July 13, 2020

# Traffic Impact Study

1007 South English Station Road Louisville, KY

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PLANNING & DESIGN SERVICES

Prepared for

Louisville Metro Planning Commission





# Table of Contents

INTRODUCTION2	
Figure 1. Site Map2	
EXISTING CONDITIONS	
Figure 2. Existing Peak Hour Volumes	
FUTURE CONDITIONS	
Figure 3. 2023 No Build Peak Hour Volumes	
TRIP GENERATION	
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	
Table 2. Peak Hour Level of Service	
CONCLUSIONS8	
APPENDIX	

### INTRODUCTION

The development plan for an apartment community and patio homes on South English Station Road in Louisville, KY shows 168 apartment units and 58 patio homes. **Figure 1** displays a map of the site. Access to the community will be from two entrances on South English Station Road. 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 entrances on South English Station Road.



Figure 1. Site Map

### **EXISTING CONDITIONS**

South English Station Road is maintained by Louisville Metro with an estimated 2020 ADT of 3,100 vehicles per day south of Lake Village Drive as estimated from the turning movement count. The count was divided by 0.12, the estimated K factor for South English Station Road. The road is a two-lane road with nine-foot lanes with a one-foot shoulder. The speed limit is 35 mph. There are no sidewalks.

Peak hour traffic counts for the intersection of South English Station Road at Lake Village Drive was obtained on Tuesday, March 3, 2020. The a.m. peak hour was 7:15 to 8:15 and the p.m. peak hour was 4:45 to 5:45. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes. The Appendix contains the full count data for the intersection.

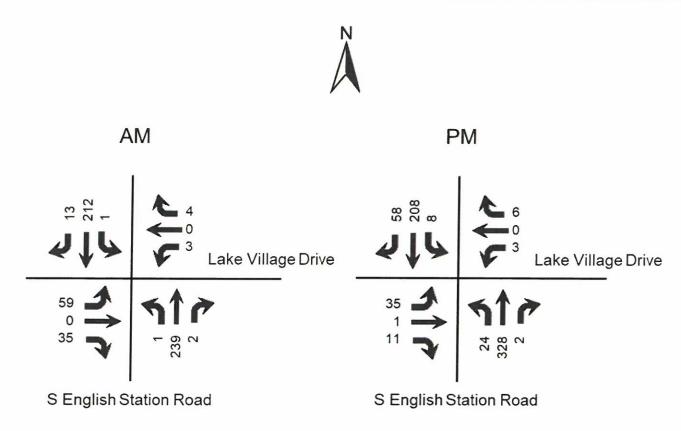


Figure 2. Existing Peak Hour Volumes

### **FUTURE CONDITIONS**

The project completion date is 2023. An annual growth rate of 2.0 percent was applied to the thru 2020 volumes. Additionally, trip generation for 72 additional single-family homes in Signature Point and 105 single family homes just south of I 64 was included on South English Station Road. **Figure 3** displays the 2023 No Build peak hour volumes.

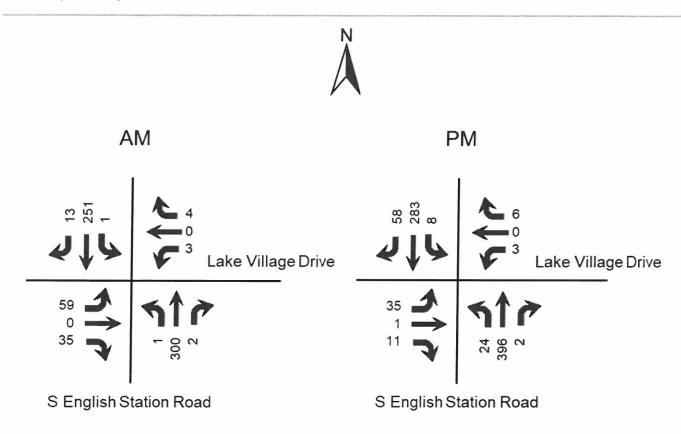


Figure 3. 2023 No Build Peak Hour Volumes

### TRIP GENERATION

The Institute of Transportation Engineers <u>Trip Generation Manual</u>, 10<sup>th</sup> Edition contains trip generation rates for a wide range of developments. The land uses of "Multifamily Housing Mid-Rise (221)" and "Multifamily Housing Low-Rise (220)" were 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. Peak Hour P.M.

