<u>inal report</u>

August 4, 2022 Revised January 4, 2023

Traffic Impact Study

3500 Lees Lane Louisville, KY

Prepared for

Louisville Metro Planning Commission Kentucky Transportation Cabinet



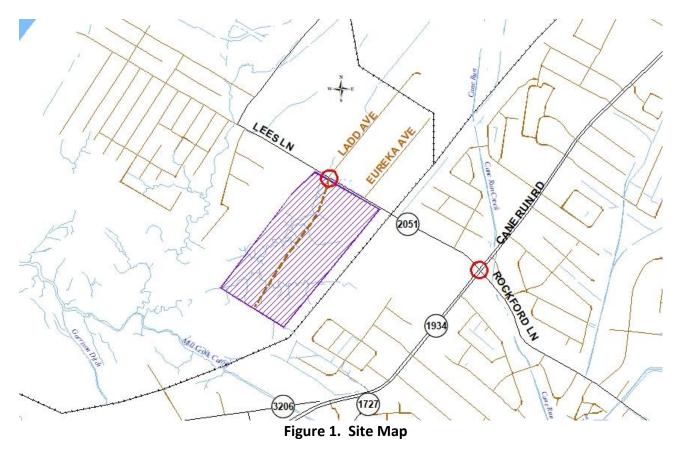


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INTRODUCTION

The development plan for an apartment community on Lees Lane in Louisville, KY shows 312 apartment units. Figure 1 displays a map of the site. Access to the community will be from two entrances on Ladd Avenue (extension) and one on Lees Lane. 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 Lees Lane with Cane Run Road and Ladd Avenue.



EXISTING CONDITIONS

Lees Lane, KY 2051, is maintained by the Kentucky Transportation Cabinet (KYTC) with an estimated 2022 ADT of 5,700 vehicles per day west of Cane Run Road as estimated from a 2019 count at KYTC station 852. The road is a two-lane highway with ten-foot lanes with three-foot shoulders through the study area (provided by the Kentucky Transportation Cabinet). The speed limit is 35 mph. There are no sidewalks. The intersection at Ladd Avenue is controlled with a stop sign on Ladd Avenue. The intersection with Cane Run Road is controlled with a traffic signal. At the intersection Lees Lane has a shared left/thru lane and a shared thru/right lane. There are dedicated left turn lanes on Cane Run Road.

Peak hour traffic count for the intersections were obtained on March 9, 2022. The a.m. peak was 7:00 to 8:00 and the p.m. peak hour varied. Figure 2 illustrates the existing a.m. and p.m. peak hour traffic volumes. The Appendix contains the full count data.

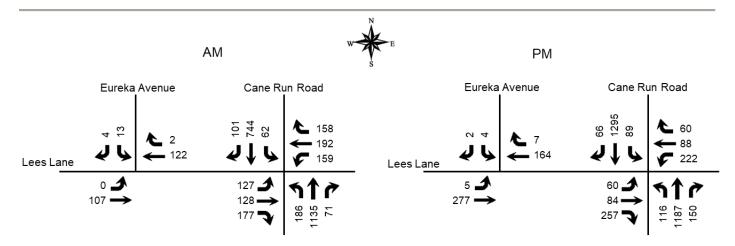


Figure 2. Existing Peak Hour Volumes

FUTURE CONDITIONS

The projected completion year for this development is 2025. To predict traffic conditions in 2025, 2.6 percent annual growth in traffic was applied to Lees Lane west of the railroad track. This growth is based upon a review of the historical count data at the KYTC count station 852. Volumes on Cane Run Road were increased by 0.5 percent annual growth based upon a review of KYTC station 664. The Kentucky Transportation Cabinet has a project to improve the approaches of Lees Lane an Rockford Lane to provide dedicated left turn lanes. This project will be completed in 2023. Figure 3 illustrates the 2025 traffic volumes without the development.

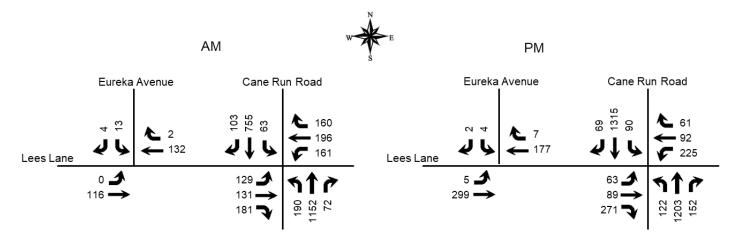


Figure 3. 2025 Peak Hour No Build Volumes

TRIP GENERATION

The Institute of Transportation Engineers Trip Generation Manual, 11th Edition contains trip generation rates for a wide range of developments. The land use of "Multifamily Housing Low-Rise (220)" was reviewed and determined to be the best match. The trip generation results are listed in Table 1. The trips were assigned to the highway network

with the percentages shown in Figure 4. Figure 5 shows the trips generated by this development and distributed throughout the road network during the peak hours. Figure 6 displays the individual turning movements for the peak hours when the development is completed.

Table 1. Peak Hour Trips Generated by Site

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

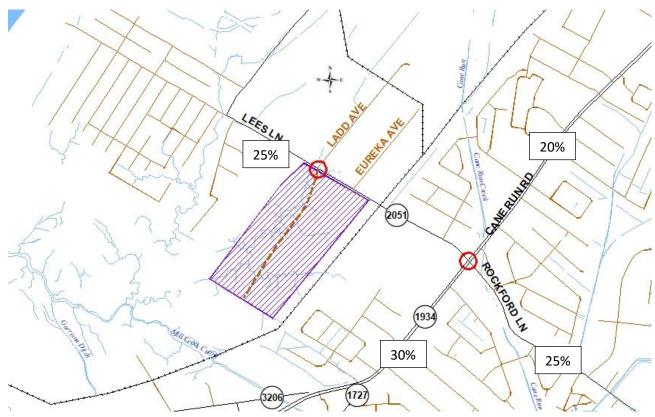


Figure 4. Trip Distribution Percentages

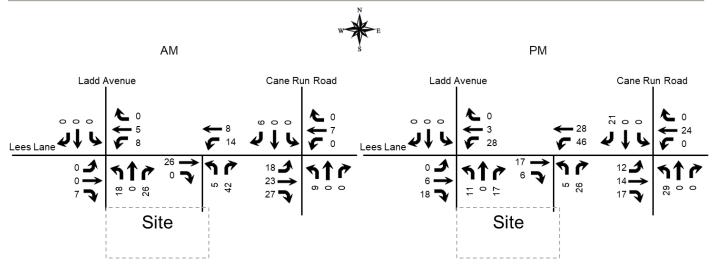


Figure 5. Peak Hour Trips Generated by Site

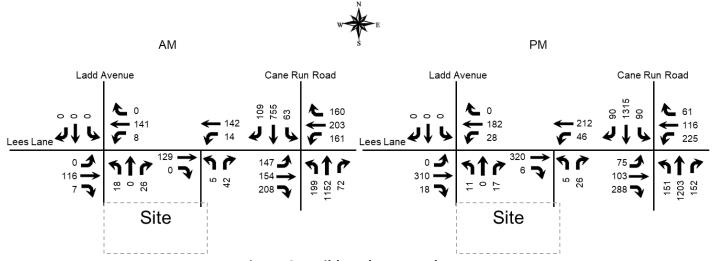


Figure 6. Build Peak Hour Volumes

ANALYSIS

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

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the <u>Highway Capacity Manual</u>, 7th edition. Future delays and Level of Service were determined for the intersections using the HCS Streets and TWSC (version 2022) software. The delays and Level of Service are summarized in **Table 2**.

Table 2. Peak Hour Level of Service

		A.M.			P.M.	
Approach	2022 Existing	2025 No Build	2025 Build	2022 Existing	2025 No Build	2025 Build
Lees Lane at Ladd Avenue						
Lees Lane Westbound (left)			Α			Α
			7.5			8.0
Ladd Avenue Northbound			Α			В
			9.8			11.6
Lees Lane at Entrance						
Lees Lane Westbound (left)			Α			Α
			7.5			8.1
Entrance Northbound			Α			В
			9.4			11.1
Cane Run Road at Lees Lane	E	D	D	D	D	D
Carle Kuri Koau at Lees Larie	61.0	48.7	50.9	52.6	35.8	33.8
Lees Lane Eastbound	F	D	D	F	С	С
	82.6	54.5	53.8	86.6	34.8	36.3
Rockford Lane Westbound	Е	Е	E	F	E	E
	79.0	69.4	69.3	93.4	69.6	68.8
Cane Run Road Northbound	D	D	D	D	С	D
	52.3	42.5	45.4	45.6	33.2	37.9
Cane Run Road Southbound	D	D	D	D	C	С
	54.0	44.4	47.7	41.2	30.1	32.3

Key: Level of Service, Delay in seconds per vehicle

The entrance on Lees Lane was evaluated for turn lanes using the Kentucky Transportation Cabinet Highway Design Guidance Manual dated July, 2020. The traffic impact policy requires using volumes for ten years beyond opening date, or 2035. The 2035 volumes were determined by using 2.6% annual growth from the 2022 volumes on Lees Lane west of the railroad track and 0.5% annual growth on Cane Run Road. Figure 7 is the 2035 No Build and Figure 8 is the Build. The volumes in Figure 8 were utilized to determine turn lane requirements. Neither entrance meets the volume warrants for installing turn lanes. Table 3 displays the level of service results for 2035.

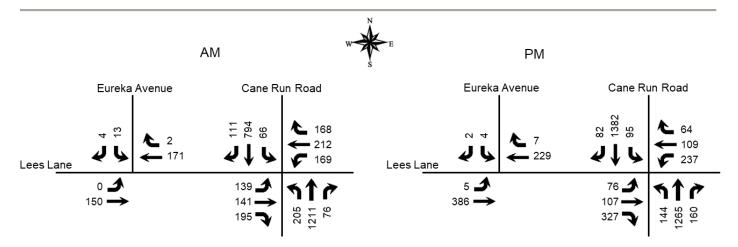


Figure 7. 2035 No Build Peak Hour Volumes

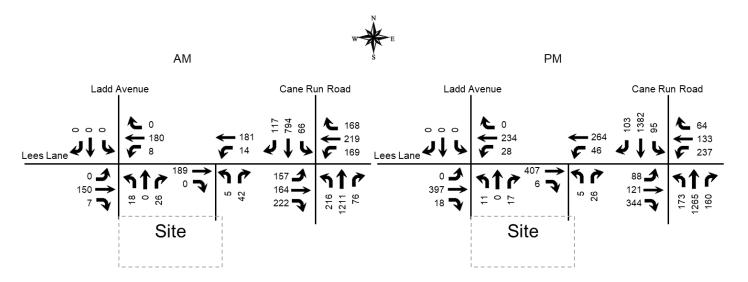


Figure 8. 2035 Build Peak Hour Volumes

Table 3. Peak Hour Level of Service

		A.M.	P.M.						
Approach	2022	2035	2035	2022	2035	2035			
присает	Existing	No Build	Build	Existing	No Build	Build			
Lees Lane at Ladd Avenue									
Lees Lane Westbound (left)			Α			Α			
			7.6			8.3			
Ladd Avenue Northbound			В			В			
			10.3			12.8			

		A.M.			P.M.	
Approach	2022	2035	2035	2022	2035	2035
	Existing	No Build	Build	Existing	No Build	Build
Lees Lane at Entrance						
Lees Lane Westbound (left)			A 7.7			A 8.3
Entrance Northbound			A 9.9			B 12.1
Cane Run Road at Lees Lane	E	D	E	D	D	D
	61.0	53.7	56.5	52.6	42.8	46.6
Lees Lane Eastbound	F	D	D	F	D	D
	82.6	52.7	53.0	86.6	36.0	34.3
Rockford Lane Westbound	E	E	E	F	E	E
	79.0	69.7	70.1	93.4	64.8	66.3
Cane Run Road Northbound	D	D	D	D	D	D
	52.3	50.2	54.2	45.6	43.8	45.9
Cane Run Road Southbound	D	D	D	D	D	D
	54.0	51.0	54.8	41.2	37.8	45.8

Key: Level of Service, Delay in seconds per vehicle

CONCLUSIONS

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2025 and 2035, there will be an impact to the existing highway network, with Levels of Service remaining within acceptable ranges. Turn lanes are not required at the entrances.

