Perm         0.01         0.01         0.01         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.17         0.18         0.17         0.18         0.17         0.18         0.17         0.18         0.17         0.18         0.17         0.18         0.17         0.18         0.19         0.14         0.17         0.18         0.19         0.14         0.17         0.18         0.19         0.14         0.19         0.14         0.19         0.14         0.19         0.14         0.19         0.14         0.19         0.14         0.19         0.11         0.11         0.10         0.19         0.14         1.11	Vehicle Extension (s)				3.0								
v/s Ratio Perm         0.01         0.01         0.01         0.17           v/c Ratio         0.53         0.61         0.12         0.74         0.73         0.05         0.60         0.67         0.35         0.49         0.35           Uniform Delay, d1         70.1         70.6         67.7         65.5         65.4         58.8         71.0         30.2         24.4         68.4         23.0           Progression Factor         1.00         1.00         1.00         0.49         0.49         1.00         1.10         0.63         0.77         0.88         0.52           Incremental Delay, d2         3.5         7.2         0.4         5.7         9.8         0.1         3.1         1.2         1.1         1.1         0.4           Delay (s)         73.6         77.9         68.1         37.6         41.8         58.9         80.9         20.4         19.9         61.4         12.3           Level of Service         E         E         E         D         D         E         F         C         B         E         B           Approach LOS         E         D         C         B         B         B         B         B	Lane Grp Cap (vph)			134			230			787			
v/c Ratio         0.53         0.61         0.12         0.74         0.73         0.05         0.60         0.67         0.35         0.49         0.35           Uniform Delay, d1         70.1         70.6         67.7         65.5         65.4         58.8         71.0         30.2         24.4         68.4         23.0           Progression Factor         1.00         1.00         1.00         0.49         0.49         1.00         1.10         0.63         0.77         0.88         0.52           Incremental Delay, d2         3.5         7.2         0.4         5.7         9.8         0.1         3.1         1.2         1.1         1.1         0.4           Delay (s)         73.6         77.9         68.1         37.6         41.8         58.9         80.9         20.4         19.9         61.4         12.3           Level of Service         E         E         E         D         D         E         F         C         B         E         B           Approach LOS         E         D         C         B         E         B           Intersection Summary         HCM 2000 Control Delay         29.5         HCM 2000 Level of Service         <	v/s Ratio Prot	0.04	c0.05		c0.11	0.11		0.05	c0.33		c0.05	0.18	
Uniform Delay, d1 70.1 70.6 67.7 65.5 65.4 58.8 71.0 30.2 24.4 68.4 23.0 Progression Factor 1.00 1.00 1.00 0.49 0.49 1.00 1.10 0.63 0.77 0.88 0.52 Incremental Delay, d2 3.5 7.2 0.4 5.7 9.8 0.1 3.1 1.2 1.1 1.1 0.4 Delay (s) 73.6 77.9 68.1 37.6 41.8 58.9 80.9 20.4 19.9 61.4 12.3 Level of Service E E E D D E F C B E B Approach Delay (s) 71.7 41.7 24.4 19.9 Approach LOS E D C B Intersection Summary HCM 2000 Control Delay 29.5 HCM 2000 Level of Service C HCM 2000 Volume to Capacity ratio 0.65	v/s Ratio Perm						0.01			0.17			
Progression Factor         1.00         1.00         1.00         0.49         0.49         1.00         1.10         0.63         0.77         0.88         0.52           Incremental Delay, d2         3.5         7.2         0.4         5.7         9.8         0.1         3.1         1.2         1.1         1.1         0.4           Delay (s)         73.6         77.9         68.1         37.6         41.8         58.9         80.9         20.4         19.9         61.4         12.3           Level of Service         E         E         E         D         D         E         F         C         B         E         B           Approach LOS         E         D         D         C         B         B           Intersection Summary         HCM 2000 Control Delay         29.5         HCM 2000 Level of Service         C         C           HCM 2000 Volume to Capacity ratio         0.65         HCM 2000 Level of Service         C         C			0.61										
Incremental Delay, d2   3.5   7.2   0.4   5.7   9.8   0.1   3.1   1.2   1.1   1.1   0.4													
Delay (s)       73.6       77.9       68.1       37.6       41.8       58.9       80.9       20.4       19.9       61.4       12.3         Level of Service       E       E       E       D       D       E       F       C       B       E       B         Approach Delay (s)       71.7       41.7       24.4       19.9         Approach LOS       E       D       C       B     Intersection Summary  HCM 2000 Control Delay  29.5 HCM 2000 Level of Service C  HCM 2000 Volume to Capacity ratio 0.65				1.00			1.00						
Level of Service         E         E         E         D         D         E         F         C         B         E         B           Approach Delay (s)         71.7         41.7         24.4         19.9           Approach LOS         E         D         C         B           Intersection Summary           HCM 2000 Control Delay         29.5         HCM 2000 Level of Service         C           HCM 2000 Volume to Capacity ratio         0.65						9.8		3.1					
Approach Delay (s)         71.7         41.7         24.4         19.9           Approach LOS         E         D         C         B           Intersection Summary           HCM 2000 Control Delay         29.5         HCM 2000 Level of Service         C           HCM 2000 Volume to Capacity ratio         0.65													
Approach LOS E D C B  Intersection Summary  HCM 2000 Control Delay 29.5 HCM 2000 Level of Service C  HCM 2000 Volume to Capacity ratio 0.65		Е		Е	D		Е	F		В	Е		
Intersection Summary HCM 2000 Control Delay 29.5 HCM 2000 Level of Service C HCM 2000 Volume to Capacity ratio 0.65													
HCM 2000 Control Delay 29.5 HCM 2000 Level of Service C HCM 2000 Volume to Capacity ratio 0.65	Approach LOS		Е			D			С			В	
HCM 2000 Volume to Capacity ratio 0.65	Intersection Summary												
					Н	CM 2000	Level of S	Service		С			
Actuated Cycle Length (s) 160.0 Sum of lost time (s) 27.8		ity ratio											
	Actuated Cycle Length (s)												
Intersection Capacity Utilization 67.4% ICU Level of Service C	. ,	on		67.4%	IC	U Level	of Service			С			
Analysis Period (min) 15				15									