	A.M.	A.M. Peak Hour P.M. P						
Land Use	Trips	In	Out	Trips	In	Out		
Multifamily Housing Mid-Rise (168 units)	57	15	42	73	45	28		
Multifamily Housing Low-Rise (58 units)	28	6	22	36	23	13		
TOTAL	85	21	64	109	68	41		



Figure 4. Trip Distribution Percentages

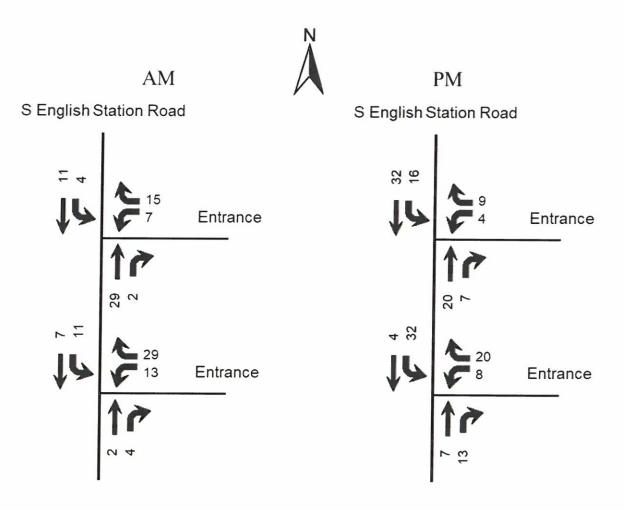


Figure 5. Peak Hour Trips Generated by Site

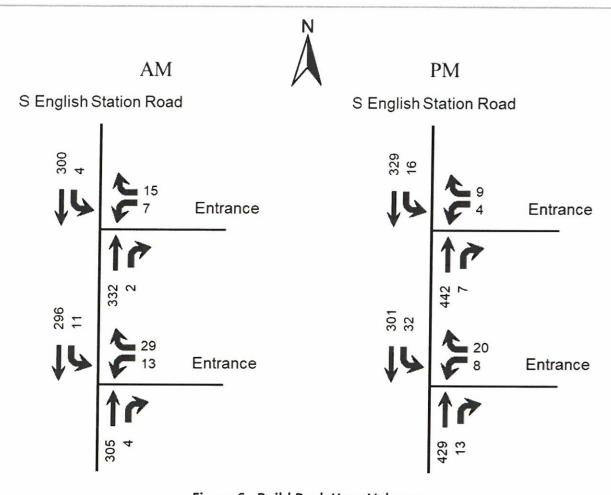


Figure 6. Build Peak Hour Volumes

### **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 HCS Streets (version 7.8.5) software. The delays and Level of Service are summarized in **Table 2**.

Table 2. Peak Hour Level of Service

		A.M.		P.M.				
Approach	2020	2023	2023	2020	2023	2023		
Дрргоаст	Existing	No Build	Build	Existing	No Build	Build		
S English Station Road at Patio Homes								
Entrance Westbound			В			В		
Entrance Westbound			11.7			13.8		
S English Station Road Southbound (left)			Α			Α		
The second secon			8.0			8.5		
S English Station Road at Apartment Entrance								
Entrance Eastbound			В			В		
Zinianoo Zaotboana			11.7			14.0		
S English Station Road Southbound (left)			Α			Α		
5 2. ig.io.i Gladoff (left)			8.0			8.6		

Key: Level of Service, Delay in seconds per vehicle

The entrances were evaluated for turn lanes using the Kentucky Transportation Cabinet <u>Highway Design Guidance</u> <u>Manual</u> dated March, 2017. Using the volumes in Figure 6, no turn lanes are required at the entrances.

### **CONCLUSIONS**

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2023, there will be a minimal impact to the existing highway network. No improvements are required.

## **APPENDIX**

### 1007 South English Station Road Traffic Impact Study

### Jefferson County, KY

Classified Turn Movement Count

Site 1 of 1 S English Station Rd (North) Lake Village Dr S English Station Rd (South) English Park Cir



### **Traffic Counts**

41 Peabody Street, Nashville, TN 37210 10 Gienlake Parkway, Suite 130, Atlanta, GA 30328 555 Fayetteville Street, Suite 201, Raieigh, NC 27601 1229 South Shelby Street, Louisville, KY 40203 6565 North MacArthur Boulevard, Suite 225, Dallas, TX 75039