APPENDIX

Traffic Counts

Marr Traffic DATA COLLECTION

www.marrtraffic.com

Site 1 of 2

Louisville, KY

Eureka Ave Less Ln (West) Less Ln (East) Date

Wednesday, March 9, 2022

Weather
Wintry Mix
42°F

Lat/Long

38.187205°, -85.862197°

0700 - 0900 (Weekday 2h Session) (03-09-2022)

All vehicles

TIME
0700 - 0715
0715 - 0730
0730 - 0745
0745 - 0800
Hourly Total
0800 - 0815
0815 - 0830
0830 - 0845
0845 - 0900
Hourly Total
Grand Total
Approach %
Intersection %
PHF

	So	uthbou	nd			Ea	astbour	ıd			W	estbou	nd		
	E	ureka Av	ve			Les	s Ln (W	est)			Les	s Ln (Ea	ıst)		
Left		Right	U-Turn	App	Left	Thru		U-Turn	App		Thru	Right	U-Turn	App	Int
1.1		1.2	1.3	Total	1.4	1.5		1.6	Total		1.7	1.8	1.9	Total	Total
3		0	0	3	0	39		0	39		29	1	0	30	72
2		1	0	3	0	31		0	31		36	0	0	36	70
5		2	0	7	0	25		0	25		29	1	0	30	62
3		1	0	4	0	12		0	12		28	0	0	28	44
13		4	0	17	0	107		0	107	1	122	2	0	124	248
2		0	0	2	0	23		0	23		29	2	0	31	56
2		0	0	2	0	31		0	31	1	14	0	0	14	47
3		1	0	4	0	33		0	33		22	2	0	24	61
0		0	0	0	0	27		0	27		34	1	0	35	62
7		1	0	8	0	114		0	114	1	99	5	0	104	226
	,	•													
20		5	0	25	0	221		0	221	l	221	7	0	228	474
80.00		20.00	0.00	-	0.00	100.00		0.00	-	1	96.93	3.07	0.00	-	
4.22		1.05	0.00	5.27	0.00	46.62		0.00	46.62		46.62	1.48	0.00	48.10	
	•	,	•							1			•		
0.65		0.50	0.00	0.61	0.00	0.69		0.00	0.69		0.85	0.50	0.00	0.86	0.86
	•														

1600 - 1800 (Weekday 2h Session) (03-09-2022)

All vehicles

TIME
1600 - 1615
1615 - 1630
1630 - 1645
1645 - 1700
Hourly Total
1700 - 1715
1715 - 1730
1730 - 1745
1745 - 1800
Hourly Total
Grand Total
Approach %
Intersection %
PHF

	So	uthbou	nd			E	astbour	ıd		W	estbou	nd		
	E	ureka Av	/e			Les	s Ln (W	est)		Les	s Ln (Ea	ıst)		
Left		Right	U-Turn	App	Left	Thru		U-Turn	App	Thru	Right	U-Turn	App	Int
1.1		1.2	1.3	Total	1.4	1.5		1.6	Total	1.7	1.8	1.9	Total	Total
3		1	0	4	1	78		0	79	26	4	0	30	113
1		0	0	1	0	73		0	73	33	4	0	37	111
2		0	0	2	2	67		0	69	48	1	0	49	120
1		0	0	1	0	56		0	56	38	1	0	39	96
7		1	0	8	3	274		0	277	145	10	0	155	440
0		0	0	0	2	77		0	79	40	1	0	41	120
1		2	0	3	1	77		0	78	38	4	0	42	123
3		3	0	6	2	55		0	57	22	2	0	24	87
0		0	0	0	2	44		0	46	33	4	0	37	83
4		5	0	9	7	253		0	260	133	11	0	144	413
11		6	0	17	10	527		0	537	278	21	0	299	853
64.71		35.29	0.00	-	1.86	98.14		0.00	-	92.98	7.02	0.00	-	
1.29		0.70	0.00	1.99	1.17	61.78		0.00	62.95	32.59	2.46	0.00	35.05	
0.50		0.25	0.00	0.50	0.63	0.90		0.00	0.89	0.85	0.44	0.00	0.87	0.93

Classified Turn Movement Count || All vehicles



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Site 2 of 2

Louisville, KY

KY-1934 Cane Run Rd (South) KY-1934 Cane Run Rd (North) Lees Ln Rockford Ln Date

Wednesday, March 9, 2022

Weather Wintry Mix

42°F

Lat/Long 38.183856°, -85.855314°

0700 - 0900 (Weekday 2h Session) (03-09-2022)

All vehicles

		No	orthbou	nd			Sc	uthbou	nd			E	astboun	ıd			W	estbou	nd		l
	KY-	-1934 Ca	ne Run	Rd (Sou	th)	KY	-1934 Ca	ne Run	Rd (Nor	th)			Lees Ln			Rockford Ln					
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	2.1	2.2	2.3	2.4	Total	2.5	2.6	2.7	2.8	Total	2.9	2.10	2.11	2.12	Total	2.13	2.14	2.15	2.16	Total	Total
0700 - 0715	65	272	18	0	355	12	172	25	1	210	27	28	58	0	113	35	44	26	0	105	783
0715 - 0730	57	277	18	0	352	14	185	39	0	238	41	36	53	0	130	32	47	39	0	118	838
0730 - 0745	43	292	20	0	355	21	198	21	0	240	33	52	48	0	133	43	72	42	0	157	885
0745 - 0800	21	294	15	0	330	14	189	16	0	219	26	12	18	0	56	49	29	51	0	129	734
Hourly Total	186	1135	71	0	1392	61	744	101	1	907	127	128	177	0	432	159	192	158	0	509	3240
0800 - 0815	26	330	22	0	378	13	180	6	0	199	10	14	16	0	40	33	17	41	0	91	708
0815 - 0830	14	268	11	0	293	13	174	11	0	198	7	15	20	0	42	29	10	24	0	63	596
0830 - 0845	19	298	35	0	352	16	179	10	0	205	6	6	26	0	38	35	8	34	0	77	672
0845 - 0900	32	241	21	0	294	18	203	15	0	236	6	8	31	0	45	49	21	51	0	121	696
Hourly Total	91	1137	89	0	1317	60	736	42	0	838	29	43	93	0	165	146	56	150	0	352	2672
Grand Total	277	2272	160	0	2709	121	1480	143	1	1745	156	171	270	0	597	305	248	308	0	861	5912
Approach %	10.23	83.87	5.91	0.00	-	6.93	84.81	8.19	0.06	-	26.13	28.64	45.23	0.00	-	35.42	28.80	35.77	0.00	-	
Intersection %	4.69	38.43	2.71	0.00	45.82	2.05	25.03	2.42	0.02	29.52	2.64	2.89	4.57	0.00	10.10	5.16	4.19	5.21	0.00	14.56	
PHF	0.72	0.97	0.89	0.00	0.98	0.73	0.94	0.65	0.25	0.94	0.77	0.62	0.76	0.00	0.81	0.81	0.67	0.77	0.00	0.81	0.92

1600 - 1800 (Weekday 2h Session) (03-09-2022)

All vehicles

		No	orthbou	nd			So	uthbou	nd			Е	astbour	ıd			W	estboui	nd		
	KY	-1934 Ca	ne Run	Rd (Sou	th)	KY	-1934 Ca	ne Run	Rd (Nor	th)			Lees Ln								
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	2.1	2.2	2.3	2.4	Total	2.5	2.6	2.7	2.8	Total	2.9	2.10	2.11	2.12	Total	2.13	2.14	2.15	2.16	Total	Total
1600 - 1615	20	259	39	0	318	29	255	13	0	297	4	20	71	0	95	44	15	7	0	66	776
1615 - 1630	26	298	48	0	372	17	352	11	0	380	10	21	55	0	86	68	24	18	0	110	948
1630 - 1645	32	270	29	0	331	26	317	13	1	357	19	28	64	0	111	44	20	9	0	73	872
1645 - 1700	25	323	38	0	386	19	333	20	0	372	13	19	53	0	85	61	21	18	0	100	943
Hourly Total	103	1150	154	0	1407	91	1257	57	1	1406	46	88	243	0	377	217	80	52	0	349	3539
1700 - 1715	33	296	35	0	364	26	293	22	0	341	18	16	85	0	119	49	23	15	0	87	911
1715 - 1730	24	280	29	0	333	12	353	11	0	376	11	27	59	0	97	47	23	13	0	83	889
1730 - 1745	21	258	29	0	308	25	347	13	0	385	13	28	61	0	102	44	16	12	0	72	867
1745 - 1800	26	218	31	0	275	23	273	6	0	302	15	20	51	0	86	50	19	18	0	87	750
Hourly Total	104	1052	124	0	1280	86	1266	52	0	1404	57	91	256	0	404	190	81	58	0	329	3417
Grand Total	207	2202	278	0	2687	177	2523	109	1	2810	103	179	499	0	781	407	161	110	0	678	6956
Approach %	7.70	81.95	10.35	0.00	-	6.30	89.79	3.88	0.04	-	13.19	22.92	63.89	0.00	-	60.03	23.75	16.22	0.00	-	
Intersection %	2.98	31.66	4.00	0.00	38.63	2.54	36.27	1.57	0.01	40.40	1.48	2.57	7.17	0.00	11.23	5.85	2.31	1.58	0.00	9.75	
PHF	0.88	0.92	0.78	0.00	0.94	0.85	0.92	0.75	0.25	0.95	0.79	0.75	0.76	0.00	0.84	0.82	0.92	0.83	0.00	0.84	0.97

HCS Reports

					110	S IVE	s neports											
		ŀ	HCS T	ſwo-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information	_									nation								
Analyst	Diane	Zimme	rman				Inters	ection			Lees Ln at Ladd Ave							
Agency/Co.	_		nerman i	Traffic Er	ngineerir	ng	_	liction										
Date Performed	8/5/2						East/	West Str	eet		Lees	Lane						
Analysis Year	2025						North	n/South :	Street		Entra	nce						
Time Analyzed	AM P	eak					Peak	Hour Fac	ctor		0.86							
Intersection Orientation	East-\	West					Analy	sis Time	Period (hrs)	0.25							
Project Description	Lees	Lane																
Lanes																		
				5744√ ↑ ↑ ↑ ↑		Y Y or Street: Ea		↑ ↑ ↑ ↑										
Vehicle Volumes and Ad	justme																	
Approach	_		oound			_	oound			North	bound		Southbound					
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T			
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	1:		
Number of Lanes	0	0	1	0 TD	0	0	1 0				1	0		0	0	-		
Configuration Volume (veh/h)	+		116	TR 7		LT 8	141			18	LR	26				+		
Percent Heavy Vehicles (%)	+		110	<u> </u>		0	141			0		0				+		
Proportion Time Blocked						-						0				+		
Percent Grade (%)	+-										0					_		
Right Turn Channelized																		
Median Type Storage				Undi	vided													
Critical and Follow-up H	eadwa	ys																
Base Critical Headway (sec)	\top		П		П	4.1		П		7.1	П	6.2	П	П	П	Т		
Critical Headway (sec)						4.10				6.40		6.20						
Base Follow-Up Headway (sec)						2.2				3.5		3.3						
Follow-Up Headway (sec)						2.20				3.50		3.30						
Delay, Queue Length, an	d Leve	l of S	ervice															
		_				9					51					Т		
Flow Rate, v (veh/h)	\top	l									707							
Flow Rate, v (veh/h) Capacity, c (veh/h)	\blacksquare					1452					797							
						1452 0.01					0.06					۲		
Capacity, c (veh/h)						_												
Capacity, c (veh/h) v/c Ratio						0.01	0.1				0.06							
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)						0.01	0.1 A				0.06							
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)						0.01 0.0 7.5 A	_			9	0.06 0.2 9.8							

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HCSTM TWSC Version 2022 Ladd AM 25.xtw

