final report

July 5, 2022

Traffic Impact Study

Sina Office Buildings
4922 Brownsboro Road
Louisville, KY

Prepared for

Louisville Metro Planning Commission
Kentucky Transportation Cabinet

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INTRODUCTION

The development plan for two office buildings at 4922 Brownsboro Road in Louisville, KY shows a 69,960 square feet of office buildings. **Figure 1** displays a map of the site. Access to the center will be from Brownsboro Road and Warrington Way. The purpose of this study is to examine the traffic impacts of the development upon the adjacent highway system. For this study, the impact area was defined to be the intersections along Brownsboro Road with Herr Lane, Crossgate Lane, Warrington Way, I 264 exit ramp and US 42.

Figure 1. Site Map

EXISTING CONDITIONS

Brownsboro Road is a state-maintained road (KY 22) with an estimated 2022 ADT of 14,000 vehicles per day between the I 264 exit ramp and Herr Lane, as estimated from a 2018 Kentucky Transportation Cabinet count at station 196. The road is a two-lane highway with ten-foot lanes, a two-way left turn lane, a stabilized shoulder eastbound and curb and gutter westbound. The speed limit is 35 mph. There are sidewalks on the north side. The intersections with US 42, I 264 ramp and Herr Lane are controlled with a traffic signal. The intersections with Warrington Way and Crossgate Lane are controlled with stop signs on Warrington Way and Crossgate Lane.

Peak hour traffic counts for the intersection were obtained on Thursday, April 21, 2022. The a.m. peak hour was 7:15-8:15 for each intersection but the p.m. peak hour varied. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes.

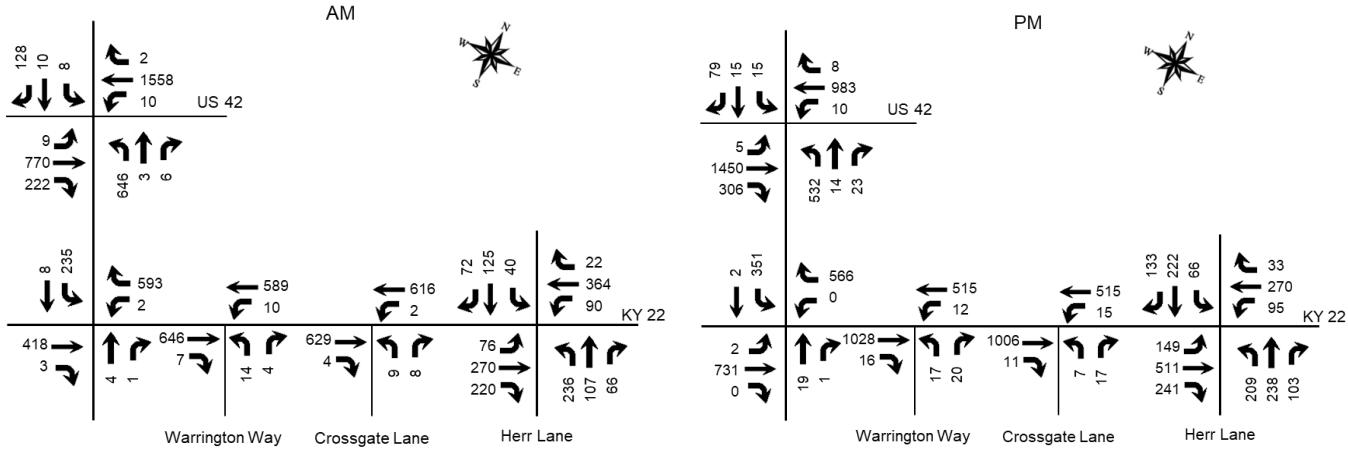

Figure 2. Existing (2022) Peak Hour Volumes

FUTURE CONDITIONS

The project completion date is 2024. An annual growth rate of 1.0 percent was applied to all 2022 traffic volumes. This is based upon a review of historical traffic counts at stations 195, 196, 198, and 004. **Figure 3** displays the 2024 No Build peak hour volumes.

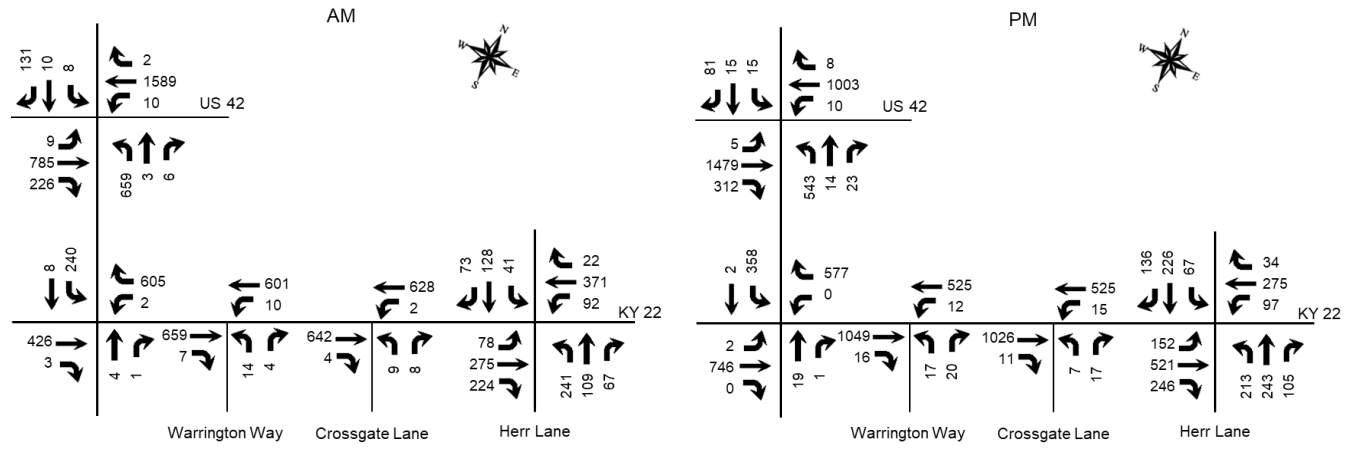

Figure 3. No Build Peak Hour Volumes

TRIP GENERATION

The Institute of Transportation Engineers Trip Generation Manual, 11th Edition contains trip generation rates for a wide range of developments. The land uses 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. Peak Hour		
Land Use	Trips	In	Out	Trips	In	Out
Office (69,960 sq ft)	123	108	15	123	21	102

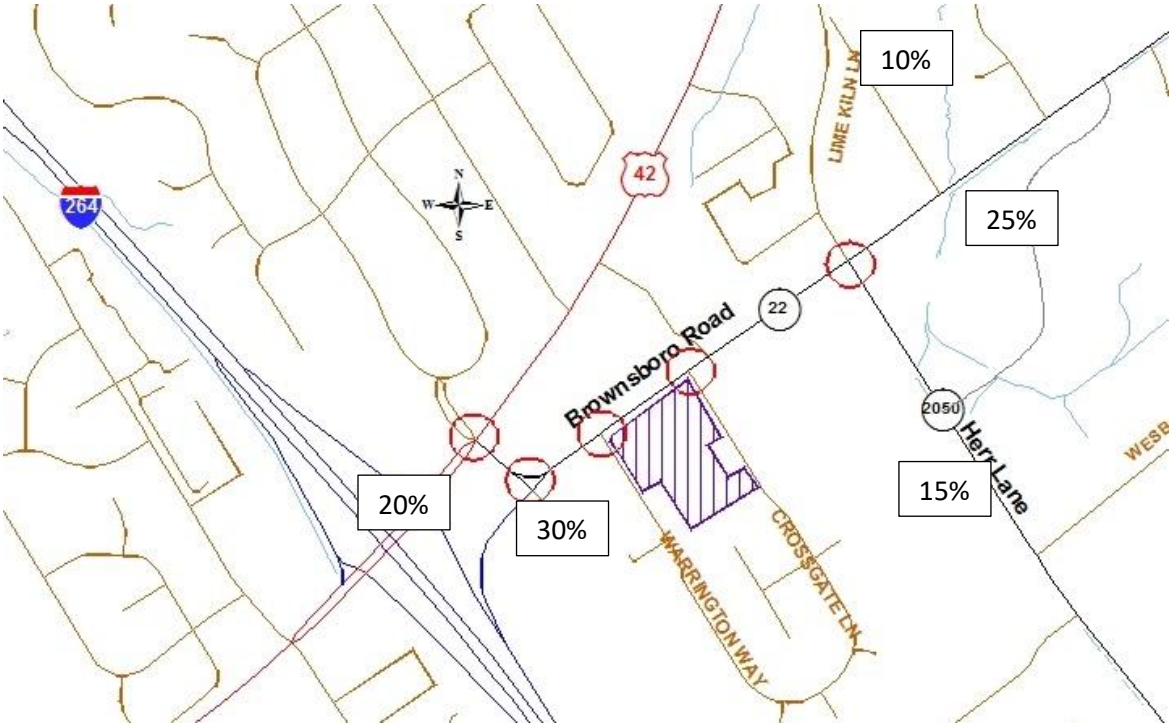

Figure 4. Trip Distribution Percentages

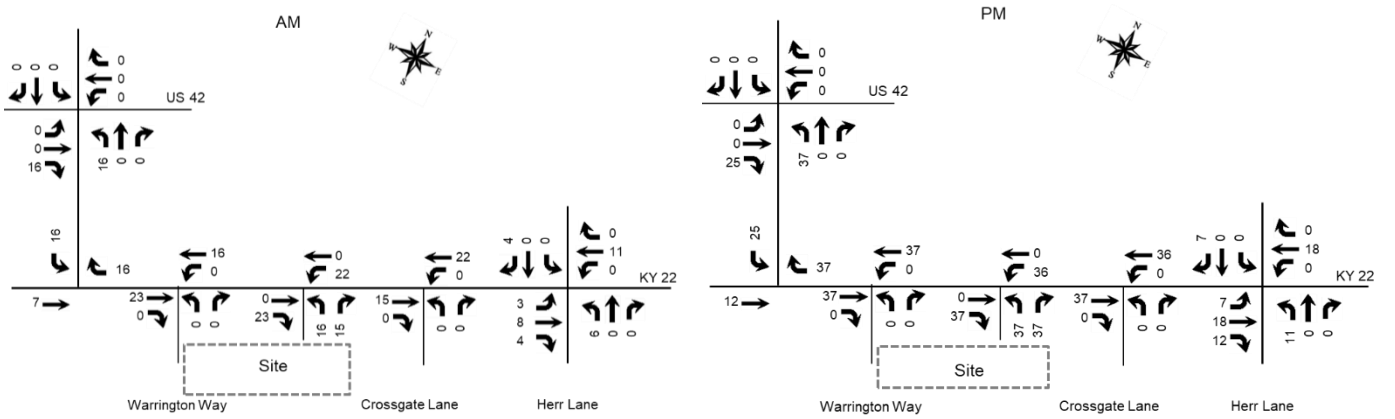

Figure 5. Peak Hour Trips Generated by Site

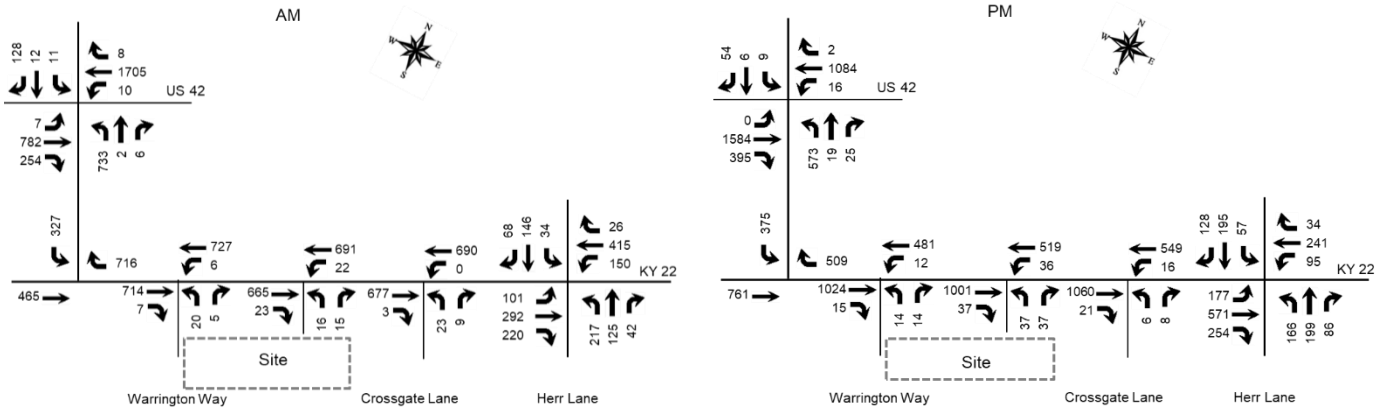

Figure 6. 2024 Build Peak Hour Volumes

ANALYSIS

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

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the Highway Capacity Manual, 7th edition. Future delays and Level of Service were determined for the intersections using the HCS Streets (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	2024 No Build	2024 Build	2022 Existing	2024 No Build	2024 Build
US 42 at KY 22	**C 34.3**	**D 36.1**	**D 36.5**	**C 25.6**	**C 26.6**	**C 29.2**
US 42 Eastbound	C 22.2	C 22.9	C 23.2	B 18.2	B 19.8	C 23.5
US 42 Westbound	C 26.9	C 29.5	C 30.2	C 22.1	C 23.0	C 25.2
KY 22 Northbound	D 53.5	D 53.7	D 53.9	D 46.0	D 45.8	D 44.6
Northfield Drive Southbound	F 112.3	F 118.1	F 118.1	E 70.9	E 70.8	E 70.8
I 264 ramp at KY 22	**B 14.2**	**B 15.0**	**B 16.7**	**B 17.7**	**B 19.1**	**D 35.3**
I 264 ramp Eastbound	B 11.5	B 11.6	B 12.5	B 16.1	B 17.7	B 35.7
KY 22 Westbound	B 15.1	B 16.5	B 19.3	B 18.4	B 19.8	D 40.2
VA Hospital Northbound	B 12.8	B 13.1	B 13.4	B 13.7	B 14.1	B 17.0
KY 22 Southbound	B 16.6	B 17.1	B 17.9	C 20.2	C 21.2	C 27.2
KY 22 at Warrington Way						
KY 22 Westbound	A 9.2	A 9.2	A 9.5	B 10.7	B 10.8	B 10.8
Warrington Way Northbound	C 17.4	C 17.7	C 18.5	C 21.9	C 22.4	C 23.0
KY 22 at Crossgate Lane						
KY 22 Westbound	A 9.1	A 9.2	A 9.2	B 10.9	B 11.0	B 11.3
Crossgate Lane Northbound	C 16.6	C 16.8	C 17.3	C 20.9	C 21.4	C 22.6
KY 22 at Herr Lane	**C 26.5**	**C 26.9**	**C 27.9**	**C 35.4**	**D 36.8**	**D 38.2**
KY 22 Eastbound	C 22.3	C 22.6	C 23.0	C 31.3	C 32.3	C 32.9
KY 22 Westbound	C 26.1	C 26.5	C 27.5	C 28.2	C 29.1	C 29.7
Herr Lane Northbound	C 28.9	C 29.4	C 30.7	D 41.2	D 43.6	D 46.7

	A.M.			P.M.		
Approach	2022 Existing	2024 No Build	2024 Build	2022 Existing	2024 No Build	2024 Build
Lime Kiln Lane Southbound	C 33.0	C 33.6	C 35.3	D 44.9	D 46.5	D 48.8
KY 22 at Entrance						
KY 22 Westbound			A 9.7			B 10.8
Entrance Northbound			C 17.8			D 31.7

Key: Level of Service, Delay in seconds per vehicle

The entrances were 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 2034. The 2034 volumes were determined applying a 0.5 percent annual growth rate from 2024. Additionally, trip generation from the Veterans Administration Hospital (Traffic Impact Study dated April 2017) and Providence Point (Traffic Impact Study dated October 30, 2020) have been included. The trip generation from each study is included in the appendix.

Figure 7 illustrates the 2034 No Build volumes. **Figure 8** illustrates the 2034 Build Volumes. Using the volumes in Figure 8, a right turn lane will not be required at the entrance. **Table 3** summarizes the delay and Level of Service for 2034.

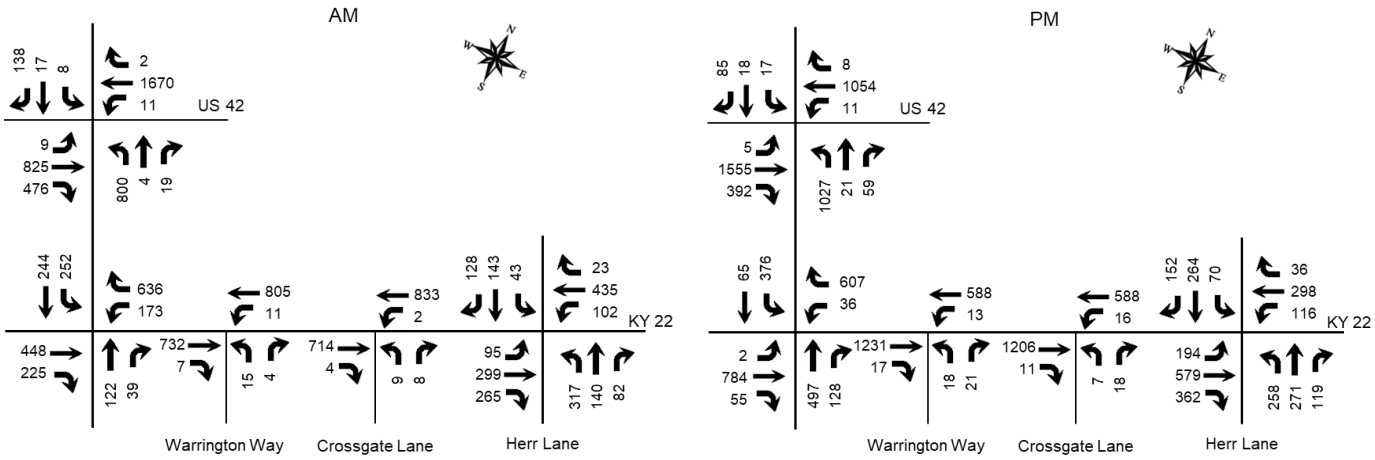

Figure 7. 2034 No Build Peak Hour Volumes

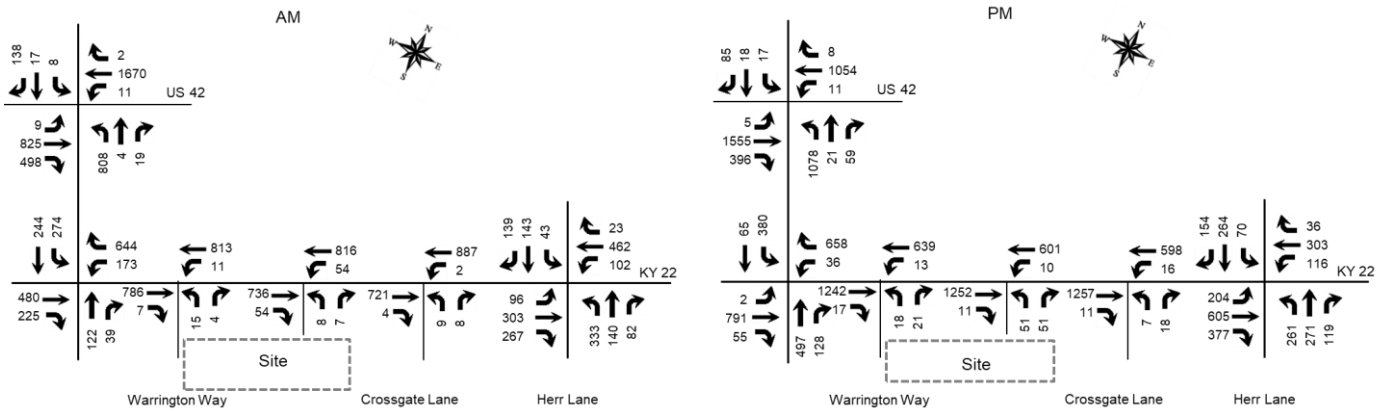

Figure 8. 2034 Build Peak Hour Volumes

The results shown in Table 3 reflect the following roadway improvements. US 42 will have 3 through lanes westbound. KY 22 will have2 through lanes eastbound. These projects are planned for construction in 2025 by the Kentucky Transportation Cabinet.