c Critical Lane Group

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak 2024 No Build Synchro 11 Report M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	4	7	ሻሻ	र्स	7	14.54	ተተተ	7	ሻሻ	ተተኈ	
Traffic Volume (vph)	102	127	306	711	152	152	204	1497	533	102	1320	76
Future Volume (vph)	102	127	306	711	152	152	204	1497	533	102	1320	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	6.4	6.4	6.4	6.4	6.1	5.9	5.9	6.1	5.9	
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1763	1583	3221	1655	1583	3433	5085	1583	3433	5044	
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1763	1583	3221	1655	1583	3433	5085	1583	3433	5044	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	138	333	773	165	165	222	1627	579	111	1435	83
RTOR Reduction (vph)	0	0	163	0	0	113	0	0	311	0	3	0
Lane Group Flow (vph)	100	149	170	618	320	52	222	1627	268	111	1515	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	25.6	25.6	25.6	36.6	36.6	36.6	16.8	76.1	76.1	16.9	76.2	
Effective Green, g (s)	25.6	25.6	25.6	36.6	36.6	36.6	16.8	76.1	76.1	16.9	76.2	
Actuated g/C Ratio	0.14	0.14	0.14	0.20	0.20	0.20	0.09	0.42	0.42	0.09	0.42	
Clearance Time (s)	6.4	6.4	6.4	6.4	6.4	6.4	6.1	5.9	5.9	6.1	5.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	239	250	225	654	336	321	320	2149	669	322	2135	
v/s Ratio Prot	0.06	0.08		0.19	c0.19		0.06	c0.32		0.03	c0.30	
v/s Ratio Perm			c0.11			0.03			0.17			
v/c Ratio	0.42	0.60	0.76	0.94	0.95	0.16	0.69	0.76	0.40	0.34	0.71	
Uniform Delay, d1	70.4	72.4	74.2	70.7	70.8	59.1	79.1	44.1	36.1	76.4	42.8	
Progression Factor	1.00	1.00	1.00	1.23	1.23	2.41	0.97	0.80	1.33	0.84	0.72	
Incremental Delay, d2	5.3	10.1	20.8	23.9	38.2	1.1	5.8	2.3	1.6	0.6	1.8	
Delay (s)	75.7	82.4	95.0	111.0	125.4	143.2	82.6	37.7	49.7	64.7	32.6	
Level of Service	Е	F	F	F	F	F	F	D	D	Е	С	
Approach Delay (s)		88.5			120.0			44.7			34.8	
Approach LOS		F			F			D			С	
Intersection Summary												
HCM 2000 Control Delay			60.8	Н	CM 2000	Level of	Service		Е			
HCM 2000 Volume to Capa	city ratio		0.81									
Actuated Cycle Length (s)			180.0	S	um of lost	t time (s)			24.8			
Intersection Capacity Utiliza	ition		77.5%	IC	CU Level	of Service			D			
Analysis Period (min)			15									
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c Critical Lane Group

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy) 4:51 pm 03/15/2021 Weekday PM Peak 2024 No Build Synchro 11 Report M. Brandon Shelley, PE Page 1

HCM Signalized Intersection Capacity Analysis

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्स	7	ሻሻ	र्स	7	14.54	ተተተ	7	ሻሻ	ተተኈ	
Traffic Volume (vph)	76	76	193	381	102	76	157	1548	508	152	761	76
Future Volume (vph)	76	76	193	381	102	76	157	1548	508	152	761	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6	6.6	6.6	7.3	7.3	7.3	7.3	7.3	
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1762	1583	3221	1664	1583	3433	5085	1583	3433	5016	
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1762	1583	3221	1664	1583	3433	5085	1583	3433	5016	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	83	210	414	111	83	171	1683	552	165	827	83
RTOR Reduction (vph)	0	0	192	0	0	71	0	0	277	0	6	0
Lane Group Flow (vph)	75	91	18	348	177	12	171	1683	275	165	904	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		. 8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	13.6	13.6	13.6	23.3	23.3	23.3	13.1	79.6	79.6	15.7	82.2	
Effective Green, g (s)	13.6	13.6	13.6	23.3	23.3	23.3	13.1	79.6	79.6	15.7	82.2	
Actuated g/C Ratio	0.08	0.08	0.08	0.15	0.15	0.15	0.08	0.50	0.50	0.10	0.51	
Clearance Time (s)	6.6	6.6	6.6	6.6	6.6	6.6	7.3	7.3	7.3	7.3	7.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	142	149	134	469	242	230	281	2529	787	336	2576	
v/s Ratio Prot	0.04	c0.05		c0.11	0.11		0.05	c0.33		c0.05	0.18	
v/s Ratio Perm			0.01			0.01			0.17			
v/c Ratio	0.53	0.61	0.13	0.74	0.73	0.05	0.61	0.67	0.35	0.49	0.35	
Uniform Delay, d1	70.1	70.6	67.7	65.5	65.4	58.8	71.0	30.2	24.4	68.4	23.1	
Progression Factor	1.00	1.00	1.00	0.49	0.49	1.00	1.10	0.63	0.77	0.88	0.52	
Incremental Delay, d2	3.5	7.2	0.5	5.7	9.8	0.1	3.3	1.2	1.1	1.1	0.4	
Delay (s)	73.6	77.9	68.2	37.6	41.8	58.9	81.2	20.4	19.9	61.4	12.5	
Level of Service	E	Е	E	D	D	E	F	С	В	E	В	
Approach Delay (s)	_	71.6	_	_	41.7	_		24.6	_	_	20.0	
Approach LOS		Е			D			С			В	
Intersection Summary												
HCM 2000 Control Delay			29.8	Н	CM 2000	Level of S	Service		С			
HCM 2000 Volume to Capa	city ratio		0.65									
Actuated Cycle Length (s)			160.0	Si	um of lost	t time (s)			27.8			
Intersection Capacity Utiliza	tion		67.4%	IC	U Level	of Service			С			
Analysis Period (min)			15									
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c Critical Lane Group

Pattern 10 (Weekday AM Peak) KY-1747 (Hurstbourne Pkwy) 7:56 am 03/19/2021 Weekday AM Peak 2024 Build M. Brandon Shelley, PE

