final report

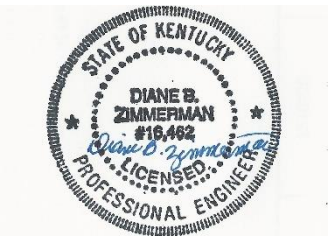
May 18, 2018

Traffic Impact Study

Plantside Drive Extension to Rehl Road
Louisville, KY

Prepared for

Louisville Metro Planning Commission
Kentucky Transportation Cabinet



DIANE B. ZIMMERMAN
Traffic Engineering, LLC

12803 High Meadows Pike
Prospect, KY 40059
502.648.1858
dianebzim@att.net

Table of Contents

INTRODUCTION 2

Figure 1. Site Map 2

EXISTING CONDITIONS 2

Figure 2. Existing Peak Hour Volumes 3

FUTURE CONDITIONS 3

Figure 3. No Build Peak Hour Volumes 4

PLANTSIDE DRIVE EXTENSION 4

Figure 4. Peak Hour Trips Distributed to Plantside Drive at Rehl Road 5

Figure 5. Build Peak Hour Volumes 6

Figure 6. Build Peak Hour Volumes for Plantside Drive at Rehl Road 6

ANALYSIS 7

Table 1. Peak Hour Level of Service 7

CONCLUSIONS 8

APPENDIX 9

INTRODUCTION

The development plan for Blankenbaker Station II on Plantside Drive in Louisville, KY shows 25 industrial lots with approximately 203 acres. The approved plan is date September 22, 2010. **Figure 1** displays a map of the site. Access to the development is from Plantside Drive at the intersection with Tucker Station Road, with Plantside Drive extending to Rehl Road. The purpose of this study is to impact of extending Plantside Drive to Rehl Road. For this study, the impact area was defined to be the intersections of Plantside Drive with Blankenbaker Parkway, Tucker Station Road; the intersections of Blankenbaker Parkway with Rehl Road, Rehl Road with Tucker Station Road, and Taylorsville Road with Tucker Station Road.

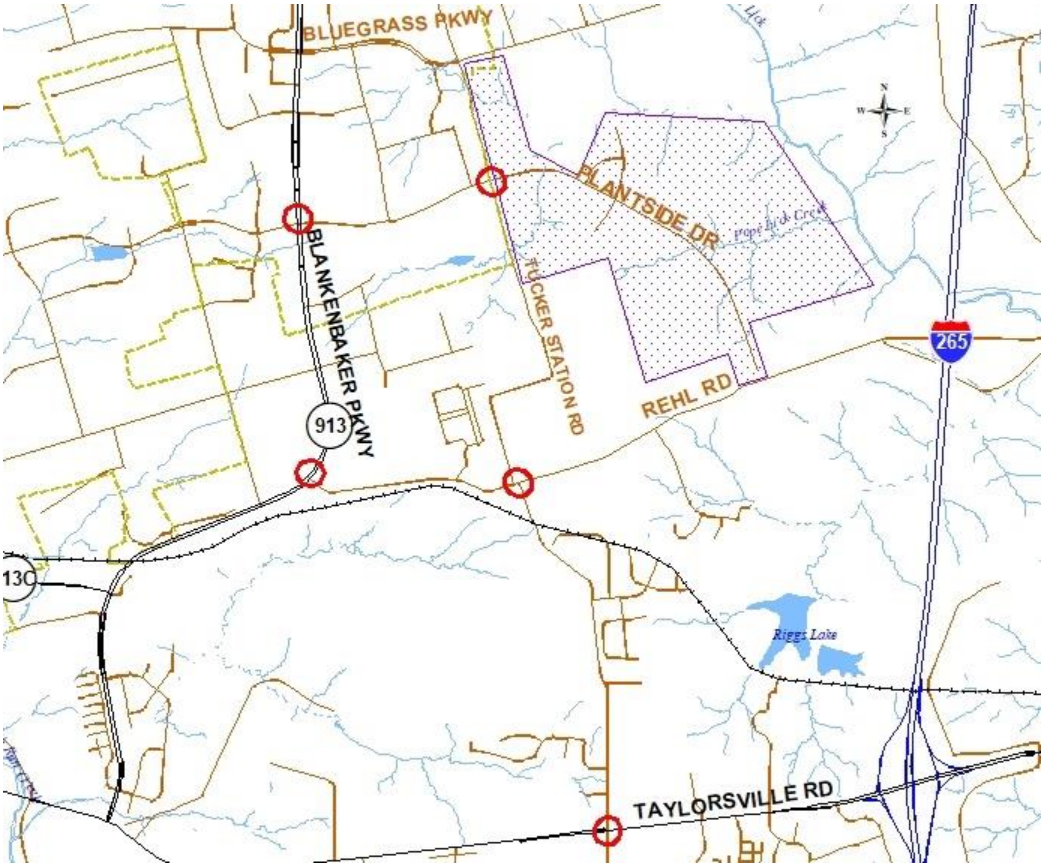


Figure 1. Site Map

EXISTING CONDITIONS

Plantside Drive is a Metro-maintained minor arterial with an estimated 2018 ADT of 4,200 vehicles per day east of Tucker Station Road, as estimated from the turning movement count. The road is a four-lane highway with eleven-foot lanes with a median, and curbs through the study area. The speed limit is 35 mph. There are sidewalks along the developed lots. The intersection with Tucker Station Road, is controlled with stop signs on all approaches. There are left turn lanes on Plantside Drive. Southbound Tucker Station Road has a right turn lane. The intersection with Blankenbaker Parkway is controlled with a traffic signal. Each approach has a left turn lane, and both approaches on Blankenbaker Parkway have right turn lanes.

Rehl Road is a Metro-maintained secondary collector with an estimated 2018 ADT of 1,700 vehicles per day east of Tucker Station Road, as estimated from the turning movement count. The road is a two-lane highway with nine-foot lanes through the study area. The speed limit is 35 mph. There are no sidewalks. The intersection with Tucker Station Road, is controlled with stop signs on all approaches. The intersection with Blankenbaker Parkway is controlled with a stop sign on Rehl Road. Each approach has a left turn lane.

Peak hour traffic counts for the intersections were obtained on various dates. The a.m. and p.m. peak hour varied between the intersections. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes.

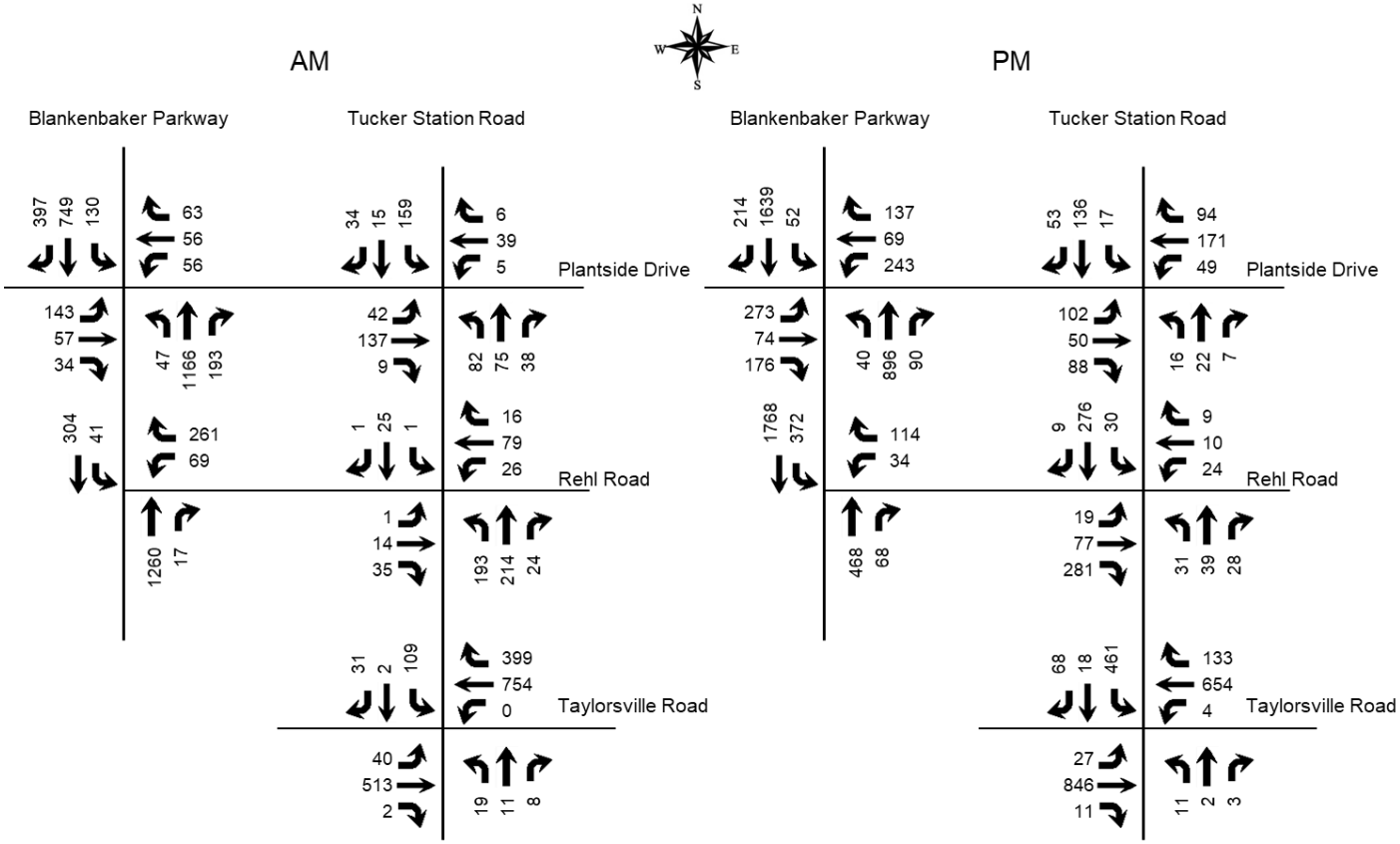


Figure 2. Existing Peak Hour Volumes

FUTURE CONDITIONS

Blankenbaker II is approximately 75% occupied. For this analysis, full occupancy is assumed by 2020. The traffic volumes from Blankenbaker II are increased to 100%. Using the 2005 and 2013 traffic impact studies for Blankenbaker II, an annual growth rate was established of 4.0 percent and was applied to all volumes along Blankenbaker Parkway. Volumes along Taylorsville Road were increased by an annual rate of two percent. Other locations were increased by an annual growth rate of one percent. Trip generation for 77 lots in Grand Lakes Estates has also been included. **Figure 3** displays the 2020 No Build peak hour volumes.