Generated: 8/5/2022 4:19:30 PM

		ŀ	ICS T	wo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforr	natio	n						
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	n at Lac	ld Ave			
Agency/Co.	Diane	B. Zimn	nerman i	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/5/2	022					East/\	Nest Stre	eet		Lees I	ane				
Analysis Year	2035						North	/South S	Street		Entra	nce				
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.86					
Intersection Orientation	East-\	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees I	ane														
Lanes	_															
				A 7 4 4 7 ↑ 7 7	Ti di	Y Y Y d	t.West	74 14 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16								
Vehicle Volumes and Ad	justme	nts			11.55											
Approach		Eastb	ound			Westl	ound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
				TR		LT					LR					
Configuration																
Configuration Volume (veh/h)			150	7		8	180			18		26				_
			150			8	180			18 0		26 0				
Volume (veh/h)			150	/			180									
Volume (veh/h) Percent Heavy Vehicles (%)			150	/			180			0	0					
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked			150				180			0	0					
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)			150		vided		180			0	0					
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys	150		vided		180			0	0					
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	leadwa	ys	150		vided		180			0	0					
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	leadwa	ys	150		vided	0	180			0	0	0				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	ys	150		vided	4.1	180			7.1		6.2				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	ys	150		vided	4.1 4.10	180			7.1	0	6.2				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)				Undi	vided	4.1 4.10 2.2	180			7.1 6.40 3.5	0	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)				Undi	vided	4.1 4.10 2.2	180			7.1 6.40 3.5	51	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and				Undi	vided	4.1 4.10 2.2 2.20	180			7.1 6.40 3.5		6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)				Undi	vided	4.1 4.10 2.2 2.20	180			7.1 6.40 3.5	51	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)				Undi	vided	4.1 4.10 2.2 2.20	180			7.1 6.40 3.5	51 735	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio				Undi	vided	9 1405 0.01	0.1			7.1 6.40 3.5	51 735 0.07	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)				Undi	vided	9 1405 0.01				7.1 6.40 3.5	51 735 0.07 0.2	6.2 6.20 3.3				
Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)				Undi	vided	9 1405 0.01 0.0 7.6 A	0.1			7.1 6.40 3.5 3.50	51 735 0.07 0.2 10.3	6.2 6.20 3.3				

					Way		_									
General Information							Site	Inforr	natio	ı						
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	n at Lac	ld Ave			
Agency/Co.	Diane	B. Zimr	nerman	Traffic Er	ngineerir	ng	Jurisd	iction								
Date Performed	8/5/2	022					East/\	Nest Str	eet		Lees I	ane				
Analysis Year	2025						North	/South :	Street		Entra	nce				
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.93					
Intersection Orientation	East-\	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees l	.ane														
Lanes																
				0 7 4 4 Y ↑ Y ↑		Y Y Y I	st-West	7 4 ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑								
Vehicle Volumes and Ad	justme	nts														
Approach	_		ound				oound				bound				bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration			240	TR		LT	100			- 11	LR	47				H
Volume (veh/h)	+		310	18		28	182			11 0		17 0				H
						0				-		-				H
Percent Heavy Vehicles (%)																
Proportion Time Blocked											n					
Proportion Time Blocked Percent Grade (%)											0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized				Undi	vided						0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	leadway	VC.		Undi	vided						0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	leadwa	ys		Undi	vided	41					0	6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	leadwa	ys		Undi	vided	4.1				7.1	0	6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	ys		Undi	vided	4.10				7.1 6.40	0	6.20				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	leadwa	ys		Undi	vided					7.1	0	_				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	4.10 2.2				7.1 6.40 3.5	0	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and			ervice		vided	4.10 2.2 2.20				7.1 6.40 3.5		6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)			ervice		vided	4.10 2.2 2.20				7.1 6.40 3.5	30	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)			ervice		vided	4.10 2.2 2.20 30 1217				7.1 6.40 3.5	30 579	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice		vided	4.10 2.2 2.20 30 1217 0.02				7.1 6.40 3.5	30 579 0.05	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)			ervice		vided	4.10 2.2 2.20 30 1217	0.2			7.1 6.40 3.5	30 579	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice		vided	4.10 2.2 2.20 30 1217 0.02 0.1	0.2 A			7.1 6.40 3.5	30 579 0.05 0.2	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)			ervice		vided	30 1217 0.02 0.1 8.0	А			7.1 6.40 3.5 3.50	30 579 0.05 0.2 11.6	6.20 3.3				

		,	ICS	IWO-	Way	Stop	-COI	itrol	керс	ort						
General Information							Site	Inforr	natio	1						
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	n at Lad	ld Ave			
Agency/Co.	Diane	B. Zimn	nerman	Traffic Er	ngineerir	ng	Jurisd	liction								
Date Performed	8/5/20	022					East/\	Nest Str	eet		Lees l	ane				
Analysis Year	2035						North	/South :	Street		Entrai	nce				
Time Analyzed	PM Pe	eak					Peak	Hour Fac	ctor		0.93					
Intersection Orientation	East-V	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees L	ane														
Lanes																
				A 7 4 4 Y ↑ Y C		Y Y 1 or Street: Ea	ነ <mark>ነ</mark> ነ	74 + Y + C 0								
Vehicle Volumes and Adj	justmei	nts														
Approach	\perp	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	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration	+			TR		LT					LR					
Volume (veh/h)	+		397	18		28	234			11		17				
Percent Heavy Vehicles (%)	+					0				0		0				
Proportion Time Blocked	+															
Percent Grade (%)	+)					
Right Turn Channelized	+-				<u> </u>											
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadway	ys														
Base Critical Headway (sec)	\perp					4.1				7.1		6.2				
0.00	\perp					4.10				6.40		6.20				
Critical Headway (sec)						2.2				3.5		3.3				
Base Follow-Up Headway (sec)	+					2 20				3.50		3.30				<u> </u>
Base Follow-Up Headway (sec) Follow-Up Headway (sec)				<u> </u>		2.20										
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Level	of S	ervice			2.20										
Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Level	of S	ervice			30					30					
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Level	l of S	ervice								30 492					
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	d Level	of Se	ervice			30										
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Level	l of So	ervice			30 1125					492					
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Level	of Se	ervice			30 1125 0.03	0.3				492 0.06					
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	l of So	ervice			30 1125 0.03 0.1	0.3 A				492 0.06 0.2					
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	d Leve	of Se	ervice			30 1125 0.03 0.1 8.3	А			12	492 0.06 0.2 12.8					

		ŀ	HCS T	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						
Analyst	Diane	Zimme	rman				Inters	ection			Lees	Ln at Ent	rance			
Agency/Co.	Diane	B. Zimr	nerman [†]	Traffic Er	ngineerir	ng	Jurisd	liction								
Date Performed	8/5/2	022					East/\	Nest Str	eet		Lees	Lane				
Analysis Year	2025						North	/South	Street		Entra	nce				
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.86					
Intersection Orientation	East-\	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees I	ane														
Lanes																
				A 7 4 4 7 ↑ 7 7		T Y or Street: Ea		744440								
Vehicle Volumes and Ad	justme	nts			11.05	5, 5, cca 20	J. 112.									
Approach		Eastb	ound			Westl	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			129	0		14	142			5		42				L
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										-	0					
Right Turn Channelized																
Median Type Storage				Undi	vided											_
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				Π
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				
Delay, Queue Length, an	d Leve	of S	ervice													
Flow Rate, v (veh/h)	\top					16					55				$\overline{}$	П
Capacity, c (veh/h)						1444					865					
v/c Ratio						0.01					0.06					
95% Queue Length, Q ₉₅ (veh)						0.0					0.2					
Control Delay (s/veh)						7.5	0.1				9.4					
						А	А				А					
Level of Service (LOS)										_						
Level of Service (LOS) Approach Delay (s/veh)						0	.8		l	9	.4					

		ŀ	HCS T	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	1						_
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	Ln at Ent	rance			
Agency/Co.	Diane	B. Zimr	nerman i	Traffic Er	ngineerin	ng	Juriso	liction								
Date Performed	8/5/20	022					East/\	Nest Str	eet		Lees I	Lane				
Analysis Year	2035						North	/South :	Street		Entra	nce				
Time Analyzed	AM Pe	eak					Peak	Hour Fac	tor		0.86					
Intersection Orientation	East-V	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees L	ane														
Lanes																
				A 7 4 4 Y ↑ Y C		Y Y Y 1 or Street: Ea	トード c	744440								
Vehicle Volumes and Ad	justme	nts														
Approach	\bot	Eastk	ound			Westl	oound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration	\perp			TR		LT					LR					
Volume (veh/h)	+		189	0		14	181			5		42				
Percent Heavy Vehicles (%)	+					0				0		0				
Proportion Time Blocked	+															
Percent Grade (%)	+									(0					
Right Turn Channelized	+-															
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadway	ys														
						4.1				7.1		6.2				
Base Critical Headway (sec)						4.10				6.40		6.20				
Critical Headway (sec)										3.5	I	3.3	I	I		
Critical Headway (sec) Base Follow-Up Headway (sec)						2.2				_						
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)						2.2				3.50		3.30				_
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	d Level	l of S	ervice							_						
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	ıd Level	l of S	ervice							_	55					
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Level	l of S	ervice			2.20				_	55 784					
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	l of Se	ervice			2.20 16 1361 0.01				_	784 0.07					
Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	id Leve	l of So	ervice			2.20 16 1361 0.01 0.0				_	784 0.07 0.2					
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 ₉₅ (veh) Control Delay (s/veh)	id Level	l of So	ervice			2.20 16 1361 0.01 0.0 7.7	0.1			_	784 0.07 0.2 9.9					
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 ₉₅ (veh) Control Delay (s/veh) Level of Service (LOS)	nd Leve	l of Se	ervice			2.20 16 1361 0.01 0.0 7.7 A	А			3.50	784 0.07 0.2 9.9 A					
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 ₉₅ (veh) Control Delay (s/veh)	ld Leve	l of So	ervice			2.20 16 1361 0.01 0.0 7.7 A				3.50	784 0.07 0.2 9.9					

		ŀ	ICS T	[wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						_
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	Ln at Ent	rance			
Agency/Co.	Diane	B. Zimr	nerman i	Traffic Er	ngineerir	ng	Jurisd	liction								
Date Performed	8/5/2	022					East/\	Nest Stre	eet		Lees I	Lane				
Analysis Year	2025						North	/South S	Street		Entra	nce				
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.93					
Intersection Orientation	East-\	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees l	Lane														
Lanes																
				A 7 4 4 Y ↑ Y C		マ マ or Street: Ea		74 1 1 4 4 7 6 6								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastl	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	Т	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration	_			TR		LT					LR					L
Volume (veh/h)	+		320	6		46	212			5		26				
Percent Heavy Vehicles (%)	-					0				0		0				⊢
Proportion Time Blocked	_															
Percent Grade (%)	+										0					
Right Turn Channelized	+			Undi	vided											_
Median Type Storage				ondi	viued											
Critical and Follow-up H	eadwa	ys				I .				I -						
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)	1.					2.20				3.50		3.30				
Delay, Queue Length, an	d Leve	of S	ervice													
Flow Rate, v (veh/h)						49					33					
Capacity, c (veh/h)						1220					626					
v/c Ratio						0.04					0.05					
95% Queue Length, Q ₉₅ (veh)						0.1					0.2					
Control Delay (s/veh)						8.1	0.4				11.1					
						A	Α				В					
Level of Service (LOS)						-	7				1 1					
							.7 A				1.1 B					