HCM Signalized Intersection Capacity Analysis

03/07/2022

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	र्स	7	ሻሻ	र्स	7	14.54	ተተተ	7	ሻሻ	ተተኈ	
Traffic Volume (vph)	102	127	315	711	152	152	220	1497	533	102	1320	76
Future Volume (vph)	102	127	315	711	152	152	220	1497	533	102	1320	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4	6.4	6.4	6.4	6.4	6.1	5.9	5.9	6.1	5.9	
Lane Util. Factor	0.95	0.95	1.00	0.91	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1763	1583	3221	1655	1583	3433	5085	1583	3433	5044	
Flt Permitted	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1763	1583	3221	1655	1583	3433	5085	1583	3433	5044	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	138	342	773	165	165	239	1627	579	111	1435	83
RTOR Reduction (vph)	0	0	163	0	0	113	0	0	311	0	3	0
Lane Group Flow (vph)	100	149	179	618	320	52	239	1627	268	111	1515	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		. 8	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	25.6	25.6	25.6	36.6	36.6	36.6	17.5	76.1	76.1	16.9	75.5	
Effective Green, g (s)	25.6	25.6	25.6	36.6	36.6	36.6	17.5	76.1	76.1	16.9	75.5	
Actuated g/C Ratio	0.14	0.14	0.14	0.20	0.20	0.20	0.10	0.42	0.42	0.09	0.42	
Clearance Time (s)	6.4	6.4	6.4	6.4	6.4	6.4	6.1	5.9	5.9	6.1	5.9	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	239	250	225	654	336	321	333	2149	669	322	2115	
v/s Ratio Prot	0.06	0.08		0.19	c0.19		0.07	c0.32		0.03	c0.30	
v/s Ratio Perm			c0.11			0.03			0.17			
v/c Ratio	0.42	0.60	0.80	0.94	0.95	0.16	0.72	0.76	0.40	0.34	0.72	
Uniform Delay, d1	70.4	72.4	74.7	70.7	70.8	59.1	78.9	44.1	36.1	76.4	43.4	
Progression Factor	1.00	1.00	1.00	1.23	1.23	2.41	0.97	0.80	1.32	0.84	0.72	
Incremental Delay, d2	5.3	10.1	24.6	23.9	38.2	1.1	6.5	2.3	1.6	0.6	1.9	
Delay (s)	75.7	82.4	99.2	111.0	125.4	143.2	83.0	37.8	49.3	64.7	33.3	
Level of Service	Е	F	F	F	F	F	F	D	D	Е	С	
Approach Delay (s)		91.0			120.0			44.9			35.4	
Approach LOS		F			F			D			D	
Intersection Summary												
HCM 2000 Control Delay			61.3	Н	CM 2000	Level of	Service		Е			
HCM 2000 Volume to Capa	city ratio		0.82									
Actuated Cycle Length (s)			180.0	S	um of los	t time (s)			24.8			
Intersection Capacity Utiliza	ition		78.1%	IC	CU Level	of Service			D			
Analysis Period (min)			15									
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c Critical Lane Group

Pattern 50 (Weekday PM Peak) KY-1747 (Hurstbourne Pkwy) 4:51 pm 03/15/2021 Weekday PM Peak 2024 Build M. Brandon Shelley, PE

		HCS7	AII-W	ay Sto	ob Coi	ILI OI IN	eport					
General Information					Site In	format	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	5
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	6/14/20	18			East/We	st Street			Oxmooi	r Woods Pk	wy	
Analysis Year	2018				North/S	outh Stree	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.67			
Time Analyzed	AM Pea	k										
Project Description	Lot 5											
Lanes												
			14 1 1 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1	ገተቀነ	<b>711</b> 11							
Vehicle Volume and Adjus	tments											
Approach	1	Eastbound			Westbound			Northboun			Southboun	_
Movement	L	T	R	L	T	R	L	T	R	L	Т	R
Volume	68	42			61	14				5		128
% Thrus in Shared Lane	14	1.2	12	14	12	1.2	14	12	12	14	12	12
Lane	L1	L2 T	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L 101	63		TR						LR 100		-
	101			112						199		
Flow Rate, v (veh/h)	١ ،									1	l	
Percent Heavy Vehicles	2	5		4								
Percent Heavy Vehicles  Departure Headway and S	ervice Ti	me										
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)	ervice Ti	<b>me</b> 3.20		3.20						3.20		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x	3.20 0.090	<b>me</b> 3.20 0.056		3.20						0.176		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)	3.20 0.090 5.57	3.20 0.056 5.12		3.20 0.100 4.61						0.176 4.03		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x	3.20 0.090 5.57 0.157	3.20 0.056 5.12 0.089		3.20 0.100 4.61 0.143						0.176 4.03 0.222		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x  Move-Up Time, m (s)	3.20 0.090 5.57 0.157 2.3	3.20 0.056 5.12 0.089 2.3		3.20 0.100 4.61 0.143 2.0						0.176 4.03 0.222 2.0		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x	3.20 0.090 5.57 0.157 2.3 3.27	3.20 0.056 5.12 0.089 2.3 2.82		3.20 0.100 4.61 0.143						0.176 4.03 0.222		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)	3.20 0.090 5.57 0.157 2.3 3.27	3.20 0.056 5.12 0.089 2.3 2.82		3.20 0.100 4.61 0.143 2.0						0.176 4.03 0.222 2.0		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level	3.20 0.090 5.57 0.157 2.3 3.27	3.20 0.056 5.12 0.089 2.3 2.82		3.20 0.100 4.61 0.143 2.0 2.61						0.176 4.03 0.222 2.0 2.03		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x  Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)	3.20 0.090 5.57 0.157 2.3 3.27 of Servic	3.20 0.056 5.12 0.089 2.3 2.82 e		3.20 0.100 4.61 0.143 2.0 2.61						0.176 4.03 0.222 2.0 2.03		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity	3.20 0.090 5.57 0.157 2.3 3.27 of Servic	3.20 0.056 5.12 0.089 2.3 2.82 e 63 703		3.20 0.100 4.61 0.143 2.0 2.61						0.176 4.03 0.222 2.0 2.03		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh)	3.20 0.090 5.57 0.157 2.3 3.27 of Servic 101 646 0.6	3.20 0.056 5.12 0.089 2.3 2.82 e 63 703 0.3		3.20 0.100 4.61 0.143 2.0 2.61 112 781 0.5						0.176 4.03 0.222 2.0 2.03 199 894 0.8		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	3.20 0.090 5.57 0.157 2.3 3.27 of Servic 101 646 0.6 9.3	3.20 0.056 5.12 0.089 2.3 2.82 e 63 703 0.3 8.3		3.20 0.100 4.61 0.143 2.0 2.61 112 781 0.5 8.4	8.4					0.176 4.03 0.222 2.0 2.03 199 894 0.8 8.2	8.2	
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh) Level of Service, LOS	3.20 0.090 5.57 0.157 2.3 3.27 of Servic 101 646 0.6 9.3	3.20 0.056 5.12 0.089 2.3 2.82 e 63 703 0.3 8.3 A		3.20 0.100 4.61 0.143 2.0 2.61 112 781 0.5 8.4	8.4 A					0.176 4.03 0.222 2.0 2.03 199 894 0.8 8.2	8.2 A	