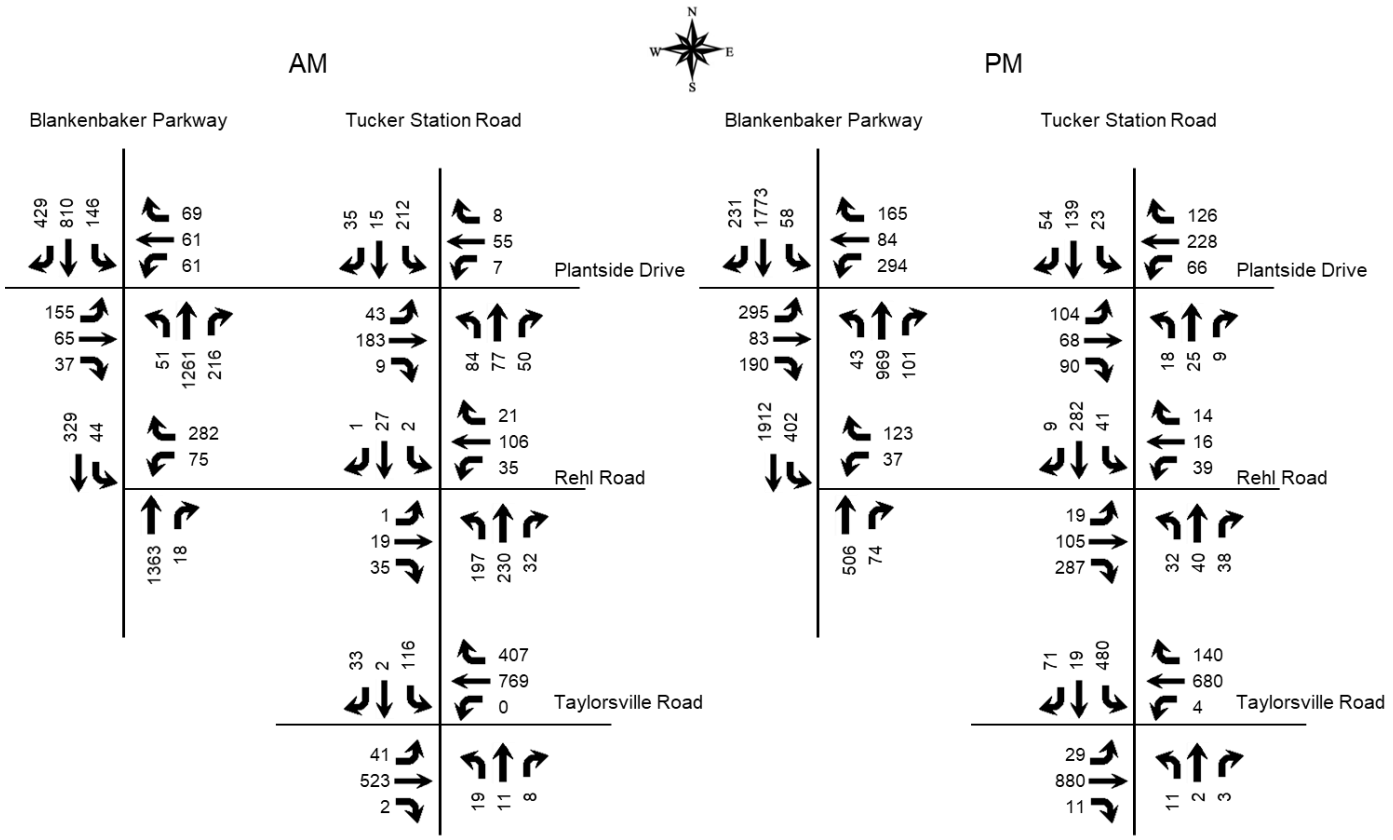


Figure 3. No Build Peak Hour Volumes

PLANTSIDE DRIVE EXTENSION

Plantside Drive has been planned to connect Rehl Road since the development plan was presented. The connection is now being proposed with the development of the lot that will be adjacent to Rehl Road. The trips that would be diverted to the Plantside Drive intersection with Rehl Road are determined by the volumes at the intersection of Tucker Station Road in Figure 3. The diverted trips are shown in **Figure 4**. **Figure 5** displays the individual turning movements for the peak hours when Plantside Drive is connected at Rehl Road.