		ŀ	HCS T	「wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	1						_
Analyst	Diane	Zimme	rman				Inters	ection			Lees I	n at Ent	rance			
Agency/Co.	Diane	B. Zimr	nerman	Traffic Er	ngineerir	ng	Juriso	liction								
Date Performed	8/5/20						East/\	Nest Stre	eet		Lees I	ane				
Analysis Year	2035						North	/South :	Street		Entra	nce				
Time Analyzed	PM Pe	eak					Peak	Hour Fac	tor		0.93					
Intersection Orientation	East-V	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Lees L	ane														
Lanes																
				0 7 4 4 Y 1 7 7	\ 11 1	Υ •Υ	11417	14 + Y + P C 0								
Vehicle Volumes and Ad	justme	nts			Majo	or Street: Ea	st-West									
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			407	6		46	264			5		26				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)	\bot									-	0					
Right Turn Channelized	\perp															
Median Type Storage				Undi	vided											_
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				П
						4.10				6.40		6.20				
Critical Headway (sec)						2.2				3.5		3.3				
Critical Headway (sec) Base Follow-Up Headway (sec)										3.50		3.30				
						2.20				3.30		3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	d Level	l of S	ervice			2.20				3.30		3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	d Level	l of S	ervice			2.20				3.30	33	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	d Leve	l of S	ervice			2.20 49 1127				3.30	542	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	d Leve	l of S	ervice			2.20 49 1127 0.04				3.30	542 0.06	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	d Leve	l of Se	ervice			2.20 49 1127 0.04 0.1				3.30	542 0.06 0.2	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	d Leve	l of So	ervice			2.20 49 1127 0.04 0.1 8.3	0.4			3.30	542 0.06 0.2 12.1	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh) Level of Service (LOS)	d Leve	l of Se	ervice			2.20 49 1127 0.04 0.1 8.3 A	А				542 0.06 0.2 12.1 B	3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	d Leve	l of So	ervice			2.20 49 1127 0.04 0.1 8.3 A				12	542 0.06 0.2 12.1	3.30				

		HUS	osigr	ialize	ı inte	rsect	ion K	esu	lts Sun	шагу					
General Inform	nation								Intersec	tion Info	ormatio	on	U	al July 1	e U
Agency		Diane B. Zimmerma	an Traffi	c Engin	eerina				Duration		0.250			411	
Analyst		Diane Zimmerman				8/4/20	22		Area Typ		Other		4		
Jurisdiction				Time F		AM Pe			PHF		0.92		2		**
Urban Street		Cane Run Road		_	is Year	_			Analysis	Period	1> 7:	00			
Intersection		Lees Lane		File Na		AM 22	XUS		7		1			544	
Project Descrip	otion	3500 Lees Lane		1 110 110	*******	7 1111 222	- IAGO							4 tey	1
		10000 2000 2000													
Demand Infor	mation				EB			V	/B	Т	NB		Т	SB	
Approach Move	ement			L	Т	R	L	Т	T R	L	Т	R	L	T	R
Demand (v), v	/eh/h			127	128	177	159	19	92 158	186	1135	71	62	744	101
01	41			1		111:	1 111	Ţ							
Signal Informa	1	Deference Dhase		-		24	1211	L			Į		кŤа		7
Cycle, s	180.0	Reference Phase	2 End	1	5117	" " îî	*	R	E			1	2	3	\Rightarrow
Offset, s	0	Reference Point	End	Green		55.9	6.1		0.5 34.8						<u> </u>
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	+	4.3	4.3	3.		0.0		\ 4	X		Z
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.	0 3.0	0.0		5	6	7	
Timer Results				EBL		EBT	WBI		WBT	NBL		NBT	SBI		SBT
Assigned Phas	d Phase					4	.,,,,	-	8	5		2	1		6
Case Number						12.0			12.0	1.2		4.0	1.3		4.0
Phase Duration	Number				\rightarrow	37.1		+	41.4	24.9		88.1	13.4	-	76.6
Change Period		c). s				6.6			6.6	7.3		7.3	7.3	$\overline{}$	7.3
Max Allow Hea		**				5.7		_	4.7	6.5		0.0	4.5	-	0.0
Queue Clearar						27.2			32.1	15.8		3.0	2.0	\rightarrow	5.5
Green Extension		(- //			-	3.3		+	2.7	1.9		0.0	4.4	-	0.0
Phase Call Pro		(3-7)-			\rightarrow	1.00		\dashv	1.00	1.00		5.0	0.97	\rightarrow	2.0
Max Out Proba					\rightarrow	0.02		\top	0.00	0.00	-		0.17	-	
Movement Gro		ults			EB	_		WE	_		NB			SB	
Approach Move				L	T	R	L	Т	R	L	T	R	L	T	R
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow		<i>''</i>		257		213	299		254	202	662	649	67	469	449
		ow Rate (s), veh/h/l	n	1778		1570	1746		1601	1739	1811	1773	1654	1767	169
Queue Service		- ,:		25.2		23.4	30.1		27.4	13.8	57.1	57.3	0.0	40.0	40.0
Cycle Queue C		e IIme (g c), s		25.2		23.4	30.1		27.4	13.8	57.1	57.3	0.0	40.0	40.0
Green Ratio (g				0.17		0.17	0.19		0.19	0.42	0.45	0.45	0.33	0.38	0.38
Capacity (c),		W- () ()		302		266	337		309	262	813	796	143	680	651
Volume-to-Cap			,	0.851		0.799	0.888		0.820	0.771	0.814	0.816	0.472	0.690	0.69
		t/ln (95 th percentile		40.0		45.0	00.7		47.1	44.0	05.5	05.4	F 0	05.5	0.4.
	, ,	eh/ln (95 th percenti		18.3		15.3	20.7		17.4	11.0	35.5	35.1	5.6	25.5	24.6
		RQ) (95 th percent	iie)	2.72		2.28	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay				72.5		71.8	70.7		69.6	41.6	43.1	43.2	76.6	46.4	46.4
In an an an an and a Late		*		11.5		9.1	10.8		6.4	12.3	8.8	9.1	2.9	5.7	5.9
Incremental De				0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue D				84.1		80.8	81.5		76.0	53.9	51.9	52.2	79.5	52.0	52.3
Initial Queue D Control Delay (e (LOS)			F		F	F 70.0		E	D	D	D	E	D	
Initial Queue D Control Delay (Level of Servic		/TOS		82.6		F	79.0)	E	52.3		D	54.0)	D
Initial Queue D Control Delay (Level of Servic Approach Dela						61	1.0				_		E		
Initial Queue D Control Delay (Level of Servic															
Initial Queue D Control Delay (Level of Servic Approach Dela	lay, s/ve				EB			WE	3		NB			SB	
Initial Queue D Control Delay (Level of Servic Approach Dela Intersection De	elay, s/ve	h/LOS		2.32	_	В	2.34	_	3 B	2.17	_	В	2.13		В

Beginning in 2023, this intersection will be modified to an eastbound L, T, R lane and westbound L, T/R. There will be dedicated left-turn phasing for e/w and an eastbound right-turn overlap with northbound left.

			9						ts Sun						
General Inforn	nation								Intersec	tion Inf	ormatic	n			
Agency		Diane B. Zimmerma	an Traff	ic Engin	eering			\rightarrow	Duration		0.250				
Analyst		Diane Zimmerman				Jan 5,	2023	$\overline{}$	Area Typ	,	Other				
Jurisdiction				_	Period	AM P		$\overline{}$	PHF		0.92				
Urban Street		Cane Run Road		Analys	sis Year	2025	No Build	i /	Analysis	Period	1> 7:0	00			
Intersection		Lees Lane		File N			NB.xu		,						
Project Descrip	tion	3500 Lees Lane													
Demand Inform	mation				EB			WE	3		NB			SB	
Approach Move	ement			L	T	R	L	Т	R	L	T	R	L	T	R
Demand (v), v	/eh/h			129	131	181	161	196	160	190	1152	72	63	755	10
Signal Informa	tion				T	7	1	7							
	180.0	Reference Phase	2	1											
Cycle, s Offset, s	0	Reference Point	End									1	2	3	
	_			Green		65.3	6.2	13.2		40.9	9				
Uncoordinated	No	Simult. Gap N/S	Off	Yellow Red	3.0	3.0	3.0	3.6	0.0	3.6	_	5	G	7	
Force Mode	Fixed	Simult. Gap N/S	On	Red	1 J.U	3.0	3.0	13.0	10.0	3.0		3	ь	,	
Timer Results				EBI		EBT	WB		WBT	NBI		NBT	SBI		SBT
Assigned Phas				7		4	3		8	5		2	1		6
Case Number				1.1		3.0	1.1	\rightarrow	4.0	1.2		4.0	1.3	_	4.0
Phase Duration	1 S			19.8	-	47.5	22.5	-	50.2	23.9	-	96.5	13.5	-	86.1
Change Period		c) S		6.6	-	6.6	6.6	-	6.6	7.3	-	7.3	7.3	-	7.3
Max Allow Hea		**		4.1	_	5.2	4.1	-	5.2	6.5	-	0.0	4.5	-	0.0
Queue Clearan				12.9	$\overline{}$	20.4	15.5	-	39.9	15.0	$\overline{}$	0.0	2.0	$\overline{}$	0.0
Green Extension				0.3	-	4.6	0.4	-	3.7	1.6	-	0.0	4.4	-	0.0
Phase Call Pro		(g =), 3		1.00	-	1.00	1.00	-	1.00	1.00	-	0.0	0.97	-	0.0
Max Out Proba				0.00	-	0.01	0.02	_	0.15	0.01	_		0.17	$\overline{}$	
Movement Gro	oup Res	sults			EB			WB			NB			SB	
Approach Move	ement			L	T	R	L	T	R	L	T	R	L	T	R
Assigned Move	ement			7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow I	Rate (v), veh/h		140	142	197	175	365		207	671	659	68	476	450
Adjusted Satura	ation Flo	ow Rate (s), veh/h/	n	1753	1826	1510	1767	1671		1739	1811	1773	1654	1767	169
Queue Service	Time (g ₅), s		10.9	11.8	18.4	13.5	37.9		13.0	53.5	53.7	0.0	37.4	37.
Cycle Queue C	learanc	e Time (<i>g ₅</i>), s		10.9	11.8	18.4	13.5	37.9		13.0	53.5	53.7	0.0	37.4	37.
Green Ratio (g				0.30	0.23	0.32	0.32	0.25		0.47	0.50	0.50	0.39	0.44	0.4
Capacity (c), v	/eh/h			189	415	482	396	414		291	897	878	168	774	74
Volume-to-Cap	acity Ra	itio (X)		0.740	0.343	0.408	0.442	0.883	3	0.710	0.748	0.750	0.407	0.616	0.61
Back of Queue	(Q), f	t/In (95 th percentile	:)	228.5	245.9	305.7	260.5	652.1		263.9	855.8	832.1	149	630.2	581
		eh/ln (95 th percent		8.9	9.5	11.5	10.2	24.7		10.2	32.7	32.3	5.5	23.5	22.
Queue Storage	Ratio (RQ) (95 th percen	tile)	1.31	1.41	1.36	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.0
Queue eterage	(d 1), s	/veh		52.2	58.3	48.0	47.2	65.2		35.8	36.4	36.5	66.7	38.9	38.
Uniform Delay				5.6	0.8	1.0	0.8	14.4		8.5	5.7	5.9	1.9	3.7	3.8
Uniform Delay Incremental De	elay (d			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Uniform Delay Incremental De Initial Queue De	ial Queue Delay (d s), s/veh			57.8 E	59.1 E	48.9	48.0	79.6		44.3	42.1	42.3	68.6	42.6	42.
Uniform Delay Incremental De Initial Queue De Control Delay (trol Delay (d), s/veh				D	D	Ę		D	D	D	E	D	D
Uniform Delay Incremental De Initial Queue De Control Delay (Level of Service	e (LOS)	of Service (LOS)				D	69.4	1	Е	42.5	5	D	44.4	1	D
Uniform Delay Incremental De Initial Queue De Control Delay (Level of Service Approach Delay	e (LOS) y, s/veh	/LOS		54.5	<u> </u>										
Uniform Delay Incremental De Initial Queue De Control Delay (Level of Service	e (LOS) y, s/veh	/LOS		54.8	·		3.7						D		
Uniform Delay Incremental De Initial Queue De Control Delay (Level of Service Approach Dela Intersection De	e (LOS) y, s/veh lay, s/ve	/LOS		54.5			3.7	\A/D			NID		D	ÇD	
Uniform Delay Incremental De Initial Queue De Control Delay (Level of Service Approach Delay	e (LOS) y, s/veh lay, s/ve	/LOS eh/LOS		2.32	EB		2.32	WB	В	2.00	NB	В	2.12	SB	В