Table 3. Peak Hour Level of Service

	A.M.			P.M.		
Approach	2022 Existing	2034 No Build	2034 Build	2022 Existing	2023 No Build	2034 Build
US 42 at KY 22	**C 34.3**	**D 35.4**	**D 35.9**	**C 25.6**	**D 51.2**	**D 56.4**
US 42 Eastbound	C 22.2	C 31.3	C 32.3	B 18.2	E 65.7	E 76.7
US 42 Westbound	C 26.9	C 21.7	C 22.0	C 22.1	C 30.4	C 31.9
KY 22 Northbound	D 53.5	D 51.3	D 51.7	D 46.0	D 42.4	D 42.1
Northfield Drive Southbound	F 112.3	F 128.8	F 128.8	E 70.9	F 82.2	F 82.2
I 264 ramp at KY 22	**B 14.2**	**D 50.0**	**D 53.1**	**B 17.7**	**E 60.5**	**E 61.1**
I 264 ramp Eastbound	B 11.5	E 55.0	E 58.8	B 16.1	E 73.7	E 76.2
KY 22 Westbound	B 15.1	D 36.5	D 38.3	B 18.4	C 20.7	C 22.4
VA Hospital Northbound	B 12.8	C 33.1	D 35.2	B 13.7	E 76.3	E 76.5
KY 22 Southbound	B 16.6	E 70.7	E 74.2	C 20.2	E 71.1	E 71.4

	A.M.			P.M.		
Approach	2022 Existing	2034 No Build	2034 Build	2022 Existing	2023 No Build	2034 Build
KY 22 at Warrington Way						
KY 22 Westbound	A 9.2	A 9.5	A 9.8	B 10.7	B 12.4	B 12.5
Warrington Way Northbound	C 17.4	C 21.3	C 22.3	C 21.9	C 23.3	C 23.8
KY 22 at Crossgate Lane						
KY 22 Westbound	A 9.1	A 9.5	A 9.5	B 10.9	B 12.4	B 12.8
Crossgate Lane Northbound	C 16.6	C 18.2	C 18.8	C 20.9	C 19.5	C 20.4
KY 22 at Herr Lane	**C 26.5**	**C 32.8**	**C 34.5**	**C 35.4**	**D 51.5**	**D 52.1**
KY 22 Eastbound	C 22.3	C 26.8	C 27.4	C 31.3	D 41.8	D 42.9
KY 22 Westbound	C 26.1	C 32.4	C 33.9	C 28.2	D 37.5	D 38.2
Herr Lane Northbound	C 28.9	D 35.2	D 37.1	D 41.2	E 66.2	E 67.0
Lime Kiln Lane Southbound	C 33.0	D 42.1	D 45.2	D 44.9	E 70.4	E 70.5
KY 22 at Entrance						
KY 22 Westbound			B 10.1			B 11.9
Entrance Northbound			C 19.5			D 33.0

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 2024 and 2034, there will be a manageable impact to the existing highway network, with Levels of Service remaining within acceptable limits. The delays experienced in the area will increase within acceptable limits, therefore no improvements are recommended.

APPENDIX

Traffic Counts

Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION
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Louisville, KY

Site 1 of 5
SR-22 Brownsboro Rd
Northfield Dr
US-42 Brownsboro Rd
US-42 W

Date
Thursday, April 21, 2022

Weather
Cloudy
63°F

Lat/Long
38.281332°, -85.634745°

0700 - 0900 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound					Southbound					Eastbound					Westbound					
	SR-22 Brownsboro Rd					Northfield Dr					US-42 Brownsboro Rd					US-42 W					
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	Total
0700 - 0715	106	0	1	0	107	0	1	9	0	10	2	83	54	1	140	3	351	2	0	356	613
0715 - 0730	149	0	2	0	151	0	4	29	0	33	1	133	71	0	205	2	410	0	0	412	801
0730 - 0745	165	0	1	0	166	3	2	54	0	59	3	148	51	0	202	3	390	0	0	393	820
0745 - 0800	166	1	1	0	168	5	1	26	0	32	3	246	50	0	299	3	414	1	0	418	917
Hourly Total	586	1	5	0	**592**	8	8	118	0	**134**	9	610	226	1	**846**	11	1565	3	0	**1579**	**3151**
0800 - 0815	165	2	2	1	170	0	3	19	0	22	2	243	50	0	295	2	344	1	0	347	834
0815 - 0830	136	1	1	0	138	0	2	11	0	13	7	180	40	0	227	4	317	2	0	323	701
0830 - 0845	134	0	2	0	136	1	1	26	0	28	5	205	53	0	263	8	346	0	0	354	781
0845 - 0900	174	1	2	0	177	1	5	18	0	24	6	220	52	0	278	2	320	4	0	326	805
Hourly Total	609	4	7	1	**621**	2	11	74	0	**87**	20	848	195	0	**1063**	16	1327	7	0	**1350**	**3121**
Grand Total	1195	5	12	1	**1213**	10	19	192	0	**221**	29	1458	421	1	**1909**	27	2892	10	0	**2929**	**6272**
Approach %	98.52	0.41	0.99	0.08	-	4.52	8.60	86.88	0.00	-	1.52	76.38	22.05	0.05	-	0.92	98.74	0.34	0.00	-	
Intersection %	19.05	0.08	0.19	0.02	19.34	0.16	0.30	3.06	0.00	3.52	0.46	23.25	6.71	0.02	30.44	0.43	46.11	0.16	0.00	46.70	
PHF	0.97	0.38	0.75	0.25	**0.96**	0.40	0.63	0.59	0.00	**0.62**	0.75	0.78	0.78	0.00	**0.84**	0.83	0.94	0.50	0.00	**0.94**	**0.92**

1600 - 1800 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound					Southbound					Eastbound					Westbound					
	SR-22 Brownsboro Rd					Northfield Dr					US-42 Brownsboro Rd					US-42 W					
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	Total
1600 - 1615	143	5	5	0	153	2	2	6	0	10	0	297	61	0	358	1	243	1	0	245	766
1615 - 1630	104	3	4	0	111	3	2	7	0	12	1	368	75	0	444	3	258	2	0	263	830
1630 - 1645	143	2	4	0	149	2	1	14	0	17	0	312	70	0	382	0	240	0	0	240	788
1645 - 1700	131	4	4	0	139	1	5	21	0	27	1	252	92	0	345	2	264	0	0	266	777
Hourly Total	521	14	17	0	**552**	8	10	48	0	**66**	2	1229	298	0	**1529**	6	1005	3	0	**1014**	**3161**
1700 - 1715	140	1	6	0	147	2	3	21	0	26	2	362	69	0	433	3	247	3	0	253	859
1715 - 1730	162	2	2	0	166	5	4	20	0	29	2	336	66	0	404	1	204	2	0	207	806
1730 - 1745	120	9	7	0	136	4	5	15	0	24	0	357	80	0	437	0	280	0	0	280	877
1745 - 1800	110	2	8	0	120	4	3	23	0	30	1	395	91	0	487	6	252	3	0	261	898
Hourly Total	532	14	23	0	**569**	15	15	79	0	**109**	5	1450	306	0	**1761**	10	983	8	0	**1001**	**3440**
Grand Total	1053	28	40	0	**1121**	23	25	127	0	**175**	7	2679	604	0	**3290**	16	1988	11	0	**2015**	**6601**
Approach %	93.93	2.50	3.57	0.00	-	13.14	14.29	72.57	0.00	-	0.21	81.43	18.36	0.00	-	0.79	98.66	0.55	0.00	-	
Intersection %	15.95	0.42	0.61	0.00	16.98	0.35	0.38	1.92	0.00	2.65	0.11	40.58	9.15	0.00	49.84	0.24	30.12	0.17	0.00	30.53	
PHF	0.82	0.39	0.72	0.00	**0.86**	0.75	0.75	0.86	0.00	**0.91**	0.63	0.92	0.84	0.00	**0.90**	0.42	0.88	0.67	0.00	**0.89**	**0.96**

Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION
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Louisville, KY

Site 2 of 5
Driveway
SR-22 Brownsboro Rd (North)
I-264 Henry Watterson Expy E/Bound Off Ramp
SR-22 Brownsboro Rd (East)

Date
Thursday, April 21, 2022

Lat/Long
38.280607 °, -85.633707°

Weather
Cloudy
63°F

0700 - 0900 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound				Southbound				Eastbound				Westbound				
	Driveway				SR-22 Brownsboro Rd (North)				I-264 Henry Watterson Expy E/Bound Off Ra				SR-22 Brownsboro Rd (East)				
TIME	Thru 2.1	Right 2.2	U-Turn 2.3	App Total	Left 2.4	Thru 2.5	U-Turn 2.6	App Total	Left 2.7	Thru 2.8	Right 2.9	App Total	Left 2.10	Right 2.11	U-Turn 2.12	App Total	Int Total
0700 - 0715	0	0	0	0	51	3	0	54	0	95	2	97	0	104	0	104	255
0715 - 0730	1	0	0	1	68	2	0	70	0	147	0	147	0	132	0	132	350
0730 - 0745	0	0	0	0	55	4	0	59	0	87	2	89	1	149	0	150	298
0745 - 0800	0	1	0	1	57	1	0	58	0	82	1	83	1	163	0	164	306
Hourly Total	1	1	0	**2**	231	10	0	**241**	0	411	5	**416**	2	548	0	**550**	**1209**
0800 - 0815	3	0	0	3	55	1	0	56	0	102	0	102	0	149	0	149	310
0815 - 0830	1	8	0	9	40	0	0	40	2	98	1	101	0	112	0	112	262
0830 - 0845	2	1	0	3	42	6	0	48	0	91	1	92	0	141	1	142	285
0845 - 0900	3	1	0	4	62	1	0	63	0	104	0	104	1	156	0	157	328
Hourly Total	9	10	0	**19**	199	8	0	**207**	2	395	2	**399**	1	558	1	**560**	**1185**
Grand Total	10	11	0	**21**	430	18	0	**448**	2	806	7	**815**	3	1106	1	**1110**	**2394**
Approach %	47.62	52.38	0.00	-	95.98	4.02	0.00	-	0.25	98.90	0.86	-	0.27	99.64	0.09	-	
Intersection %	0.42	0.46	0.00	0.88	17.96	0.75	0.00	18.71	0.08	33.67	0.29	34.04	0.13	46.20	0.04	46.37	
PHF	0.33	0.25	0.00	**0.42**	0.86	0.50	0.00	**0.87**	0.00	0.71	0.38	**0.72**	0.50	0.91	0.00	**0.91**	**0.90**

1600 - 1800 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound				Southbound				Eastbound				Westbound				
	Driveway				SR-22 Brownsboro Rd (North)				I-264 Henry Watterson Expy E/Bound Off Ra				SR-22 Brownsboro Rd (East)				
TIME	Thru 2.1	Right 2.2	U-Turn 2.3	App Total	Left 2.4	Thru 2.5	U-Turn 2.6	App Total	Left 2.7	Thru 2.8	Right 2.9	App Total	Left 2.10	Right 2.11	U-Turn 2.12	App Total	Int Total
1600 - 1615	3	1	0	4	69	4	0	73	0	136	0	136	1	129	0	130	343
1615 - 1630	5	0	0	5	69	3	0	72	1	179	0	180	0	110	0	110	367
1630 - 1645	2	1	0	3	80	0	0	80	0	208	0	208	0	147	0	147	438
1645 - 1700	1	0	0	1	101	1	0	102	1	185	0	186	0	125	0	125	414
Hourly Total	11	2	0	**13**	319	8	0	**327**	2	708	0	**710**	1	511	0	**512**	**1562**
1700 - 1715	12	0	0	12	87	1	0	88	0	174	0	174	0	155	0	155	429
1715 - 1730	4	0	0	4	83	0	0	83	1	164	0	165	0	139	0	139	391
1730 - 1745	1	1	0	2	71	0	0	71	4	182	1	187	0	119	0	119	379
1745 - 1800	2	1	0	3	104	1	0	105	2	165	0	167	0	120	0	120	395
Hourly Total	19	2	0	**21**	345	2	0	**347**	7	685	1	**693**	0	533	0	**533**	**1594**
Grand Total	30	4	0	**34**	664	10	0	**674**	9	1393	1	**1403**	1	1044	0	**1045**	**3156**
Approach %	88.24	11.76	0.00	-	98.52	1.48	0.00	-	0.64	99.29	0.07	-	0.10	99.90	0.00	-	
Intersection %	0.95	0.13	0.00	1.08	21.04	0.32	0.00	21.36	0.29	44.14	0.03	44.46	0.03	33.08	0.00	33.11	
PHF	0.40	0.25	0.00	**0.42**	0.87	0.50	0.00	**0.87**	0.50	0.88	0.00	**0.88**	0.00	0.91	0.00	**0.91**	**0.95**

Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION
www.marrtraffic.com

Louisville, KY

Site 3 of 5
Warrington Way

SR-22 Brownsboro Rd (West)
SR-22 Brownsboro Rd (East)

Date
Thursday, April 21, 2022

Lat/Long
38.281405°, -85.632461°

Weather
Cloudy
63°F

0700 - 0900 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound Warrington Way				Eastbound SR-22 Brownsboro Rd (West)				Westbound SR-22 Brownsboro Rd (East)				
TIME	Left 3.1	Right 3.2	U-Turn 3.3	App Total	Thru 3.4	Right 3.5	U-Turn 3.6	App Total	Left 3.7	Thru 3.8	U-Turn 3.9	App Total	Int Total
0700 - 0715	4	0	0	4	158	3	0	161	0	108	0	108	273
0715 - 0730	3	1	0	4	221	0	0	221	1	136	0	137	362
0730 - 0745	3	2	0	5	130	2	0	132	1	168	0	169	306
0745 - 0800	4	1	0	5	145	1	0	146	3	148	0	151	302
Hourly Total	14	4	0	**18**	654	6	0	**660**	5	560	0	**565**	**1243**
0800 - 0815	4	0	0	4	150	4	0	154	5	137	0	142	300
0815 - 0830	0	1	0	1	138	7	0	145	5	118	0	123	269
0830 - 0845	1	1	0	2	124	7	0	131	3	138	0	141	274
0845 - 0900	3	3	0	6	166	5	0	171	2	146	0	148	325
Hourly Total	8	5	0	**13**	578	23	0	**601**	15	539	0	**554**	**1168**
Grand Total	22	9	0	**31**	1232	29	0	**1261**	20	1099	0	**1119**	**2411**
Approach %	70.97	29.03	0.00	-	97.70	2.30	0.00	-	1.79	98.21	0.00	-	
Intersection %	0.91	0.37	0.00	1.29	51.10	1.20	0.00	52.30	0.83	45.58	0.00	46.41	
PHF	0.88	0.50	0.00	**0.90**	0.73	0.44	0.00	**0.74**	0.50	0.88	0.00	**0.89**	**0.88**

1600 - 1800 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound Warrington Way				Eastbound SR-22 Brownsboro Rd (West)				Westbound SR-22 Brownsboro Rd (East)				
TIME	Left 3.1	Right 3.2	U-Turn 3.3	App Total	Thru 3.4	Right 3.5	U-Turn 3.6	App Total	Left 3.7	Thru 3.8	U-Turn 3.9	App Total	Int Total
1600 - 1615	9	5	0	14	186	5	0	191	2	121	0	123	328
1615 - 1630	1	4	0	5	248	3	0	251	3	109	0	112	368
1630 - 1645	1	1	0	2	273	4	0	277	1	137	0	138	417
1645 - 1700	11	11	0	22	267	8	0	275	3	120	0	123	420
Hourly Total	22	21	0	**43**	974	20	0	**994**	9	487	0	**496**	**1533**
1700 - 1715	4	4	0	8	240	1	0	241	5	149	0	154	403
1715 - 1730	7	5	0	12	233	1	0	234	3	118	0	121	367
1730 - 1745	7	3	0	10	245	5	0	250	1	110	0	111	371
1745 - 1800	1	2	0	3	254	3	0	257	1	125	0	126	386
Hourly Total	19	14	0	**33**	972	10	0	**982**	10	502	0	**512**	**1527**
Grand Total	41	35	0	**76**	1946	30	0	**1976**	19	989	0	**1008**	**3060**
Approach %	53.95	46.05	0.00	-	98.48	1.52	0.00	-	1.88	98.12	0.00	-	
Intersection %	1.34	1.14	0.00	2.48	63.59	0.98	0.00	64.58	0.62	32.32	0.00	32.94	
PHF	0.39	0.45	0.00	**0.42**	0.94	0.50	0.00	**0.94**	0.60	0.86	0.00	**0.86**	**0.96**

Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION
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Louisville, KY

Site 4 of 5
Crossgate Ln

SR-22 Brownsboro Rd (West)
SR-22 Brownsboro Rd (East)

Date
Thursday, April 21, 2022

Lat/Long
38.282304°, -85.630853°

Weather
Cloudy
63°F

0700 - 0900 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound				Eastbound				Westbound				
	Crossgate Ln				SR-22 Brownsboro Rd (West)				SR-22 Brownsboro Rd (East)				
TIME	Left 4.1	Right 4.2	U-Turn 4.3	App Total	Thru 4.4	Right 4.5	U-Turn 4.6	App Total	Left 4.7	Thru 4.8	U-Turn 4.9	App Total	Int Total
0700 - 0715	1	2	0	3	147	0	0	147	0	105	0	105	255
0715 - 0730	0	4	0	4	222	1	0	223	0	140	0	140	367
0730 - 0745	6	0	0	6	140	1	0	141	1	190	0	191	338
0745 - 0800	1	0	0	1	135	1	0	136	0	151	0	151	288
Hourly Total	8	6	0	**14**	644	3	0	**647**	1	586	0	**587**	**1248**
0800 - 0815	2	4	0	6	132	1	0	133	1	135	0	136	275
0815 - 0830	3	3	0	6	132	0	0	132	0	116	0	116	254
0830 - 0845	4	4	0	8	129	2	0	131	1	140	0	141	280
0845 - 0900	3	1	0	4	161	3	0	164	0	159	0	159	327
Hourly Total	12	12	0	**24**	554	6	0	**560**	2	550	0	**552**	**1136**
Grand Total	20	18	0	**38**	1198	9	0	**1207**	3	1136	0	**1139**	**2384**
Approach %	52.63	47.37	0.00	-	99.25	0.75	0.00	-	0.26	99.74	0.00	-	
Intersection %	0.84	0.76	0.00	1.59	50.25	0.38	0.00	50.63	0.13	47.65	0.00	47.78	
PHF	0.38	0.50	0.00	**0.71**	0.71	1.00	0.00	**0.71**	0.50	0.81	0.00	**0.81**	**0.86**

1600 - 1800 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound				Eastbound				Westbound				
	Crossgate Ln				SR-22 Brownsboro Rd (West)				SR-22 Brownsboro Rd (East)				
TIME	Left 4.1	Right 4.2	U-Turn 4.3	App Total	Thru 4.4	Right 4.5	U-Turn 4.6	App Total	Left 4.7	Thru 4.8	U-Turn 4.9	App Total	Int Total
1600 - 1615	1	3	0	4	206	1	0	207	4	113	0	117	328
1615 - 1630	1	1	0	2	245	2	0	247	3	109	0	112	361
1630 - 1645	3	2	0	5	268	4	0	272	3	138	0	141	418
1645 - 1700	3	8	0	11	257	4	0	261	6	118	0	124	396
Hourly Total	8	14	0	**22**	976	11	0	**987**	16	478	0	**494**	**1503**
1700 - 1715	0	6	0	6	236	1	0	237	3	150	0	153	396
1715 - 1730	4	3	0	7	217	5	0	222	3	122	0	125	354
1730 - 1745	1	2	0	3	257	1	0	258	4	113	0	117	378
1745 - 1800	3	3	0	6	239	4	0	243	2	115	0	117	366
Hourly Total	8	14	0	**22**	949	11	0	**960**	12	500	0	**512**	**1494**
Grand Total	16	28	0	**44**	1925	22	0	**1947**	28	978	0	**1006**	**2997**
Approach %	36.36	63.64	0.00	-	98.87	1.13	0.00	-	2.78	97.22	0.00	-	
Intersection %	0.53	0.93	0.00	1.47	64.23	0.73	0.00	64.96	0.93	32.63	0.00	33.57	
PHF	0.58	0.53	0.00	**0.55**	0.94	0.69	0.00	**0.93**	0.63	0.86	0.00	**0.87**	**0.94**