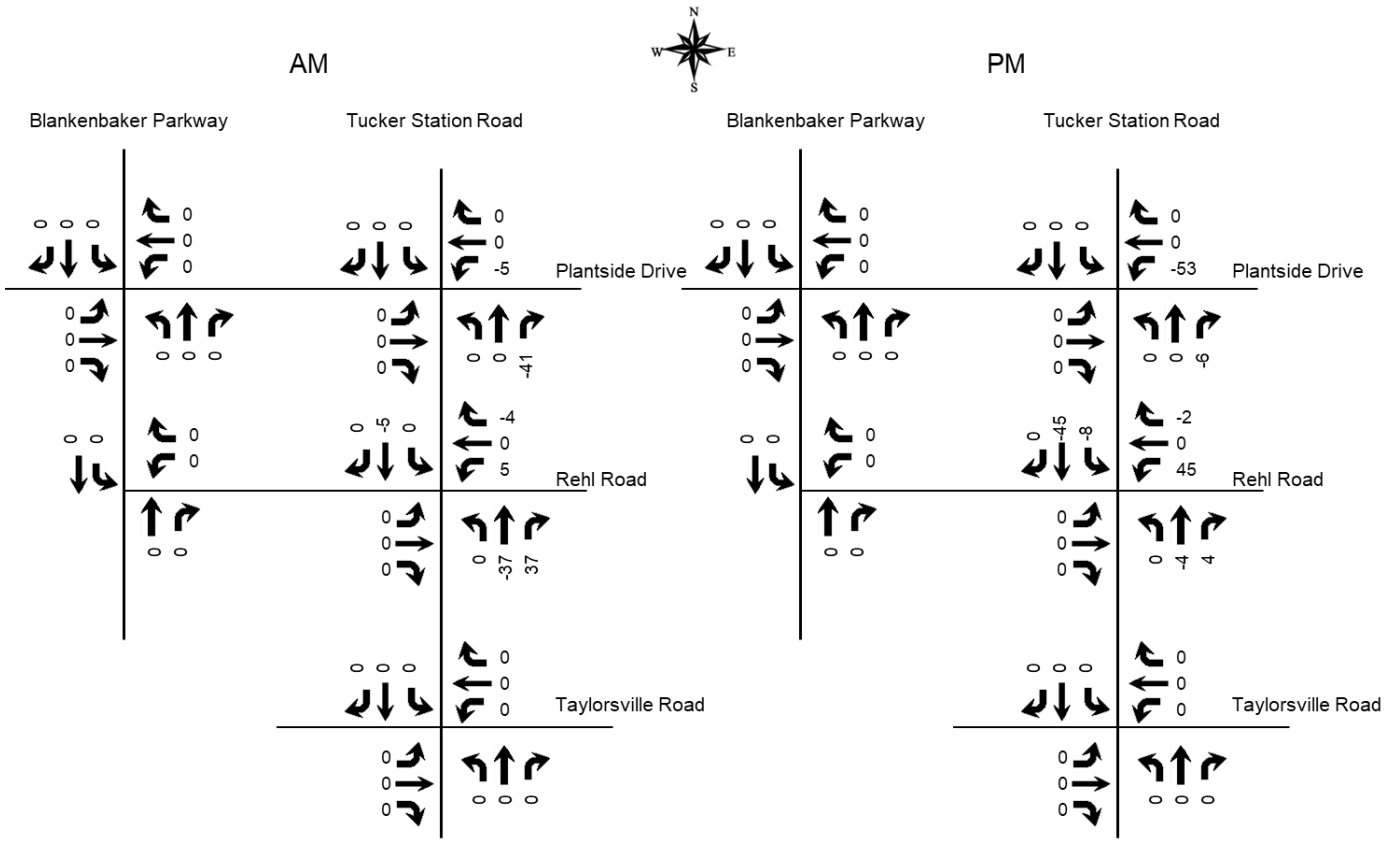


Figure 4. Peak Hour Trips Distributed to Plantside Drive at Rehl Road

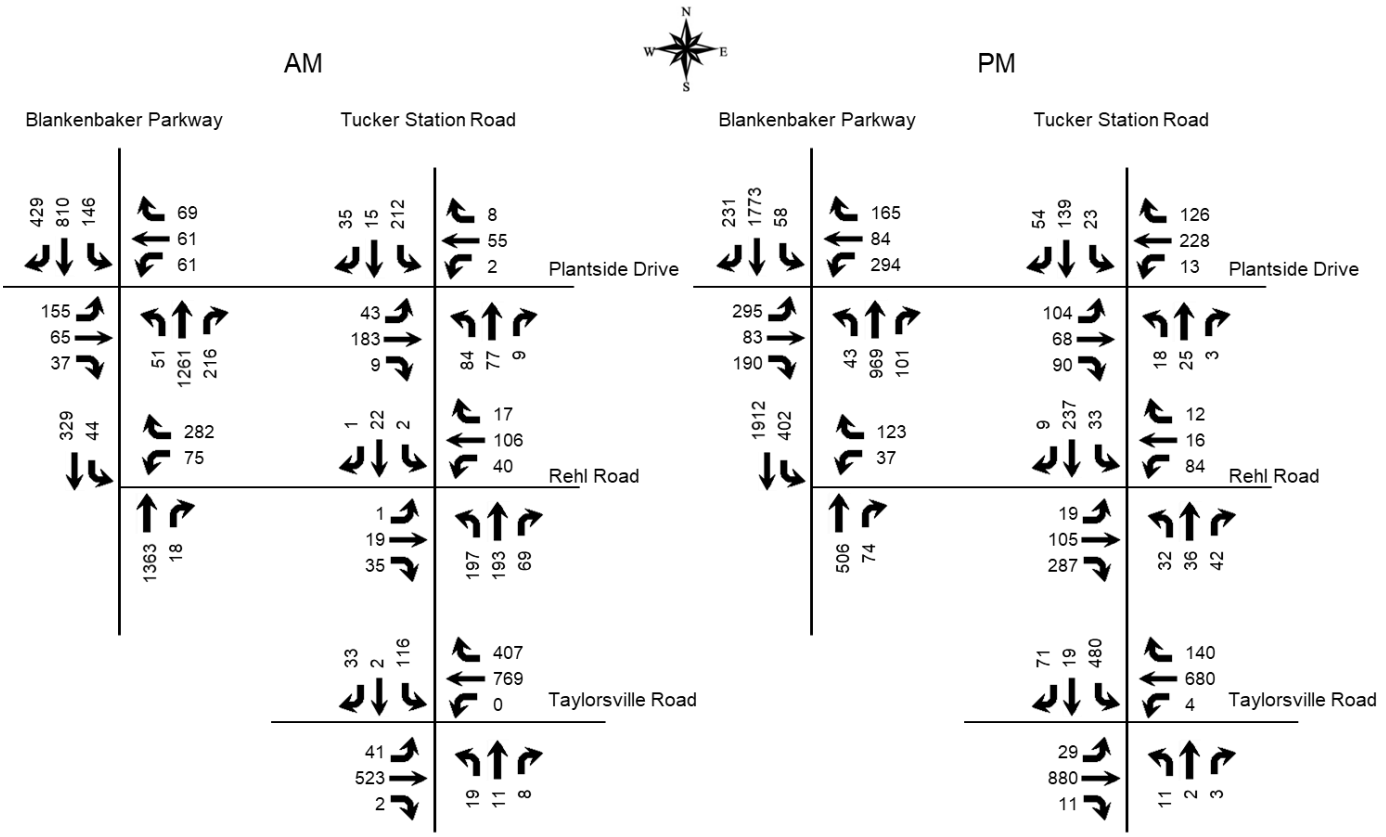


Figure 5. Build Peak Hour Volumes

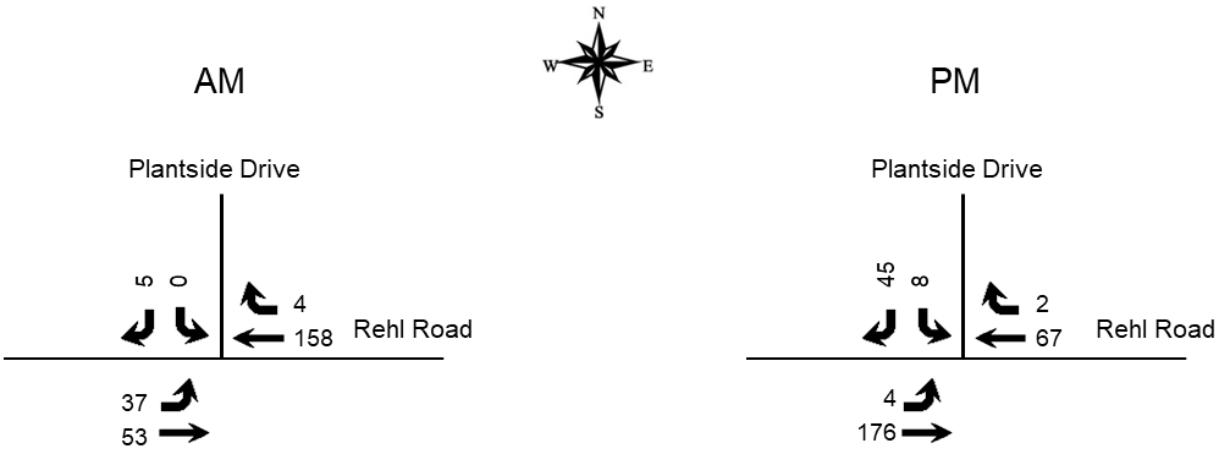


Figure 6. Build Peak Hour Volumes for Plantside Drive at Rehl Road

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, 6th edition. Future delays and Level of Service were determined for the intersections using the HCS Streets (version 7.4) software. The delays and Level of Service are summarized in **Table 1**.

Table 1. Peak Hour Level of Service

	A.M.			P.M.		
Approach	2018 Existing	2020 No Build	2020 Build	2018 Existing	2020 No Build	2020 Build
Blankenbaker Parkway at Plantside Drive	**C 23.7**	**C 25.7**	**C 25.7**	**E 62.3**	**E 67.8**	**E 67.8**
Plantside Drive Eastbound	E 58.7	E 59.7	E 59.7	E 67.9	E 62.4	E 62.4
Plantside Drive Westbound	D 54.7	D 54.3	D 54.3	E 57.0	F 87.1	F 87.1
Blankenbaker Parkway Northbound	C 20.1	C 22.6	C 22.6	C 25.8	C 27.2	C 27.2
Blankenbaker Parkway Southbound	B 16.9	B 18.4	B 18.4	F 81.1	F 85.4	F 85.4
Blankenbaker Parkway at Rehl Road						
Rehl Road Westbound	E 38.1	F 56.4	F 56.4	E 41.1	F 66.6	F 66.6
Blankenbaker Parkway Southbound	B 13.4	B 14.5	B 14.5	B 11.2	B 12.1	B 12.1
Plantside Drive at Tucker Station Road	**B 11.8**	**B 14.0**	**B 13.2**	**B 12.8**	**C 15.5**	**C 15.2**
Plantside Drive Eastbound	B 10.3	B 11.4	B 11.1	B 12.1	B 13.6	B 13.1
Plantside Drive Westbound	A 9.9	B 10.7	B 10.5	B 12.8	C 16.8	C 16.9
Tucker Station Road Northbound	B 13.1	C 15.4	B 13.8	B 11.9	B 13.2	B 12.7
Tucker Station Road Southbound	B 12.4	C 16.2	C 15.5	B 13.6	C 16.0	C 15.2
Rehl Road at Tucker Station Road	**B 12.9**	**B 14.6**	**B 14.4**	**B 14.8**	**B 17.9**	**B 16.5**
Rehl Road Eastbound	A 8.4	A 8.8	A 8.7	C 15.9	C 20.5	C 19.9

	A.M.			P.M.		
Approach	2018 Existing	2020 No Build	2020 Build	2018 Existing	2020 No Build	2020 Build
Rehl Road Westbound	A 9.5	B 10.4	B 10.4	A 9.7	B 10.5	B 11.2
Tucker Station Road Northbound	B 14.7	C 17.2	C 16.7	B 10.2	B 11.0	B 11.0
Tucker Station Road Southbound	A 8.3	A 8.6	A 8.5	C 15.5	C 18.5	C 15.9
Taylorsville Road at Rehl Road	**C 20.7**	**C 21.3**	**C 21.3**	**C 33.3**	**C 35.9**	**C 35.9**
Taylorsville Road Eastbound	A 8.0	A 8.1	A 8.1	C 23.4	C 24.8	C 24.8
Taylorsville Road Westbound	C 21.4	C 22.1	C 22.1	D 35.2	D 40.6	D 40.6
Rehl Road Northbound	E 62.9	E 62.9	E 62.9	E 58.7	E 58.7	E 58.7
Rehl Road Southbound	D 52.9	D 53.6	D 53.6	D 46.0	D 46.3	D 46.3
Rehl Road at Plantside Drive						
Rehl Road Eastbound (left)			A 7.6			A 7.4
Plantside Drive Southbound			A 9.4			A 9.1

Key: Level of Service, Delay in seconds per vehicle

CONCLUSIONS

The extension of Plantside Drive to Rehl Road will have a minimal impact on existing intersections. The extension will allow some trips to be diverted from Tucker Station Road between Plantside Drive and Rehl Road. The two intersections that will experience a change in traffic patterns, have reduced average delays with the extension open.