		HCS	Sig	nalize	d Inte	rsect	ion R	esul	ts Sur	nmary	′				
General Inforn	nation							T	Intersec	tion Inf	ormatic	on.			
Agency		Diane B. Zimmerma	an Traff	ic Engin	eering			\rightarrow	Duration		0.250				
Analyst		Diane Zimmerman	ari irail			Jan 5,	2023	$\overline{}$	Area Typ	,	Other				
Jurisdiction		Sidno Ziminomidii		-	Period	AM Pe		\rightarrow	PHF		0.92				
Urban Street		Cane Run Road				2025		\rightarrow	Analysis	Period	1> 7:0	20			
Intersection		Lees Lane		File N		-	B.xus		Allalysis	renou	1 - 1.0	50			
Project Descrip	tion	3500 Lees Lane		I lie iv	anic	AIVI Z	D.XuS						-		
1 Toject Descrip	tion	3300 Lees Lane													
Demand Infor	nation				EB		Т	WE	3		NB			SB	_
Approach Move				L	T	ΓR	L	T	_	L	T	T R	L	T	R
Demand (v), v				147	154	208	161	20		_	1152	_	63	755	109
Demand (7), 1	CHIT			1.17	101	200	101	20	0 100	100	1102	. , , _	- 00	700	100
Signal Informa	ition				Т	$\overline{}$	$\overline{}$	\top	\neg	\Box	\neg				
Cycle, s	180.0	Reference Phase	2	1											
Offset, s	0	Reference Point	End	1	17.5	00.4	0.0	144		10.0	\rightarrow	1	2	3	
Uncoordinated	No	Simult. Gap E/W	Off	Green Yellow		62.1 4.3	6.3	14. 3.6		43.3 3.6	_				
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0		3.0	\dashv	5	6	7	
Timer Results				EBI		EBT	WB	L	WBT	NBI		NBT	SBI	L	SBT
Assigned Phas				7		4	3		8	5		2	1	\neg	6
Case Number	_			1.1		3.0	1.1		4.0	1.2		4.0	1.3		4.0
Phase Duration	1 5			21.2	-	49.9	22.3	-	51.0	24.8	-	94.3	13.6	-	83.0
Change Period		a) s		6.6	-	6.6	6.6	_	6.6	7.3	-	7.3	7.3	-	7.3
Max Allow Hea				4.1	-	5.2	4.1	-	5.2	6.5	-	0.0	4.5	-	0.0
Queue Clearan				14.2	-	23.0	15.3	-	40.6	16.0	-	0.0	2.0	$\overline{}$	0.0
Green Extension				0.3	-	5.1	0.4	_	3.8	1.5	-	0.0	4.5	-	0.0
Phase Call Pro		(<i>y</i> e), S		1.00	-	1.00	1.00	-	1.00	1.00	-	0.0	0.97	-	0.0
				0.0	$\overline{}$	0.02	0.02	-	0.27	0.04	_		0.9	-	
Max Out Proba	Dility		-	0.0		0.02	0.02	2	0.27	0.02	+		0.10	>	-
Movement Gro	oup Res	sults	_		EB			WB			NB			SB	_
Approach Move	_			L	T	R	L	T	R	L	T	R	L	T	R
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow) veh/h		160	167	226	175	373	+	216	671	659	68	480	459
		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1673		1739	1811	1773	1654	1767	168
Queue Service			"	12.2	13.8	21.0	13.3	38.6	_	14.0	54.8	55.0	0.0	38.9	38.9
		<i>g ₅</i>), s e Time (<i>g ₀</i>), s		12.2	13.8	21.0	13.3	38.6		14.0	54.8	55.0	0.0	38.9	38.
Green Ratio (g		c mic (gr), s		0.32	0.24	0.34	0.33	0.25	_	0.45	0.48	0.48	0.0	0.42	0.42
Capacity (c), v				203	439	510	392	422		284	875	857	161	743	710
Volume-to-Cap		atio (X)		0.787	0.381	0.443		_	_	0.761		0.769	0.425	0.646	0.64
		t/In (95 th percentile)	253.4	278.9						879.3	855.6	153.3	657.5	605.
		eh/ln (95 th percenti		9.8	10.7	12.8	10.0	25.2	$\overline{}$	11.0	33.6	33.2	5.6	24.5	23.6
		· · ·					_	_							-
		RQ) (95 th percent	iiie)	1.45 50.5	1.59 57.1	1.51	0.00	0.00 64.8		0.00 38.1	0.00 38.2	0.00	70.0	0.00 41.5	0.00 41.5
Uniform Delay						46.4	45.8	-					-	_	-
Incromont-I D -				7.8	0.9	1.0	0.8	15.2	_	11.1	6.4	6.6	2.1	4.3	4.5
				0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue D				58.4	58.1	47.4	46.6	79.9		49.1	44.6	44.9	72.1	45.8	46.0
Initial Queue D Control Delay (e (LOS)			53.8	E	D	D	E		D	D	D	E	D	<u> D</u>
Initial Queue D Control Delay (Level of Service					3	D	69.3	3	E	45.4	1	D	47.7		D
Initial Queue D Control Delay (Level of Servic Approach Dela	y, s/veh					E ().9						D		
Initial Queue D Control Delay (Level of Servic Approach Dela	y, s/veh					5(
Initial Queue D Control Delay (Level of Service Approach Dela Intersection De	y, s/veh lay, s/ve				EB	50		WB			NB			SB	
Incremental De Initial Queue D Control Delay (Level of Service Approach Dela Intersection De Multimodal Re Pedestrian LOS	y, s/veh lay, s/ve	eh / LOS		2.32	EB	В	2.31	_	В	2.00	NB	В	2.13	SB	В

		HCS	Sigi	alize	a inte	rsect	ion R	esul	ts Su	mmary	/				
General Inform	nation								Interse	ction Inf	ormatic	nn .			
Agency		Diane B. Zimmerma	n Traff	ic Engin	eering			\rightarrow	Duratio		0.250				
Analyst		Diane Zimmerman	ITGII			Jan 5,	2023	\rightarrow	Area T		Other				
Jurisdiction		Zimileman		Time F		AM Pe		$\overline{}$	PHF	P-	0.92				
Urban Street		Cane Run Road		_		_	No Build	_		s Period	1> 7:	00			
Intersection		Lees Lane		File Na		-	NB.xu		, mining o						
Project Descrip	otion	3500 Lees Lane		1											
,															
Demand Infor	mation				EB			WI	3		NB			SB	
Approach Move	ement			L	Т	R	L	T	F	L	T	R	L	Т	R
Demand (v), v	/eh/h			139	141	195	169	21:	2 16	8 205	1211	76	66	794	111
Signal Informa	ation					T	1								
Cycle, s	180.0	Reference Phase	2	1											
Offset, s	0	Reference Point	End					\perp				1	2	3	
Uncoordinated	<u> </u>	Simult. Gap E/W	Off	Green		60.3	6.5	13.	-						
Force Mode	Fixed	Simult. Gap E/W	On	Yellow Red	3.0	3.0	3.0	3.6		-		5	6	7	
. or oo mode	, ixeu	Simal. Oup 14/0	511		,	3.5		3.0							
Timer Results				EBI	.	EBT	WB	L	WBT	NB	L	NBT	SBI		SBT
Assigned Phas	e			7		4	3		8	5		2	1		6
Case Number				1.1		3.0	1.1		4.0	1.2	2	4.0	1.3		4.0
Phase Duration	ո, s			20.5	5	50.3	22.9	•	52.7	25.	4	93.0	13.8	3	81.4
Change Period	l, (Y+R	ε), S		6.6		6.6	6.6		6.6	7.3	3	7.3	7.3		7.3
Max Allow Hea	dway (I	<i>MAH</i>), s		4.1		5.2	4.1		5.2	6.5	5	0.0	4.5		0.0
Queue Clearar	nce Time	e (g s), s		13.6	3	21.3	15.9	9	42.6	16.	6		2.0		
Green Extension	on Time	(ge),s		0.3		4.9	0.4		3.5	1.5	5	0.0	4.7		0.0
Phase Call Pro	bability			1.00)	1.00	1.00)	1.00	1.0	0		0.97	7	
Max Out Proba	bility			0.00) (0.01	0.04	1	0.34	0.0	8		0.20)	
Movement Gro	oun Doc	ulte			EB			WB		_	NB			SB	
Approach Move		ouits		L	T	R	L	T	R	L	T	R	L	T	l R
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow) veh/h		151	153	212	184	391	+ 10	223	705	693	72	503	481
		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1672	,	1739	1811	1773	1654	1767	169
Queue Service				11.6	12.5	19.3	13.9	40.6		14.6	60.2	60.6	0.0	42.1	42.
		e Time (<i>g ₀</i>), s		11.6	12.5	19.3	13.9	40.6		14.6	60.2	60.6	0.0	42.1	42.
Green Ratio ((3-71-		0.32	0.24	0.34	0.33	0.26	-	0.45	0.48	0.48	0.36	0.41	0.4
Capacity (c),				194	443	518	412	438	_	271	862	844	146	727	696
Volume-to-Cap		itio (X)		0.779	0.346			0.894	-	0.821	_	0.821	0.491	0.691	-
		t/ln (95 th percentile)	240.3	257.4	317.3	266	700.4		308.1	_	941.7	162.8	708.1	652.
		eh/ln (95 th percenti		9.3	9.9	11.9	10.4	26.5		11.8	36.9	36.5	6.0	26.4	25.5
		RQ) (95 th percent		1.37	1.47	1.41	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay	(d 1), s	/veh		50.7	56.4	45.2	45.2	64.1		40.1	40.5	40.6	76.2	43.5	43.5
Incremental De	elay (d 2), s/veh		6.9	0.8	0.9	0.8	16.8		16.4	8.5	8.8	3.1	5.3	5.6
Initial Queue D	elay (d	з), s/veh		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (57.6	57.2	46.0	45.9	80.8		56.5	49.0	49.4	79.2	48.9	49.1
Level of Servic	e (LOS)			Е	E	D	D	F		E	D	D	E	D	D
Approach Dela				52.7	7	D	69.7	7	Е	50.	2	D	51.0)	D
	lay, s/ve	h / LOS				53	3.7						D		
Intersection De					ED			WB			NB			SB	
	seulte.														
Multimodal Re		/1.08		2.32	EB	В	2.31	_	В	2.0	_	В	2.13	_	В