Classified Turn Movement Count || All vehicles

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Louisville, KY

Site 5 of 5
Herr Ln
Lime Kiln Ln
SR-22 Brownsboro Rd (West)
SR-22 Brownsboro Rd (East)

Date
Thursday, April 21, 2022

Weather
Cloudy
63°F

Lat/Long
38.283890 °, -85.627974°

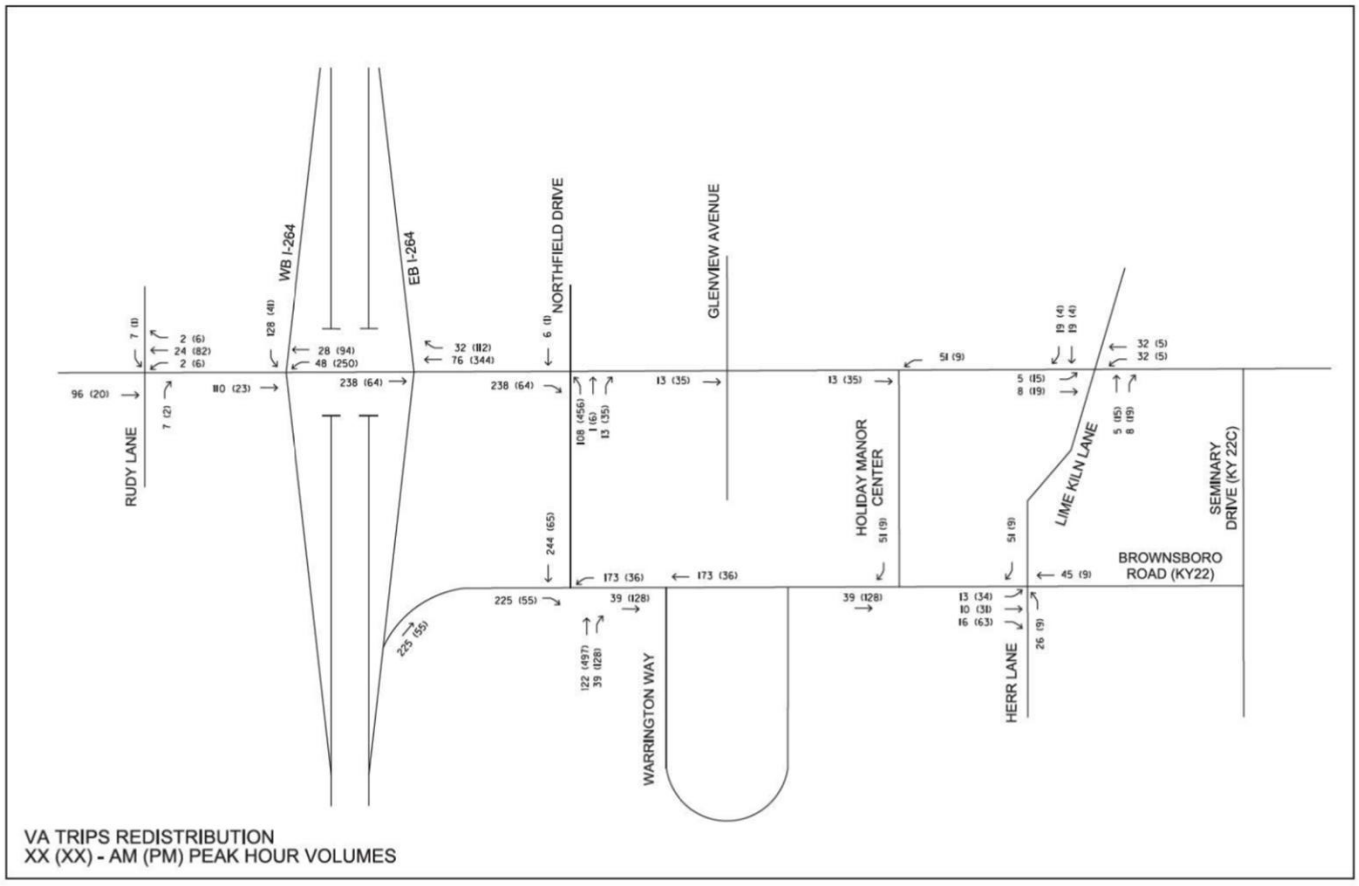
0700 - 0900 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound (Herr Ln)					Southbound (Lime Kiln Ln)					Eastbound (SR-22 Brownsboro Rd (West))					Westbound (SR-22 Brownsboro Rd (East))					
TIME	Left 5.1	Thru 5.2	Right 5.3	U-Turn 5.4	App Total	Left 5.5	Thru 5.6	Right 5.7	U-Turn 5.8	App Total	Left 5.9	Thru 5.10	Right 5.11	U-Turn 5.12	App Total	Left 5.13	Thru 5.14	Right 5.15	U-Turn 5.16	App Total	Int Total
0700 - 0715	50	11	15	0	76	11	25	12	0	48	10	79	52	0	141	13	63	1	0	77	342
0715 - 0730	68	23	15	0	106	24	33	6	0	63	5	107	87	0	199	9	55	3	0	67	435
0730 - 0745	80	20	12	0	112	9	38	27	0	74	15	66	40	0	121	19	107	8	0	134	441
0745 - 0800	52	44	20	0	116	3	34	22	0	59	24	51	41	0	116	37	105	6	0	148	439
Hourly Total	250	98	62	0	**410**	47	130	67	0	**244**	54	303	220	0	**577**	78	330	18	0	**426**	**1657**
0800 - 0815	36	20	19	0	75	4	20	17	0	41	32	46	52	0	130	25	97	5	0	127	373
0815 - 0830	35	30	11	0	76	2	33	19	0	54	28	53	40	0	121	33	79	3	0	115	366
0830 - 0845	33	22	12	0	67	4	36	15	0	55	19	52	42	0	113	35	103	3	0	141	376
0845 - 0900	65	34	14	0	113	8	38	22	0	68	36	67	42	0	145	25	100	14	0	139	465
Hourly Total	169	106	56	0	**331**	18	127	73	0	**218**	115	218	176	0	**509**	118	379	25	0	**522**	**1580**
Grand Total	419	204	118	0	**741**	65	257	140	0	**462**	169	521	396	0	**1086**	196	709	43	0	**948**	**3237**
Approach %	56.55	27.53	15.92	0.00	-	14.07	55.63	30.30	0.00	-	15.56	47.97	36.46	0.00	-	20.68	74.79	4.54	0.00	-	
Intersection %	12.94	6.30	3.65	0.00	22.89	2.01	7.94	4.32	0.00	14.27	5.22	16.10	12.23	0.00	33.55	6.05	21.90	1.33	0.00	29.29	
PHF	0.74	0.61	0.83	0.00	**0.88**	0.42	0.82	0.67	0.00	**0.80**	0.59	0.63	0.63	0.00	**0.71**	0.61	0.85	0.69	0.00	**0.80**	**0.96**

1600 - 1800 (Weekday 2h Session) (04-21-2022)
All vehicles

	Northbound (Herr Ln)					Southbound (Lime Kiln Ln)					Eastbound (SR-22 Brownsboro Rd (West))					Westbound (SR-22 Brownsboro Rd (East))					
TIME	Left 5.1	Thru 5.2	Right 5.3	U-Turn 5.4	App Total	Left 5.5	Thru 5.6	Right 5.7	U-Turn 5.8	App Total	Left 5.9	Thru 5.10	Right 5.11	U-Turn 5.12	App Total	Left 5.13	Thru 5.14	Right 5.15	U-Turn 5.16	App Total	Int Total
1600 - 1615	72	54	26	0	152	7	41	33	0	81	35	111	68	0	214	24	63	9	0	96	543
1615 - 1630	46	39	34	0	119	10	56	22	0	88	39	118	44	0	201	29	60	6	0	95	503
1630 - 1645	43	33	30	0	106	9	51	34	0	94	59	139	64	0	262	21	89	9	0	119	581
1645 - 1700	51	59	23	0	133	12	56	33	0	101	36	138	63	0	237	28	73	10	0	111	582
Hourly Total	212	185	113	0	**510**	38	204	122	0	**364**	169	506	239	0	**914**	102	285	34	0	**421**	**2209**
1700 - 1715	49	54	22	0	125	20	68	27	0	115	32	116	59	0	207	25	81	9	0	115	562
1715 - 1730	43	51	26	0	120	13	42	44	0	99	39	131	61	0	231	23	60	7	0	90	540
1730 - 1745	66	74	32	0	172	21	56	29	0	106	42	126	58	0	226	19	56	7	0	82	586
1745 - 1800	45	40	24	0	109	10	43	33	0	86	38	132	67	0	237	24	76	7	0	107	539
Hourly Total	203	219	104	0	**526**	64	209	133	0	**406**	151	505	245	0	**901**	91	273	30	0	**394**	**2227**
Grand Total	415	404	217	0	**1036**	102	413	255	0	**770**	320	1011	484	0	**1815**	193	558	64	0	**815**	**4436**
Approach %	40.06	39.00	20.95	0.00	-	13.25	53.64	33.12	0.00	-	17.63	55.70	26.67	0.00	-	23.68	68.47	7.85	0.00	-	
Intersection %	9.36	9.11	4.89	0.00	23.35	2.30	9.31	5.75	0.00	17.36	7.21	22.79	10.91	0.00	40.92	4.35	12.58	1.44	0.00	18.37	
PHF	0.79	0.80	0.80	0.00	**0.80**	0.79	0.82	0.76	0.00	**0.92**	0.89	0.93	0.96	0.00	**0.95**	0.85	0.83	0.83	0.00	**0.87**	**0.97**

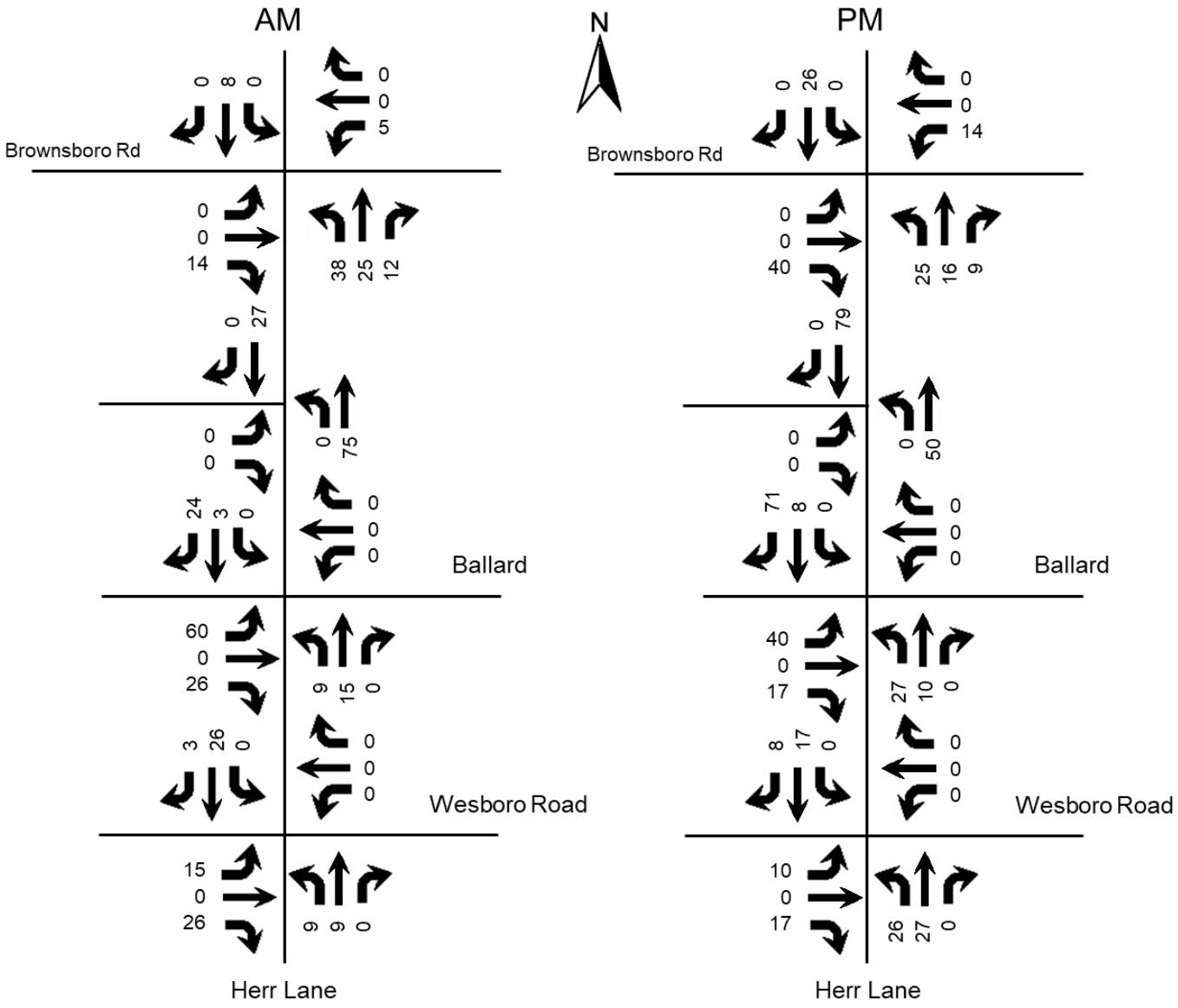
TRIP DISTRIBUTION from VA HOSPITAL



Appendix B Page B 48

Final Environmental Impact Statement
Replacement Robley Rex VAMC April 2017

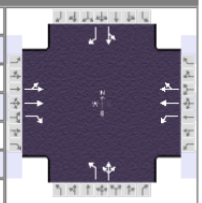
TRIP DISTRIBTUION FROM PROVIDENCE POINT



HCS Reports

HCS Signalized Intersection Results Summary

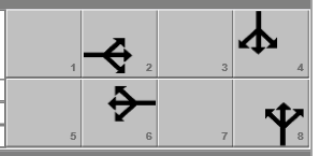
General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.92
Urban Street	US 42	Analysis Year	2022	Analysis Period	1> 7:15
Intersection	KY 22	File Name	AM US 42.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	770	222	10	1558	2	646	3	6	8	10	128

Signal Information			
Cycle, s	135.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off

Green	69.4	11.4	35.0	0.0	0.0	0.0	
Yellow	3.6	3.6	3.6	0.0	0.0	0.0	
Red	2.4	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		75.4		75.4		41.6		18.0
Change Period, (*Y+R c*), s		6.0		6.0		7.2		6.6
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						32.3		13.7
Green Extension Time (*g e*), s		0.0		0.0		2.0		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.95		1.00

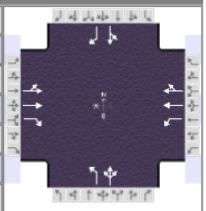
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	426	421	241	11	848	848	421	291			20	139
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1705	1689	1547	667	1885	1884	1781	1769			1859	1598
Queue Service Time (*g s*), s	1.1	21.8	12.1	0.9	46.2	46.2	30.3	18.8			1.3	11.7
Cycle Queue Clearance Time (*g c*), s	47.3	21.8	12.1	23.0	46.2	46.2	30.3	18.8			1.3	11.7
Green Ratio (*g/C*)	0.51	0.51	0.51	0.52	0.52	0.52	0.25	0.25			0.08	0.08
Capacity (*c*), veh/h	904	868	796	289	983	983	467	450			157	147
Volume-to-Capacity Ratio (*X*)	0.471	0.485	0.303	0.038	0.862	0.863	0.902	0.645			0.125	0.948
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	13.6	13.8	8.0	0.3	25.1	25.1	21.2	12.7			1.2	11.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.93	0.94	1.04	0.07	1.40	1.40	2.16	0.75			0.14	1.45
Uniform Delay (*d 1*), s/veh	20.7	21.2	18.9	19.8	17.2	16.9	42.3	39.4			57.2	61.0
Incremental Delay (*d 2*), s/veh	1.8	1.9	1.0	0.2	9.9	9.9	18.8	3.1			0.5	59.0
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	22.5	23.2	19.9	20.1	27.1	26.8	61.1	42.5			57.7	120.0
Level of Service (LOS)	C	C	B	C	C	C	E	D			E	F
Approach Delay, s/veh / LOS	22.2	C		26.9	C		53.5	D		112.3	F	
Intersection Delay, s/veh / LOS	34.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	1.39	A	1.90	B	1.66	B	0.75	A

 HCS™ Streets Version 2022 Generated: 7/4/2022 3:24:44 PM

HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.92
Urban Street	US 42	Analysis Year	2024 No Build	Analysis Period	1> 7:15
Intersection	KY 22	File Name	AM US 42 24 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	785	226	10	1589	2	659	3	6	8	10	131

Signal Information					EB			WB			NB			SB		
Cycle, s	135.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	68.9	11.4		35.5	0.0	0.0	0.0					
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6		3.6	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.0		3.0	0.0	0.0	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		74.9		74.9		42.1		18.0
Change Period, (*Y+R c*), s		6.0		6.0		7.2		6.6
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						33.0		14.0
Green Extension Time (*g e*), s		0.0		0.0		1.9		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	423	440	246	11	865	865	430	296			20	142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1618	1689	1547	657	1885	1884	1781	1769			1859	1598
Queue Service Time (*g s*), s	2.3	23.3	12.5	1.0	49.4	49.4	31.0	19.1			1.3	12.0
Cycle Queue Clearance Time (*g c*), s	51.7	23.3	12.5	24.6	49.4	49.4	31.0	19.1			1.3	12.0
Green Ratio (*g/C*)	0.51	0.51	0.51	0.52	0.52	0.52	0.26	0.26			0.08	0.08
Capacity (*c*), veh/h	853	862	790	275	976	976	474	457			157	147
Volume-to-Capacity Ratio (*X*)	0.495	0.511	0.311	0.040	0.886	0.886	0.908	0.648			0.125	0.970
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	13.7	14.7	8.2	0.4	27.1	27.1	21.7	12.9			1.2	12.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.93	1.00	1.07	0.07	1.52	1.52	2.21	0.76			0.14	1.51
Uniform Delay (*d 1*), s/veh	21.2	21.9	19.2	21.0	18.0	17.7	42.0	39.1			57.2	61.1
Incremental Delay (*d 2*), s/veh	2.1	2.2	1.0	0.3	11.7	11.7	19.7	3.2			0.5	65.3
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	23.2	24.0	20.3	21.3	29.7	29.4	61.7	42.2			57.7	126.4
Level of Service (LOS)	C	C	C	C	C	C	E	D			E	F
Approach Delay, s/veh / LOS	22.9	C		29.5	C		53.7	D		118.1	F	
Intersection Delay, s/veh / LOS	36.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	1.40	A	1.92	B	1.69	B	0.75	A

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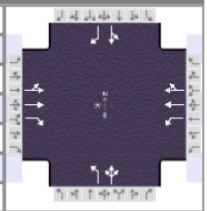
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.92
Urban Street	US 42	Analysis Year	2024 Build	Analysis Period	1> 7:15
Intersection	KY 22	File Name	AM US 42 24 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	785	248	10	1589	2	667	3	6	8	10	131