APPENDIX

Traffic Counts

Louisville, KY
Classified Turn Movement Count

Site 1 of 2
Plantside Dr (West)
Plantside Dr (East)
SR-913 Blankenbaker Pkwy (South)
SR-913 Blankenbaker Pkwy (North)

Marr Traffic
Transportation Data Collection

41 Peabody Street, Nashville, TN 37210
1 (615) 431-6750
1 (800) 615-3765

Lat/Long
38.210334°, -85.538853°

Date
Tuesday 17 April 2018

Weather
Sunny
Temp: 19°C

	Eastbound				Westbound				Northbound				Southbound				
	Plantside Dr (West)				Plantside Dr (East)				SR-913 Blankenbaker Pkwy (South)				SR-913 Blankenbaker Pkwy (North)				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Int
0700 - 0715	0	29	3	5	0	20	6	13	0	8	271	26	0	25	95	53	554
0715 - 0730	0	20	8	5	0	12	9	6	0	13	271	32	0	22	169	86	653
0730 - 0745	0	36	11	12	0	14	13	17	0	9	277	37	0	31	175	71	703
0745 - 0800	0	28	22	6	0	14	15	13	0	13	289	70	0	35	200	87	792
0800 - 0815	1	32	12	8	0	13	11	20	0	14	280	48	0	36	219	91	785
0815 - 0830	0	46	12	8	0	15	17	13	0	11	320	38	0	28	155	60	723
0830 - 0845	0	44	10	9	0	7	13	22	0	11	251	36	0	24	137	54	618
0845 - 0900	0	16	7	9	0	12	15	30	0	14	209	32	0	29	142	74	589
1600 - 1615	0	65	10	30	0	28	9	46	0	8	160	14	0	18	282	69	739
1615 - 1630	0	54	6	36	0	30	4	27	0	11	151	16	0	13	322	42	712
1630 - 1645	0	92	31	46	0	66	10	35	0	5	198	19	0	11	345	50	908
1645 - 1700	0	66	10	44	0	54	16	39	0	7	204	14	0	14	392	60	920
1700 - 1715	0	94	27	46	0	61	18	62	0	5	259	26	0	13	436	63	1110
1715 - 1730	0	64	17	57	0	64	19	16	0	8	214	32	0	14	418	37	960
1730 - 1745	0	49	20	29	0	64	16	20	0	20	219	18	0	11	393	54	913
1745 - 1800	0	43	15	30	0	48	13	31	0	11	191	20	0	13	437	54	906
Grand Total	1	778	221	380	0	522	204	410	0	168	3764	478	0	337	4317	1005	**12585**
Cars	1	678	200	360	0	493	190	369	0	154	3660	451	0	291	4232	896	
Trucks	0	100	20	20	0	29	14	41	0	14	103	27	0	46	85	109	
P/Cycles	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	
Cars (%)	100.00	87.15	90.91	94.74	0.00	94.44	93.14	90.00	0.00	91.67	97.26	94.35	0.00	86.35	98.03	89.15	
Trucks (%)	0.00	12.85	9.09	5.26	0.00	5.56	6.86	10.00	0.00	8.33	2.74	5.65	0.00	13.65	1.97	10.85	
P/Cycles (%)	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	

0730 - 0745	0	36	11	12	0	14	13	17	0	9	277	37	0	31	175	71	703
0745 - 0800	0	28	22	6	0	14	15	13	0	13	289	70	0	35	200	87	792
0800 - 0815	1	32	12	8	0	13	11	20	0	14	280	48	0	36	219	91	785
0815 - 0830	0	46	12	8	0	15	17	13	0	11	320	38	0	28	155	60	723
AM Peak	**1**	**142**	**57**	**34**	**0**	**56**	**56**	**63**	**0**	**47**	**1166**	**193**	**0**	**130**	**749**	**309**	**3003**
1645 - 1700	0	66	10	44	0	54	16	39	0	7	204	14	0	14	392	60	920
1700 - 1715	0	94	27	46	0	61	18	62	0	5	259	26	0	13	436	63	1110
1715 - 1730	0	64	17	57	0	64	19	16	0	8	214	32	0	14	418	37	960
1730 - 1745	0	49	20	29	0	64	16	20	0	20	219	18	0	11	393	54	913
PM Peak	**0**	**273**	**74**	**176**	**0**	**243**	**69**	**137**	**0**	**40**	**896**	**90**	**0**	**52**	**1639**	**214**	**3903**

Louisville, KY
Classified Turn Movement Count

Site 2 of 2
Rehl Rd
SR-913 Blankenbaker Pkwy (South)
SR-913 Blankenbaker Pkwy (North)

Marr Traffic
Transportation Data Collection

41 Peabody Street, Nashville, TN 37210
1 (615) 431-6750
1 (800) 615-3765

Lat/Long
38.200530°, -85.538289°

Date
Tuesday 17 April 2018

Weather
Sunny
Temp: 19°C

	Westbound			Northbound			Southbound			
	Rehl Rd			KY-913 Blankenbaker Pkwy			KY-913 Blankenbaker Pkwy			
	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn	Left	Thru	Int
0700 - 0715	0	11	56	0	248	3	0	3	52	373
0715 - 0730	0	18	71	0	264	9	0	4	72	438
0730 - 0745	0	20	83	0	307	4	0	12	64	490
0745 - 0800	0	17	67	0	340	10	0	8	89	531
0800 - 0815	0	14	61	0	303	2	0	13	87	480
0815 - 0830	0	18	50	0	310	1	0	8	64	451
0830 - 0845	0	16	42	0	233	9	1	9	64	374
0845 - 0900	0	10	46	1	181	3	0	6	77	324
1600 - 1615	0	7	18	0	93	16	0	60	243	437
1615 - 1630	0	5	11	0	105	17	0	52	309	499
1630 - 1645	0	6	17	0	106	10	0	94	368	601
1645 - 1700	0	8	22	0	114	13	0	73	398	628
1700 - 1715	0	6	19	0	102	19	0	103	496	745
1715 - 1730	0	7	34	0	124	25	0	110	488	788
1730 - 1745	0	13	39	0	128	11	0	86	386	663
1745 - 1800	0	17	26	0	97	7	0	58	385	590
Grand Total	0	193	662	1	3055	159	1	699	3642	**8412**
Cars	0	193	643	1	2943	158	1	692	3532	
Trucks	0	0	18	0	112	1	0	7	110	
P/Cycles	0	0	1	0	0	0	0	0	0	
Cars (%)	0.00	100.00	97.28	100.00	96.33	99.37	100.00	99.00	96.98	
Trucks (%)	0.00	0.00	2.72	0.00	3.67	0.63	0.00	1.00	3.02	
P/Cycles (%)	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	

0730 - 0745	0	20	83	0	307	4	0	12	64	490
0745 - 0800	0	17	67	0	340	10	0	8	89	531
0800 - 0815	0	14	61	0	303	2	0	13	87	480
0815 - 0830	0	18	50	0	310	1	0	8	64	451
AM Peak	**0**	**69**	**261**	**0**	**1260**	**17**	**0**	**41**	**304**	**1952**
1645 - 1700	0	8	22	0	114	13	0	73	398	628
1700 - 1715	0	6	19	0	102	19	0	103	496	745
1715 - 1730	0	7	34	0	124	25	0	110	488	788
1730 - 1745	0	13	39	0	128	11	0	86	386	663
PM Peak	**0**	**34**	**114**	**0**	**468**	**68**	**0**	**372**	**1768**	**2824**

02.20.18

Interval Start Time	*Tucker Station Road* From North				*Plantside Drive* From East				*Tucker Station Road* From South				*Plantside Drive* From West				
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Total
7:00	21	5	8		1	5	2		17	23	8		7	23	4		124
7:15	19	4	6		2	11	2		12	20	4		5	38	2		125
7:30	40	7	10		1	7	2		13	20	4		11	24	3		142
7:45	57	2	14		2	14	2		27	20	9		12	33	1		193
8:00	43	2	4		0	6	0		30	15	18		14	40	3		175
8:15	22	4	3		2	15	4		13	13	4		6	22	0		108
8:30	6	1	10		2	5	2		18	6	3		5	18	2		78
8:45	14	5	12		2	8	2		13	9	0		4	7	3		79
AM TOTALS	**222**	**30**	**67**		**12**	**71**	**16**		**143**	**126**	**50**		**64**	**205**	**18**		1024
16:00	1	28	9		12	27	20		4	5	0		7	8	11		132
16:15	2	15	9		5	28	8		9	12	1		15	8	10		122
16:30	1	32	10		9	34	17		6	7	1		22	5	22		166
16:45	4	24	15		11	43	20		3	2	0		18	10	22		172
17:00	5	50	14		22	60	36		4	6	0		36	12	26		271
17:15	3	30	14		7	25	21		2	7	1		26	6	18		160
17:30	1	31	17		6	23	13		4	4	0		32	6	15		152
17:45	0	29	13		5	18	15		1	12	0		18	6	17		134
PM TOTALS	**17**	**239**	**101**		**77**	**258**	**150**		**34**	**55**	**3**		**174**	**61**	**141**		1310
7:15	19	4	6	0	2	11	2	0	12	20	5	0	5	39	2		
7:30	40	7	10	0	1	7	2	0	13	20	5	0	11	25	3	0	
7:45	57	2	14	0	2	15	2	0	27	20	10	0	13	33	1	0	
8:00	43	2	4	0	0	6	0	0	30	15	18	0	14	40	3	0	
AM TOTALS	**159**	**15**	**34**	**0**	**5**	**39**	**6**	**0**	**82**	**75**	**38**	**0**	**43**	**137**	**9**		642
16:30	4	32	10	0	9	36	17	0	7	7	2	0	22	13	22	0	
16:45	4	24	15	0	11	47	20	0	3	2	1	0	18	14	22	0	
17:00	6	50	14	0	22	61	36	0	4	6	2	0	36	14	26	0	
17:15	3	30	14	0	7	27	21	0	2	7	2	0	26	9	18	0	
PM TOTALS	**17**	**136**	**53**	**0**	**49**	**171**	**94**	**0**	**16**	**22**	**7**	**0**	**102**	**50**	**88**		805