		1100	Joigi	IUIIZO				CJui	.o ou	mmary					
General Inforn	ation								Interse	ction Inf	ormatic	on.			
Agency	iu ii o ii	Diane B. Zimmerma	an Traff	ic Engin	eering			_	Duratio		0.250				
Analyst		Diane Zimmerman		_		Jan 5,	2023	$\overline{}$	Area Ty	,	Other				
Jurisdiction		Diane Zimieman		-	eriod	AM P			PHF	P 0	0.92				
Urban Street		Cane Run Road		-		2035		$\overline{}$		s Period	1> 7:0	20			
Intersection		Lees Lane		File Na			B.xus		Allalysi	31 CHOC	15 7.0				
Project Descrip	tion	3500 Lees Lane		T IIC IV	anic	AW 50	D.Aus						1		
1 Toject Descrip	lion	5500 Lees Lane													
Demand Inform	nation				EB		$\overline{}$	WE	3		NB		Т	SB	
Approach Move	ement				Т	T R	L	Т	R	T	T	R	L	Т	ΓR
Demand (v), v				157	164	222	169	-	9 16	3 216	1211	-	66	794	117
				111			1							121	
Signal Informa	tion				П	Т		\top		$\neg \neg$					
Cycle, s	180.0	Reference Phase	2	1											
Offset, s	0	Reference Point	End	Green	10.2	57.2	6.6	15.	2 0.9	45.9		1	2	3	
Uncoordinated	No	Simult. Gap E/W	Off	Yellow		4.3	4.3	3.6	0.0	$\overline{}$	-				
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0				5	G	7	
Timer Results				EBI	- T	EBT	WB	L	WBT	NB	_	NBT	SBI	L	SBT
Assigned Phas	e			7		4	3		8	5		2	1		6
Case Number				1.1		3.0	1.1		4.0	1.2		4.0	1.3		4.0
Phase Duration	i, S			21.8	3	52.5	22.7	7	53.3	26.5	5	91.0	13.9	•	78.4
Change Period	(Y+R	c), S		6.6		6.6	6.6		6.6	7.3		7.3	7.3		7.3
Max Allow Hea				4.1	\neg	5.2	4.1	\neg	5.2	6.5		0.0	4.5		0.0
Queue Clearan				14.8	3	23.9	15.7	7	43.4	17.9	9		2.0		
Green Extension				0.4	-	5.4	0.4	-	3.4	1.4	-	0.0	4.8	-	0.0
Phase Call Pro		(9-7)		1.00	$\overline{}$	1.00	1.00	-	1.00	1.00	_	0.0	0.97	-	
Max Out Proba				0.01	_	0.03	0.03	-	0.52	0.25	-		0.20	-	
Movement Gro	up Res	sults			EB			WB			NB			SB	
Approach Move	ement			L	T	R	L	Т	R	L	Т	R	L	Т	R
Assigned Move	ment			7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow I	Rate (v), veh/h		171	178	241	184	399		235	705	693	72	507	484
Adjusted Satura	ation Flo	ow Rate (s), veh/h/	n	1753	1826	1510	1767	1675		1739	1811	1773	1654	1767	168
Queue Service	Time (g ₃), s		12.8	14.5	21.9	13.7	41.4		15.9	61.4	61.9	0.0	43.8	43.8
Cycle Queue C	learanc	e Time (g c), s		12.8	14.5	21.9	13.7	41.4		15.9	61.4	61.9	0.0	43.8	43.8
Green Ratio (g	/C)			0.34	0.25	0.36	0.34	0.27		0.44	0.46	0.46	0.34	0.39	0.39
Capacity (c), v				206	465	546	406	444	_	267	842	824	140	697	666
Volume-to-Cap		atio (X)		0.828	0.383	0.442	0.452	0.898	3	0.880	0.838	0.841	0.513	0.726	0.72
		t/ln (95 th percentile	:)	270.4	290.2	350.5	262.1	716.2	2	345.3	993.8	968.5	163.3	739.3	680.
		eh/ln (95 th percent	-	10.5	11.2	13.2	10.2	27.1	-	13.3	37.9	37.5	6.0	27.6	26.6
		RQ) (95 th percen		1.55	1.66	1.56	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay		,, ,	,	49.2	55.4	43.7	43.9	63.8	_	41.7	42.2	42.3	78.1	46.2	46.2
Incremental De				12.1	0.9	1.0	0.8	18.0	-	24.5	9.7	10.1	3.5	6.5	6.8
Initial Queue De				0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (61.3	56.3	44.6	44.7	81.8		66.2	51.9	52.4	81.6	52.7	53.0
Level of Service				E	E	D	D	F		E	D	D	F	D	D
Approach Delay				53.0		D	70.1	_	E	54.2		D	54.8	_	D
Intersection De				55.0			6.6			31.2			E		
	7, 7														
Multimodal Re	sults				EB			WB			NB			SB	
Pedestrian LOS	Score	/ LOS		2.31		В	2.31	1	В	2.00)	В	2.13	3	В
															Α

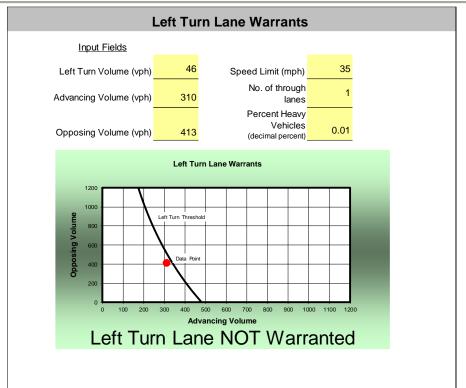
		пса	Joigi	ialize	a mile	1500	IOII K	csu	Its Sun	шагу						
General Inforr	nation				Intersection Information									4444	la lu	
Agency		Diane B. Zimmerma	an Traffi	c Engin	eerina				Duration		0.250			411		
Analyst		Diane Zimmerman			is Date	8/4/20)22		Area Typ		Other		 			
Jurisdiction				Time F			PM Peak				0.97				*7	
Urban Street		Cane Run Road		Analys	is Year	2022			Analysis	Period	1> 4:	15	2			
Intersection	Intersection Lees Lane					PM 22	2.xus							514		
Project Description 3500 Lees Lane													1	4144	1- (*	
Demand Information					EB	T 5	+ .	_	/B	+	NB	T 5	+ .	SB	T 5	
Approach Movement			L	T	R	L	-	T R	L 440	T	R 450	L	T	R		
Demand (v), veh/h				60	84	257	222	8	8 60	116	1187	150	89	1295	66	
Signal Informa	ation					ĮĮ.	Т	Т	<u></u>	\top						
Cycle, s	180.0	Reference Phase	2	1	244		, Sti	,⊌			`	`	Φ		-4	
Offset, s	0	Reference Point	End	Green	7.6	78.4	6.0	26	3.6 26.3	0.0		1	2	3	<u> </u>	
Uncoordinated	No	Simult. Gap E/W	Off	Yellow		4.3	4.3	3.		0.0	_				→	
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.		0.0		5	6	7		
Timer Results					-	EBT	WBL		WBT	NBL	-	NBT	SBI	-	SBT	
Assigned Phase					+	4			8	5	_	2	1	_	6	
Case Number				_	_	12.0	-	\rightarrow	12.0	1.3		4.0	1.2		4.0	
Phase Duration, s					-	33.2	_	-	32.9 6.6	13.3	'	99.0	14.9		100.6	
Change Period, (Y+Rc), s					_	6.6	_			7.3	7.3		7.3		7.3	
Max Allow Headway (MAH), s				_	_	5.7	_	-	4.6	6.5	_	0.0	7.4		0.0	
Queue Clearance Time (g s), s				-	_	25.2	-	-	25.6	2.7		0.0		_	0.0	
Green Extension Time ($g \in $), s Phase Call Probability				_	-	1.4	_	-	1.00	1.00		0.0	0.3	-	0.0	
Max Out Proba					_	0.48	_	\dashv	1.00	1.00	_		0.00	_		
THE PERSON NAMED IN COLUMN NAM									1100				0.00			
Movement Gr	oup Res	ults			EB			W	В		NB			SB		
Approach Mov				ㄴ	T	R	L	Т	R	L	T	R	L	T	R	
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16	
Adjusted Flow		,·		148		203	229		153	120	701	678	92	706	697	
Adjusted Saturation Flow Rate (s), veh/h/ln			n	1789		1547	1711		1674	1739	1811	1740	1654	1767	173	
				13.9		23.2	23.6		15.4	0.7	55.7	56.4	5.4	57.8	58.	
Queue Service	Cycle Queue Clearance Time (g ε), s							15.4	0.7	55.7	56.4	5.4	57.8	58.		
Queue Service Cycle Queue C		e Time (<i>g</i> _c), s		13.9		23.2	23.6		0 4 5	- 11/16	0.51		0.49	0.52	0.52	
Queue Service Cycle Queue C Green Ratio (c	g/C)	e Time (<i>g</i> ҫ), s		0.15		0.15	0.15		0.15	0.46		0.51	AEE	040		
Queue Service Cycle Queue C Green Ratio (c Capacity (c),	g/C) veh/h			0.15 264		0.15 237	0.15 250		245	167	922	886	155	916	-	
Queue Service Cycle Queue C Green Ratio (c Capacity (c), Volume-to-Cap	g/C) veh/h acity Ra	tio (X)	\	0.15		0.15	0.15 250			-	922		155 0.594	916 0.772	-	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (¢), Volume-to-Cap Back of Queue	g/C) veh/h vacity Ra (Q),ft	tio (X) /In (95 th percentile		0.15 264 0.562		0.15 237 0.856	0.15 250 0.915		245 0.623	167 0.716	922 0.760	886 0.765	0.594	0.772	0.77	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue	g/C) veh/h vacity Ra (Q), ft	tio (X) /In (95 th percentile eh/In (95 th percenti	le)	0.15 264 0.562 10.8		0.15 237 0.856 15.9	0.15 250 0.915 18.3		245 0.623 11.2	167 0.716 10.3	922 0.760 33.8	886 0.765 33.0	0.594 4.2	0.772 34.1	33.8	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (¢), Volume-to-Cap Back of Queue Back of Queue Queue Storage	g/C) veh/h eacity Ra e (Q), ft e (Q), ve	tio (X) In (95 th percentile ch/in (95 th percenti RQ) (95 th percent	le)	0.15 264 0.562 10.8 1.61		0.15 237 0.856 15.9 2.36	0.15 250 0.915 18.3 0.00		245 0.623 11.2 0.00	167 0.716 10.3 0.00	922 0.760 33.8 0.00	886 0.765 33.0 0.00	0.594 4.2 0.00	0.772 34.1 0.00	33.8	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay	g/C) veh/h vacity Ra (Q), ft (Q), ve Ratio ((d1), s	tio (X) In (95 th percentile ch/ln (95 th percentile RQ) (95 th percentile (veh	le)	0.15 264 0.562 10.8 1.61 71.3		0.15 237 0.856 15.9 2.36 74.7	0.15 250 0.915 18.3 0.00 74.8		245 0.623 11.2 0.00 72.2	167 0.716 10.3 0.00 74.5	922 0.760 33.8 0.00 35.3	33.0 0.00 35.5	0.594 4.2 0.00 37.5	0.772 34.1 0.00 34.8	33.8 0.00 34.9	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De	g/C) veh/h vacity Ra e (Q), ft e (Q), ve e Ratio ((d1), s elay (d2	tio (X) /In (95 th percentile ch/in (95 th percentile RQ) (95 th percentile /veh), s/veh	le)	0.15 264 0.562 10.8 1.61 71.3 3.2		0.15 237 0.856 15.9 2.36 74.7 20.7	0.15 250 0.915 18.3 0.00 74.8 30.3		245 0.623 11.2 0.00 72.2 3.9	167 0.716 10.3 0.00 74.5 18.4	922 0.760 33.8 0.00 35.3 5.8	886 0.765 33.0 0.00 35.5 6.2	0.594 4.2 0.00 37.5 4.3	34.1 0.00 34.8 6.3	0.77 33.8 0.00 34.9 6.4	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D	yeh/h veh/h vacity Ra e (Q), ft e (Q), ve e Ratio ((d1), s elay (d2 elay (d	tio (X) /In (95 th percentile eh/In (95 th percenti RQ) (95 th percent /veh), s/veh 3), s/veh	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0		0.15 237 0.856 15.9 2.36 74.7 20.7	0.15 250 0.915 18.3 0.00 74.8 30.3 0.0		245 0.623 11.2 0.00 72.2 3.9 0.0	167 0.716 10.3 0.00 74.5 18.4 0.0	922 0.760 33.8 0.00 35.3 5.8 0.0	886 0.765 33.0 0.00 35.5 6.2 0.0	0.594 4.2 0.00 37.5 4.3 0.0	34.1 0.00 34.8 6.3 0.0	0.77 33.8 0.00 34.9 6.4 0.0	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (q/C) veh/h veh/h hacity Ra (Q), ft (Q), ve Ratio ((d1), se elay (d2 elay (d, d), s/ve	tio (X) /In (95 th percentile eh/In (95 th percenti RQ) (95 th percent /veh), s/veh 3), s/veh	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0 74.5		0.15 237 0.856 15.9 2.36 74.7 20.7	0.15 250 0.915 18.3 0.00 74.8 30.3		245 0.623 11.2 0.00 72.2 3.9 0.0 76.0	167 0.716 10.3 0.00 74.5 18.4	922 0.760 33.8 0.00 35.3 5.8	886 0.765 33.0 0.00 35.5 6.2	0.594 4.2 0.00 37.5 4.3	34.1 0.00 34.8 6.3	0.77 33.8 0.00 34.9 6.4 0.0	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Service	ye/C) veh/h vacity Ra (Q), ft (Q), ve Ratio ((d1), se Play (d2 Play (d4), s/ve e (LOS)	tio (X) In (95 th percentile ch/in (95 th percentile RQ) (95 th percentile Veh), s/veh 3), s/veh ch	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0		0.15 237 0.856 15.9 2.36 74.7 20.7 0.0 95.4	0.15 250 0.915 18.3 0.00 74.8 30.3 0.0 105.0		245 0.623 11.2 0.00 72.2 3.9 0.0	167 0.716 10.3 0.00 74.5 18.4 0.0 92.9	922 0.760 33.8 0.00 35.3 5.8 0.0 41.2 D	33.0 0.00 35.5 6.2 0.0 41.7	0.594 4.2 0.00 37.5 4.3 0.0 41.9	34.1 0.00 34.8 6.3 0.0 41.1	0.77 33.8 0.00 34.9 6.4 0.0 41.3	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (ye/C) veh/h veh/h vacity Ra (Q), ft (Q), ve Ratio ((d1), si elay (d2) elay (d3), sive e (LOS) y, siveh	tio (X) In (95 th percentile ch/in (95 th percentile RQ) (95 th percenti Veh), s/veh 3), s/veh ch	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0 74.5 E		0.15 237 0.856 15.9 2.36 74.7 20.7 0.0 95.4 F	0.15 250 0.915 18.3 0.00 74.8 30.3 0.0 105.0		245 0.623 11.2 0.00 72.2 3.9 0.0 76.0 E	167 0.716 10.3 0.00 74.5 18.4 0.0 92.9	922 0.760 33.8 0.00 35.3 5.8 0.0 41.2 D	886 0.765 33.0 0.00 35.5 6.2 0.0 41.7 D	0.594 4.2 0.00 37.5 4.3 0.0 41.9	34.1 0.00 34.8 6.3 0.0 41.1		
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	ye/C) veh/h veh/h vacity Ra (Q), ft (Q), ve Ratio ((d1), si elay (d2) elay (d3), sive e (LOS) y, siveh	tio (X) In (95 th percentile ch/in (95 th percentile RQ) (95 th percenti Veh), s/veh 3), s/veh ch	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0 74.5 E		0.15 237 0.856 15.9 2.36 74.7 20.7 0.0 95.4 F	0.15 250 0.915 18.3 0.00 74.8 30.3 0.0 105.0 F		245 0.623 11.2 0.00 72.2 3.9 0.0 76.0 E	167 0.716 10.3 0.00 74.5 18.4 0.0 92.9	922 0.760 33.8 0.00 35.3 5.8 0.0 41.2 D	886 0.765 33.0 0.00 35.5 6.2 0.0 41.7 D	0.594 4.2 0.00 37.5 4.3 0.0 41.9 D	34.1 0.00 34.8 6.3 0.0 41.1	0.77 33.8 0.00 34.9 6.4 0.0 41.5	
Queue Service Cycle Queue C Green Ratio (¿ Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	ye/C) veh/h vacity Ra (Q), ft (Q), ve Ratio ((d1), se elay (d2) elay (d3), s/ve e (LOS) y, s/veh elay, s/ve	tio (X) //In (95 th percentile eh/In (95 th percenti RQ) (95 th percent //veh), s/veh 3), s/veh eh // LOS	le)	0.15 264 0.562 10.8 1.61 71.3 3.2 0.0 74.5 E	EB	0.15 237 0.856 15.9 2.36 74.7 20.7 0.0 95.4 F	0.15 250 0.915 18.3 0.00 74.8 30.3 0.0 105.0 F	W	245 0.623 11.2 0.00 72.2 3.9 0.0 76.0 E	167 0.716 10.3 0.00 74.5 18.4 0.0 92.9	922 0.760 33.8 0.00 35.3 5.8 0.0 41.2 D	886 0.765 33.0 0.00 35.5 6.2 0.0 41.7 D	0.594 4.2 0.00 37.5 4.3 0.0 41.9 D	0.772 34.1 0.00 34.8 6.3 0.0 41.1 D	0.77 33.8 0.00 34.9 6.4 0.0 41.5	