Signal Information													
Cycle, s	135.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	68.6	11.4	35.8	0.0	0.0	0.0	1	2	3	4
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6	3.6	0.0	0.0	0.0	5	6	7	8
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.0	3.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		74.6		74.6		42.4		18.0
Change Period, ($Y+R_c$), s		6.0		6.0		7.2		6.6
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (g_s), s						33.4		14.0
Green Extension Time (g_e), s		0.0		0.0		1.8		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	420	443	270	11	865	865	435	300			20	142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1601	1689	1547	657	1885	1884	1781	1769			1859	1598
Queue Service Time (g_s), s	2.5	23.6	14.0	1.0	49.8	49.9	31.4	19.3			1.3	12.0
Cycle Queue Clearance Time (g_c), s	52.4	23.6	14.0	24.9	49.8	49.9	31.4	19.3			1.3	12.0
Green Ratio (*g/C*)	0.51	0.51	0.51	0.52	0.52	0.52	0.26	0.26			0.08	0.08
Capacity (*c*), veh/h	841	858	786	272	972	972	478	461			157	147
Volume-to-Capacity Ratio (*X*)	0.500	0.516	0.343	0.040	0.890	0.890	0.911	0.650			0.125	0.970
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	13.7	14.8	9.0	0.4	27.4	27.5	22.0	13.0			1.2	12.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.93	1.01	1.17	0.07	1.54	1.54	2.24	0.76			0.14	1.51
Uniform Delay (d_1), s/veh	21.4	22.1	19.8	21.4	18.3	18.0	41.8	38.8			57.2	61.1
Incremental Delay (d_2), s/veh	2.1	2.2	1.2	0.3	12.0	12.0	20.3	3.2			0.5	65.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	23.5	24.3	21.0	21.7	30.4	30.1	62.1	42.1			57.7	126.4
Level of Service (LOS)	C	C	C	C	C	C	E	D			E	F
Approach Delay, s/veh / LOS	23.2	C		30.2	C		53.9	D		118.1	F	
Intersection Delay, s/veh / LOS	36.5						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	1.42	A	1.92	B	1.70	B	0.75	A

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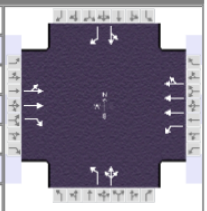
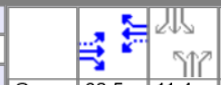
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.92
Urban Street	US 42	Analysis Year	2034 No Build	Analysis Period	1> 7:15
Intersection	KY 22	File Name	AM US 42 34 NB.xus		
Project Description	Sina Office				

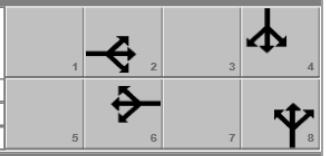


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	825	476	11	1670	2	800	4	19	8	17	138

Signal Information			
Cycle, s	135.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



Green	62.5	11.4	41.9	0.0	0.0	0.0	
Yellow	3.6	3.6	3.6	0.0	0.0	0.0	
Red	2.4	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		68.5		68.5		48.5		18.0
Change Period, (*Y+R c*), s		6.0		6.0		7.2		6.6
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						39.7		14.4
Green Extension Time (*g e*), s		0.0		0.0		1.6		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	467	440	517	12	1212	606	522	373			27	150
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1773	1689	1547	631	1885	1884	1781	1754			1870	1598
Queue Service Time (*g s*), s	0.0	25.6	36.4	1.4	28.3	28.3	37.7	23.7			1.8	12.4
Cycle Queue Clearance Time (*g c*), s	24.4	25.6	36.4	27.2	28.3	28.3	37.7	23.7			1.8	12.4
Green Ratio (*g/C*)	0.46	0.46	0.46	0.47	0.47	0.47	0.31	0.31			0.08	0.08
Capacity (*c*), veh/h	848	781	716	226	1772	886	559	537			158	147
Volume-to-Capacity Ratio (*X*)	0.550	0.563	0.723	0.053	0.684	0.684	0.934	0.694			0.172	1.022
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	16.7	16.2	20.7	0.5	16.4	17.0	25.7	15.2			1.6	13.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.71	0.69	0.90	0.10	0.92	0.95	2.61	1.27			0.20	1.65
Uniform Delay (*d 1*), s/veh	26.0	26.4	29.3	27.5	18.9	18.6	37.9	34.7			57.4	61.3
Incremental Delay (*d 2*), s/veh	2.6	2.9	6.2	0.4	2.2	4.3	22.4	4.0			0.7	80.3
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	28.6	29.3	35.5	27.9	21.1	22.9	60.4	38.7			58.1	141.6
Level of Service (LOS)	C	C	D	C	C	C	E	D			E	F
Approach Delay, s/veh / LOS	31.3	C		21.7	C		51.3	D		128.8	F	
Intersection Delay, s/veh / LOS	35.4						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	2.48	B	2.45	B
Bicycle LOS Score / LOS	1.66	B	1.49	A	1.96	B	0.78	A

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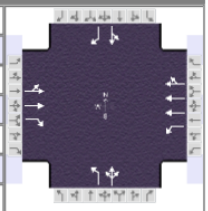
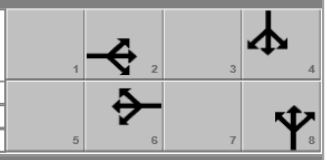
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.92
Urban Street	US 42	Analysis Year	2034 Build	Analysis Period	1> 7:15
Intersection	KY 22	File Name	AM US 42 34 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	825	498	11	1670	2	808	4	19	8	17	138

Signal Information					EB			WB			NB			SB		
Cycle, s	135.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	62.2	11.4		42.2	0.0	0.0	0.0					
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6		3.6	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.0		3.0	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		68.2		68.2		48.8		18.0
Change Period, (*Y+R c*), s		6.0		6.0		7.2		6.6
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						40.2		14.4
Green Extension Time (*g e*), s		0.0		0.0		1.4		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	467	440	541	12	1212	606	527	376			27	150
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1773	1689	1547	631	1885	1884	1781	1754			1870	1598
Queue Service Time (*g s*), s	0.0	25.6	39.2	1.4	28.5	28.5	38.2	23.9			1.8	12.4
Cycle Queue Clearance Time (*g c*), s	24.5	25.6	39.2	27.3	28.5	28.5	38.2	23.9			1.8	12.4
Green Ratio (*g/C*)	0.46	0.46	0.46	0.47	0.47	0.47	0.31	0.31			0.08	0.08
Capacity (*c*), veh/h	844	778	713	224	1765	882	562	541			158	147
Volume-to-Capacity Ratio (*X*)	0.553	0.565	0.759	0.053	0.687	0.687	0.937	0.696			0.172	1.022
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	16.8	16.2	22.2	0.5	16.5	17.2	26.0	15.3			1.6	13.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.72	0.69	0.96	0.10	0.93	0.96	2.64	1.28			0.20	1.65
Uniform Delay (*d 1*), s/veh	26.2	26.5	30.2	27.7	19.1	18.9	37.8	34.6			57.4	61.3
Incremental Delay (*d 2*), s/veh	2.6	3.0	7.5	0.5	2.2	4.3	23.1	4.1			0.7	80.3
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	28.8	29.5	37.6	28.2	21.3	23.2	61.0	38.6			58.1	141.6
Level of Service (LOS)	C	C	D	C	C	C	E	D			E	F
Approach Delay, s/veh / LOS	32.3	C		22.0	C		51.7	D		128.8	F	
Intersection Delay, s/veh / LOS	35.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	2.48	B	2.45	B
Bicycle LOS Score / LOS	1.68	B	1.49	A	1.98	B	0.78	A

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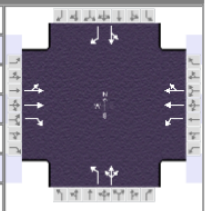
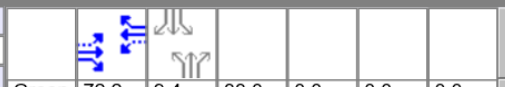
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.96
Urban Street	US 42	Analysis Year	2022	Analysis Period	1> 5:00
Intersection	KY 22	File Name	PM US 42.xus		
Project Description	Sina Office				

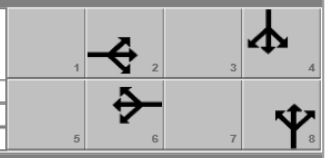


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	1450	306	10	983	8	532	14	23	15	15	79

Signal Information			
Cycle, s	135.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



Green	72.2	9.4	33.0	0.0	0.0	0.0						
Yellow	3.6	3.6	3.6	0.0	0.0	0.0						
Red	2.4	3.6	3.6	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		78.2		78.2		40.2		16.6
Change Period, (*Y+R c*), s		6.0		6.0		7.2		7.2
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						29.2		8.9
Green Extension Time (*g e*), s		0.0		0.0		3.8		0.7
Phase Call Probability						1.00		0.99
Max Out Probability						0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	793	722	319	10	517	515	388	205			31	82
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1877	1716	1598	352	1885	1880	1795	1779			1810	1585
Queue Service Time (*g s*), s	0.0	35.9	10.5	3.0	23.7	23.7	27.2	12.4			2.2	6.9
Cycle Queue Clearance Time (*g c*), s	36.5	35.9	10.5	38.7	23.7	23.7	27.2	12.4			2.2	6.9
Green Ratio (*g/C*)	0.54	0.54	0.54	0.53	0.53	0.53	0.24	0.24			0.07	0.07
Capacity (*c*), veh/h	1031	930	854	148	1008	1005	452	435			126	111
Volume-to-Capacity Ratio (*X*)	0.769	0.777	0.373	0.070	0.513	0.513	0.858	0.471			0.248	0.744
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	18.9	17.6	6.3	0.5	16.1	16.0	17.9	9.0			1.9	5.7
Queue Storage Ratio (*RQ*) (95 th percentile)	1.27	1.18	0.80	0.11	0.90	0.90	1.80	0.45			0.24	0.72
Uniform Delay (*d 1*), s/veh	13.8	13.5	10.5	37.0	20.1	20.1	42.6	38.6			59.4	61.6
Incremental Delay (*d 2*), s/veh	5.5	6.3	1.2	0.9	1.9	1.9	6.8	1.1			1.4	13.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	19.3	19.9	11.8	38.0	22.0	22.0	49.4	39.7			60.9	74.7
Level of Service (LOS)	B	B	B	D	C	C	D	D			E	E
Approach Delay, s/veh / LOS	18.2	B		22.1	C		46.0	D		70.9	E	
Intersection Delay, s/veh / LOS	25.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	2.00	B	1.35	A	1.47	A	0.67	A

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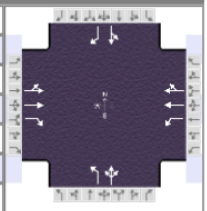
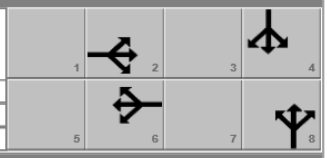
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.96
Urban Street	US 42	Analysis Year	2024 No Build	Analysis Period	1> 5:00
Intersection	KY 22	File Name	PM US 42 24 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	1479	312	10	1003	8	543	14	23	15	15	81

Signal Information					EB			WB			NB			SB		
Cycle, s	135.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	71.4	9.6		33.6	0.0	0.0	0.0					
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6		3.6	0.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.6		3.6	0.0	0.0	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		77.4		77.4		40.8		16.8
Change Period, (*Y+R c*), s		6.0		6.0		7.2		7.2
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						29.8		9.1
Green Extension Time (*g e*), s		0.0		0.0		3.8		0.7
Phase Call Probability						1.00		0.99
Max Out Probability						0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	809	737	325	10	527	526	396	208			31	84
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1877	1716	1598	342	1885	1880	1795	1779			1810	1585
Queue Service Time (*g s*), s	0.0	38.6	11.1	3.2	24.7	24.7	27.8	12.5			2.2	7.1
Cycle Queue Clearance Time (*g c*), s	39.3	38.6	11.1	41.7	24.7	24.7	27.8	12.5			2.2	7.1
Green Ratio (*g/C*)	0.54	0.54	0.54	0.53	0.53	0.53	0.25	0.25			0.07	0.07
Capacity (*c*), veh/h	1020	920	845	137	997	994	460	443			129	113
Volume-to-Capacity Ratio (*X*)	0.794	0.801	0.385	0.076	0.529	0.529	0.861	0.470			0.243	0.748
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	20.5	19.1	6.7	0.6	16.7	16.7	18.2	9.1			1.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	1.38	1.28	0.84	0.11	0.94	0.93	1.84	0.45			0.24	0.74
Uniform Delay (*d 1*), s/veh	14.7	14.4	11.0	39.8	20.8	20.8	42.2	38.1			59.3	61.5
Incremental Delay (*d 2*), s/veh	6.4	7.3	1.3	1.1	2.0	2.0	7.1	1.1			1.4	13.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	21.0	21.7	12.3	40.9	22.8	22.8	49.3	39.2			60.6	74.6
Level of Service (LOS)	C	C	B	D	C	C	D	D			E	E
Approach Delay, s/veh / LOS	19.8	B		23.0	C		45.8	D		70.8	E	
Intersection Delay, s/veh / LOS	26.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	2.03	B	1.37	A	1.48	A	0.68	A

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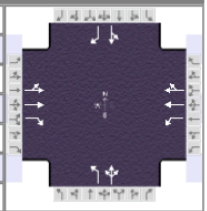
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.96
Urban Street	US 42	Analysis Year	2024 Build	Analysis Period	1> 5:00
Intersection	KY 22	File Name	PM US 42 24 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	1479	316	10	1003	8	594	14	23	15	15	81

Signal Information					EB			WB			NB		
Cycle, s	135.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	68.6	9.6	36.4	0.0	0.0	0.0			
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6	3.6	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.6	3.6	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		74.6		74.6		43.6		16.8
Change Period, (*Y+R c*), s		6.0		6.0		7.2		7.2
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						32.3		9.1
Green Extension Time (*g e*), s		0.0		0.0		4.2		0.7
Phase Call Probability						1.00		0.99
Max Out Probability						0.02		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	809	737	329	10	527	526	433	224			31	84
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1877	1716	1598	342	1885	1880	1795	1781			1810	1585
Queue Service Time (*g s*), s	0.0	42.4	12.4	3.4	25.8	25.8	30.3	13.1			2.2	7.1
Cycle Queue Clearance Time (*g c*), s	43.2	42.4	12.4	45.6	25.8	25.8	30.3	13.1			2.2	7.1
Green Ratio (*g/C*)	0.52	0.52	0.52	0.51	0.51	0.51	0.27	0.27			0.07	0.07
Capacity (*c*), veh/h	980	884	811	120	958	955	498	480			129	113
Volume-to-Capacity Ratio (*X*)	0.825	0.833	0.406	0.087	0.551	0.551	0.870	0.467			0.243	0.748
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	23.4	21.7	7.5	0.6	17.5	17.4	19.6	9.3			1.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	1.57	1.46	0.95	0.12	0.98	0.98	1.98	0.47			0.24	0.74
Uniform Delay (*d 1*), s/veh	17.2	16.9	12.7	45.1	22.7	22.7	40.3	35.7			59.3	61.5
Incremental Delay (*d 2*), s/veh	7.9	9.1	1.5	1.4	2.3	2.3	8.3	1.0			1.4	13.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	25.1	26.0	14.2	46.5	25.0	25.0	48.6	36.8			60.6	74.6
Level of Service (LOS)	C	C	B	D	C	C	D	D			E	E
Approach Delay, s/veh / LOS	23.5	C		25.2	C		44.6	D		70.8	E	
Intersection Delay, s/veh / LOS	29.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.33	B	2.30	B
Bicycle LOS Score / LOS	2.03	B	1.37	A	1.57	B	0.68	A

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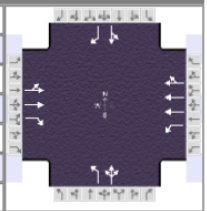
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.96
Urban Street	US 42	Analysis Year	2034 No Build	Analysis Period	1> 5:00
Intersection	KY 22	File Name	PM US 42 34 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	1555	392	11	1054	8	1027	21	59	17	18	85

Signal Information					EB			WB				NB				SB			
Cycle, s	135.0	Reference Phase	2																
Offset, s	0	Reference Point	End	Green	56.3	9.4		48.9	0.0	0.0	0.0								
Uncoordinated	No	Simult. Gap E/W	Off	Yellow	3.6	3.6		3.6	0.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.4	3.6		3.6	0.0	0.0	0.0								

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		62.3		62.3		56.1		16.6
Change Period, (*Y+R c*), s		6.0		6.0		7.2		7.2
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						41.8		9.4
Green Extension Time (*g e*), s		0.0		0.0		7.1		0.1
Phase Call Probability						1.00		0.99
Max Out Probability						0.38		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	851	774	408	11	738	368	588	565			36	89
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1876	1716	1598	317	1885	1878	1795	1778			1812	1585
Queue Service Time (*g s*), s	16.5	57.3	23.2	0.0	19.2	19.2	39.8	37.7			2.6	7.4
Cycle Queue Clearance Time (*g c*), s	57.3	57.3	23.2	56.3	19.2	19.2	39.8	37.7			2.6	7.4
Green Ratio (*g/C*)	0.42	0.42	0.42	0.42	0.42	0.42	0.37	0.37			0.07	0.07
Capacity (*c*), veh/h	823	728	666	53	1572	783	664	644			126	110
Volume-to-Capacity Ratio (*X*)	1.034	1.064	0.613	0.215	0.470	0.470	0.886	0.877			0.289	0.801
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	43.8	41.7	13.3	0.9	13.7	13.9	24.5	23.1			2.2	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	1.84	1.75	0.56	0.19	0.77	0.78	1.76	1.65			0.29	0.88
Uniform Delay (*d 1*), s/veh	30.2	29.3	22.6	67.5	28.5	28.5	31.7	31.2			59.6	61.9
Incremental Delay (*d 2*), s/veh	40.4	51.5	4.2	9.0	1.0	2.0	11.3	10.6			1.8	28.9
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	70.6	80.9	26.8	76.5	29.6	30.6	43.0	41.8			61.4	90.8
Level of Service (LOS)	F	F	C	E	C	C	D	D			E	F
Approach Delay, s/veh / LOS	65.7	E		30.4	C		42.4	D		82.2	F	
Intersection Delay, s/veh / LOS	51.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	2.48	B	2.44	B
Bicycle LOS Score / LOS	2.17	B	1.10	A	2.39	B	0.69	A

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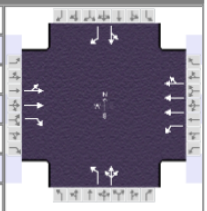
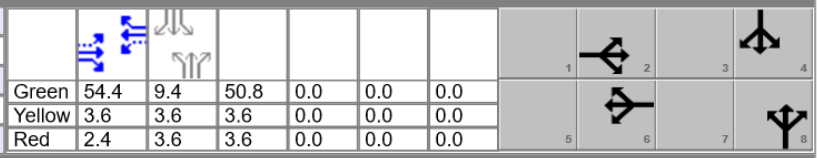
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 4, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.96
Urban Street	US 42	Analysis Year	2034 Build	Analysis Period	1> 5:00
Intersection	KY 22	File Name	PM US 42 34 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	1555	396	11	1054	8	1078	21	59	17	18	85

Signal Information			
Cycle, s	135.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	Off



	EB			WB			NB			SB		
Green	54.4	9.4		50.8	0.0	0.0	0.0					
Yellow	3.6	3.6		3.6	0.0	0.0	0.0					
Red	2.4	3.6		3.6	0.0	0.0	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		7.0		6.0		10.0		11.0
Phase Duration, s		60.4		60.4		58.0		16.6
Change Period, (*Y+R c*), s		6.0		6.0		7.2		7.2
Max Allow Headway (*MAH*), s		0.0		0.0		5.2		5.3
Queue Clearance Time (*g s*), s						43.9		9.4
Green Extension Time (*g e*), s		0.0		0.0		6.9		0.1
Phase Call Probability						1.00		0.99
Max Out Probability						0.49		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	851	774	413	11	738	368	618	589			36	89
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1876	1716	1598	317	1885	1878	1795	1779			1812	1585
Queue Service Time (*g s*), s	16.0	55.4	24.6	0.0	19.6	19.6	41.9	39.1			2.6	7.4
Cycle Queue Clearance Time (*g c*), s	55.4	55.4	24.6	54.4	19.6	19.6	41.9	39.1			2.6	7.4
Green Ratio (*g/C*)	0.41	0.41	0.41	0.40	0.40	0.40	0.38	0.38			0.07	0.07
Capacity (*c*), veh/h	797	704	644	53	1519	757	689	669			126	110
Volume-to-Capacity Ratio (*X*)	1.068	1.100	0.641	0.215	0.486	0.486	0.897	0.880			0.289	0.801
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	46.9	44.9	14.1	0.9	14.0	14.3	25.6	23.8			2.2	7.0
Queue Storage Ratio (*RQ*) (95 th percentile)	1.97	1.89	0.59	0.19	0.79	0.80	1.85	1.70			0.29	0.88
Uniform Delay (*d 1*), s/veh	31.4	30.6	24.3	67.5	29.9	29.9	30.6	29.9			59.6	61.9
Incremental Delay (*d 2*), s/veh	51.6	64.5	4.8	9.0	1.1	2.2	12.5	11.1			1.8	28.9
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	83.0	95.1	29.2	76.5	31.0	32.2	43.1	41.0			61.4	90.8
Level of Service (LOS)	F	F	C	E	C	C	D	D			E	F
Approach Delay, s/veh / LOS	76.7	E		31.9	C		42.1	D		82.2	F	
Intersection Delay, s/veh / LOS	56.4						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	1.93	B	2.48	B	2.44	B
Bicycle LOS Score / LOS	2.17	B	1.10	A	2.48	B	0.69	A