3/6/2018

Interval Start Time	Tucker Station Rd			Rehl Road			Tucker Station Rd			Rehl Road			
	From North			From East			From South			From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	13	1	2	15	2	50	50	5	2	3	5	148
7:15	0	7	0	4	19	1	55	52	8	0	3	3	152
7:30	0	10	0	7	15	7	52	33	5	0	3	10	142
7:45	1	2	0	3	17	3	50	64	6	0	4	4	154
8:00	0	2	0	11	28	3	43	69	9	0	4	10	179
8:15	0	11	1	5	19	3	48	48	4	1	3	11	154
8:30	0	5	2	3	11	2	61	46	1	0	4	6	141
8:45	0	10	2	0	9	2	35	36	4	0	5	8	111
AM TOTALS	**1**	**60**	**6**	**35**	**133**	**23**	**394**	**398**	**42**	**3**	**29**	**57**	1181
16:00	3	37	1	3	6	3	4	2	4	1	9	52	125
16:15	1	26	1	2	10	0	18	10	4	0	9	55	136
16:30	6	56	0	6	4	4	11	9	11	4	17	70	198
16:45	7	57	2	6	2	0	4	10	8	2	16	54	168
17:00	10	91	2	6	2	5	8	10	6	1	17	90	248
17:15	7	72	5	6	2	0	8	10	3	12	27	67	219
17:30	6	33	2	7	6	1	18	15	11	0	19	56	174
17:45	3	32	2	0	5	0	18	10	6	0	17	41	134
PM TOTALS	**43**	**404**	**15**	**36**	**37**	**13**	**89**	**76**	**53**	**20**	**131**	**485**	1402
7:30	0	10	0	7	15	7	52	33	5	0	3	10	
7:45	1	2	0	3	17	3	50	64	6	0	4	4	
8:00	0	2	0	11	28	3	43	69	9	0	4	10	
8:15	0	11	1	5	19	3	48	48	4	1	3	11	
AM TOTALS	**1**	**25**	**1**	**26**	**79**	**16**	**193**	**214**	**24**	**1**	**14**	**35**	629
16:30	6	56	0	6	4	4	11	9	11	4	17	70	
16:45	7	57	2	6	2	0	4	10	8	2	16	54	
17:00	10	91	2	6	2	5	8	10	6	1	17	90	
17:15	7	72	5	6	2	0	8	10	3	12	27	67	
PM TOTALS	**30**	**276**	**9**	**24**	**10**	**9**	**31**	**39**	**28**	**19**	**77**	**281**	833

Qk4 - Louisville
815 W. Market St.
Suite 300
Louisville, Kentucky, United States 40202
502.585.2222 jlukat@qk4.com

Count Name: Taylorsville Rd & Tucker Station Rd
Site Code:
Start Date: 12/13/2016
Page No: 4

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Tucker Station Rd Southbound						Taylorsville Rd Westbound						Sweeney Ln Northbound						Taylorsville Rd Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
7:00 AM	9	1	21	0	0	31	79	170	0	0	0	249	3	1	3	0	0	7	0	110	7	0	0	117	404
7:15 AM	7	0	30	0	0	37	107	195	0	0	0	302	0	2	4	0	0	6	1	143	10	0	0	154	499
7:30 AM	11	0	38	0	0	49	109	201	0	0	0	310	3	3	7	0	0	13	1	153	10	0	0	164	536
7:45 AM	4	1	20	0	0	25	104	188	0	0	0	292	2	5	5	0	0	12	0	107	13	0	0	120	449
Total	31	2	109	0	0	142	399	754	0	0	0	1153	8	11	19	0	0	38	2	513	40	0	0	555	1888
Approach %	21.8	1.4	76.8	0.0	-	-	34.6	65.4	0.0	0.0	-	-	21.1	28.9	50.0	0.0	-	-	0.4	92.4	7.2	0.0	-	-	-
Total %	1.6	0.1	5.8	0.0	-	7.5	21.1	39.9	0.0	0.0	-	61.1	0.4	0.6	1.0	0.0	-	2.0	0.1	27.2	2.1	0.0	-	29.4	-
PHF	0.705	0.500	0.717	0.000	-	0.724	0.915	0.938	0.000	0.000	-	0.930	0.667	0.550	0.679	0.000	-	0.731	0.500	0.838	0.769	0.000	-	0.846	0.881
Lights	29	2	108	0	-	139	390	741	0	0	-	1131	8	11	19	0	-	38	2	494	40	0	-	536	1844
% Lights	93.5	100.0	99.1	-	-	97.9	97.7	98.3	-	-	-	98.1	100.0	100.0	100.0	-	-	100.0	100.0	96.3	100.0	-	-	96.6	97.7
Other Vehicles	2	0	1	0	-	3	9	13	0	0	-	22	0	0	0	0	-	0	0	19	0	0	-	19	44
% Other Vehicles	6.5	0.0	0.9	-	-	2.1	2.3	1.7	-	-	-	1.9	0.0	0.0	0.0	-	-	0.0	0.0	3.7	0.0	-	-	3.4	2.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Qk4 - Louisville
815 W. Market St.
Suite 300
Louisville, Kentucky, United States 40202
502.585.2222 jlukat@qk4.com

Count Name: Taylorsville Rd & Tucker Station Rd
Site Code:
Start Date: 12/13/2016
Page No: 6

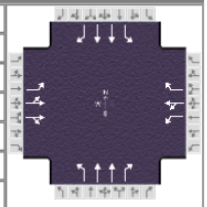
Turning Movement Peak Hour Data (4:45 PM)

Start Time	Tucker Station Rd Southbound						Taylorsville Rd Westbound						Sweeney Ln Northbound						Taylorsville Rd Eastbound						Int. Total
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:45 PM	16	3	106	0	0	125	34	137	1	0	0	172	1	0	4	0	0	5	4	232	6	0	0	242	544
5:00 PM	23	3	138	0	0	164	27	178	1	0	0	206	2	1	3	0	0	6	1	190	8	0	0	199	575
5:15 PM	17	3	117	0	0	137	36	150	2	0	0	188	0	1	3	0	0	4	1	222	8	0	0	231	560
5:30 PM	12	9	100	0	0	121	36	189	0	0	0	225	0	0	1	0	0	1	5	202	5	0	0	212	559
Total	68	18	461	0	0	547	133	654	4	0	0	791	3	2	11	0	0	16	11	846	27	0	0	884	2238
Approach %	12.4	3.3	84.3	0.0	-	-	16.8	82.7	0.5	0.0	-	-	18.8	12.5	68.8	0.0	-	-	1.2	95.7	3.1	0.0	-	-	-
Total %	3.0	0.8	20.6	0.0	-	24.4	5.9	29.2	0.2	0.0	-	35.3	0.1	0.1	0.5	0.0	-	0.7	0.5	37.8	1.2	0.0	-	39.5	-
PHF	0.739	0.500	0.835	0.000	-	0.834	0.924	0.865	0.500	0.000	-	0.879	0.375	0.500	0.688	0.000	-	0.667	0.550	0.912	0.844	0.000	-	0.913	0.973
Lights	68	18	461	0	-	547	132	628	4	0	-	764	3	2	11	0	-	16	11	834	27	0	-	872	2199
% Lights	100.0	100.0	100.0	-	-	100.0	99.2	96.0	100.0	-	-	96.6	100.0	100.0	100.0	-	-	100.0	100.0	98.6	100.0	-	-	98.6	98.3
Other Vehicles	0	0	0	0	-	0	1	26	0	0	-	27	0	0	0	0	-	0	0	12	0	0	-	12	39
% Other Vehicles	0.0	0.0	0.0	-	-	0.0	0.8	4.0	0.0	-	-	3.4	0.0	0.0	0.0	-	-	0.0	0.0	1.4	0.0	-	-	1.4	1.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

HCS Reports

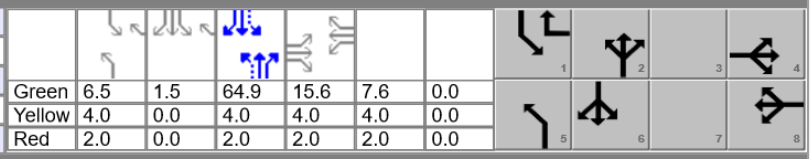
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	5/23/2018	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.95
Urban Street	Blankenbaker Parkway	Analysis Year	2018	Analysis Period	1> 7:30
Intersection	Planstisde Drive	File Name	Blankenbaker AM 18.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	143	57	34	56	56	63	47	1166	193	130	749	397