		HCS7	' All-W	lay Sto	op Cor	itroi K	eport					
General Information					Site In	formati	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	5
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	3/7/202	2			East/We	st Street			Oxmooi	r Woods Pk	wy	
Analysis Year	2024				North/S	outh Street	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.67			
Time Analyzed	AM Pea	k No Build										
Project Description	Lot 5											
Lanes												
			14 + Y + Y	ገ ዛ ቀነ	የተዞሰ	4 <del>↑</del> ↑ ↓						
Vehicle Volume and Adjus												
Approach	_	Eastbound			Westbound			Northboun			Southboun	_
Movement	L	T 42	R	L	T	R	L	T	R	L	T	R
% Thrus in Shared Lane	69	43			62	14				5		131
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	LS	TR	LZ	LJ	LI	LE	LJ	LR	LZ	
Flow Rate, v (veh/h)	103	64		113						203		
Percent Heavy Vehicles	2	5		4						1		
Departure Headway and S												
Departure neadway and 3	ervice 11									2.20		
-	2 20									3.20		
Initial Departure Headway, hd (s)	3.20	3.20		3.20						0.100		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x	0.092	0.057		0.101						0.180		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s)	0.092 5.59	0.057 5.13		0.101 4.62						4.04		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	0.092 5.59 0.160	0.057 5.13 0.092		0.101 4.62 0.146						4.04 0.228		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s)	0.092 5.59 0.160 2.3	0.057 5.13 0.092 2.3		0.101 4.62 0.146 2.0						4.04 0.228 2.0		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	0.092 5.59 0.160 2.3 3.29	0.057 5.13 0.092 2.3 2.83		0.101 4.62 0.146						4.04 0.228		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)	0.092 5.59 0.160 2.3 3.29	0.057 5.13 0.092 2.3 2.83		0.101 4.62 0.146 2.0						4.04 0.228 2.0		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level	0.092 5.59 0.160 2.3 3.29 of Service	0.057 5.13 0.092 2.3 2.83		0.101 4.62 0.146 2.0 2.62						4.04 0.228 2.0 2.04		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)	0.092 5.59 0.160 2.3 3.29 of Service	0.057 5.13 0.092 2.3 2.83 e		0.101 4.62 0.146 2.0 2.62						4.04 0.228 2.0 2.04		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity	0.092 5.59 0.160 2.3 3.29 of Service 103 644	0.057 5.13 0.092 2.3 2.83  e 64 701		0.101 4.62 0.146 2.0 2.62						4.04 0.228 2.0 2.04 203 891		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh)	0.092 5.59 0.160 2.3 3.29 of Service 103 644 0.6	0.057 5.13 0.092 2.3 2.83 e 64 701 0.3		0.101 4.62 0.146 2.0 2.62 113 779 0.5						2.04 2.04 2.04 2.03 891 0.9		
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)	0.092 5.59 0.160 2.3 3.29 of Servic 103 644 0.6 9.3	0.057 5.13 0.092 2.3 2.83 e 64 701 0.3 8.4		0.101 4.62 0.146 2.0 2.62 113 779 0.5 8.4	8.4					203 891 0.9 8.2	8.2	
Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh) Level of Service, LOS	0.092 5.59 0.160 2.3 3.29 of Servic 103 644 0.6 9.3	0.057 5.13 0.092 2.3 2.83 e 64 701 0.3 8.4 A		0.101 4.62 0.146 2.0 2.62 113 779 0.5 8.4	8.4 A					203 891 0.9 8.2	8.2 A	

		HCS7	All-W	lay Sto	op Cor	ntrol R	eport					
General Information					Site In	format	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	5
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	3/7/202	2			East/We	st Street			Oxmooi	r Woods Pk	wy	
Analysis Year	2024				North/S	outh Street	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.67			
Time Analyzed	AM Pea	k Build										
Project Description	Lot 5											
Lanes												
			4 <del>4 4 4 7 1</del> 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ገ ቀ ቀነ	ፖተኮሰ	7 4 4 7 1						
Vehicle Volume and Adjus				ı								
Approach	_	Eastbound			Westbound			Northboun			Southboun	_
Movement	L	T	R	L	T 67	R	L	T	R	L	T	R 121
% Thrus in Shared Lane	69	58			67	14				5		131
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T		TR				LE	- 5	LR	LE	
Flow Rate, v (veh/h)	103	87		121						203		
Percent Heavy Vehicles	2	5		4						1		
Departure Headway and S												
				2.20						2.20		_
Initial Departure Headway, hd (s)	3.20	3.20		3.20						3.20		
Initial Degree of Utilization, x	0.092	0.077		0.107						0.180		
Final Danartura Haadway hd (s)				4.66						0.232		
Final Departure Headway, hd (s)	5.60	5.15										-
Final Degree of Utilization, x	0.160	0.124		0.157								
Final Degree of Utilization, x Move-Up Time, m (s)	0.160 2.3	0.124 2.3		0.157 2.0						2.0		
Final Degree of Utilization, x	0.160 2.3 3.30	0.124 2.3 2.85		0.157								
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)	0.160 2.3 3.30	0.124 2.3 2.85		0.157 2.0						2.0		
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level	0.160 2.3 3.30 of Service	0.124 2.3 2.85		0.157 2.0 2.66						2.0		
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level  Flow Rate, v (veh/h)	0.160 2.3 3.30 of Service	0.124 2.3 2.85 <b>e</b>		0.157 2.0 2.66						2.0 2.11 203		
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level  Flow Rate, v (veh/h)  Capacity	0.160 2.3 3.30 of Service 103 643	0.124 2.3 2.85 <b>e</b> 87 699		0.157 2.0 2.66 121 772						2.0 2.11 203 877		
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level  Flow Rate, v (veh/h)  Capacity  95% Queue Length, Qos (veh)	0.160 2.3 3.30 of Service 103 643 0.6	0.124 2.3 2.85 <b>e</b> 87 699 0.4		0.157 2.0 2.66 121 772 0.6						2.0 2.11 203 877 0.9		
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level  Flow Rate, v (veh/h)  Capacity  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	0.160 2.3 3.30 of Service 103 643 0.6 9.4	0.124 2.3 2.85 <b>e</b> 87 699 0.4 8.6		0.157 2.0 2.66 121 772 0.6 8.5	8.5					2.0 2.11 203 877 0.9 8.3	8.3	
Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level  Flow Rate, v (veh/h)  Capacity  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)  Level of Service, LOS	0.160 2.3 3.30 of Service 103 643 0.6 9.4	0.124 2.3 2.85 <b>e</b> 87 699 0.4 8.6 A		0.157 2.0 2.66 121 772 0.6 8.5	8.5 A					2.0 2.11 203 877 0.9 8.3	8.3 A	