		HCS	Sigr	nalize	d Inte	rsect	ion R	esul	ts Sur	nmary						
General Inforn	nation								Intersec	tion Inf	ormatic	n .				
Agency	MUUII	Diane B. Zimmerma	n Traff	ic Engin	eering			\rightarrow	Duration		0.250					
Analyst		Diane B. Zimmerman	ari iiail			Jan 5,	2023	\rightarrow	Area Ty	,	Other					
Jurisdiction		Diane Ziminemian		Time F		PM Pe		\rightarrow	PHF		0.97					
Urban Street		Cane Run Road				+	No Build	\rightarrow	Analysis	Dorind	1> 4:1	15	-			
Intersection		Lees Lane		File Na		-	NB.xu		Allalysis	renou	1/ 4.	10				
Project Descrip	tion	3500 Lees Lane		File IV	ine	T IVI Z) IND.XU	5					-			
Project Descrip	lion	3500 Lees Lane													_	
Demand Inform	nation				EB		$\overline{}$	WE	3		NB			SB		
Approach Move				L	T	T R	L	T	_	L	T	R	L	T	R	
			63	89	271	225	92	_	122	1203	_	90	1315	69		
Demand (v), veh/h					00	2/1	223	32	. 01	122	1200	102	30	1010	00	
Signal Informa	tion					T	1	$\overline{}$		$\overline{}$	\neg					
Cycle, s	180.0	Reference Phase	2	1												
Offset, s	0	Reference Point	End	1	7.0	0.1.1	100	100		07		1	2	3		
Uncoordinated	No	Simult. Gap E/W	Off	Green Yellow		91.1	6.0 4.3	9.6		27.4 3.6	\vdash					
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0		3.0	\dashv	5	6	7		
	· incu	2	0.1				,	, 5.5	, 5.5	3.0						
Timer Results				EBI		EBT	WB	L	WBT	NBI		NBT	SBI		SBT	
Assigned Phas	e			7		4	3		8	5		2	1		6	
Case Number						3.0	1.1		4.0	1.3		4.0	1.2		4.0	
Phase Duration				1.1		34.0	20.0	-	37.8	13.3	_	111.7		-	112.7	
Change Period		-) c		6.6	_	6.6	6.6	-	6.6	7.3	-	7.3		14.3 1 7.3		
Max Allow Hea				4.1	_	4.2	4.1		4.2	6.5	_					
				7.5		26.3	16.4	-	17.5	2.0	$\overline{}$	0.0	6.7		0.0	
Queue Clearan				0.1	-		0.0	-	1.7	0.3	_	0.0	0.7	-	0.0	
Green Extension		(g e), S		0.1		1.1	1.00	-	1.00	_	_	0.0	0.99	-	0.0	
Phase Call Pro				_	$\overline{}$		1.00	-		1.00	$\overline{}$		_	-		
Max Out Proba	Dility			0.13	, ,	0.33	1.00	,	0.00	1.00	,		0.00	,		
Movement Gro	oup Res	sults			EB			WB			NB			SB		
Approach Move				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16	
Adjusted Flow I) veh/h		65	92	218	232	158	10	126	710	687	93	718	708	
		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1676		1739	1811	1740	1654	1767	173	
Queue Service				5.5	8.1	24.3	14.4	15.5		0.0	48.7	49.3	4.7	51.1	51.	
Cycle Queue C				5.5	8.1	24.3	14.4	15.5		0.0	48.7	49.3	4.7	51.1	51.	
Green Ratio (g		c mic (gc), s		0.21	0.15	0.19	0.24	0.17	_	0.53	0.58	0.58	0.56	0.59	0.5	
Capacity (c), v				226	278	297	328	291		204	1051	1009	187	1034	101	
Volume-to-Cap		atio (X)		0.287	0.330	0.733					0.676	0.681	0.495	0.694	0.69	
		t/In (95 th percentile)	116.5	180	322.5	168.9			266.1		730.5	95.7	792.6	751.	
				_				-	$\overline{}$	_			-	_	-	
		eh/ln (95 th percenti		4.5	6.9	12.1	6.6	11.0		10.2	28.9	28.3	3.5	29.6	29.	
		RQ) (95 th percent	iie)	0.67	1.03	1.43	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.0	
Uniform Delay				59.5 0.7	68.1	6.4	62.9	67.9		62.3	26.1 3.5	26.2	28.7	26.1	26.	
Incremental De				_	0.7		6.9	1.6		9.4		3.7	2.4	3.8	4.0	
Initial Queue D				0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (60.2	68.8	12.9	69.8	69.5		71.7	29.6	29.9	31.1	29.9	30.	
Level of Service				E	E	В	E	E	1_	E	C	С	C	C	_ C	
Approach Dela				34.8		С	69.6		E	33.2		С	30.1		С	
Intersection De	lay, s/ve	eh / LOS				35	5.8						D			
	sults				EB			WB			NB			SB		
Multimodal Results																
Multimodal Re Pedestrian LOS		/ LOS		2.32	!	В	2.32	2	В	1.91		В	2.25	5	В	

		HCS	Sigi	nalize	a inte	rsect	ion R	esuli	s Sun	nmary						
General Inforr	nation								ntersec	tion Inf						
Agency		Diane B. Zimmerma	an Traff	ic Engin	eering				Duration		0.250					
Analyst		Diane Zimmerman	ari itali			Jan 5,	2023	$\overline{}$	Area Typ	,	Other					
Jurisdiction		Diano Zimineman		Time F		PM Pe		$\overline{}$	PHF		0.97					
Urban Street		Cane Run Road		-	is Year	+		_	Analysis	Period	1> 4:	15				
Intersection		Lees Lane		File Na		-	B.xus		Allalysis	i enou	12.4.	10				
Project Descrip	tion	3500 Lees Lane		I lie ive	anne	I IVI Z	D.XuS						-			
Froject Descrip	HOH	3300 Lees Lane													_	
Demand Infor	mation				EB			WE	3		NB			SB	_	
Approach Mov					T	ΤR	L	T	R	L	T	R	L	T	T R	
Demand (v), v				75	103	288	225	116	_	151	1203		90	1315	90	
Demand (),	7011711			7.0	100	200	220	111	01	101	1200	102	- 00	1010		
Signal Informa	ation				Т	Т	\top	\top	$\overline{}$	$\overline{}$	\neg					
Cycle, s	180.0	Reference Phase	2	1												
Offset, s	0	Reference Point	End	Green	7.4	89.1	6.0	9.8	3.6	29.3	_	1	2	3		
Uncoordinated	No	Simult. Gap E/W	Off	Yellow		4.3	4.3	3.6	0.0	3.6	<u>'</u>					
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0	0.0	3.0		5	G	7		
Timer Results				EBI		EBT	WB	L	WBT	NBI		NBT	SBI		SBT	
Assigned Phas				7		4	3		8	5		2	1	6		
Case Number				1.1		3.0	1.1		4.0	1.3		4.0		4.0		
Phase Duration	1. S			16.4		35.9	20.0	-	39.5	13.3			1.2 14.4	_	110.8	
Change Period	,	c). S		6.6	_	6.6	6.6	-	6.6	7.3	_	7.3			7.3	
				4.1	_	4.2	4.1		4.2	6.5	$\overline{}$	0.0		$\overline{}$	0.0	
Max Allow Headway (<i>MAH</i>), s Queue Clearance Time ($g s$), s					-	28.3	16.4	-	19.8	3.9	$\overline{}$	5.5	4.5 6.9		5.0	
Green Extension				8.5 0.1	-	1.0	0.0	-	1.8	_	0.2 0.0		0.3		0.0	
Phase Call Pro		(y =), 3		0.1	-	1.00	1.00	-	1.00	1.00	-	0.0	0.99	-	0.0	
Max Out Proba				0.90	-	0.73	1.00	-	0.01	1.00	_		0.00			
max Out 100a	-Smrty			0.44		0.10	1.00		0.01	1.00			0.00	,		
Movement Gr	oup Res	sults			EB			WB			NB			SB		
Approach Mov				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16	
Adjusted Flow) veh/h		77	106	235	232	182	1	156	710	687	93	731	718	
		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1691		1739	1811	1740	1654	1767	172	
Queue Service				6.5	9.3	26.3	14.4	17.8		1.9	50.0	50.6	4.9	53.9	54.	
Cycle Queue C				6.5	9.3	26.3	14.4	17.8		1.9	50.0	50.6	4.9	53.9	54.	
Green Ratio (5 .ano (g t), 5		0.22	0.16	0.20	0.25	0.18		0.52	0.57	0.57	0.55	0.58	0.5	
Capacity (c),				221	297	313	330	309		192	1031	990	182	1016	99:	
		atio (X)		0.349	0.357	0.751	_			0.812		0.694	0.511	0.719	0.72	
Volume-to-Capacity Ratio (X)				137.9	205	344.5	165.9	-		341.9		751.6	98.6	835.9	79	
Back of Queue (Q), ft/ln (95 th percentile) Back of Queue (Q), veh/ln (95 th percentile)					7.9	13.0	6.5	12.5	-	13.1	29.8	29.1	3.6	31.2	30.	
		· · · · ·		5.3 0.79	1.17	1.53	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.0	
Back of Queue		. , , ,	uic)	58.5	67.0	6.5	61.7	67.4		70.0	27.5	27.6	30.1	27.7	27.	
Back of Queue Queue Storage	Uniform Delay (d 1), s/veh					8.0	_	_		_		-	$\overline{}$		-	
Back of Queue Queue Storage Uniform Delay		Incremental Delay (d 2), s/veh					6.5	2.1		26.2	3.8	4.0	2.7	4.4	4.6	
Back of Queue Queue Storage Uniform Delay Incremental De	lay (d 2	**	Initial Queue Delay (d 3), s/veh				0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D	elay (d 2 elay (d	з), s/veh		EC 4	n//	14.5	68.2	69.5		96.2	31.3 C	31.6 C	32.7 C	32.1	32.	
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (elay (d 2 elay (d d), s/ve	३), s/veh eh		59.4	67.7	n			4	F			- 1	C	l C	
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Service	elay (d 2 elay (d d), s/ve e (LOS)	3), s/veh eh		E	E	В	E	E	-				_			
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	elay (<i>d 2</i> elay (<i>d</i> (<i>d</i>), s/ve e (LOS) y, s/veh	/ LOS			E	D	68.8		Е	37.9		D	32.3		С	
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Service	elay (<i>d 2</i> elay (<i>d</i> (<i>d</i>), s/ve e (LOS) y, s/veh	/ LOS		E	E	D	_		E			D	_			
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela Intersection De	elay (d 2 elay (d d), s/ve e (LOS) y, s/veh elay, s/ve	/ LOS		E	E	D	68.8	3	E			D	32.3	3		
Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	elay (d 2 elay (d d), s/ve e (LOS) y, s/veh elay, s/ve	s), s/veh eh / LOS eh / LOS		E	E B EB	D	68.8	WB	E		NB	D	32.3	SB		