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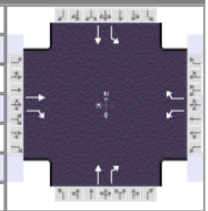
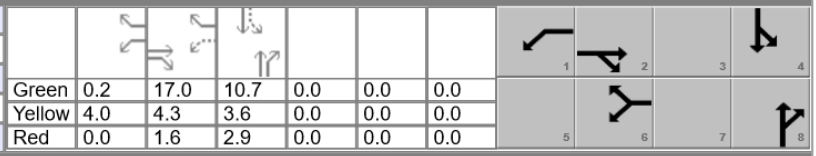
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2022	Analysis Period	1> 7:15
Intersection	I 264 Slip ramp	File Name	AM ramp.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		418	3	2		593		4	1	235	8	

Signal Information			
Cycle, s	44.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.2	17.0	10.7	0.0	0.0	0.0		
Yellow	4.0	4.3	3.6	0.0	0.0	0.0		
Red	0.0	1.6	2.9	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		22.9	4.2	27.1		17.2		17.2
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	3.1	3.2		4.6		4.6
Queue Clearance Time (*g s*), s		11.0	2.1	18.7		2.1		9.7
Green Extension Time (*g e*), s		2.8	0.0	2.3		1.3		1.3
Phase Call Probability		1.00	0.03	1.00		0.97		0.97
Max Out Probability		0.00	0.00	0.12		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		464	3	2		659		4	1	261	9	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1401	596	
Queue Service Time (*g s*), s		9.0	0.1	0.1		16.7		0.1	0.1	7.7	0.5	
Cycle Queue Clearance Time (*g c*), s		9.0	0.1	0.1		16.7		0.1	0.1	7.7	0.5	
Green Ratio (*g/C*)		0.38	0.38	0.44		0.48		0.24	0.24	0.24	0.24	
Capacity (*c*), veh/h		720	460	272		753		461	86	502	144	
Volume-to-Capacity Ratio (*X*)		0.645	0.007	0.008		0.875		0.010	0.013	0.521	0.062	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		5.1	0.0	0.0		8.3		0.1	0.0	3.9	0.1	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.22	0.00	0.00		0.57		0.00	0.00	0.34	0.00	
Uniform Delay (*d 1*), s/veh		11.2	8.4	8.5		10.4		12.8	12.8	15.7	13.0	
Incremental Delay (*d 2*), s/veh		0.4	0.0	0.0		4.7		0.0	0.0	1.0	0.2	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		11.6	8.4	8.5		15.1		12.8	12.8	16.7	13.2	
Level of Service (LOS)		B	A	A		B		B	B	B	B	
Approach Delay, s/veh / LOS	11.5	B		15.1	B		12.8	B		16.6	B	
Intersection Delay, s/veh / LOS	14.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	1.89	B	1.67	B
Bicycle LOS Score / LOS	1.26	A		F	0.50	A	0.93	A

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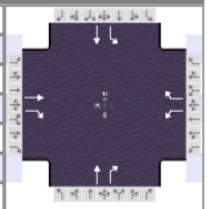
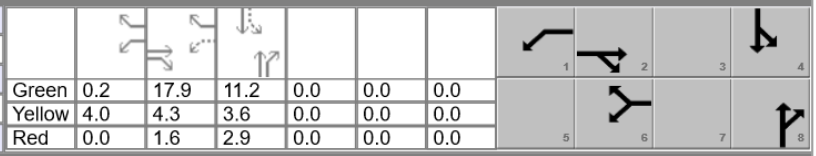
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2024 No Build	Analysis Period	1> 7:15
Intersection	I 264 Slip ramp	File Name	AM ramp 24 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		426	3	2		605		4	1	240	8	

Signal Information			
Cycle, s	45.7	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.2	17.9	11.2	0.0	0.0	0.0
Yellow	4.0	4.3	3.6	0.0	0.0	0.0
Red	0.0	1.6	2.9	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		23.8	4.2	28.0		17.7		17.7
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	3.1	3.2		4.6		4.6
Queue Clearance Time (*g s*), s		11.4	2.1	19.7		2.1		10.1
Green Extension Time (*g e*), s		2.8	0.0	2.3		1.3		1.3
Phase Call Probability		1.00	0.03	1.00		0.97		0.97
Max Out Probability		0.00	0.00	0.16		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		473	3	2		672		4	1	267	9	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1401	596	
Queue Service Time (*g s*), s		9.4	0.1	0.1		17.7		0.1	0.1	8.1	0.5	
Cycle Queue Clearance Time (*g c*), s		9.4	0.1	0.1		17.7		0.1	0.1	8.1	0.5	
Green Ratio (*g/C*)		0.39	0.39	0.44		0.48		0.25	0.25	0.25	0.25	
Capacity (*c*), veh/h		736	470	270		761		467	87	501	146	
Volume-to-Capacity Ratio (*X*)		0.643	0.007	0.008		0.883		0.010	0.013	0.532	0.061	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		5.4	0.0	0.0		9.1		0.1	0.0	4.1	0.1	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.23	0.00	0.00		0.62		0.00	0.00	0.36	0.00	
Uniform Delay (*d 1*), s/veh		11.3	8.5	8.6		10.7		13.1	13.1	16.1	13.3	
Incremental Delay (*d 2*), s/veh		0.4	0.0	0.0		5.8		0.0	0.0	1.1	0.2	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		11.7	8.5	8.6		16.5		13.1	13.1	17.2	13.5	
Level of Service (LOS)		B	A	A		B		B	B	B	B	
Approach Delay, s/veh / LOS	11.6	B		16.5	B		13.1	B		17.1	B	
Intersection Delay, s/veh / LOS	15.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	1.89	B	1.68	B
Bicycle LOS Score / LOS	1.27	A		F	0.50	A	0.94	A

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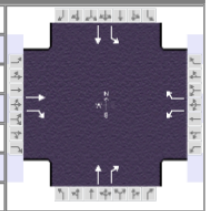
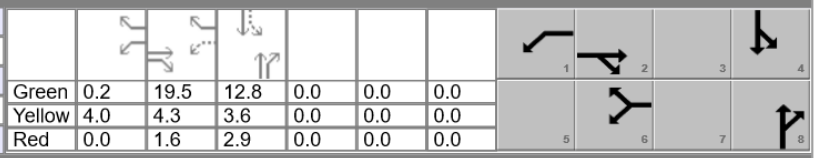
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2024 Build	Analysis Period	1> 7:15
Intersection	I 264 Slip ramp	File Name	AM ramp 24 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		458	3	2		613		4	1	262	8	

Signal Information			
Cycle, s	48.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.2	19.5	12.8	0.0	0.0	0.0		
Yellow	4.0	4.3	3.6	0.0	0.0	0.0		
Red	0.0	1.6	2.9	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		25.4	4.2	29.6		19.3		19.3
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	3.1	3.2		4.6		4.6
Queue Clearance Time (*g s*), s		13.0	2.1	21.3		2.1		11.5
Green Extension Time (*g e*), s		3.0	0.0	2.2		1.5		1.4
Phase Call Probability		1.00	0.03	1.00		0.98		0.98
Max Out Probability		0.00	0.00	0.26		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		509	3	2		681		4	1	291	9	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1401	596	
Queue Service Time (*g s*), s		11.0	0.1	0.1		19.3		0.1	0.1	9.5	0.5	
Cycle Queue Clearance Time (*g c*), s		11.0	0.1	0.1		19.3		0.1	0.1	9.5	0.5	
Green Ratio (*g/C*)		0.40	0.40	0.45		0.48		0.26	0.26	0.26	0.26	
Capacity (*c*), veh/h		747	478	249		762		499	93	514	156	
Volume-to-Capacity Ratio (*X*)		0.681	0.007	0.009		0.894		0.009	0.012	0.566	0.057	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		6.5	0.0	0.0		10.5		0.1	0.0	4.9	0.1	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.28	0.00	0.00		0.72		0.00	0.00	0.43	0.00	
Uniform Delay (*d 1*), s/veh		12.2	8.9	9.3		11.5		13.4	13.4	16.8	13.5	
Incremental Delay (*d 2*), s/veh		0.4	0.0	0.0		7.9		0.0	0.0	1.2	0.2	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		12.6	8.9	9.3		19.4		13.4	13.4	18.0	13.7	
Level of Service (LOS)		B	A	A		B		B	B	B	B	
Approach Delay, s/veh / LOS	12.5	B		19.3	B		13.4	B		17.9	B	
Intersection Delay, s/veh / LOS	16.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	1.33	A		F	0.50	A	0.98	A

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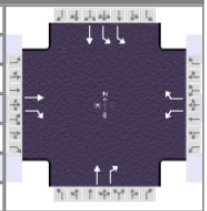
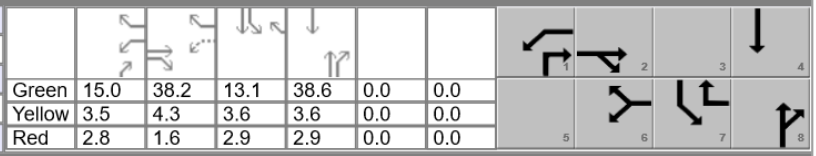
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2034 No Build	Analysis Period	1> 7:15
Intersection	I 264 Slip ramp	File Name	AM ramp 34 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		448	225	173		636		122	39	252	244	

Signal Information			
Cycle, s	130.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	15.0	38.2	13.1	38.6	0.0	0.0		
Yellow	3.5	4.3	3.6	3.6	0.0	0.0		
Red	2.8	1.6	2.9	2.9	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8	7	4
Case Number		7.3	1.0	3.0		7.3	2.0	4.0
Phase Duration, s		44.1	21.3	65.4		45.1	19.6	64.7
Change Period, (*Y+R c*), s		5.9	6.3	5.9		6.5	6.5	6.5
Max Allow Headway (*MAH*), s		5.0	5.1	5.0		4.8	4.6	4.8
Queue Clearance Time (*g s*), s		35.3	17.4	48.9		12.7	12.3	61.2
Green Extension Time (*g e*), s		2.9	0.0	0.0		0.9	0.8	0.0
Phase Call Probability		1.00	1.00	1.00		1.00	1.00	1.00
Max Out Probability		0.74	1.00	1.00		0.00	0.20	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		498	250	192		707		136	43	280	271	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1716	596	
Queue Service Time (*g s*), s		33.3	24.3	15.4		46.9		7.0	10.7	10.3	59.2	
Cycle Queue Clearance Time (*g c*), s		33.3	24.3	15.4		46.9		7.0	10.7	10.3	59.2	
Green Ratio (*g/C*)		0.29	0.29	0.44		0.56		0.30	0.41	0.49	0.46	
Capacity (*c*), veh/h		549	351	216		878		563	146	346	271	
Volume-to-Capacity Ratio (*X*)		0.906	0.712	0.889		0.805		0.241	0.297	0.809	1.000	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		24.4	12.1	10.0		24.8		6.0	1.7	8.1	16.5	
Queue Storage Ratio (*RQ*) (95 th percentile)		1.03	0.64	0.88		1.59		0.00	0.00	0.72	2.43	
Uniform Delay (*d 1*), s/veh		44.2	41.0	30.9		23.1		34.7	25.7	55.1	25.6	
Incremental Delay (*d 2*), s/veh		15.3	5.1	33.7		5.8		0.3	1.6	6.3	54.7	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		59.5	46.1	64.5		28.9		35.0	27.3	61.4	80.3	
Level of Service (LOS)		E	D	E		C		C	C	E	F	
Approach Delay, s/veh / LOS	55.0	E		36.5	D		33.1	C		70.7	E	
Intersection Delay, s/veh / LOS	50.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.94	B	2.11	B	2.13	B	1.69	B
Bicycle LOS Score / LOS	1.72	B		F	0.78	A	1.40	A

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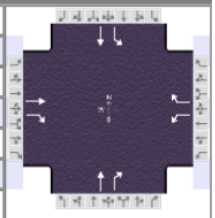
HCS Signalized Intersection Results Summary

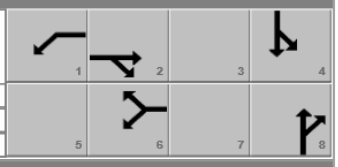
General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.95
Urban Street	KY 22	Analysis Year	2022	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		731	0	0		566		19	1	351	2	

Signal Information			
Cycle, s	58.4	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	27.3	18.7	0.0	0.0	0.0	0.0	
Yellow	4.3	3.6	0.0	0.0	0.0	0.0	
Red	1.6	2.9	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		33.2	0.0	33.2		25.2		25.2
Change Period, ($Y+R_c$), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	0.0	3.2		4.6		4.6
Queue Clearance Time (g_s), s		23.8		21.0		2.4		16.8
Green Extension Time (g_e), s		3.3	0.0	2.6		1.9		1.9
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.02		0.29		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		769	0	0		596		20	1	369	2	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1381	596	
Queue Service Time (g_s), s		21.8	0.0	0.0		19.0		0.4	0.1	14.6	0.1	
Cycle Queue Clearance Time (g_c), s		21.8	0.0	0.0		19.0		0.4	0.1	14.8	0.1	
Green Ratio (*g/C*)		0.47	0.47	0.44		0.47		0.32	0.32	0.32	0.32	
Capacity (*c*), veh/h		876	560	167		737		608	113	560	191	
Volume-to-Capacity Ratio (*X*)		0.878	0.000	0.000		0.809		0.033	0.009	0.660	0.011	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		12.3	0.0	0.0		10.5		0.3	0.0	7.7	0.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.52	0.00	0.00		0.72		0.00	0.00	0.68	0.00	
Uniform Delay (d_1), s/veh		14.1	0.0	0.0		13.3		13.7	13.6	18.7	13.6	
Incremental Delay (d_2), s/veh		2.1	0.0	0.0		5.1		0.0	0.0	1.6	0.0	
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		16.1	0.0	0.0		18.4		13.7	13.6	20.3	13.6	
Level of Service (LOS)		B				B		B	B	C	B	
Approach Delay, s/veh / LOS	16.1	B		18.4	B		13.7	B		20.2	C	
Intersection Delay, s/veh / LOS	17.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.88	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	1.76	B		F	0.52	A	1.10	A

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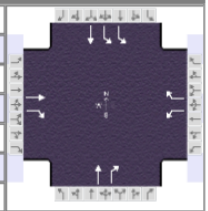
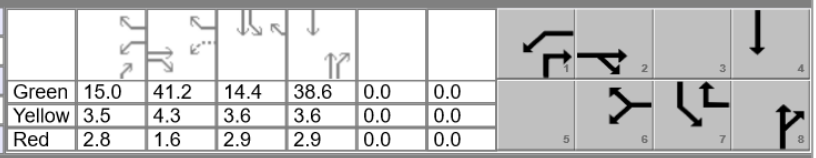
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2034 Build	Analysis Period	1> 7:15
Intersection	I 264 Slip ramp	File Name	AM ramp 34 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		480	225	173		644		122	39	274	244	

Signal Information			
Cycle, s	134.4	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	15.0	41.2	14.4	38.6	0.0	0.0
Yellow	3.5	4.3	3.6	3.6	0.0	0.0
Red	2.8	1.6	2.9	2.9	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8	7	4
Case Number		7.3	1.0	3.0		7.3	2.0	4.0
Phase Duration, s		47.1	21.3	68.4		45.1	20.9	66.0
Change Period, (*Y+R c*), s		5.9	6.3	5.9		6.5	6.5	6.5
Max Allow Headway (*MAH*), s		5.0	5.1	5.0		4.8	4.6	4.8
Queue Clearance Time (*g s*), s		39.2	17.6	50.0		13.3	13.6	62.5
Green Extension Time (*g e*), s		2.0	0.0	0.0		0.9	0.8	0.0
Phase Call Probability		1.00	1.00	1.00		1.00	1.00	1.00
Max Out Probability		0.95	1.00	1.00		0.00	0.41	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		533	250	192		716		136	43	304	271	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1716	596	
Queue Service Time (*g s*), s		37.2	24.6	15.6		48.0		7.4	11.3	11.6	60.5	
Cycle Queue Clearance Time (*g c*), s		37.2	24.6	15.6		48.0		7.4	11.3	11.6	60.5	
Green Ratio (*g/C*)		0.31	0.31	0.45		0.57		0.29	0.40	0.48	0.45	
Capacity (*c*), veh/h		573	367	205		900		546	141	367	268	
Volume-to-Capacity Ratio (*X*)		0.930	0.682	0.937		0.795		0.248	0.307	0.829	1.011	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		27.5	12.2	10.9		25.2		6.3	1.8	9.0	17.2	
Queue Storage Ratio (*RQ*) (95 th percentile)		1.17	0.64	0.95		1.61		0.00	0.00	0.80	2.53	
Uniform Delay (*d 1*), s/veh		45.2	40.8	31.8		22.6		36.8	27.7	56.4	26.9	
Incremental Delay (*d 2*), s/veh		20.0	4.5	45.6		5.3		0.3	1.7	8.6	57.8	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		65.1	45.4	77.4		27.8		37.1	29.4	65.0	84.6	
Level of Service (LOS)		E	D	E		C		D	C	E	F	
Approach Delay, s/veh / LOS	58.8	E		38.3	D		35.2	D		74.2	E	
Intersection Delay, s/veh / LOS	53.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.94	B	2.11	B	2.13	B	1.69	B
Bicycle LOS Score / LOS	1.78	B		F	0.78	A	1.44	A

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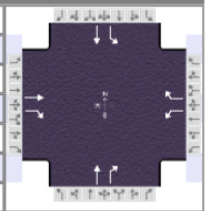
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.95
Urban Street	KY 22	Analysis Year	2022	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		731	0	0		566		19	1	351	2	

Signal Information					EB		WB				NB				SB			
Cycle, s	58.4	Reference Phase	2															
Offset, s	0	Reference Point	End															
Uncoordinated	Yes	Simult. Gap E/W	On	Green	27.3	18.7	0.0	0.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0								
				Red	1.6	2.9	0.0	0.0	0.0	0.0								

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		33.2	0.0	33.2		25.2		25.2
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	0.0	3.2		4.6		4.6
Queue Clearance Time (*g s*), s		23.8		21.0		2.4		16.8
Green Extension Time (*g e*), s		3.3	0.0	2.6		1.9		1.9
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.02		0.29		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		769	0	0		596		20	1	369	2	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1381	596	
Queue Service Time (*g s*), s		21.8	0.0	0.0		19.0		0.4	0.1	14.6	0.1	
Cycle Queue Clearance Time (*g c*), s		21.8	0.0	0.0		19.0		0.4	0.1	14.8	0.1	
Green Ratio (*g/C*)		0.47	0.47	0.44		0.47		0.32	0.32	0.32	0.32	
Capacity (*c*), veh/h		876	560	167		737		608	113	560	191	
Volume-to-Capacity Ratio (*X*)		0.878	0.000	0.000		0.809		0.033	0.009	0.660	0.011	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		12.3	0.0	0.0		10.5		0.3	0.0	7.7	0.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.52	0.00	0.00		0.72		0.00	0.00	0.68	0.00	
Uniform Delay (*d 1*), s/veh		14.1	0.0	0.0		13.3		13.7	13.6	18.7	13.6	
Incremental Delay (*d 2*), s/veh		2.1	0.0	0.0		5.1		0.0	0.0	1.6	0.0	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		16.1	0.0	0.0		18.4		13.7	13.6	20.3	13.6	
Level of Service (LOS)		B				B		B	B	C	B	
Approach Delay, s/veh / LOS	16.1	B		18.4	B		13.7	B		20.2	C	
Intersection Delay, s/veh / LOS	17.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.88	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	1.76	B		F	0.52	A	1.10	A