		HCS7	' All-W	ay Sto	op Cor	ilioi K	eport_					
General Information					Site In	format	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	<del></del>
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	6/14/20	18			East/We	st Street			Oxmoo	Woods Pk	wy	
Analysis Year	2018				North/S	outh Street	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.93			
Time Analyzed	PM Peal	<										
Project Description	Lot 5											
Lanes												
			↑ <del>↑ ↑ ↑ ↑</del> ↑ ↑ ↑	ገ ቀ ቀነ	ረተ ኮረ	4 <del>↑</del> ↑ ↓						
Vehicle Volume and Adjus												
Approach	_	Eastbound			Westbound			Vorthboun			Southboun	_
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	150	126			149	19				26		184
% Thrus in Shared Lane	1.1	12	12	1.1	12	1.2	11	12	12	1.1	13	12
Lane	L1	L2 T	L3	L1 TR	L2	L3	L1	L2	L3	L1 LR	L2	L3
Configuration  Flow Rate, v (veh/h)	161	135		181						226		
Percent Heavy Vehicles	0	0		2						1		
										'		
<u> </u>	<b>-:</b>											
Departure Headway and S		_										$\overline{}$
Departure Headway and S Initial Departure Headway, hd (s)	3.20	3.20		3.20						3.20		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x	3.20 0.143	3.20 0.120		0.161						0.201		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s)	3.20 0.143 5.74	3.20 0.120 5.24		0.161 4.90						0.201 4.56		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	3.20 0.143 5.74 0.257	3.20 0.120 5.24 0.197		0.161 4.90 0.246						0.201 4.56 0.286		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s)	3.20 0.143 5.74 0.257 2.3	3.20 0.120 5.24 0.197 2.3		0.161 4.90 0.246 2.0						0.201 4.56 0.286 2.0		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	3.20 0.143 5.74 0.257 2.3 3.44	3.20 0.120 5.24 0.197 2.3 2.94		0.161 4.90 0.246						0.201 4.56 0.286		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)	3.20 0.143 5.74 0.257 2.3 3.44	3.20 0.120 5.24 0.197 2.3 2.94		0.161 4.90 0.246 2.0						0.201 4.56 0.286 2.0		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level	3.20 0.143 5.74 0.257 2.3 3.44 of Service	3.20 0.120 5.24 0.197 2.3 2.94		0.161 4.90 0.246 2.0 2.90						0.201 4.56 0.286 2.0 2.56		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h)	3.20 0.143 5.74 0.257 2.3 3.44 of Service	3.20 0.120 5.24 0.197 2.3 2.94 e		0.161 4.90 0.246 2.0 2.90						0.201 4.56 0.286 2.0 2.56		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity	3.20 0.143 5.74 0.257 2.3 3.44 of Servic 161 627	3.20 0.120 5.24 0.197 2.3 2.94 e 135		0.161 4.90 0.246 2.0 2.90						0.201 4.56 0.286 2.0 2.56		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh)	3.20 0.143 5.74 0.257 2.3 3.44 of Service 161 627 1.0	3.20 0.120 5.24 0.197 2.3 2.94 e 135 687 0.7		0.161 4.90 0.246 2.0 2.90 181 734						0.201 4.56 0.286 2.0 2.56 226 789		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)	3.20 0.143 5.74 0.257 2.3 3.44  of Service 161 627 1.0 10.4	3.20 0.120 5.24 0.197 2.3 2.94  e  135 687 0.7 9.2		0.161 4.90 0.246 2.0 2.90 181 734 1.0	9.5					0.201 4.56 0.286 2.0 2.56 226 789 1.2	9.4	
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity 95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh) Level of Service, LOS	3.20 0.143 5.74 0.257 2.3 3.44  of Service 161 627 1.0 10.4	3.20 0.120 5.24 0.197 2.3 2.94  e  135 687 0.7 9.2 A		0.161 4.90 0.246 2.0 2.90 181 734 1.0	9.5 A					0.201 4.56 0.286 2.0 2.56 226 789 1.2	9.4 A	

		HCS7	All-V	ay Sil	op Coi	ILIOIR	eport_					
General Information					Site In	format	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	5
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	3/7/202	2			East/We	st Street			Oxmooi	r Woods Pk	wy	
Analysis Year	2024				North/S	outh Street	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.93			
Time Analyzed	PM Peal	k No Build										
Project Description	Lot 5											
Lanes												
			4 <del>4 4 4 7 1</del> 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ገ ዛ ቀነ	የተዋሰ	4 4 4 4 4 4 4 4 4 7						
Vehicle Volume and Adjus												
Approach	_	Eastbound			Westbound			Vorthboun			Southboun	_
Movement	L	T 120	R	L	T 452	R	L	T	R	L	T	R 100
% Thrus in Shared Lane	155	129			153	19				26		190
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	LS	TR	LZ	LJ	LI	LZ	LS	LR	LZ	LJ
	167	139		185						232		
	107	133								1		
Flow Rate, v (veh/h)	0	lο		1 2								
Percent Heavy Vehicles	0	0		2								
Percent Heavy Vehicles  Departure Headway and S	ervice Ti	me								2.20		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)	ervice Ti	<b>me</b> 3.20		3.20						3.20		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x	3.20 0.148	<b>me</b> 3.20 0.123		3.20 0.164						0.206		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)	3.20 0.148 5.77	3.20 0.123 5.27		3.20 0.164 4.94						0.206 4.59		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x	3.20 0.148 5.77 0.267	3.20 0.123 5.27 0.203		3.20 0.164 4.94 0.254						0.206 4.59 0.296		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x  Move-Up Time, m (s)	3.20 0.148 5.77 0.267 2.3	3.20 0.123 5.27 0.203 2.3		3.20 0.164 4.94 0.254 2.0						0.206 4.59 0.296 2.0		
Percent Heavy Vehicles  Departure Headway and S  Initial Departure Headway, hd (s)  Initial Degree of Utilization, x  Final Departure Headway, hd (s)  Final Degree of Utilization, x	3.20 0.148 5.77 0.267 2.3 3.47	3.20 0.123 5.27 0.203 2.3 2.97		3.20 0.164 4.94 0.254						0.206 4.59 0.296		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)	3.20 0.148 5.77 0.267 2.3 3.47	3.20 0.123 5.27 0.203 2.3 2.97		3.20 0.164 4.94 0.254 2.0						0.206 4.59 0.296 2.0		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level	3.20 0.148 5.77 0.267 2.3 3.47	me 3.20 0.123 5.27 0.203 2.3 2.97		3.20 0.164 4.94 0.254 2.0 2.94						0.206 4.59 0.296 2.0 2.59		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x  Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s)  Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)	3.20 0.148 5.77 0.267 2.3 3.47 of Service	3.20 0.123 5.27 0.203 2.3 2.97 e		3.20 0.164 4.94 0.254 2.0 2.94						0.206 4.59 0.296 2.0 2.59		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity	3.20 0.148 5.77 0.267 2.3 3.47 of Service 167 624	3.20 0.123 5.27 0.203 2.3 2.97 e 139 683		3.20 0.164 4.94 0.254 2.0 2.94						0.206 4.59 0.296 2.0 2.59 232 784		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh)	3.20 0.148 5.77 0.267 2.3 3.47 of Service 167 624 1.1	3.20 0.123 5.27 0.203 2.3 2.97 e 139 683 0.8		3.20 0.164 4.94 0.254 2.0 2.94 185 729						0.206 4.59 0.296 2.0 2.59 232 784 1.2		
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)	3.20 0.148 5.77 0.267 2.3 3.47 of Servic 167 624 1.1 10.6	3.20 0.123 5.27 0.203 2.3 2.97 e 139 683 0.8 9.3		3.20 0.164 4.94 0.254 2.0 2.94 185 729 1.0 9.6	9.6					0.206 4.59 0.296 2.0 2.59 232 784 1.2 9.5	9.5	
Percent Heavy Vehicles  Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x  Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity 95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)  Level of Service, LOS	3.20 0.148 5.77 0.267 2.3 3.47 of Servic 167 624 1.1 10.6	3.20 0.123 5.27 0.203 2.3 2.97  e 139 683 0.8 9.3 A		3.20 0.164 4.94 0.254 2.0 2.94 185 729 1.0 9.6	9.6 A					0.206 4.59 0.296 2.0 2.59 232 784 1.2 9.5	9.5 A	