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.5	1.5	64.9	15.6	7.6	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	2.0	0.0	2.0	2.0	2.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		10.0		9.0	1.1	3.0	1.1	3.0
Phase Duration, s		21.6		13.6	12.5	70.9	13.9	72.3
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.2	3.0	0.0	3.0	0.0
Queue Clearance Time (g_s), s		15.0		7.1	3.5		6.1	
Green Extension Time (g_e), s		0.5		0.6	0.1	0.0	0.2	0.0
Phase Call Probability		1.00		1.00	0.81		0.99	
Max Out Probability		0.05		0.00	0.00		0.00	

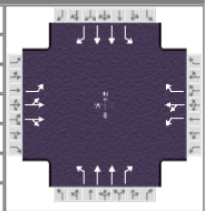
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	151	48	47	59	59	66	49	1227	140	137	788	418
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1358	1693	1490	1781	1796	1434	1654	1766	1585	1697	1781	1472
Queue Service Time (g_s), s	13.0	3.1	3.4	3.8	3.8	5.1	1.5	29.3	5.3	4.1	15.3	21.3
Cycle Queue Clearance Time (g_c), s	13.0	3.1	3.4	3.8	3.8	5.1	1.5	29.3	5.3	4.1	15.3	21.3
Green Ratio (*g/C*)	0.13	0.13	0.13	0.06	0.06	0.13	0.59	0.54	0.54	0.61	0.55	0.55
Capacity (*c*), veh/h	176	219	193	114	114	186	410	1910	857	300	1969	814
Volume-to-Capacity Ratio (*X*)	0.855	0.221	0.245	0.519	0.515	0.356	0.121	0.643	0.163	0.456	0.401	0.514
Back of Queue (*Q*), ft/ln (90 th percentile)	251.3	66.2	58.5	83.6	86.8	93	25.1	405.3	87.1	69.5	229.3	287.2
Back of Queue (*Q*), veh/ln (90 th percentile)	8.0	2.4	2.3	3.3	3.3	3.3	0.9	15.8	3.4	2.6	9.0	10.6
Queue Storage Ratio (*RQ*) (90 th percentile)	0.56	0.13	0.13	0.64	0.00	0.37	0.11	0.00	0.70	0.28	0.00	0.88
Uniform Delay (d_1), s/veh	51.1	46.8	46.9	54.4	54.4	47.6	11.3	19.4	13.9	15.4	15.4	16.8
Incremental Delay (d_2), s/veh	14.8	0.5	0.7	3.6	3.5	1.2	0.0	1.7	0.4	0.4	0.6	2.3
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	0.0	0.0
Control Delay (*d*), s/veh	65.9	47.3	47.6	58.0	57.9	48.8	11.3	21.1	14.3	15.8	16.0	19.1
Level of Service (LOS)	E	D	D	E	E	D	B	C	B	B	B	B
Approach Delay, s/veh / LOS	58.7	E		54.7	D		20.1	C		16.9	B	
Intersection Delay, s/veh / LOS	23.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.48	B	2.26	B	2.09	B
Bicycle LOS Score / LOS	0.69	A	0.79	A	1.66	B	1.60	B

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:52:27 PM

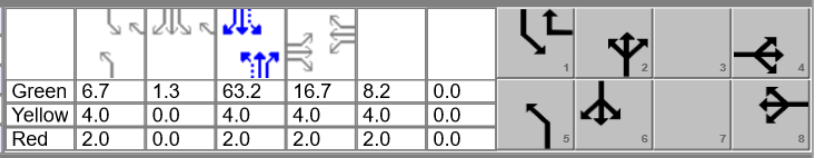
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	5/23/2018	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.95
Urban Street	Blankenbaker Parkway	Analysis Year	2020	Analysis Period	1> 7:30
Intersection	Planstisde Drive	File Name	Blankenbaker AM 20 NB.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	155	65	37	61	61	69	51	1261	216	146	810	429

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.7	1.3	63.2	16.7	8.2	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	2.0	0.0	2.0	2.0	2.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		10.0		9.0	1.1	3.0	1.1	3.0
Phase Duration, s		22.7		14.2	12.7	69.2	14.0	70.5
Change Period, (*Y+R c*), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.2	3.0	0.0	3.0	0.0
Queue Clearance Time (*g s*), s		16.1		7.5	3.7		6.9	
Green Extension Time (*g e*), s		0.6		0.7	0.1	0.0	0.2	0.0
Phase Call Probability		1.00		1.00	0.83		0.99	
Max Out Probability		0.11		0.00	0.00		0.00	

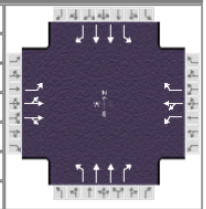
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	163	54	53	64	64	73	54	1327	164	154	853	388
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1358	1693	1495	1781	1796	1434	1654	1766	1585	1697	1781	1472
Queue Service Time (*g s*), s	14.1	3.4	3.8	4.2	4.1	5.5	1.7	34.2	6.6	4.9	17.5	19.9
Cycle Queue Clearance Time (*g c*), s	14.1	3.4	3.8	4.2	4.1	5.5	1.7	34.2	6.6	4.9	17.5	19.9
Green Ratio (*g/C*)	0.14	0.14	0.14	0.07	0.07	0.13	0.58	0.53	0.53	0.59	0.54	0.54
Capacity (*c*), veh/h	189	235	208	121	123	193	377	1860	835	267	1914	791
Volume-to-Capacity Ratio (*X*)	0.865	0.231	0.255	0.529	0.524	0.377	0.142	0.713	0.197	0.575	0.446	0.491
Back of Queue (*Q*), ft/ln (90 th percentile)	273.9	73.6	64.9	90.6	94.1	101.7	28.4	469.8	108	83.3	258.9	273.9
Back of Queue (*Q*), veh/ln (90 th percentile)	8.7	2.6	2.6	3.6	3.6	3.7	1.0	18.4	4.3	3.1	10.2	10.1
Queue Storage Ratio (*RQ*) (90 th percentile)	0.62	0.15	0.14	0.70	0.00	0.41	0.13	0.00	0.86	0.33	0.00	0.84
Uniform Delay (*d 1*), s/veh	50.6	46.0	46.1	54.0	54.0	47.3	12.3	21.5	15.0	18.9	16.9	17.4
Incremental Delay (*d 2*), s/veh	17.7	0.5	0.6	3.5	3.4	1.2	0.1	2.4	0.5	0.7	0.8	2.2
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	0.0	0.0
Control Delay (*d*), s/veh	68.3	46.5	46.8	57.6	57.5	48.6	12.4	23.9	15.5	19.7	17.6	19.6
Level of Service (LOS)	E	D	D	E	E	D	B	C	B	B	B	B
Approach Delay, s/veh / LOS	59.7	E		54.3	D		22.6	C		18.4	B	
Intersection Delay, s/veh / LOS	25.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.56	C	2.26	B	2.09	B
Bicycle LOS Score / LOS	0.71	A	0.82	A	1.76	B	1.64	B

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:52:27 PM

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	5/23/2018	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.92
Urban Street	Blankenbaker Parkway	Analysis Year	2018	Analysis Period	1> 4:45
Intersection	Planstisde Drive	File Name	Blankenbaker PM 18.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	273	74	176	243	69	137	40	896	90	52	1639	214

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.4	0.5	48.1	19.0	14.0	0.0	
Yellow	4.0	0.0	4.0	4.0	4.0	0.0	
Red	2.0	0.0	2.0	2.0	2.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		10.0		9.0	1.1	3.0	1.1	3.0
Phase Duration, s		25.0		20.0	10.4	54.1	10.9	54.6
Change Period, (*Y+R c*), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		4.2		4.2	3.0	0.0	3.0	0.0
Queue Clearance Time (*g s*), s		21.1		13.7	3.6		4.0	
Green Extension Time (*g e*), s		0.0		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	0.74		0.82	
Max Out Probability		1.00		1.00	0.00		0.01	

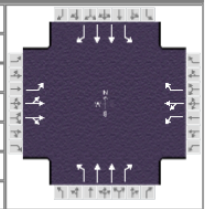
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	237	140	191	145	194	149	43	974	33	57	1782	167
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1358	1550	1434	1781	1787	1434	1654	1766	1585	1697	1781	1472
Queue Service Time (*g s*), s	19.1	9.0	14.0	8.5	11.7	10.6	1.6	23.6	1.3	2.0	49.6	7.9
Cycle Queue Clearance Time (*g c*), s	19.1	9.0	14.0	8.5	11.7	10.6	1.6	23.6	1.3	2.0	49.6	7.9
Green Ratio (*g/C*)	0.17	0.17	0.17	0.13	0.13	0.17	0.48	0.44	0.44	0.48	0.45	0.45
Capacity (*c*), veh/h	247	268	248	226	227	246	132	1545	693	264	1606	651
Volume-to-Capacity Ratio (*X*)	0.962	0.522	0.772	0.642	0.854	0.604	0.330	0.630	0.047	0.214	1.109	0.257
Back of Queue (*Q*), ft/ln (90 th percentile)	421.4	165.4	223.6	168.3	260.9	179.9	28	347.5	21.9	34.8	1087.5	131.4
Back of Queue (*Q*), veh/ln (90 th percentile)	13.4	5.9	8.9	6.6	9.9	6.5	1.0	13.6	0.9	1.3	42.8	4.8
Queue Storage Ratio (*RQ*) (90 th percentile)	0.95	0.33	0.50	1.29	0.00	0.72	0.12	0.00	0.18	0.14	0.00	0.40
Uniform Delay (*d 1*), s/veh	44.6	40.9	43.4	45.6	47.0	42.1	25.9	24.0	17.8	18.1	30.2	19.3
Incremental Delay (*d 2*), s/veh	46.5	1.8	13.9	5.1	23.3	3.6	0.5	2.0	0.1	0.1	58.6	1.0
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	0.0	0.0
Control Delay (*d*), s/veh	91.1	42.8	57.4	50.8	70.3	45.7	26.5	26.0	17.9	18.2	88.8	20.3
Level of Service (LOS)	F	D	E	D	E	D	C	C	B	B	F	C
Approach Delay, s/veh / LOS	67.9	E		57.0	E		25.8	C		81.1	F	
Intersection Delay, s/veh / LOS	62.3						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.56	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	0.96	A	1.29	A	1.35	A	2.14	B