hello@martraffic.com www.marrtraffic.com

1 (800) 615-3765

Lat/Long Weather

38.224740°, -85.494760° Fair 55°F

Date

			South	bound	-				West	tbound					North	bound					East	bound			T
		SE	nglish Stal	tion Rd (N	North)				Lake V	illage Dr	W. C		u	SE	nglish Sta	tion Rd (S	outh)	NO PETER ACTUAL			English	Park Cir			1
	U-Tum	Left	Thru	Right	Peds	App	U-Tum	Left	Thru	Right	Peds	App	U-Tum	Left	Thru	Right	Peds	App	U-Tum	Left	Thru	Right	Peds	App	In
0700 - 0715	0	1	22	0	0	23	0	0	0	2	0	2	0	0	22	1	0	23	1	14	0	3	0	18	66
0715 - 0730	0	0	43	1	0	44	0	1	0	3	0	4	0	0	63	1	0	64	0	22	0	7	0	29	14
0730 - 0745	0	0	53	5	0	58	0	0	0	0	0	0	0	0	71	0	0	71	0	17	0	8	0	25	15
0745 - 0800	0	0	54	3	0	57	0	1	0	1	0	2	0	0	55	1	0	56	0	12	0	12	0	24	13
0800 - 0815	0	1	62	4	0	67	0	1	0	0	0	1	0	1	50	0	0	51	0	8	0	8	0	16	13
0815 - 0830	0	0	37	1	0	38	0	0	0	3	0	3	0	1	42	0	0	43	0	15	1	7	3	26	1
0830 - 0845	0	0	24	4	0	28	0	1	0	2	0	3	0	0	42	0	0	42	0	14	0	2	0	16	8
0845 - 0900	0	0	24	3	0	27	0	0	0	0	0	0	0	1	28	2	0	31	0	18	0	0	0	18	7
1600 - 1615	0	2	29	14	0	45	0	0	0	2	0	2	0	2	32	1	0	35	0	1	0	0	0	1	8
1615 - 1630	0	4	39	13	3	59	0	0	0	1	0	1	0	3	46	0	0	49	0	6	0	0	0	6	1
1630 - 1645	0	2	43	12	0	57	0	0	0	3	0	3	0	3	53	0	0	56	0	6	0	2	0	8	1
1645 - 1700	0	1	43	15	0	59	0	0	0	1	0	1	0	5	55	0	0	60	0	12	0	1	0	13	1
1700 - 1715	0	0	46	12	0	58	0	1	0	1	0	2	0	4	86	1	0	91	0	5	1	0	0	6	15
1715 - 1730	0	3	60	13	0	76	0	0	0	1	0	1	0	10	104	0	0	114	0	11	0	2	0	13	20
1730 - 1745	0	4	59	18	0	81	0	2	0	3	0	5	0	5	83	1	0	89	0	7	0	8	0	15	19
1745 - 1800	0	2	24	15	0	41	0	0	0	2	0	2	0	4	50	1	0	55	0	6	0	2	0	8	1(
0715 - 0730	0	0	43	1	0	44	0	1	0	3	0	4	0	0	63	1	0	64	0	22	0	7	0	29	1
0730 - 0745	0	0	53	5	0	58	0	0	0	0	0	0	0	0	71	0	0	71	0	17	0	8	0	25	1
0745 - 0800	0	0	54	3	0	57	0	1	0	1	0	2	0	0	55	1	0	56	0	12	0	12	0	24	13
0800 - 0815	0	1	62	4	0	67	0	1	0	0	0	1	0	1	50	0	0	51	0	8	0	8	0	16	13
AM PEAK	0	1	212	13	0	226	0	3	0	4	0	7	0	1	239	2	0	242	0	59	0	35	0	94	5
1645 - 1700	0	1	43	15	0	59	0	0	0	1	0	1	0	5	55	0	0	60	0	12	0	1	0	13	13
1700 - 1715	0	0	46	12	0	58	0	1	0	1	0	2	0	4	86	1	0	91	0	5	1	0	0	6	15
1715 - 1730	0	3	60	13	0	76	0	0	0	1	0	1	0	10	104	0	0	114	0	11	0	2	0	13	20
1730 - 1745	0	4	59	18	0	81	0	2	0	3	0	5	0	5	83	1	0	89	0	7	0	8	0	15	19
PM PEAK	0	8	208	58	0	274	0	3	0	6	0	9	0	24	328	2	0	354	0	35	4	11	0	47	68