		HCS7	' All-W	ay Sto	op Coi	ILI OI K	eport					
General Information					Site In	format	ion					
Analyst	Diane Z	immerman			Intersec	tion			Lyndon	Ln at Oxmo	oor Woods	5
Agency/Co.	Diane B	. Zimmerm	an Traffic E	ngineeri	Jurisdict	ion						
Date Performed	3/7/202	2			East/We	st Street			Oxmooi	r Woods Pk	wy	
Analysis Year	2024				North/S	outh Stree	t		Lyndon	Lane		
Analysis Time Period (hrs)	0.25				Peak Ho	ur Factor			0.93			
Time Analyzed	PM Peal	k Build										
Project Description	Lot 5											
Lanes												
			14 + Y + Y	ገ ላ ቀነ	ሃተ የሰ	7 4 4 7 7 4 4 7 4 4 4 4 4 4 4 4 4 4 4 4						
Vehicle Volume and Adjus				ı								
Approach	_	Eastbound			Westbound			Vorthboun			Southboun	_
Movement	L	T 120	R	L	T 100	R	L	T	R	L	T	R 100
% Thrus in Shared Lane	155	138			169	19				26		190
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	LS	TR	LZ	LJ	LI	LZ	LS	LR	LZ	
Flow Rate, v (veh/h)	167	148		202						232		
Percent Heavy Vehicles	0	0		2						1		
										<u>'</u>		
<u> </u>	orvico Ti											
Departure Headway and S		_		2 20						2.20		
Departure Headway and S Initial Departure Headway, hd (s)	3.20	3.20		3.20						3.20		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x	3.20 0.148	3.20 0.132		0.180						0.206		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s)	3.20 0.148 5.80	3.20 0.132 5.29		0.180 4.96						0.206 4.65		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	3.20 0.148 5.80 0.268	3.20 0.132 5.29 0.218		0.180 4.96 0.279						0.206 4.65 0.300		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s)	3.20 0.148 5.80 0.268 2.3	3.20 0.132 5.29 0.218 2.3		0.180 4.96 0.279 2.0						0.206 4.65 0.300 2.0		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x	3.20 0.148 5.80 0.268 2.3 3.50	3.20 0.132 5.29 0.218 2.3 2.99		0.180 4.96 0.279						0.206 4.65 0.300		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)	3.20 0.148 5.80 0.268 2.3 3.50	3.20 0.132 5.29 0.218 2.3 2.99		0.180 4.96 0.279 2.0						0.206 4.65 0.300 2.0		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level	3.20 0.148 5.80 0.268 2.3 3.50 of Service	3.20 0.132 5.29 0.218 2.3 2.99		0.180 4.96 0.279 2.0 2.96						0.206 4.65 0.300 2.0 2.65		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h)	3.20 0.148 5.80 0.268 2.3 3.50 of Service 167	3.20 0.132 5.29 0.218 2.3 2.99 e		0.180 4.96 0.279 2.0 2.96						0.206 4.65 0.300 2.0 2.65		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity	3.20 0.148 5.80 0.268 2.3 3.50 of Servic 167 621	3.20 0.132 5.29 0.218 2.3 2.99 e 148 680		0.180 4.96 0.279 2.0 2.96						0.206 4.65 0.300 2.0 2.65		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh)	3.20 0.148 5.80 0.268 2.3 3.50 of Service 167 621 1.1	3.20 0.132 5.29 0.218 2.3 2.99 e 148 680 0.8		0.180 4.96 0.279 2.0 2.96						0.206 4.65 0.300 2.0 2.65 232 774 1.3		
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s) Capacity, Delay and Level Flow Rate, v (veh/h) Capacity 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)	3.20 0.148 5.80 0.268 2.3 3.50 of Service 167 621 1.1 10.6	3.20 0.132 5.29 0.218 2.3 2.99 e 148 680 0.8 9.5		0.180 4.96 0.279 2.0 2.96 202 725 1.1	9.9					0.206 4.65 0.300 2.0 2.65 232 774 1.3 9.6	9.6	
Departure Headway and S Initial Departure Headway, hd (s) Initial Degree of Utilization, x Final Departure Headway, hd (s) Final Degree of Utilization, x Move-Up Time, m (s) Service Time, ts (s)  Capacity, Delay and Level Flow Rate, v (veh/h)  Capacity 95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh) Level of Service, LOS	3.20 0.148 5.80 0.268 2.3 3.50 of Service 167 621 1.1 10.6	3.20 0.132 5.29 0.218 2.3 2.99 e 148 680 0.8 9.5 A		0.180 4.96 0.279 2.0 2.96 202 725 1.1	9.9 A					0.206 4.65 0.300 2.0 2.65 232 774 1.3 9.6	9.6 A	

		Н	CS7	Two-	-Way	' Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	1						
Analyst	DBZ						Inters	ection			Christ	ian Way	at Sears	Ro		
Agency/Co.	Diane	B Zimm	nerman 1	Fraffic En	gineerin	ıq	Jurisc	liction								
Date Performed	3/7/2	022					East/	Nest Stre	eet		Sears	Road				
Analysis Year	2018						North	/South S	Street		Christ	ian Way	,			
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.63					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	Lot 5															
Lanes																
				1447477		11	1 1 1	7 4 4 4 4 4								
Vehicle Volumes and Adj	ustme	nts			,											
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	2	0	0	0	2	0
Configuration		L		R						L	Т	TR			Т	TF
Volume (veh/h)		22		25					0	41	161	0			74	1
Percent Heavy Vehicles (%)		5		12					0	2						L
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized		N	lo													
Median Type   Storage				Left	Only								1			
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		7.5		6.9						4.1						П
Critical Headway (sec)		7.60		7.14						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.55		3.42						2.22						
Delay, Queue Length, and	Leve		ervice	_												
Flow Rate, v (veh/h)		35		40						65						
Capacity, c (veh/h)		576		951						1447						
v/c Ratio	_	0.06		0.04		_				0.04				_		
95% Queue Length, Q <sub>95</sub> (veh)		0.2		0.1						0.1						
Control Delay (s/veh)		11.7		9.0						7.6						
Level of Service (LOS)		В		A						А						
Approach Delay (s/veh)		10	).2							1	.5					
Approach LOS			В													