		HCS	Sigi	nalize	d Inte	rsect	ion R	esult	s Sun	nmary						
General Inforn	nation							ormatio	on							
Agency	iauon	Diane B. Zimmerma	an Traff	ic Engin	eering			\rightarrow	Duration		0.250					
Analyst		Diane Zimmerman	ari itali			Jan 5,	2023		Area Typ	,	Other					
Jurisdiction		Diane Zillinelliali		Time F		PM Pe		$\overline{}$	PHF		0.97					
Urban Street		Cane Run Road		_	sis Year	-	eak No Build		Analysis	Period	1> 4:	15				
Intersection		Lees Lane		File Na		-	NB.xu		-many SIS	renou	1/ 4.	10				
	tion	3500 Lees Lane		Trile M	anne	ILIM 35	IND.XU	3								
Project Descrip	uon	19900 Lees Lane														
Demand Inform	nation				EB			WE			NB			SB		
Approach Move				L	T	T R	L	T	R	L	T	R	L	T	R	
Demand (v), v				76	107	327	237	109		144	1265	_	95	1382	82	
Demand (v), vervii				- 10	.07	JE1	201	100	0-1	177	1200	. 100		1302	02	
Signal Informa	tion															
Cycle, s	180.0	Reference Phase	2	1												
Offset, s	0	Reference Point	End	1	7.0	04.0	100	100	100	00.4	_	1	2	3		
Uncoordinated	No	Simult. Gap E/W	Off	Green Yellow		84.8 4.3	6.0	9.8	3.6 0.0	33.1 3.6	-					
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0	0.0	3.0	\dashv	5	G	7		
	· mou	32.2. Gup 1470	J.11													
Timer Results				EBI		EBT	WB	L	WBT	NBI		NBT	SBI		SBT	
Assigned Phas	<u> </u>			7		4	3		8	5		2	1		6	
Case Number				1.1		3.0	1.1		4.0	1.3		4.0	1.2		4.0	
Phase Duration	1 8			16.4	-	39.7	20.0	_	43.3	13.3		105.4	14.9		107.0	
Change Period	-	-) c		6.6	-		6.6 6.6		6.6	7.3		7.3	7.3		7.3	
Max Allow Hea				4.1	-	4.2			4.2	6.5		0.0	4.5		0.0	
				_	_		-	-			$\overline{}$	-		-	0.0	
Queue Clearan		10 //		8.4	-	33.0	16.4	_	19.0	5.9	_	0.0	7.4	_	0.0	
Green Extension		(<i>g</i> e), S		0.1	-	0.1	0.0	-	2.0	0.0	-	0.0	0.3		0.0	
Phase Call Pro				0.98	_	1.00	1.00	-	1.00	1.00	-		0.99	_		
Max Out Proba	DIIITY			0.40	,	1.00	1.00	,	0.01	1.00			0.00	,		
Movement Gro	un Per	sults			EB			WB			NB			SB		
Approach Move	•	PUI LO		L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16	
		() , vob/b			-				18				_	_		
Adjusted Flow I				78	110	275	244	178		148	746	724	98	760	749	
-		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1684		1739	1811	1740	1654	1767	173	
Queue Service				6.4	9.4	31.0	14.4	17.0		3.9	57.3	58.3	5.4	60.6	61.3	
Cycle Queue C		e rime (g °), s		6.4	9.4	31.0	14.4	17.0		3.9	57.3	58.3	5.4	60.6	61.3	
Green Ratio (g				0.24	0.18	0.22	0.27	0.20		0.50	0.55	0.55	0.52	0.55	0.5	
Capacity (c), v		C (1)(1)		252	336	345	355	343		176	987	948	159	979	959	
Volume-to-Cap			`	0.311	0.329	0.799		0.520	-	0.843		0.763	0.616	0.777	0.78	
		t/ln (95 th percentile		135.3	206.7	180.5		314.9		339	893.1	865.7	112.7	939.9	893	
		eh/ln (95 th percenti		5.2	8.0	6.8	7.0	11.9		13.0	34.1	33.6	4.1	35.1	34.9	
		RQ) (95 th percent	tile)	0.77	1.18	0.80	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay				55.4	63.8	6.7	59.2	63.8		75.2	31.7	31.9	35.9	31.4	31.6	
Incremental De	- , ,	**		0.7	0.6	12.3	5.5	1.4		32.7	5.4	5.8	4.6	6.0	6.3	
Initial Queue De	_ , ,	**		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (56.1	64.4	19.0	64.6	65.2		107.9	37.0	37.7	40.5	37.5	37.9	
Level of Service	e (LOS)			E	E	В	E	E		F	D	D	D	D	D	
Approach Dela	y, s/veh	/LOS		36.0)	D	64.8	3	Е	43.8	3	D	37.8	3	D	
Approach Delay, s/veh / LOS Intersection Delay, s/veh / LOS						42	2.8						D			
Intersection De					EB			WB			NB			SB		
	Multimodal Results							V V I)		-	IND					
		/1.08		2.32	_	В	2.32	_	В	1.91		В	2.25		В	

		HCS	Sigr	nalize	d Inte	rsect	ıon R	esul	ts S	um	mary						
General Inforn	nation				Intersection Information												
Agency		Diane B. Zimmerma	an Traffi	ic Engin	eering			\rightarrow	Dura			0.250					
Analyst		Diane Zimmerman	an mail	Analysis Date Jan 5, 2023					Area			Other					
Jurisdiction		Diane Zimineman		_	eriod	eak	\rightarrow	PHF	· y P		0.97						
Urban Street		Cane Run Road		-		2035		\rightarrow		veie	Period	1> 4:	15				
Intersection		Lees Lane		File N		-	B.xus		Allai	yolo	renou	12 4.	10				
Project Descrip	tion	3500 Lees Lane		I lie iv	anic	II IVI 30	D.XUS							-			
1 Toject Descrip	tion	3300 Lees Lane															
Demand Inform	mation				EB			WI	В		Т	NB			SB		
Approach Movement					T	T R	L	T	_	R	L	T	R		T	R	
Demand (v), veh/h				88	121	344	237	13	-	64	173	1265		95	1382	103	
Signal Informa		D (D)		-													
Cycle, s	180.0	Reference Phase	2	-									1	2	3		
Offset, s	0	Reference Point	End	Green		78.7	11.4	9.9	-	3.5	33.4						
Uncoordinated		Simult. Gap E/W	Off	Yellow		4.3	4.3	3.6	-	0.0	3.6						
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	3.0	3.0		0.0	3.0		5	G	7		
Timer Results				EBI		EBT	WB	L	WB	т	NBL		NBT	SB	L	SBT	
Assigned Phas	e			7		4			8		5		2	1		6	
Case Number				1.1		3.0		1.1		4.0		4.0		1.2		4.0	
Phase Duration). S			16.5	_	40.0		20.0		43.5				15.2		101.3	
Change Period		c) S		6.6	-	6.6	_	6.6		6.6			7.3	7.3		7.3	
				4.1	_	4.2	4.1	_		-	7.3 6.5		0.0		-	0.0	
Max Allow Headway (<i>MAH</i>), s Queue Clearance Time ($g s$), s					-	34.0	16.4	-	21.5	-	11.4		5.0	4.5 7.7	$\overline{}$	0.0	
Green Extension				9.5 0.1	_	0.0	0.0	-	2.2	-	0.0			0.3	-	0.0	
Phase Call Pro		(9=), 5		0.99	_	1.00	1.00	_	1.00	-	1.00		0.0	0.99	_	0.0	
Max Out Proba				1.00	$\overline{}$	1.00	1.00	\rightarrow	0.03	-	1.00	-		0.00	-		
Movement Gro		sults			EB			WB	_			NB		_	SB	_	
Approach Move				L	T	R	L	T	_	R	L	T	R	L	T	R	
Assigned Move				7	4	14	3	8	_	18	5	2	12	1	6	16	
Adjusted Flow I				91	125	293	244	203	$\overline{}$	_	178	746	724	98	772	759	
		ow Rate (s), veh/h/l	n	1753	1826	1510	1767	1697	-		1739	1811	1740	1654	1767	172	
Queue Service				7.5	10.7	32.0	14.4	19.5	_		9.4	57.8	58.8	5.7	66.8	67.	
Cycle Queue C		e fime (<i>g ₀</i>), s		7.5	10.7	32.0	14.4	19.5	_		9.4	57.8	58.8	5.7	66.8	67.7	
Green Ratio (g				0.24	0.19	0.25	0.27	0.21	\rightarrow		0.50	0.54	0.54	0.49	0.52	0.5	
Capacity (c), v				236	339	393	346	348			205	980	942	150	922	900	
Volume-to-Cap				0.384	0.368	0.745					0.871	0.760	0.768	0.653	0.837	0.84	
		t/ln (95 th percentile		158	228.9	173.4	_	-	$\overline{}$		394.1		874.1	122.5		998	
		eh/ln (95 th percenti		6.1	8.8	6.5	7.3	13.5	\rightarrow		15.2	34.4	33.9	4.5	39.2	39.	
		RQ) (95 th percent	ile)	0.90	1.31	0.77	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay				55.7	64.1	6.8	59.3	64.6	_		77.1	32.2	32.4	39.0	36.5	36.	
Incremental De				1.0	0.7	7.6	6.4	2.5	-		33.7	5.5	6.0	5.7	8.9	9.5	
Initial Queue Do	_ , \			0.0	0.0	0.0	0.0	0.0	\rightarrow		0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (56.7	64.7	14.3	65.7	67.1			110.9	37.7	38.4	44.7	45.5	46.	
Level of Service				E	E	В	E	E			F	D	_ D	D	D	L D	
Approach Delay				34.3	3	С	66.3	3	E		45.9		D	45.8	В	D	
Intersection De	lay, s/ve	eh / LOS				46	8.6							D			
Multimodal Re	sults				EB			WB				NB			SB		
Pedestrian LOS		/LOS		2.32	_	В	2.32	_	В		1.92	_	В	2.2	_	В	
r euesman Loc																	



Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