## **HCS** Reports

			HCS7	Two	o-Wa	y Sto	p-C	ontro	l Rep	oort						
General Information							Site	Infor	matic	n					FIRE	
Analyst	DBZ						Inte	rsection			S En	glish Sta	ation at	Pati		
Agency/Co.	Dian	e B Zimi	merman	Traffic E	ngineer	ing	Juri	sdiction		gran.					Tay 149	
Date Performed	7/13	/2020	***************************************				Eas	t/West St	reet		Entra	ance				
Analysis Year	2023		A COLO		DOM:		Nor	th/South	Street	S 121	S En	glish Sta	ition		BALLE	
Time Analyzed	AM F	Peak					Pea	k Hour Fa	ector		0.92	-				
Intersection Orientation	Norti	h-South					Ana	lysis Tim	e Period	(hrs)	0.25			No. of the last		
Project Description	Suns	hine														
Lanes		DE L			T.Sin				Table 1	1350					tau dan	
				74 4 7 4 4 7 7		or Street: No		144								
Vehicle Volumes and Ad	justme	nts		200												
Approach		Eastb	ound			West	bound			North	bound		Π	South	bound	-
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Flicity		0	0	0	Me	0	1	0	0	-				-	1	
Number of Lanes		U				-	-	U	-	0	1	0	0	0	1	1
		0	-				LR	0	U	0	1	0 TR	0	LT	20133	
Number of Lanes		U				7	-	15		0	332		0	-	300	
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)						7	-			0		TR	0	LT		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked						1	LR	15		0		TR		LT 4		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)						1	-	15		0		TR		LT 4		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized						1	LR	15		0		TR		LT 4		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage					vided	1	LR	15		0		TR	0	LT 4		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage	eadway				vided	1	LR	15		0		TR		LT 4		
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up Ho	eadway				vided	1	LR	15 1				TR		LT 4		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up He  Base Critical Headway (sec)	eadway				vided	7.1 6.41	LR	6.2				TR		4 1 1 4.11 4.11		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up Ho  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)	eadway				vided	7.1 6.41 3.5	LR	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up He  Base Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)  Follow-Up Headway (sec)		/s		Undi	vided	7.1 6.41	LR	6.2				TR		4 1 1 4.11 4.11		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up House Critical Headway (sec)  Critical Headway (sec)  Base Follow-Up Headway (sec)		/s		Undi	vided	7.1 6.41 3.5	LR	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up 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)		/s		Undi	vided	7.1 6.41 3.5	LR	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up 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)		/s		Undi	vided	7.1 6.41 3.5	LR	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2 2.21		
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up He 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		/s		Undi	vided	7.1 6.41 3.5	LR 00	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2 2.21		
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)		/s		Undi	vided	7.1 6.41 3.5	24 563 0.04 0.1	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2 2.21		
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh) Control Delay (s/veh)		/s		Undi	vided	7.1 6.41 3.5	24 563 0.04 0.1	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2 2.21 4 1201 0.00		
Number of Lanes  Configuration  Volume (veh/h)  Percent Heavy Vehicles (%)  Proportion Time Blocked  Percent Grade (%)  Right Turn Channelized  Median Type   Storage  Critical and Follow-up He 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		/s		Undi	vided	7.1 6.41 3.5	24 563 0.04 0.1 11.7 B	6.2 6.2 6.21 3.3				TR		4.1 4.11 2.2 2.21 4 1201 0.00 0.0	300	

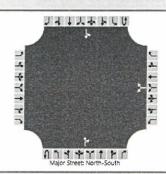
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	HCS7 Two-Way St	op-Control Report	
General Information		Site Information	
Analyst	DBZ	Intersection	S English Station at Pati
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/13/2020	East/West Street	Entrance
Analysis Year	2023	North/South Street	S English Station
Time Analyzed	PM Peak	Peak Hour Factor	0.84
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Sunshine		

#### Lanes



Vehicle Volumes and Ad	justme	nts	22.													
Approach		Eastb	ound			West	bound			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	10	1	2	3	4U	4	5	6
Number of Lanes	TO SERVICE	0	0	0	TENTE Section	0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)	1	18.78	327	1000	Mark.	4	I Year	9	TE SE	Marz	442	7	17.00	16	329	Tree
Percent Heavy Vehicles (%)						1		1						1		
Proportion Time Blocked		MA		6157			men		148	319319	1998	1000		THE STATE OF	THE STATE OF	
Percent Grade (%)						-	0				-	-				
Right Turn Channelized					Tri-li					TRE			EUC		Zi Als	JE2
Median Type   Storage	1			Undi	vided		***************************************	***************************************								
Critical and Follow-up H	eadway	ys									NO.				1910	
Base Critical Headway (sec)						7.1		6.2						4.1		Г
Critical Headway (sec)					oletore o maio	6.41	11111	6.21		a Ri	777.8	Tam		4.11	Marie	188
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)	1000				1572	3.51		3.31	1911		and the	TE THE	1000	2.21	325	
Delay, Queue Length, an	d Level	of Se	rvice													
Flow Rate, v (veh/h)	T						15							19		
Capacity, c (veh/h)				2119			424		12318		The same		122	1038	1	1121
v/c Ratio							0.04							0.02		
95% Queue Length, Q <sub>95</sub> (veh)							0.1	350					WANTE.	0.1		
Control Delay (s/veh)							13.8							8.5		
Level of Service (LOS)			657	Mail:		<b>20</b> = 0	В						a de la	Α		
Approach Delay (s/veh)					-	13	3.8			<del>                                      </del>	harawan a a d			0.	6	-