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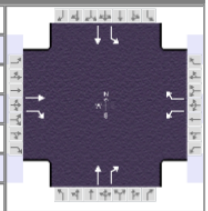
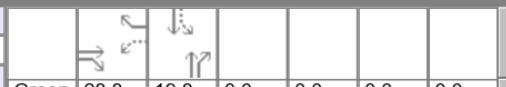
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.95
Urban Street	KY 22	Analysis Year	2024 No Build	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp 24 NB.xus		
Project Description	Sina Office				

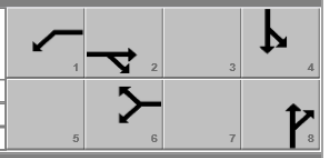


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		746	0	0		577		19	1	358	2	

Signal Information			
Cycle, s	61.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	28.8	19.8	0.0	0.0	0.0	0.0	
Yellow	4.3	3.6	0.0	0.0	0.0	0.0	
Red	1.6	2.9	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		34.7	0.0	34.7		26.3		26.3
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	0.0	3.2		4.6		4.6
Queue Clearance Time (*g s*), s		25.3		22.2		2.4		17.9
Green Extension Time (*g e*), s		3.4	0.0	2.5		2.0		1.9
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.03		0.39		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		785	0	0		607		20	1	377	2	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	354	1381	596	
Queue Service Time (*g s*), s		23.3	0.0	0.0		20.2		0.4	0.1	15.6	0.1	
Cycle Queue Clearance Time (*g c*), s		23.3	0.0	0.0		20.2		0.4	0.1	15.9	0.1	
Green Ratio (*g/C*)		0.47	0.47	0.44		0.47		0.32	0.32	0.32	0.32	
Capacity (*c*), veh/h		886	567	159		745		614	115	559	193	
Volume-to-Capacity Ratio (*X*)		0.886	0.000	0.000		0.815		0.033	0.009	0.674	0.011	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		13.5	0.0	0.0		11.4		0.3	0.0	8.2	0.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.57	0.00	0.00		0.78		0.00	0.00	0.72	0.00	
Uniform Delay (*d 1*), s/veh		14.6	0.0	0.0		13.8		14.1	14.0	19.5	14.0	
Incremental Delay (*d 2*), s/veh		3.1	0.0	0.0		6.0		0.0	0.0	1.7	0.0	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		17.7	0.0	0.0		19.8		14.2	14.1	21.2	14.1	
Level of Service (LOS)		B				B		B	B	C	B	
Approach Delay, s/veh / LOS	17.7	B		19.8	B		14.1	B		21.2	C	
Intersection Delay, s/veh / LOS	19.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.88	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	1.78	B		F	0.52	A	1.11	A

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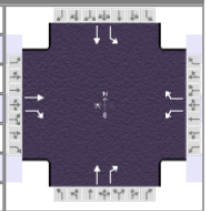
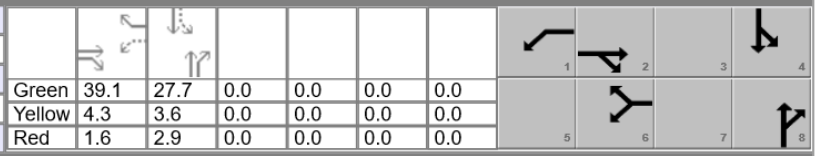
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	CBD
Jurisdiction		Time Period	PM Peak	PHF	0.95
Urban Street	KY 22	Analysis Year	2024 Build	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp 24 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		753	0	0		628		19	1	362	2	

Signal Information			
Cycle, s	79.2	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	39.1	27.7	0.0	0.0	0.0	0.0	
Yellow	4.3	3.6	0.0	0.0	0.0	0.0	
Red	1.6	2.9	0.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	3.0		7.0		6.0
Phase Duration, s		45.0	0.0	45.0		34.2		34.2
Change Period, (*Y+R c*), s		5.9	4.0	5.9		6.5		6.5
Max Allow Headway (*MAH*), s		3.2	0.0	3.2		4.8		4.8
Queue Clearance Time (*g s*), s		37.6		37.1		2.6		25.6
Green Extension Time (*g e*), s		1.4	0.0	0.0		2.3		2.1
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.45		1.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		793	0	0		661		20	1	381	2	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1683	1076	993		1415		1710	319	1243	536	
Queue Service Time (*g s*), s		35.6	0.0	0.0		35.1		0.6	0.2	23.0	0.2	
Cycle Queue Clearance Time (*g c*), s		35.6	0.0	0.0		35.1		0.6	0.2	23.6	0.2	
Green Ratio (*g/C*)		0.49	0.49	0.47		0.49		0.35	0.35	0.35	0.35	
Capacity (*c*), veh/h		833	532	110		700		597	111	516	187	
Volume-to-Capacity Ratio (*X*)		0.952	0.000	0.000		0.944		0.034	0.009	0.738	0.011	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		22.4	0.0	0.0		20.2		0.4	0.0	10.8	0.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.95	0.00	0.00		1.38		0.00	0.00	0.96	0.00	
Uniform Delay (*d 1*), s/veh		19.1	0.0	0.0		19.0		17.0	16.9	24.7	16.9	
Incremental Delay (*d 2*), s/veh		16.6	0.0	0.0		21.2		0.0	0.0	2.5	0.0	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		35.7	0.0	0.0		40.2		17.0	16.9	27.2	16.9	
Level of Service (LOS)		D				D		B	B	C	B	
Approach Delay, s/veh / LOS	35.7	D		40.2	D		17.0	B		27.2	C	
Intersection Delay, s/veh / LOS	35.3						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	1.91	B	1.69	B
Bicycle LOS Score / LOS	1.80	B		F	0.52	A	1.12	A

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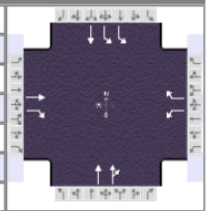
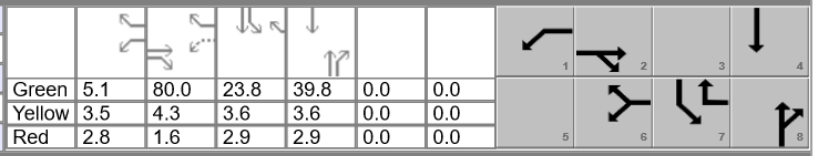
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2034 No Build	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp 34 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		784	55	36		607		497	128	376	65	

Signal Information			
Cycle, s	173.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.1	80.0	23.8	39.8	0.0	0.0
Yellow	3.5	4.3	3.6	3.6	0.0	0.0
Red	2.8	1.6	2.9	2.9	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8	7	4
Case Number		7.3	1.0	3.0		8.3	2.0	4.0
Phase Duration, s		85.9	11.4	97.3		46.3	30.3	76.6
Change Period, (*Y+R c*), s		5.9	6.3	5.9		6.5	6.5	6.5
Max Allow Headway (*MAH*), s		4.9	5.1	4.9		5.0	4.6	5.0
Queue Clearance Time (*g s*), s		83.0	5.3	46.1		36.0	22.5	13.6
Green Extension Time (*g e*), s		0.0	0.0	0.0		2.1	1.3	4.8
Phase Call Probability		1.00	0.86	1.00		1.00	1.00	1.00
Max Out Probability		1.00	0.19	1.00		0.84	0.31	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		871	61	40		674		359	335	418	72	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	1765	1716	596	
Queue Service Time (*g s*), s		81.0	5.1	3.3		44.1		34.0	31.5	20.5	11.6	
Cycle Queue Clearance Time (*g c*), s		81.0	5.1	3.3		44.1		34.0	31.5	20.5	11.6	
Green Ratio (*g/C*)		0.47	0.47	0.50		0.66		0.23	0.23	0.14	0.40	
Capacity (*c*), veh/h		871	550	74		1042		435	404	489	240	
Volume-to-Capacity Ratio (*X*)		1.000	0.111	0.541		0.647		0.826	0.830	0.854	0.301	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		55.4	2.7	1.9		22.6		23.2	22.1	14.4	3.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		2.34	0.14	0.16		1.45		0.00	0.00	1.27	0.44	
Uniform Delay (*d 1*), s/veh		46.5	26.7	41.8		17.3		63.8	63.8	68.7	26.7	
Incremental Delay (*d 2*), s/veh		30.5	0.1	8.5		1.6		11.9	13.1	10.0	0.8	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		76.9	26.8	50.3		19.0		75.6	77.0	78.6	27.6	
Level of Service (LOS)		E	C	D		B		E	E	E	C	
Approach Delay, s/veh / LOS	73.7	E		20.7	C		76.3	E		71.1	E	
Intersection Delay, s/veh / LOS	60.5						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.28	B	2.15	B	1.71	B
Bicycle LOS Score / LOS	2.03	B		F	1.06	A	1.30	A

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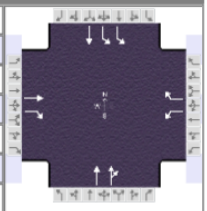
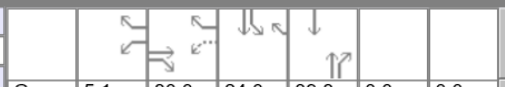
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jun 30, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.90
Urban Street	KY 22	Analysis Year	2034 Build	Analysis Period	1> 5:00
Intersection	I 264 Slip ramp	File Name	PM ramp 34 B.xus		
Project Description	Sina Office				

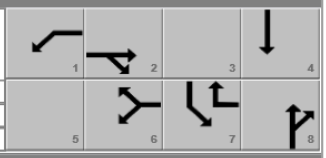


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		791	55	36		658		497	128	380	65	

Signal Information			
Cycle, s	174.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	5.1	80.0	24.0	39.8	0.0	0.0
Yellow	3.5	4.3	3.6	3.6	0.0	0.0
Red	2.8	1.6	2.9	2.9	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8	7	4
Case Number		7.3	1.0	3.0		8.3	2.0	4.0
Phase Duration, s		85.9	11.4	97.3		46.3	30.5	76.8
Change Period, (*Y+R c*), s		5.9	6.3	5.9		6.5	6.5	6.5
Max Allow Headway (*MAH*), s		4.9	5.1	4.9		5.0	4.6	5.0
Queue Clearance Time (*g s*), s		83.0	5.3	53.0		36.0	22.7	13.6
Green Extension Time (*g e*), s		0.0	0.0	0.0		2.1	1.3	4.8
Phase Call Probability		1.00	0.86	1.00		1.00	1.00	1.00
Max Out Probability		1.00	0.19	1.00		0.84	0.35	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1		16		8	18	7	4	
Adjusted Flow Rate (*v*), veh/h		879	61	40		731		359	335	422	72	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1870	1196	1104		1572		1900	1765	1716	596	
Queue Service Time (*g s*), s		81.0	5.1	3.3		51.0		34.0	31.5	20.7	11.6	
Cycle Queue Clearance Time (*g c*), s		81.0	5.1	3.3		51.0		34.0	31.5	20.7	11.6	
Green Ratio (*g/C*)		0.47	0.47	0.50		0.66		0.23	0.23	0.14	0.40	
Capacity (*c*), veh/h		870	549	74		1042		434	403	493	241	
Volume-to-Capacity Ratio (*X*)		1.010	0.111	0.541		0.701		0.827	0.832	0.856	0.300	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		56.5	2.7	1.9		25.8		23.3	22.1	14.6	3.0	
Queue Storage Ratio (*RQ*) (95 th percentile)		2.39	0.14	0.17		1.65		0.00	0.00	1.29	0.43	
Uniform Delay (*d 1*), s/veh		46.6	26.8	41.9		18.5		63.9	64.0	68.7	26.7	
Incremental Delay (*d 2*), s/veh		33.1	0.1	8.5		2.3		12.0	13.2	10.2	0.8	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh		79.6	26.9	50.4		20.8		75.9	77.2	78.9	27.5	
Level of Service (LOS)		F	C	D		C		E	E	E	C	
Approach Delay, s/veh / LOS	76.2	E		22.4	C		76.5	E		71.4	E	
Intersection Delay, s/veh / LOS	61.1						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.28	B	2.15	B	1.71	B
Bicycle LOS Score / LOS	2.04	B		F	1.06	A	1.30	A

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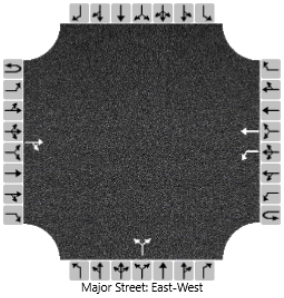
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2022	North/South Street	Warrington Way
Time Analyzed	AM Peak	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			646	7		10	589			14		4				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					20					
Capacity, c (veh/h)						874					310					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.2					17.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.2				17.4							
Approach LOS					A				C							

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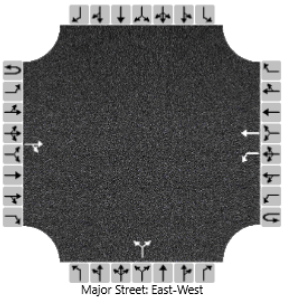
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Warrington Way
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			659	7		10	601			14		4				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					20					
Capacity, c (veh/h)						863					304					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.2					17.7					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.2				17.7							
Approach LOS					A				C							

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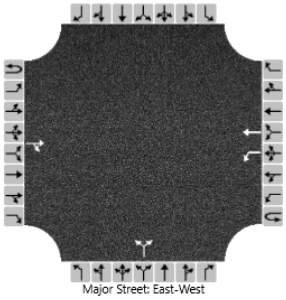
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Warrington Way
Time Analyzed	AM Peak Build	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			713	7		10	609			14		4				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					20					
Capacity, c (veh/h)						819					287					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.5					18.5					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.2				18.5							
Approach LOS					A				C							

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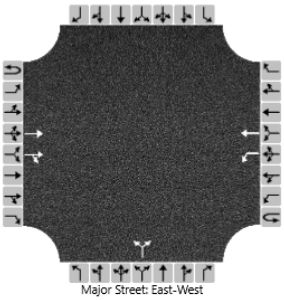
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Warrington Way
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			732	7	0	11	805			15		4				
Percent Heavy Vehicles (%)					3	0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					22					
Capacity, c (veh/h)						804					242					
v/c Ratio						0.02					0.09					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
Control Delay (s/veh)						9.5					21.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				21.3							
Approach LOS					A				C							

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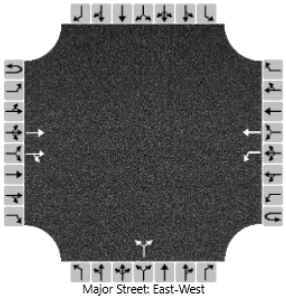
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Warrington Way
Time Analyzed	AM Peak Build	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			786	7	0	11	813			15		4				
Percent Heavy Vehicles (%)					3	0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					22					
Capacity, c (veh/h)						763					230					
v/c Ratio						0.02					0.09					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
Control Delay (s/veh)						9.8					22.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				22.3							
Approach LOS					A				C							

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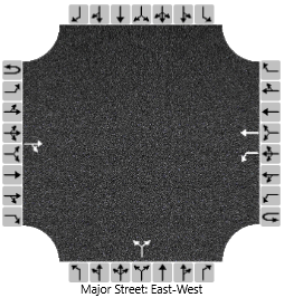
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2022	North/South Street	Warrington Way
Time Analyzed	PM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1028	16		12	515			17		20				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					39					
Capacity, c (veh/h)						649					252					
v/c Ratio						0.02					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
Control Delay (s/veh)						10.7					21.9					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				21.9							
Approach LOS					A				C							

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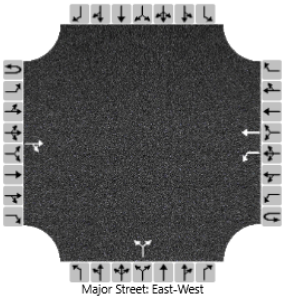
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Warrington Way
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1049	16		12	525			17		20				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					39					
Capacity, c (veh/h)						637					245					
v/c Ratio						0.02					0.16					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
Control Delay (s/veh)						10.8					22.4					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				22.4							
Approach LOS					A				C							

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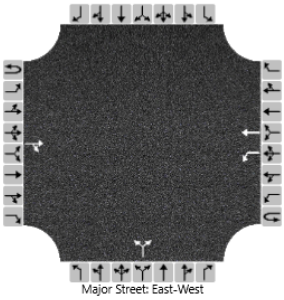
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Warrington Way
Time Analyzed	PM Peak Build	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1060	16		12	576			17		20				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					39					
Capacity, c (veh/h)						631					239					
v/c Ratio						0.02					0.16					
95% Queue Length, Q_{95} (veh)						0.1					0.6					
Control Delay (s/veh)						10.8					23.0					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				23.0							
Approach LOS					A				C							

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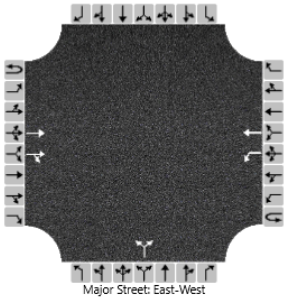
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Warrington Way
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1231	17	0	13	588			17		20				
Percent Heavy Vehicles (%)					3	8				6		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.26				6.92		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.28				3.56		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14					39					
Capacity, c (veh/h)						498					236					
v/c Ratio						0.03					0.16					
95% Queue Length, Q_{95} (veh)						0.1					0.6					
Control Delay (s/veh)						12.4					23.3					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				23.3							
Approach LOS					A				C							

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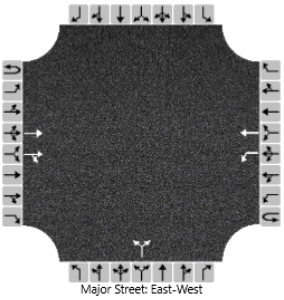
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Warrington Way
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Warrington Way
Time Analyzed	PM Peak Build	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1242	17	0	13	639			17		20				
Percent Heavy Vehicles (%)					3	8				6		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.26				6.92		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.28				3.56		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14					39					
Capacity, c (veh/h)						492					229					
v/c Ratio						0.03					0.17					
95% Queue Length, Q_{95} (veh)						0.1					0.6					
Control Delay (s/veh)						12.5					23.8					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				23.8							
Approach LOS					A				C							

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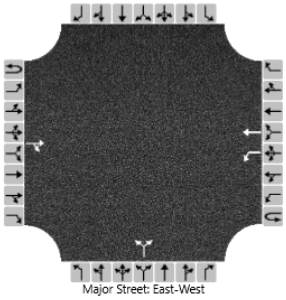
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2022	North/South Street	Crossgate Lane
Time Analyzed	AM Peak	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			629	4		2	616			9		8				
Percent Heavy Vehicles (%)						0				0		12				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage			Left Only							1						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.32				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.41				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2					20					
Capacity, c (veh/h)						879					331					
v/c Ratio						0.00					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.1					16.6					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.0				16.6						
Approach LOS						A				C						

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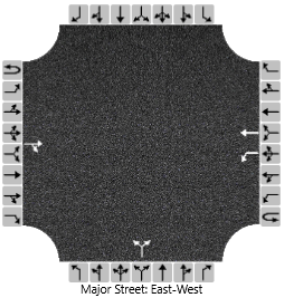
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Crossgate Lane
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			642	4		2	628			9		8				
Percent Heavy Vehicles (%)						0				0		12				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.32				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.41				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2					20					
Capacity, c (veh/h)						867					324					
v/c Ratio						0.00					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.2					16.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				16.8							
Approach LOS					A				C							

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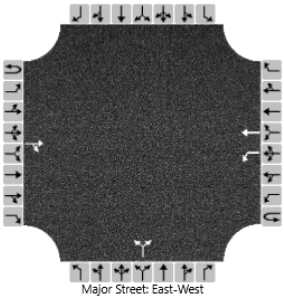
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Crossgate Lane
Time Analyzed	AM Peak Build	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			651	4		2	682			9		8				
Percent Heavy Vehicles (%)						0				0		12				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.32				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.41				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2					20					
Capacity, c (veh/h)						860					312					
v/c Ratio						0.00					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.2					17.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				17.3							
Approach LOS					A				C							