		Н	CS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inform	natio	1						_
Analyst	DBZ						Inters	ection			Christ	tian Way	at Sears	s Ro		_
Agency/Co.	Diane '	B Zimm	erman 1	Fraffic En	gineerin	ıg	Jurisc	liction								
Date Performed	3/7/20					-	East/	West Str	eet		Sears	Road				
Analysis Year	2024						North	n/South	Street		Christ	tian Way	,			
Time Analyzed	AM Pe	ak No E	Build				Peak	Hour Fa	tor		0.63					
Intersection Orientation	North-	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	Lot 5															
Lanes																
				744444 7		ን ተ <b>ተ ቀ</b> ሦ r Street: No	1 1 1	4 ↓ ↓ ↓								
Vehicle Volumes and Ad	justmen	nts														
Approach	<del></del>	Eastb	ound			West	bound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	T	F
Priority	$\bot$	10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes	$\perp$	1	0	1		0	0	0	0	1	2	0	0	0	2	(
Configuration	+	L		R						L	T	TR			T	T
Volume (veh/h)	+	23		25					0	43	163	0		_	75	1
Percent Heavy Vehicles (%)	+	5		12					0	2						L
Proportion Time Blocked	+															
Percent Grade (%)	+		)													
Right Turn Channelized	+	N	lo													
Median Type   Storage				Left	Only								1			_
Critical and Follow-up H	eadway	/S														_
Base Critical Headway (sec)	$\bot$	7.5		6.9						4.1						╙
Critical Headway (sec)	$\perp$	7.60		7.14						4.14				_	_	
Base Follow-Up Headway (sec)	+	3.5		3.3						2.2						╙
Follow-Up Headway (sec)		3.55		3.42						2.22						L
	d Level	of Se	ervice	•												
Delay, Queue Length, an				40						68						П
Delay, Queue Length, an		37								1434						
•		566		943						0.05						
Flow Rate, v (veh/h)				943 0.04				<u></u>		0.05						
Flow Rate, v (veh/h) Capacity, c (veh/h)		566		_						0.1						
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		566 0.06		0.04						_						
Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Qos (veh)		566 0.06 0.2		0.04						0.1						
Flow Rate, v (veh/h)  Capacity, c (veh/h)  v/c Ratio  95% Queue Length, Q <sub>95</sub> (veh)  Control Delay (s/veh)		566 0.06 0.2 11.8 B	0.3	0.04 0.1 9.0						0.1 7.6 A	.6					

		Н	CS7	Two-	Way	Stop	o-Coi	ntrol	Rep	ort						
General Information							Site	Inforn	natio	1						_
Analyst	DBZ						Inters	ection			Christ	ian Way	at Sears	Ro		
Agency/Co.	Diane	B Zimm	erman 1	Fraffic En	aineerin	a	Jurisd	iction								
Date Performed	3/7/2						East/\	West Stre	et		Sears	Road				
Analysis Year	2024						_	/South S			Christ	ian Way				
Time Analyzed	-	eak Build	1					Hour Fac			0.63					
Intersection Orientation	_	n-South					_	sis Time		hrs)	0.25					
Project Description	Lot 5	· boutin					7 11 1011	JID TIMIC	· ciioa (		0,25					
Lanes	2010															
				14444 F.C	ากา	1 1 1 1 4 Y	<b>)</b>	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓								
Vehicle Volumes and Adj	ustme				Major	r Street: Nor	th-South									
Approach	$\perp$		ound				oound			North					bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	$\vdash$	10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes	$\vdash$	1	0	1		0	1	0	0	1	2	0	0	1	2	0
Configuration	$\vdash$	L		R			LR			L	T	TR		L	T	TF
Volume (veh/h)	$\vdash$	23		25		15		84	0	43	163	5	0	26	75	17
Percent Heavy Vehicles (%)	$\perp$	5		12		0		0	0	2			3	0		
Proportion Time Blocked			$\overline{}$					$\overline{}$								
Proportion Time Blocked Percent Grade (%)			0				0									
<u> </u>			lo			(	)									
Percent Grade (%)				Left	Only	(	0					1	1			
Percent Grade (%) Right Turn Channelized	eadwa:	٨		Left	Only		0					1	1			
Percent Grade (%) Right Turn Channelized Median Type   Storage	eadwa	٨		Left	Only	7.5	0	6.9		4.1		1	1	4.1		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up He	eadwa	ys			Only		0	6.9		4.1 4.14				4.1		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho Base Critical Headway (sec)	eadwa	<b>ys</b> 7.5		6.9	Only	7.5	0	$\vdash$								
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho Base Critical Headway (sec)  Critical Headway (sec)	eadwa	<b>ys</b> 7.5 7.60		6.9 7.14	Only	7.5 7.50		6.90		4.14				4.10		
Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up Ho  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)		7.5 7.60 3.5 3.55	lo	6.9 7.14 3.3 3.42	Only	7.5 7.50 3.5		6.90 3.3		4.14 2.2				4.10 2.2		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		7.5 7.60 3.5 3.55	lo	6.9 7.14 3.3 3.42	Only	7.5 7.50 3.5	157	6.90 3.3		4.14 2.2				4.10 2.2		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, and		ys 7.5 7.60 3.5 3.55 I of Se	lo	6.9 7.14 3.3 3.42	Only	7.5 7.50 3.5		6.90 3.3		4.14 2.2 2.22				4.10 2.2 2.20		
Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up Ho Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)  Delay, Queue Length, and		7.5 7.60 3.5 3.55 1 of Se	lo	6.9 7.14 3.3 3.42 40	Only	7.5 7.50 3.5	157	6.90 3.3		4.14 2.2 2.22 68				4.10 2.2 2.20		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho 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 7.60 3.5 3.55 1 of Se 37	lo	6.9 7.14 3.3 3.42 40 943	Only	7.5 7.50 3.5	157	6.90 3.3		4.14 2.2 2.22 68 1434				4.10 2.2 2.20 41 1309		
Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up Ho 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)		7.5 7.60 3.5 3.55 1 of Se 37 440 0.08 0.3	lo	6.9 7.14 3.3 3.42 40 943 0.04	Only	7.5 7.50 3.5	157 786 0.20	6.90 3.3		4.14 2.2 2.22 68 1434 0.05				4.10 2.2 2.20 41 1309 0.03		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho 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 7.60 3.5 3.55 1 of Se 37 440 0.08 0.3	lo	6.9 7.14 3.3 3.42 40 943 0.04 0.1 9.0	Only	7.5 7.50 3.5	157 786 0.20 0.7 10.7	6.90 3.3		4.14 2.2 2.22 68 1434 0.05 0.1 7.6				4.10 2.2 2.20 41 1309 0.03 0.1 7.8		
Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up Ho 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)		7.5 7.60 3.5 3.55 I of Se 37 440 0.08 0.3 13.9 B	lo	6.9 7.14 3.3 3.42 40 943 0.04 0.1	Only	7.5 7.50 3.5 3.50	157 786 0.20 0.7	6.90 3.3		4.14 2.2 2.22 68 1434 0.05 0.1 7.6	.66			4.10 2.2 2.20 41 1309 0.03 0.1 7.8 A	.7	