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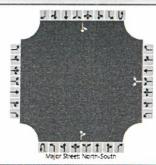
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Approach LOS

General Information		Site Information	
Analyst	DBZ	Intersection	S English Station at Apt
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/13/2020	East/West Street	Entrance
Analysis Year	2023	North/South Street	S English Station
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Sunshine		

#### Lanes



Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	Т	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	1000	0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)	1015	HOR	EFFE	100	1	13	138	29	1913	Falls	305	4	1300	11	296	100
Percent Heavy Vehicles (%)						1		1						1		
Proportion Time Blocked		Ont.	17197	100			100	25/07	-		T. II		VIII EST	Files	135	100
Percent Grade (%)							0	denomination of								
Right Turn Channelized	1		CLE	Y/DE		SEAT										
Median Type   Storage				Undi	vided											-
Critical and Follow-up H	eadway	ys				6.61	4634		1149						No.	
Base Critical Headway (sec)	T					7.1		6.2						4.1		
Critical Headway (sec)			man			6.41	17975	6.21				W.	TOTAL	4.11	766	TA
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)				A STATE OF THE PARTY OF THE PAR	BOS	3.51		3.31		A SAN	2			2.21	77773	
Delay, Queue Length, an	d Level	of Se	rvice		<b>V</b> ) :					N.						
Flow Rate, v (veh/h)							46							12		
Capacity, c (veh/h)					7.5		581					1995	150	1229	2.33	
v/c Ratio							0.08							0.01		
95% Queue Length, Q <sub>95</sub> (veh)			II.A		表生	Line	0.3	23376	300					0.0	3118	
Control Delay (s/veh)							11.7							8.0		
Level of Service (LOS)					100/25		В	15777	***		1000	77.28		Α	7	NEW YEAR
Approach Delay (s/veh)						11	.7							0.	4	
Approach LOS				1000		Е	3			-	27/16/10				1	C HS

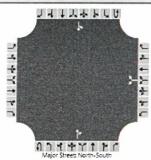
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	HCS7 Two-Way St	op control report	
General Information		Site Information	
Analyst	DBZ	Intersection	S English Station at Apt
Agency/Co.	Diane 8 Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/13/2020	East/West Street	Entrance
Analysis Year	2023	North/South Street	S English Station
Time Analyzed	PM Peak	Peak Hour Factor	0.84
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Sunshine	- American Company	

### Lanes



Vehicle Volumes and Ad	liustma	ntc		3783						65528	NESTERS.	B1949	AME H			S STATE
	Justine	-					18359									
Approach		Eastl	oound			West	bound	_		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	10	1	2	3	4U	4	5	6
Number of Lanes		0	0	0	1000	0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)	E Carrie	THE STREET	Sing	5 (5)	1	8		20		515	429	13	THE	32	301	199
Percent Heavy Vehicles (%)						1		1						1		
Proportion Time Blocked		THE		BIRE		1323		Jimes.		11123	2550	F	1000		1000	84
Percent Grade (%)							0									
Right Turn Channelized					0.11			Mestrone	300.23				11516	MO (1)	TARREST	
Median Type   Storage				Undi	vided											-
Critical and Follow-up H	eadway	/s		-45				beter.	College.							y M
Base Critical Headway (sec)	T					7.1		6.2						4.1		
Critical Headway (sec)		7.17.19		TET		6.41		6.21				The same	2572	4.11		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)		1000	17.00			3.51	1346	3.31						2.21		
Delay, Queue Length, an	d Level	of Se	rvice													
Flow Rate, v (veh/h)	T						33							38		
Capacity, c (veh/h)		THE .					432			78 9				1046		
v/c Ratio							0.08							0.04		
95% Queue Length, Q <sub>95</sub> (veh)					To file		0.2			N.E	1	Batt.		0.1		
Control Delay (s/veh)							14.0							8.6		al management of
Level of Service (LOS)		272					В						FIFT	Α		
Approach Delay (s/veh)	T					14	1.0							1.	2	
Approach LOS					SURE		3	11111111								

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