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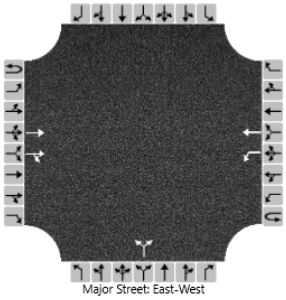
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Crossgate Lane
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			714	4	0	2	833			9		8				
Percent Heavy Vehicles (%)					3	0				0		12				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		7.14				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.42				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2					20					
Capacity, c (veh/h)						807					293					
v/c Ratio						0.00					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.5					18.2					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				18.2							
Approach LOS					A				C							

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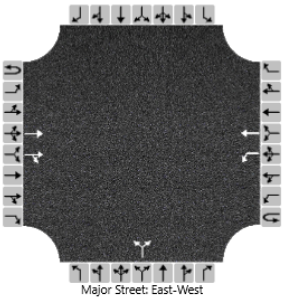
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Crossgate Lane
Time Analyzed	AM Peak Build	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			721	4	0	2	887			9		8				
Percent Heavy Vehicles (%)					3	0				0		12				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		7.14				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.42				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2					20					
Capacity, c (veh/h)						802					281					
v/c Ratio						0.00					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						9.5					18.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				18.8							
Approach LOS					A				C							

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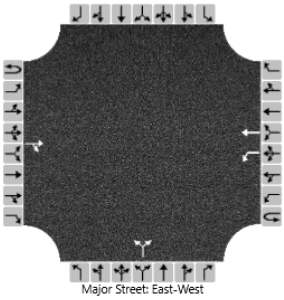
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2022	North/South Street	Crossgate Lane
Time Analyzed	PM Peak	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1006	11		15	515			7		17				
Percent Heavy Vehicles (%)						7				14		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.17				6.54		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.26				3.63		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					26					
Capacity, c (veh/h)						626					252					
v/c Ratio						0.03					0.10					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						10.9					20.9					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				20.9							
Approach LOS					A				C							

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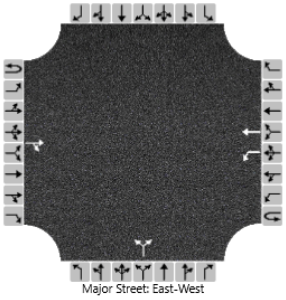
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Crossgate Lane
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1026	11		15	525			7		17				
Percent Heavy Vehicles (%)						7				14		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.17				6.54		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.26				3.63		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					26					
Capacity, c (veh/h)						615					245					
v/c Ratio						0.03					0.10					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						11.0					21.4					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				21.4							
Approach LOS					A				C							

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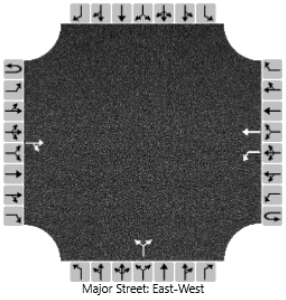
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2024	North/South Street	Crossgate Lane
Time Analyzed	PM Peak Build	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1077	11		15	535			7		17				
Percent Heavy Vehicles (%)						7				14		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.17				6.54		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.26				3.63		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					26					
Capacity, c (veh/h)						586					229					
v/c Ratio						0.03					0.11					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						11.3					22.6					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				22.6							
Approach LOS					A				C							

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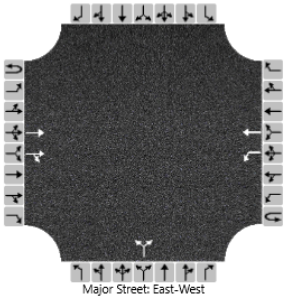
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Crossgate Lane
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1206	11	0	16	588			7		18				
Percent Heavy Vehicles (%)					3	7				14		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.24				7.08		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.27				3.64		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						17					27					
Capacity, c (veh/h)						505					275					
v/c Ratio						0.03					0.10					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						12.4					19.5					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				19.5							
Approach LOS					A				C							

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Crossgate PM 34 NB.xtw

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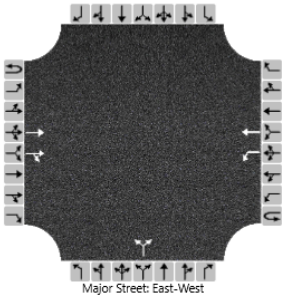
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Crossgate Lane
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	7/5/22	East/West Street	KY 22
Analysis Year	2034	North/South Street	Crossgate Lane
Time Analyzed	PM Peak Build	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1257	11	0	16	598			7		18				
Percent Heavy Vehicles (%)					3	7				14		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.24				7.08		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.27				3.64		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						17					27					
Capacity, c (veh/h)						481					261					
v/c Ratio						0.04					0.10					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						12.8					20.4					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				20.4							
Approach LOS					A				C							

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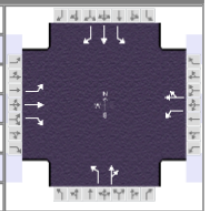
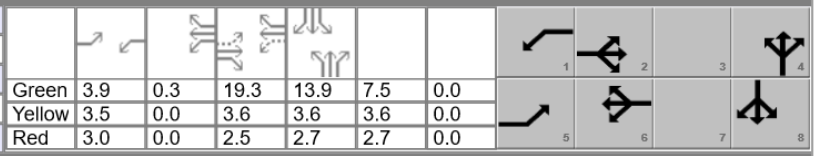
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 23, 2020	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.96
Urban Street	Herr Lane	Analysis Year	2022	Analysis Period	1> 7:15
Intersection	Brownsboror Road	File Name	AM 22 Herr.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	76	270	220	90	364	22	236	107	66	40	125	72

Signal Information			
Cycle, s	70.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



Green	3.9	0.3	19.3	13.9	7.5	0.0
Yellow	3.5	0.0	3.6	3.6	3.6	0.0
Red	3.0	0.0	2.5	2.7	2.7	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	10.4	25.4	10.7	25.7		20.2		13.8
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	5.1	6.1	5.1	6.0		5.1		5.1
Queue Clearance Time (*g s*), s	4.2	11.1	4.6	15.7		11.4		6.7
Green Extension Time (*g e*), s	0.3	4.1	0.3	3.8		2.5		0.9
Phase Call Probability	0.79	1.00	0.84	1.00		1.00		0.98
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	79	281	152	94	399		246	175		42	130	33
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1739	1856	1598	1781	1868		1725	1728		1810	1870	1610
Queue Service Time (*g s*), s	2.2	9.1	5.4	2.6	13.7		9.4	6.3		1.5	4.7	1.3
Cycle Queue Clearance Time (*g c*), s	2.2	9.1	5.4	2.6	13.7		9.4	6.3		1.5	4.7	1.3
Green Ratio (*g/C*)	0.33	0.28	0.28	0.34	0.28		0.20	0.20		0.11	0.11	0.11
Capacity (*c*), veh/h	254	512	441	371	523		342	342		194	201	173
Volume-to-Capacity Ratio (*X*)	0.311	0.549	0.345	0.252	0.764		0.719	0.511		0.215	0.649	0.193
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.6	7.1	3.5	1.8	10.4		7.2	4.7		1.2	4.1	0.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.28	0.18	0.26	0.31	0.26		0.54	0.12		0.20	0.10	0.16
Uniform Delay (*d 1*), s/veh	18.3	21.7	20.4	17.0	23.2		26.3	25.1		28.7	30.1	28.6
Incremental Delay (*d 2*), s/veh	1.0	2.0	1.0	0.5	4.9		4.0	1.7		0.8	5.0	0.8
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	19.2	23.7	21.3	17.5	28.1		30.4	26.8		29.4	35.0	29.4
Level of Service (LOS)	B	C	C	B	C		C	C		C	D	C
Approach Delay, s/veh / LOS	22.3	C		26.1	C		28.9	C		33.0	C	
Intersection Delay, s/veh / LOS	26.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	2.16	B	1.94	B	2.24	B
Bicycle LOS Score / LOS	1.33	A	1.30	A	1.18	A	0.83	A

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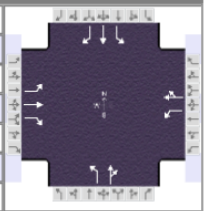
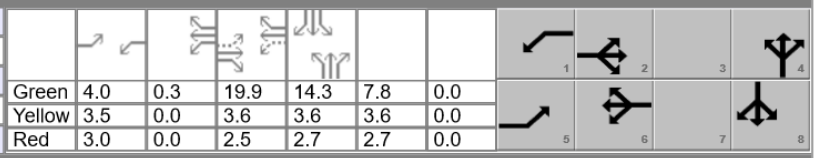
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.96
Urban Street	Herr Lane	Analysis Year	2024 No Build	Analysis Period	1> 7:15
Intersection	Brownsboror Road	File Name	AM 24 NB Herr.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	275	224	92	371	22	241	109	67	41	128	73

Signal Information			
Cycle, s	71.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



	EB			WB			NB			SB		
Green	4.0	0.3		19.9	14.3	7.8	0.0					
Yellow	3.5	0.0		3.6	3.6	3.6	0.0					
Red	3.0	0.0		2.5	2.7	2.7	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	10.5	26.0	10.8	26.3		20.6		14.1
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	5.1	6.1	5.1	6.0		5.1		5.1
Queue Clearance Time (*g s*), s	4.3	11.4	4.7	16.3		11.8		6.9
Green Extension Time (*g e*), s	0.3	4.2	0.3	3.9		2.5		1.0
Phase Call Probability	0.80	1.00	0.85	1.00		1.00		0.98
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	81	286	156	96	406		251	178		43	133	34
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1739	1856	1598	1781	1869		1725	1728		1810	1870	1610
Queue Service Time (*g s*), s	2.3	9.4	5.6	2.7	14.3		9.8	6.6		1.5	4.9	1.4
Cycle Queue Clearance Time (*g c*), s	2.3	9.4	5.6	2.7	14.3		9.8	6.6		1.5	4.9	1.4
Green Ratio (*g/C*)	0.34	0.28	0.28	0.34	0.28		0.20	0.20		0.11	0.11	0.11
Capacity (*c*), veh/h	252	518	446	369	529		346	347		197	203	175
Volume-to-Capacity Ratio (*X*)	0.322	0.554	0.351	0.259	0.769		0.726	0.514		0.217	0.656	0.196
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.7	7.4	3.7	1.9	10.7		7.5	4.9		1.2	4.3	1.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.29	0.19	0.27	0.33	0.27		0.56	0.13		0.20	0.11	0.17
Uniform Delay (*d 1*), s/veh	18.6	22.0	20.6	17.2	23.5		26.8	25.5		29.1	30.6	29.1
Incremental Delay (*d 2*), s/veh	1.0	2.0	1.0	0.5	5.0		4.1	1.7		0.8	5.0	0.8
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	19.6	24.0	21.7	17.7	28.5		30.9	27.2		29.9	35.7	29.9
Level of Service (LOS)	B	C	C	B	C		C	C		C	D	C
Approach Delay, s/veh / LOS	22.6	C		26.5	C		29.4	C		33.6	C	
Intersection Delay, s/veh / LOS	26.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	2.16	B	1.94	B	2.24	B
Bicycle LOS Score / LOS	1.35	A	1.32	A	1.20	A	0.83	A

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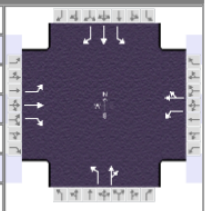
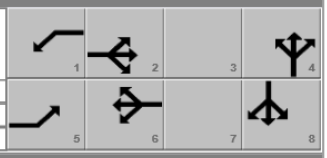
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.96
Urban Street	Herr Lane	Analysis Year	2024 Build	Analysis Period	1> 7:15
Intersection	Brownsboror Road	File Name	AM 24 B Herr.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	79	279	226	92	398	22	257	109	67	41	128	84

Signal Information					EB			WB			NB			SB		
Cycle, s	75.5	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	4.1	0.3		22.0	15.7	8.2	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0		3.6	3.6	3.6	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	0.0		2.5	2.7	2.7	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	10.6	28.1	11.0	28.5		22.0		14.5
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	5.1	6.1	5.1	6.0		5.1		5.1
Queue Clearance Time (*g s*), s	4.5	11.9	4.8	18.1		13.0		7.2
Green Extension Time (*g e*), s	0.3	4.3	0.3	4.2		2.6		1.0
Phase Call Probability	0.82	1.00	0.87	1.00		1.00		0.99
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	82	291	158	96	434		268	178		43	133	46
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1739	1856	1598	1781	1870		1725	1728		1810	1870	1610
Queue Service Time (*g s*), s	2.5	9.9	5.9	2.8	16.1		11.0	6.9		1.6	5.2	2.0
Cycle Queue Clearance Time (*g c*), s	2.5	9.9	5.9	2.8	16.1		11.0	6.9		1.6	5.2	2.0
Green Ratio (*g/C*)	0.35	0.29	0.29	0.35	0.30		0.21	0.21		0.11	0.11	0.11
Capacity (*c*), veh/h	244	542	467	376	554		359	359		196	202	174
Volume-to-Capacity Ratio (*X*)	0.338	0.536	0.339	0.255	0.783		0.747	0.496		0.218	0.660	0.263
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.8	7.7	3.9	2.0	11.9		8.3	5.1		1.3	4.6	1.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.31	0.20	0.28	0.34	0.30		0.62	0.13		0.22	0.12	0.24
Uniform Delay (*d 1*), s/veh	19.2	22.5	21.1	17.5	24.4		28.1	26.5		30.8	32.4	31.0
Incremental Delay (*d 2*), s/veh	1.2	1.8	0.9	0.5	5.2		4.4	1.5		0.8	5.1	1.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	20.4	24.2	22.0	18.1	29.6		32.5	28.0		31.6	37.6	32.1
Level of Service (LOS)	C	C	C	B	C		C	C		C	D	C
Approach Delay, s/veh / LOS	23.0	C		27.5	C		30.7	C		35.3	D	
Intersection Delay, s/veh / LOS	27.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	2.16	B	1.94	B	2.24	B
Bicycle LOS Score / LOS	1.36	A	1.36	A	1.22	A	0.85	A

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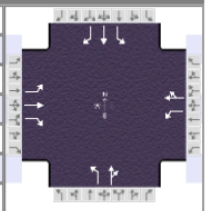
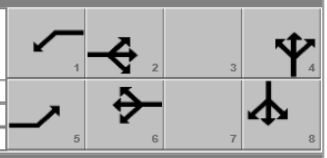
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.96
Urban Street	Herr Lane	Analysis Year	2034 No Build	Analysis Period	1> 7:15
Intersection	Brownsboror Road	File Name	AM 34 NB Herr.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95	299	265	102	435	23	317	140	82	43	143	128

Signal Information												
Cycle, s	90.4	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	5.3	0.3	27.7	21.6	10.3	0.0		
Force Mode	Fixed	Simult. Gap N/S	Off	Yellow	3.5	0.0	3.6	3.6	3.6	0.0		
				Red	3.0	0.0	2.5	2.7	2.7	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	11.8	33.8	12.1	34.0		27.9		16.6
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	5.1	6.2	5.1	6.0		5.1		5.2
Queue Clearance Time (*g s*), s	5.5	14.7	5.6	23.2		18.3		8.9
Green Extension Time (*g e*), s	0.3	4.9	0.4	4.6		3.2		1.3
Phase Call Probability	0.92	1.00	0.93	1.00		1.00		1.00
Max Out Probability	0.00	0.00	0.00	0.00		0.02		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	99	311	199	106	474		330	226		45	149	92
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1739	1856	1598	1781	1870		1725	1730		1810	1870	1610
Queue Service Time (*g s*), s	3.5	12.7	8.9	3.6	21.2		16.3	10.4		2.0	6.9	4.8
Cycle Queue Clearance Time (*g c*), s	3.5	12.7	8.9	3.6	21.2		16.3	10.4		2.0	6.9	4.8
Green Ratio (*g/C*)	0.37	0.31	0.31	0.37	0.31		0.24	0.24		0.11	0.11	0.11
Capacity (*c*), veh/h	230	569	490	369	579		413	414		206	213	184
Volume-to-Capacity Ratio (*X*)	0.430	0.548	0.406	0.288	0.819		0.800	0.546		0.217	0.698	0.499
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.6	9.5	6.2	2.7	15.2		11.5	7.8		1.7	6.2	3.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.46	0.24	0.44	0.46	0.38		0.86	0.20		0.28	0.16	0.60
Uniform Delay (*d 1*), s/veh	22.6	26.2	24.9	20.2	28.9		32.4	30.2		36.5	38.6	37.7
Incremental Delay (*d 2*), s/veh	1.8	1.8	1.2	0.6	6.1		5.1	1.6		0.7	5.8	3.0
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	24.4	27.9	26.1	20.8	35.0		37.5	31.8		37.2	44.4	40.7
Level of Service (LOS)	C	C	C	C	D		D	C		D	D	D
Approach Delay, s/veh / LOS	26.8	C		32.4	C		35.2	D		42.1	D	
Intersection Delay, s/veh / LOS	32.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.17	B	1.94	B	2.25	B
Bicycle LOS Score / LOS	1.49	A	1.44	A	1.41	A	0.96	A

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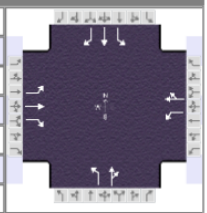
HCS Signalized Intersection Results Summary

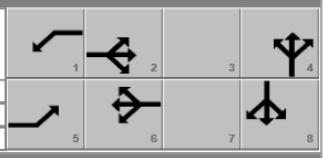
General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.96
Urban Street	Herr Lane	Analysis Year	2034 Build	Analysis Period	1> 7:15
Intersection	Brownsboror Road	File Name	AM 34 B Herr.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	95	303	267	102	462	23	333	140	82	43	143	139

Signal Information			
Cycle, s	96.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off

Green	5.5	0.3	30.7	23.6	10.8	0.0
Yellow	3.5	0.0	3.6	3.6	3.6	0.0
Red	3.0	0.0	2.5	2.7	2.7	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	12.0	36.8	12.3	37.0		29.9		17.1
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	5.1	6.2	5.1	6.0		5.1		5.2
Queue Clearance Time (*g s*), s	5.6	15.4	5.8	25.9		20.3		9.4
Green Extension Time (*g e*), s	0.3	5.0	0.4	4.9		3.3		1.4
Phase Call Probability	0.93	1.00	0.94	1.00		1.00		1.00
Max Out Probability	0.00	0.00	0.00	0.01		0.03		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	99	316	201	106	502		347	226		45	149	103
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1739	1856	1598	1781	1871		1725	1730		1810	1870	1610
Queue Service Time (*g s*), s	3.6	13.4	9.4	3.8	23.9		18.3	10.9		2.2	7.4	5.9
Cycle Queue Clearance Time (*g c*), s	3.6	13.4	9.4	3.8	23.9		18.3	10.9		2.2	7.4	5.9
Green Ratio (*g/C*)	0.38	0.32	0.32	0.38	0.32		0.25	0.25		0.11	0.11	0.11
Capacity (*c*), veh/h	222	593	510	375	603		424	425		204	211	181
Volume-to-Capacity Ratio (*X*)	0.447	0.532	0.394	0.283	0.833		0.818	0.531		0.220	0.708	0.569
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.8	10.0	6.5	2.8	16.9		12.7	8.1		1.8	6.7	4.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.48	0.26	0.47	0.48	0.43		0.95	0.21		0.30	0.17	0.74
Uniform Delay (*d 1*), s/veh	23.7	26.9	25.5	20.7	30.2		34.3	31.5		38.9	41.2	40.5
Incremental Delay (*d 2*), s/veh	2.0	1.6	1.1	0.6	6.3		5.5	1.5		0.8	6.1	4.0
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	25.7	28.5	26.6	21.3	36.6		39.8	33.0		39.7	47.3	44.5
Level of Service (LOS)	C	C	C	C	D		D	C		D	D	D
Approach Delay, s/veh / LOS	27.4	C		33.9	C		37.1	D		45.2	D	
Intersection Delay, s/veh / LOS	34.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.17	B	1.95	B	2.25	B
Bicycle LOS Score / LOS	1.50	B	1.49	A	1.43	A	0.98	A