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:52:27 PM

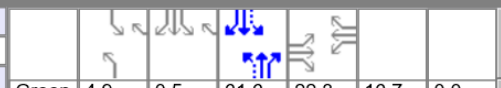
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	5/23/2018	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.92
Urban Street	Blankenbaker Parkway	Analysis Year	2020 No Build	Analysis Period	1> 4:45
Intersection	Planstisde Drive	File Name	Blankenbaker PM 20 NB.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	295	83	190	294	84	165	43	969	101	58	1773	231

Signal Information			
Cycle, s	130.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	Off
Force Mode	Fixed	Simult. Gap N/S	On



Green	4.9	0.5	61.6	22.3	16.7	0.0	
Yellow	4.0	0.0	4.0	4.0	4.0	0.0	
Red	2.0	0.0	2.0	2.0	2.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		10.0		9.0	1.1	3.0	1.1	3.0
Phase Duration, s		28.3		22.7	10.9	67.6	11.4	68.1
Change Period, ($Y+R_c$), s		6.0		6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s		4.2		4.2	3.0	0.0	3.0	0.0
Queue Clearance Time (g_s), s		20.4		19.7	3.8		4.4	
Green Extension Time (g_e), s		1.9		0.0	0.0	0.0	0.1	0.0
Phase Call Probability		1.00		1.00	0.82		0.90	
Max Out Probability		0.09		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	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	192	218	207	160	251	179	47	1053	45	63	1927	186
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1358	1496	1434	1781	1787	1434	1654	1766	1585	1697	1781	1472
Queue Service Time (g_s), s	17.6	18.4	18.1	11.1	17.7	15.4	1.8	29.0	2.0	2.4	63.1	9.8
Cycle Queue Clearance Time (g_c), s	17.6	18.4	18.1	11.1	17.7	15.4	1.8	29.0	2.0	2.4	63.1	9.8
Green Ratio (*g/C*)	0.17	0.17	0.17	0.14	0.14	0.18	0.51	0.47	0.47	0.52	0.49	0.49
Capacity (*c*), veh/h	243	256	246	243	243	244	118	1675	751	254	1729	703
Volume-to-Capacity Ratio (*X*)	0.791	0.852	0.840	0.658	1.032	0.736	0.397	0.629	0.059	0.249	1.115	0.264
Back of Queue (*Q*), ft/ln (90 th percentile)	306	314.3	267.7	211.3	452.4	262.7	34.3	420.4	33.8	44.2	1317.1	157.7
Back of Queue (*Q*), veh/ln (90 th percentile)	9.7	11.3	10.7	8.3	17.1	9.5	1.3	16.4	1.3	1.7	51.9	5.8
Queue Storage Ratio (*RQ*) (90 th percentile)	0.69	0.63	0.60	1.63	0.00	1.05	0.15	0.00	0.27	0.18	0.00	0.49
Uniform Delay (d_1), s/veh	51.0	51.8	52.1	53.3	56.1	51.2	30.6	25.6	18.5	19.5	33.4	20.3
Incremental Delay (d_2), s/veh	7.9	12.3	11.6	6.4	66.1	11.0	0.8	1.8	0.2	0.2	60.3	0.9
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	0.0	0.0
Control Delay (*d*), s/veh	59.0	64.1	63.7	59.7	122.3	62.2	31.4	27.4	18.7	19.7	93.7	21.2
Level of Service (LOS)	E	E	E	E	F	E	C	C	B	B	F	C
Approach Delay, s/veh / LOS	62.4	E		87.1	F		27.2	C		85.4	F	
Intersection Delay, s/veh / LOS	67.8						E					

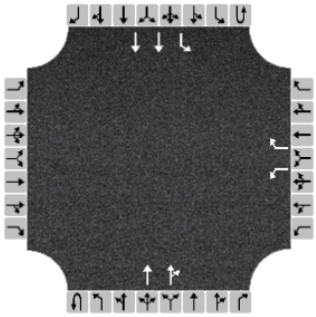
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.55	C	2.57	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.00	A	1.46	A	1.43	A	2.28	B

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:52:27 PM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Blankenbaker at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2018	North/South Street	Blankenbaker
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume, V (veh/h)						69		261			1260	17		41	304	
Percent Heavy Vehicles (%)						0		3						5		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						75		284						45		
Capacity, c (veh/h)						168		383						474		
v/c Ratio						0.45		0.74						0.09		
95% Queue Length, Q_{95} (veh)						2.1		5.8						0.3		
Control Delay (s/veh)						42.8		36.9						13.4		
Level of Service, LOS						E		E						B		
Approach Delay (s/veh)						38.1								1.6		
Approach LOS						E										

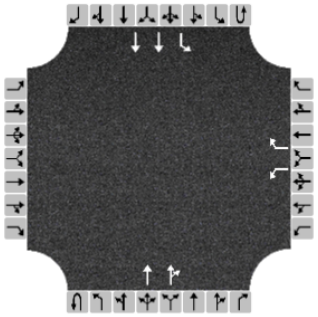
HCS7™ TWSC Version 7.4
Rehl at B AM 18.xtw

Generated: 5/23/2018 11:29:54 AM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Blankenbaker at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Blankenbaker
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume, V (veh/h)						75		282			1363	18		44	329	
Percent Heavy Vehicles (%)						0		3						5		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

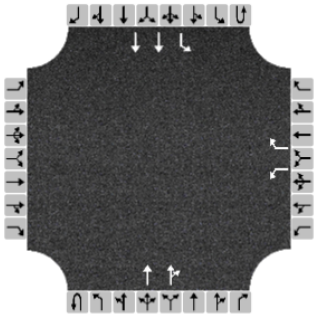
Flow Rate, v (veh/h)						82		307						48		
Capacity, c (veh/h)						146		351						428		
v/c Ratio						0.56		0.87						0.11		
95% Queue Length, Q_{95} (veh)						2.8		8.3						0.4		
Control Delay (s/veh)						57.1		56.2						14.5		
Level of Service, LOS						F		F						B		
Approach Delay (s/veh)						56.4								1.7		
Approach LOS						F										

HCS7™ TWSC Version 7.4
Rehl at B AM 20 NB.xtw
Generated: 5/23/2018 11:30:27 AM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Blankenbaker at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2018	North/South Street	Blankenbaker
Time Analyzed	PM Peak	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume, V (veh/h)						34		114			468	68		372	1768	
Percent Heavy Vehicles (%)						0		2						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						38		127						413		
Capacity, c (veh/h)						59		698						990		
v/c Ratio						0.64		0.18						0.42		
95% Queue Length, Q_{95} (veh)						2.7		0.7						2.1		
Control Delay (s/veh)						141.0		11.3						11.2		
Level of Service, LOS						F		B						B		
Approach Delay (s/veh)						41.1								1.9		
Approach LOS						E										

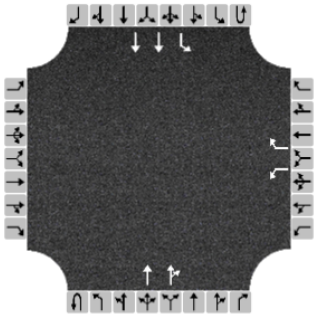
HCS7™ TWSC Version 7.4
Rehl at B PM 18.xtw

Generated: 5/23/2018 11:33:49 AM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Blankenbaker at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Blankenbaker
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	2	0	0	1	2	0
Configuration						L		R			T	TR		L	T	
Volume, V (veh/h)						37		123			506	74		402	1912	
Percent Heavy Vehicles (%)						0		2						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

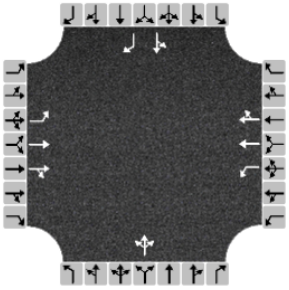
Flow Rate, v (veh/h)						41		137						447		
Capacity, c (veh/h)						45		674						951		
v/c Ratio						0.92		0.20						0.47		
95% Queue Length, Q_{95} (veh)						3.7		0.8						2.6		
Control Delay (s/veh)						249.0		11.7						12.1		
Level of Service, LOS						F		B						B		
Approach Delay (s/veh)						66.6								2.1		
Approach LOS						F										

HCS7™ TWSC Version 7.4
Rehl at B PM 20 NB.xtw
Generated: 5/23/2018 11:35:37 AM

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2018	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.83
Time Analyzed	AM Peak		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	42	137	9	5	39	6	82	75	38	159	15	34
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	51	83	93	6	23	31	235			210	41	
Percent Heavy Vehicles	2	2	0	0	3	0	2			0	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.045	0.073	0.083	0.005	0.021	0.027	0.209			0.186	0.036	
Final Departure Headway, hd (s)	6.94	6.43	6.31	7.34	6.88	6.66	6.22			6.55	5.39	
Final Degree of Utilization, x	0.098	0.147	0.164	0.012	0.045	0.057	0.406			0.381	0.061	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	4.64	4.13	4.01	5.04	4.58	4.36	3.92			4.25	3.09	