Sears AM 24 B.xtw

		Н	CS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Christ	ian Way	at Sears	Ro		
Agency/Co.	Diane	B Zimm	erman 1	Traffic En	gineerin	g	Juriso	liction								
Date Performed	3/7/20	)22					East/	Nest Str	eet		Sears	Road				
Analysis Year	2018						North	/South	Street		Christ	ian Way	,			
Time Analyzed	PM Pe	ak					Peak	Hour Fac	tor		0.73					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	Lot 5															
Lanes																
				144444 1		기수 작 수 Y r Street: Nor	1 1 1	4 + 14 + 1								
Vehicle Volumes and Ad	justmer	nts														
Approach	$\bot$	Eastb	ound			Westl	bound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	Т	F
Priority	$\bot$	10	11	12		7	8	9	1U	1	2	3	4U	4	5	-
Number of Lanes	+	1	0	1		0	0	0	0	1	2	0	0	0	2	(
Configuration	+	L		R						L	T	TR			T	T
Volume (veh/h)	+	40		69					0	93	244	0			205	6
Percent Heavy Vehicles (%)	+	8		0					0	1						
Proportion Time Blocked	+		<u></u>													
Percent Grade (%)	+															
Right Turn Channelized	+-	- N	lo	Loft	Only								1			
Median Type   Storage				цеп	Only								1			
Critical and Follow-up H	leadway															_
Base Critical Headway (sec)	+	7.5		6.9			_			4.1						┡
Critical Headway (sec)	+	7.65		6.90						4.12						
Base Follow-Up Headway (sec)	+	3.5		3.3						2.2						⊢
Follow-Up Headway (sec)		3.58		3.30						2.21						L
Delay, Queue Length, an	ıd Level	of Se	ervice													
Flow Rate, v (veh/h)		55		95						127						L
Capacity, c (veh/h)		377		830						1190						
v/c Ratio		0.15		0.11						0.11						
95% Queue Length, Q <sub>95</sub> (veh)		0.5		0.4						0.4						
Control Delay (s/veh)	$\perp$	16.2		9.9						8.4						$\perp$
1 1 60 : (100)		С		А						А						
Level of Service (LOS)										_						
Approach Delay (s/veh) Approach LOS			2.2							- 2	3					

		Н	CS7	Two-	-Way	Sto	р-Со	ntrol	Rep	ort						
General Information							Site	Inform	natio	1						_
Analyst	DBZ						Inters	ection			Christ	ian Way	at Sears	Ro		
Agency/Co.	Diane	B Zimm	erman 1	Traffic En	gineerin	g	Juriso	liction								
Date Performed	3/7/20	)22					East/	West Str	eet		Sears	Road				
Analysis Year	2024						North	n/South :	Street		Christ	tian Way	,			
Time Analyzed	PM Pe	ak No E	Build				Peak	Hour Fa	tor		0.73					
Intersection Orientation	North-	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	Lot 5															
Lanes																
				744747		ን ተ ተ ቀ ሦ r Street: No	1 1 1	4 4 4 5 5 7								
Vehicle Volumes and Ad	justmer	nts														
Approach	<del>                                     </del>	Eastb	ound			West	bound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	$\bot$	10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes	+	1	0	1		0	0	0	0	1	2	0	0	0	2	-
Configuration	+	L		R						L	T	TR			T	TI
Volume (veh/h)	+	61		73					0	97	250	0			209	8
Percent Heavy Vehicles (%)	+	8		0					0	1						
Proportion Time Blocked	+															
Percent Grade (%)	+															
Right Turn Channelized	+-	- N	lo	1 - 64	Ombo								1			
Median Type   Storage				Lеπ	Only								1			
Critical and Follow-up H	leadway															_
Base Critical Headway (sec)	+	7.5		6.9						4.1						┡
Critical Headway (sec)	+	7.65		6.90			-			4.12						
Base Follow-Up Headway (sec)	+	3.5		3.3						2.2						⊢
Follow-Up Headway (sec)	1 1	3.58	<u> </u>	3.30						2.21						_
Delay, Queue Length, ar	id Level	of Se	ervice													_
Flow Rate, v (veh/h)	$\bot$	84		100						133						╙
Capacity, c (veh/h)	$\bot$	362		810						1156						
v/c Ratio	$\perp$	0.23		0.12						0.11						
95% Queue Length, Q <sub>95</sub> (veh)	+	0.9		0.4						0.4						
	$\bot$	17.9		10.1						8.5						
Control Delay (s/veh)		С		В						Α						
Level of Service (LOS)	+															
• • • • • • • • • • • • • • • • • • • •		13	3.6							2	.4					

		Н	CS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	1						_
Analyst	DBZ						Inters	ection			Christ	ian Way	at Sears	Ro		
Agency/Co.	Diane	B Zimm	erman 1	raffic En	gineerin	ıg	Juriso	liction								
Date Performed	3/7/2						East/	West Stre	et		Sears	Road				
Analysis Year	2024						_	n/South S			Christ	tian Way	,			
Time Analyzed	PM Pe	eak Build	i				Peak	Hour Fac	tor		0.73					
Intersection Orientation	+	-South					Analy	sis Time	Period (	hrs)	0.25					
Project Description	Lot 5															
Lanes																
				744X44C		1 † 1	1 1 1	4 + A + C								
Vehicle Volumes and Adj	justme	nts			iviajo	T Select 1401	u-30001									
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		L		R			LR			L	T	TR		L	T	TF
Volume (veh/h)		61		73		9		54	0	97	250	16	0	90	209	88
Percent Heavy Vehicles (%)		8		0		0		0	0	1			3	0		
Proportion Time Blocked																
Percent Grade (%)	$\bot$	(	)				0									
Right Turn Channelized	$\bot$	N	lo													
Median Type   Storage				Left	Only								1			
Critical and Follow-up H	eadway	ys														
Base Critical Headway (sec)		7.5		6.9		7.5		6.9		4.1				4.1		
Critical Headway (sec)		7.65		6.90		7.50		6.90		4.12				4.10		
Base Follow-Up Headway (sec)		3.5		3.3		3.5		3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58		3.30		3.50		3.30		2.21				2.20		
Delay, Queue Length, an	d Leve	of Se	ervice													
Flow Rate, v (veh/h)		84		100			86			133				123		
Capacity, c (veh/h)		225		810			612			1156				1205		
v/c Ratio		0.37		0.12			0.14			0.11				0.10		
95% Queue Length, Q <sub>95</sub> (veh)		1.6		0.4			0.5			0.4				0.3		
Control Delay (s/veh)		30.1		10.1			11.8			8.5				8.3		
Control Delay (5) verily	_									<u> </u>						
Level of Service (LOS)		D		В			В			Α				A		
• • • • • • • • • • • • • • • • • • • •	+		9.2	В		1.	1.8				.3				.9	