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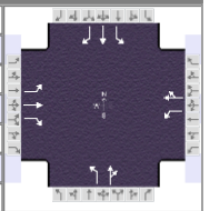
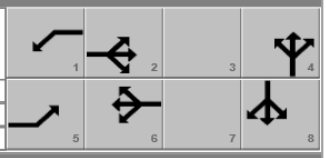
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Herr Lane	Analysis Year	2022	Analysis Period	1> 4:45
Intersection	Brownsboror Road	File Name	PM Herr 22.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	149	511	241	95	270	33	209	238	103	66	222	133

Signal Information					EB			WB			NB			SB		
Cycle, s	105.7	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	5.6	2.4		34.5	22.8	15.2	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0		3.6	3.6	3.6	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	0.0		2.5	2.7	2.7	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	14.5	43.0	12.1	40.6		29.1		21.5
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	3.1	6.1	3.1	3.1		3.1		3.1
Queue Clearance Time (*g s*), s	7.9	28.7	5.8	16.2		21.7		14.5
Green Extension Time (*g e*), s	0.1	8.0	0.1	0.6		1.0		0.5
Phase Call Probability	0.99	1.00	0.94	1.00		1.00		1.00
Max Out Probability	0.01	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	154	527	208	98	305		215	343		68	229	40
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1885	1598	1795	1841		1795	1793		1810	1885	1585
Queue Service Time (*g s*), s	5.9	26.7	10.3	3.8	14.2		11.3	19.7		3.5	12.5	2.4
Cycle Queue Clearance Time (*g c*), s	5.9	26.7	10.3	3.8	14.2		11.3	19.7		3.5	12.5	2.4
Green Ratio (*g/C*)	0.40	0.35	0.35	0.38	0.33		0.22	0.22		0.14	0.14	0.14
Capacity (*c*), veh/h	416	659	559	232	602		388	388		260	271	228
Volume-to-Capacity Ratio (*X*)	0.369	0.799	0.373	0.422	0.507		0.555	0.885		0.262	0.845	0.177
Back of Queue (*Q*), ft/ln (90 th percentile)												
Back of Queue (*Q*), veh/ln (90 th percentile)	4.4	17.2	6.5	2.9	9.3		7.8	12.6		2.8	9.1	1.7
Queue Storage Ratio (*RQ*) (90 th percentile)	0.74	0.43	0.47	0.48	0.24		0.56	0.32		0.47	0.23	0.28
Uniform Delay (*d 1*), s/veh	21.8	31.1	25.8	25.3	28.8		37.0	40.3		40.4	44.3	39.9
Incremental Delay (*d 2*), s/veh	0.2	4.8	0.9	0.5	0.2		0.5	3.2		0.2	2.8	0.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	22.0	35.9	26.7	25.7	29.0		37.5	43.5		40.6	47.1	40.0
Level of Service (LOS)	C	D	C	C	C		D	D		D	D	D
Approach Delay, s/veh / LOS	31.3	C		28.2	C		41.2	D		44.9	D	
Intersection Delay, s/veh / LOS	35.4						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.25	B	1.95	B	2.20	B
Bicycle LOS Score / LOS	1.95	B	1.15	A	1.41	A	1.04	A

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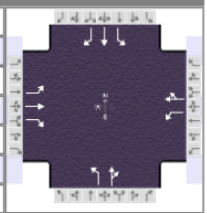
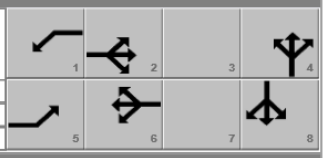
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Herr Lane	Analysis Year	2024 No Build	Analysis Period	1> 4:45
Intersection	Brownsboror Road	File Name	PM Herr 24 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	152	521	246	97	275	34	213	243	105	67	226	136

Signal Information					EB			WB			NB			SB		
Cycle, s	109.7	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	5.8	2.5		36.3	24.0	15.9	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0		3.6	3.6	3.6	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	0.0		2.5	2.7	2.7	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	14.8	44.8	12.3	42.4		30.3		22.2
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	3.1	6.1	3.1	3.1		3.1		3.1
Queue Clearance Time (*g s*), s	8.2	30.4	6.0	17.0		22.9		15.3
Green Extension Time (*g e*), s	0.1	8.2	0.1	0.6		1.0		0.6
Phase Call Probability	0.99	1.00	0.95	1.00		1.00		1.00
Max Out Probability	0.02	0.01	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	157	537	213	100	311		220	351		69	233	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1885	1598	1795	1841		1795	1793		1810	1885	1585
Queue Service Time (*g s*), s	6.2	28.4	11.0	4.0	15.0		12.0	20.9		3.7	13.3	2.6
Cycle Queue Clearance Time (*g c*), s	6.2	28.4	11.0	4.0	15.0		12.0	20.9		3.7	13.3	2.6
Green Ratio (*g/C*)	0.41	0.35	0.35	0.39	0.33		0.22	0.22		0.14	0.14	0.14
Capacity (*c*), veh/h	415	666	565	229	609		394	393		263	273	230
Volume-to-Capacity Ratio (*X*)	0.378	0.806	0.378	0.437	0.511		0.558	0.891		0.263	0.852	0.188
Back of Queue (*Q*), ft/ln (90 th percentile)												
Back of Queue (*Q*), veh/ln (90 th percentile)	4.7	18.1	6.9	3.0	9.8		8.2	13.6		3.0	9.6	1.9
Queue Storage Ratio (*RQ*) (90 th percentile)	0.78	0.46	0.50	0.51	0.25		0.59	0.34		0.50	0.24	0.32
Uniform Delay (*d 1*), s/veh	22.4	32.2	26.5	26.1	29.6		38.2	41.7		41.8	45.9	41.3
Incremental Delay (*d 2*), s/veh	0.2	4.9	0.9	0.5	0.2		0.5	5.1		0.2	2.9	0.1
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	22.6	37.1	27.4	26.6	29.9		38.7	46.8		42.0	48.8	41.5
Level of Service (LOS)	C	D	C	C	C		D	D		D	D	D
Approach Delay, s/veh / LOS	32.3	C		29.1	C		43.6	D		46.5	D	
Intersection Delay, s/veh / LOS	36.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.25	B	1.96	B	2.20	B
Bicycle LOS Score / LOS	1.98	B	1.17	A	1.43	A	1.06	A

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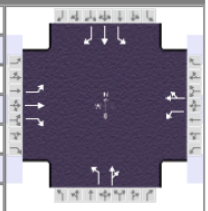
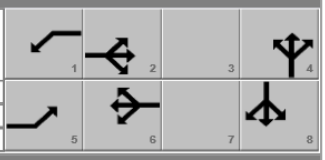
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Herr Lane	Analysis Year	2024 Build	Analysis Period	1> 4:45
Intersection	Brownsboror Road	File Name	PM Herr 24 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	162	547	261	97	280	34	216	243	105	67	226	138

Signal Information					EB			WB			NB			SB		
Cycle, s	114.9	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	6.0	3.0		39.2	25.0	16.5	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0		3.6	3.6	3.6	0.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	0.0		2.5	2.7	2.7	0.0					



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	15.4	48.2	12.5	45.3		31.3		22.8
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	3.1	6.1	3.1	3.1		3.1		3.1
Queue Clearance Time (*g s*), s	8.8	33.1	6.1	17.8		23.9		15.9
Green Extension Time (*g e*), s	0.1	8.8	0.1	0.6		1.0		0.5
Phase Call Probability	1.00	1.00	0.96	1.00		1.00		1.00
Max Out Probability	0.04	0.01	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	167	564	229	100	316		223	351		69	233	45
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1885	1598	1795	1841		1795	1793		1810	1885	1585
Queue Service Time (*g s*), s	6.8	31.1	12.2	4.1	15.8		12.8	21.9		3.9	13.9	2.9
Cycle Queue Clearance Time (*g c*), s	6.8	31.1	12.2	4.1	15.8		12.8	21.9		3.9	13.9	2.9
Green Ratio (*g/C*)	0.42	0.37	0.37	0.39	0.34		0.22	0.22		0.14	0.14	0.14
Capacity (*c*), veh/h	425	692	586	224	628		392	391		261	272	228
Volume-to-Capacity Ratio (*X*)	0.393	0.815	0.390	0.447	0.504		0.568	0.896		0.265	0.858	0.199
Back of Queue (*Q*), ft/ln (90 th percentile)												
Back of Queue (*Q*), veh/ln (90 th percentile)	5.0	19.7	7.5	3.2	10.3		8.7	14.4		3.2	10.0	2.1
Queue Storage Ratio (*RQ*) (90 th percentile)	0.84	0.50	0.54	0.53	0.26		0.62	0.36		0.53	0.25	0.35
Uniform Delay (*d 1*), s/veh	22.7	32.9	27.0	26.9	30.2		40.2	43.8		43.9	48.2	43.5
Incremental Delay (*d 2*), s/veh	0.2	5.0	0.9	0.5	0.2		0.5	6.8		0.2	3.1	0.2
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	22.9	38.0	27.9	27.5	30.4		40.7	50.6		44.1	51.2	43.6
Level of Service (LOS)	C	D	C	C	C		D	D		D	D	D
Approach Delay, s/veh / LOS	32.9	C		29.7	C		46.7	D		48.8	D	
Intersection Delay, s/veh / LOS	38.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	2.25	B	1.96	B	2.21	B
Bicycle LOS Score / LOS	2.07	B	1.17	A	1.43	A	1.06	A

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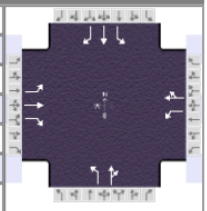
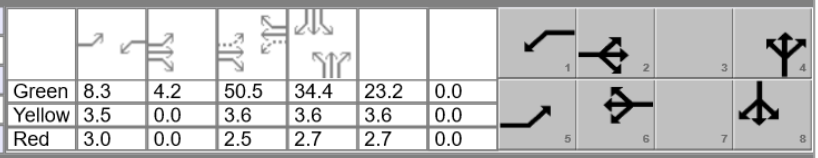
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Herr Lane	Analysis Year	2034 No Build	Analysis Period	1> 4:45
Intersection	Brownsboror Road	File Name	PM Herr 34 NB.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	194	579	362	116	298	36	258	271	119	70	264	152

Signal Information			
Cycle, s	145.8	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



	EB			WB					
Green	8.3	4.2		50.5	34.4	23.2	0.0		
Yellow	3.5	0.0		3.6	3.6	3.6	0.0		
Red	3.0	0.0		2.5	2.7	2.7	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	18.9	60.8	14.8	56.6		40.7		29.5
Change Period, (*Y+R c*), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	3.1	6.1	3.1	3.1		3.1		3.1
Queue Clearance Time (*g s*), s	12.3	44.3	8.2	23.4		33.4		22.7
Green Extension Time (*g e*), s	0.1	10.4	0.1	0.6		0.9		0.5
Phase Call Probability	1.00	1.00	0.99	1.00		1.00		1.00
Max Out Probability	1.00	0.09	0.01	0.00		0.19		0.05

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	200	597	333	120	337		266	394		72	272	60
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1885	1598	1795	1841		1795	1791		1810	1885	1585
Queue Service Time (*g s*), s	10.3	42.3	24.0	6.2	21.4		19.4	31.4		5.1	20.7	4.8
Cycle Queue Clearance Time (*g c*), s	10.3	42.3	24.0	6.2	21.4		19.4	31.4		5.1	20.7	4.8
Green Ratio (*g/C*)	0.43	0.38	0.38	0.40	0.35		0.24	0.24		0.16	0.16	0.16
Capacity (*c*), veh/h	416	707	600	211	638		424	423		289	301	253
Volume-to-Capacity Ratio (*X*)	0.481	0.844	0.555	0.568	0.528		0.628	0.932		0.250	0.905	0.236
Back of Queue (*Q*), ft/ln (90 th percentile)												
Back of Queue (*Q*), veh/ln (90 th percentile)	7.2	26.6	13.6	4.9	13.7		12.6	21.8		4.2	15.7	3.5
Queue Storage Ratio (*RQ*) (90 th percentile)	1.20	0.67	0.98	0.82	0.35		0.91	0.55		0.70	0.40	0.59
Uniform Delay (*d 1*), s/veh	28.4	41.7	36.0	34.3	38.1		50.0	54.6		53.7	60.3	53.6
Incremental Delay (*d 2*), s/veh	0.3	6.8	1.7	0.9	0.3		1.1	21.7		0.2	18.1	0.2
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	28.7	48.5	37.7	35.2	38.4		51.1	76.3		53.9	78.4	53.8
Level of Service (LOS)	C	D	D	D	D		D	E		D	E	D
Approach Delay, s/veh / LOS	41.8	D		37.5	D		66.2	E		70.4	E	
Intersection Delay, s/veh / LOS	51.5						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.94	B	2.26	B	1.97	B	2.22	B
Bicycle LOS Score / LOS	2.35	B	1.24	A	1.58	B	1.15	A

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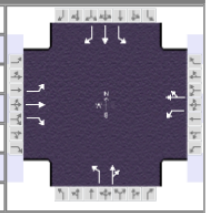
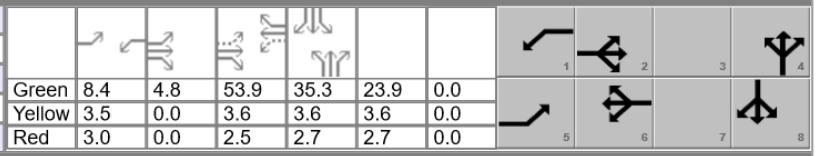
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic			Duration, h	0.250
Analyst	DBZ	Analysis Date	Jul 5, 2022	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Herr Lane	Analysis Year	2034 Build	Analysis Period	1> 4:45
Intersection	Brownsboror Road	File Name	PM Herr 34 B.xus		
Project Description	Sina Office				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	204	605	377	116	303	36	261	271	119	70	264	154

Signal Information			
Cycle, s	151.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Green	8.4	4.8	53.9	35.3	23.9	0.0		
Yellow	3.5	0.0	3.6	3.6	3.6	0.0		
Red	3.0	0.0	2.5	2.7	2.7	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		4		8
Case Number	1.1	3.0	1.1	4.0		10.0		9.0
Phase Duration, s	19.7	64.8	14.9	60.0		41.6		30.2
Change Period, ($Y+R_c$), s	6.5	6.1	6.5	6.1		6.3		6.3
Max Allow Headway (*MAH*), s	3.1	6.1	3.1	3.1		3.1		3.1
Queue Clearance Time (g_s), s	13.1	48.0	8.4	24.3		34.5		23.4
Green Extension Time (g_e), s	0.1	10.7	0.1	0.6		0.8		0.5
Phase Call Probability	1.00	1.00	0.99	1.00		1.00		1.00
Max Out Probability	1.00	0.14	0.01	0.00		0.31		0.08

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	210	624	348	120	342		269	394		72	272	62
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1885	1598	1795	1841		1795	1791		1810	1885	1585
Queue Service Time (g_s), s	11.1	46.0	25.9	6.4	22.3		20.5	32.5		5.3	21.4	5.2
Cycle Queue Clearance Time (g_c), s	11.1	46.0	25.9	6.4	22.3		20.5	32.5		5.3	21.4	5.2
Green Ratio (*g/C*)	0.44	0.39	0.39	0.41	0.36		0.24	0.24		0.16	0.16	0.16
Capacity (*c*), veh/h	425	730	619	204	655		419	430		285	310	250
Volume-to-Capacity Ratio (*X*)	0.495	0.854	0.563	0.585	0.522		0.642	0.916		0.253	0.878	0.247
Back of Queue (*Q*), ft/ln (90 th percentile)												
Back of Queue (*Q*), veh/ln (90 th percentile)	7.7	28.8	14.6	5.0	14.2		13.4	22.2		4.4	15.9	3.8
Queue Storage Ratio (*RQ*) (90 th percentile)	1.28	0.73	1.05	0.84	0.36		0.96	0.56		0.73	0.40	0.64
Uniform Delay (d_1), s/veh	28.6	42.6	36.4	35.4	38.6		52.4	56.2		56.0	62.4	56.0
Incremental Delay (d_2), s/veh	0.3	7.8	1.7	1.0	0.2		1.6	19.7		0.2	15.1	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Control Delay (*d*), s/veh	28.9	50.3	38.1	36.4	38.9		54.0	75.9		56.2	77.5	56.2
Level of Service (LOS)	C	D	D	D	D		D	E		E	E	E
Approach Delay, s/veh / LOS	42.9	D		38.2	D		67.0	E		70.5	E	
Intersection Delay, s/veh / LOS	52.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.94	B	2.26	B	1.97	B	2.22	B
Bicycle LOS Score / LOS	2.44	B	1.25	A	1.58	B	1.16	A

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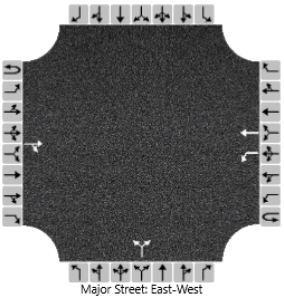
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	KY 22 at Entrance
Agency/Co.	Diane B. Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	6/29/2022	East/West Street	KY 22
Analysis Year	2024	North/South Street	Entrance
Time Analyzed	AM Peak	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			663	54		54	611			8		7				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						61					17					
Capacity, c (veh/h)						821					298					
v/c Ratio						0.07					0.06					
95% Queue Length, Q_{95} (veh)						0.2					0.2					
Control Delay (s/veh)						9.7					17.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.8				17.8							
Approach LOS					A				C							

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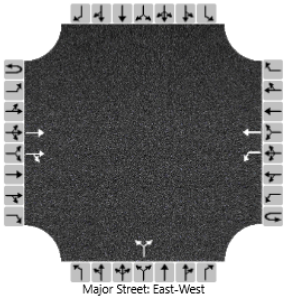
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	KY 22 at Entrance
Agency/Co.	Diane B. Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	6/29/2022	East/West Street	KY 22
Analysis Year	2034	North/South Street	Entrance
Time Analyzed	AM Peak	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			736	54	0	54	816			8		7				
Percent Heavy Vehicles (%)					3	0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						61					17					
Capacity, c (veh/h)						765					265					
v/c Ratio						0.08					0.06					
95% Queue Length, Q_{95} (veh)						0.3					0.2					
Control Delay (s/veh)						10.1					19.5					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.6				19.5							
Approach LOS					A				C							

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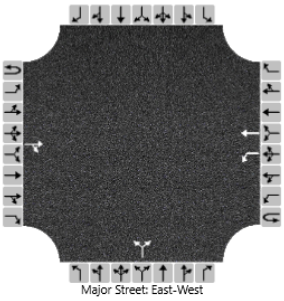
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	KY 22 at Entrance
Agency/Co.	Diane B. Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	6/29/2022	East/West Street	KY 22
Analysis Year	2024	North/South Street	Entrance
Time Analyzed	PM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			1069	11		10	537			51		51				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

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)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					106					
Capacity, c (veh/h)						628					238					
v/c Ratio						0.02					0.45					
95% Queue Length, Q_{95} (veh)						0.1					2.1					
Control Delay (s/veh)						10.8					31.7					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				31.7							
Approach LOS					A				D							

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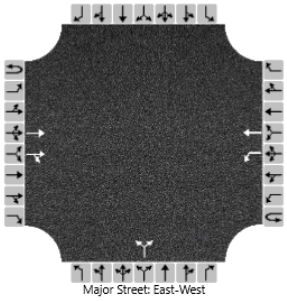
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	KY 22 at Entrance
Agency/Co.	Diane B. Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	6/29/2022	East/West Street	KY 22
Analysis Year	2034	North/South Street	Entrance
Time Analyzed	PM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Sina Office		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1252	11	0	10	601			51		51				
Percent Heavy Vehicles (%)					3	0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					106					
Capacity, c (veh/h)						532					232					
v/c Ratio						0.02					0.46					
95% Queue Length, Q_{95} (veh)						0.1					2.2					
Control Delay (s/veh)						11.9					33.0					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				33.0							
Approach LOS					A				D							

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