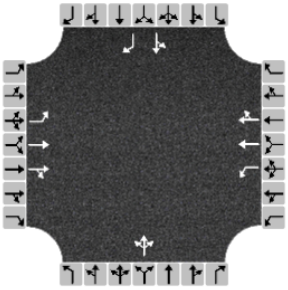
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	51	83	93	6	23	31	235			210	41	
Capacity	519	560	570	491	523	541	579			550	668	
95% Queue Length, Q_{95} (veh)	0.3	0.5	0.6	0.0	0.1	0.2	2.0			1.8	0.2	
Control Delay (s/veh)	10.4	10.2	10.2	10.1	9.9	9.8	13.1			13.2	8.4	
Level of Service, LOS	B	B	B	B	A	A	B			B	A	
Approach Delay (s/veh)	10.3			9.9			13.1			12.4		
Approach LOS	B			A			B			B		
Intersection Delay, s/veh | LOS	11.8						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.83
Time Analyzed	AM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	43	183	9	7	55	8	84	77	50	212	15	35
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	52	110	121	8	33	43	254			273	42	
Percent Heavy Vehicles	2	2	0	0	3	0	2			0	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.046	0.098	0.108	0.007	0.029	0.038	0.226			0.243	0.037	
Final Departure Headway, hd (s)	7.45	6.93	6.84	7.97	7.51	7.29	6.72			6.99	5.82	
Final Degree of Utilization, x	0.107	0.212	0.230	0.019	0.069	0.087	0.475			0.531	0.068	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	5.15	4.63	4.54	5.67	5.21	4.99	4.42			4.69	3.52	

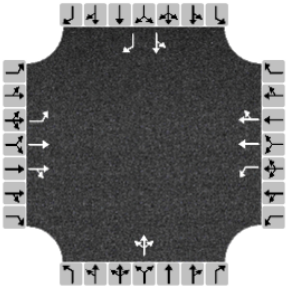
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	52	110	121	8	33	43	254			273	42	
Capacity	483	519	527	452	480	494	535			515	619	
95% Queue Length, Q_{95} (veh)	0.4	0.8	0.9	0.1	0.2	0.3	2.5			3.1	0.2	
Control Delay (s/veh)	11.0	11.5	11.6	10.8	10.8	10.7	15.4			17.3	8.9	
Level of Service, LOS	B	B	B	B	B	B	C			C	A	
Approach Delay (s/veh)	11.4			10.7			15.4			16.2		
Approach LOS	B			B			C			C		
Intersection Delay, s/veh | LOS	14.0						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.83
Time Analyzed	AM Peak Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	43	183	9	2	55	8	84	77	9	212	15	35
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	52	110	121	2	33	43	205			273	42	
Percent Heavy Vehicles	2	2	0	0	3	0	2			0	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.046	0.098	0.108	0.002	0.029	0.038	0.182			0.243	0.037	
Final Departure Headway, hd (s)	7.23	6.72	6.62	7.74	7.28	7.07	6.82			6.80	5.62	
Final Degree of Utilization, x	0.104	0.206	0.223	0.005	0.067	0.084	0.388			0.516	0.066	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	4.93	4.42	4.32	5.44	4.98	4.77	4.52			4.50	3.32	

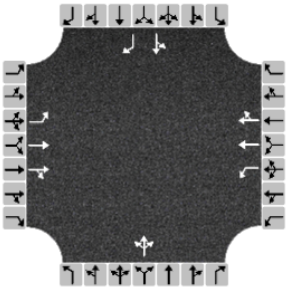
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	52	110	121	2	33	43	205			273	42	
Capacity	498	536	544	465	494	509	528			530	640	
95% Queue Length, Q_{95} (veh)	0.3	0.8	0.8	0.0	0.2	0.3	1.8			2.9	0.2	
Control Delay (s/veh)	10.8	11.1	11.2	10.5	10.5	10.4	13.8			16.5	8.7	
Level of Service, LOS	B	B	B	B	B	B	B			C	A	
Approach Delay (s/veh)	11.1			10.5			13.8			15.5		
Approach LOS	B			B			B			C		
Intersection Delay, s/veh | LOS	13.2						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2018	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.73
Time Analyzed	PM Peak		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	102	50	88	49	171	94	16	22	7	17	136	53
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	140	34	155	67	117	246	62			210	73	
Percent Heavy Vehicles	0	34	0	0	5	0	13			3	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.124	0.030	0.138	0.060	0.104	0.219	0.055			0.186	0.065	
Final Departure Headway, hd (s)	7.46	7.54	6.39	7.26	6.84	6.38	7.95			7.16	6.35	
Final Degree of Utilization, x	0.289	0.072	0.275	0.135	0.222	0.436	0.136			0.417	0.128	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	5.16	5.24	4.09	4.96	4.54	4.08	5.65			4.86	4.05	

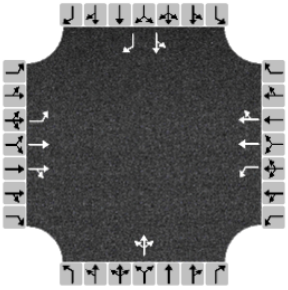
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	140	34	155	67	117	246	62			210	73	
Capacity	483	478	563	496	527	565	453			503	567	
95% Queue Length, Q_{95} (veh)	1.2	0.2	1.1	0.5	0.8	2.2	0.5			2.0	0.4	
Control Delay (s/veh)	13.2	10.8	11.5	11.1	11.5	13.9	11.9			14.9	10.0	
Level of Service, LOS	B	B	B	B	B	B	B			B	A	
Approach Delay (s/veh)	12.1			12.8			11.9			13.6		
Approach LOS	B			B			B			B		
Intersection Delay, s/veh | LOS	12.8						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.73
Time Analyzed	PM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	104	68	90	66	228	126	18	25	9	23	139	54
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	142	47	170	90	156	329	71			222	74	
Percent Heavy Vehicles	0	34	0	0	5	0	13			3	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.127	0.041	0.151	0.080	0.139	0.292	0.063			0.197	0.066	
Final Departure Headway, hd (s)	8.09	8.17	7.06	7.65	7.23	6.77	8.70			7.85	7.02	
Final Degree of Utilization, x	0.320	0.106	0.333	0.192	0.314	0.618	0.172			0.484	0.144	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	5.79	5.87	4.76	5.35	4.93	4.47	6.40			5.55	4.72	

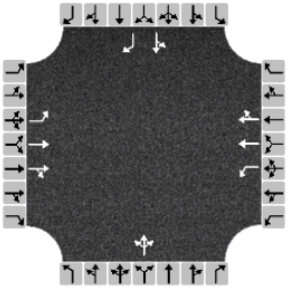
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	142	47	170	90	156	329	71			222	74	
Capacity	445	441	510	470	498	532	414			459	513	
95% Queue Length, Q_{95} (veh)	1.4	0.4	1.4	0.7	1.3	4.2	0.6			2.6	0.5	
Control Delay (s/veh)	14.6	11.8	13.2	12.2	13.2	19.8	13.2			17.7	10.9	
Level of Service, LOS	B	B	B	B	B	C	B			C	B	
Approach Delay (s/veh)	13.6			16.8			13.2			16.0		
Approach LOS	B			C			B			C		
Intersection Delay, s/veh | LOS	15.5						C					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Tucker Stati
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Plantside Drive
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.73
Time Analyzed	PM Peak Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	104	68	90	13	228	126	18	25	3	23	139	54
% Thrus in Shared Lane			50			50						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	LTR			LT	R	
Flow Rate, v (veh/h)	142	47	170	18	156	329	63			222	74	
Percent Heavy Vehicles	0	34	0	0	5	0	13			3	0	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20			3.20	3.20	
Initial Degree of Utilization, x	0.127	0.041	0.151	0.016	0.139	0.292	0.056			0.197	0.066	
Final Departure Headway, hd (s)	7.83	7.91	6.80	7.54	7.12	6.65	8.54			7.59	6.77	
Final Degree of Utilization, x	0.310	0.102	0.321	0.037	0.309	0.608	0.150			0.468	0.139	
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3			2.3	2.3	
Service Time, ts (s)	5.53	5.61	4.50	5.24	4.82	4.35	6.24			5.29	4.47	

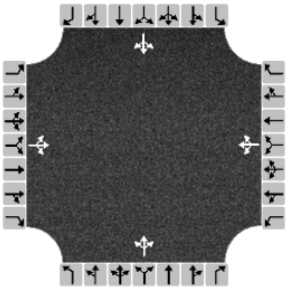
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	142	47	170	18	156	329	63			222	74	
Capacity	460	455	529	478	506	541	421			474	532	
95% Queue Length, Q_{95} (veh)	1.3	0.3	1.4	0.1	1.3	4.0	0.5			2.4	0.5	
Control Delay (s/veh)	14.0	11.5	12.7	10.5	13.0	19.1	12.7			16.8	10.6	
Level of Service, LOS	B	B	B	B	B	C	B			C	B	
Approach Delay (s/veh)	13.1			16.9			12.7			15.2		
Approach LOS	B			C			B			C		
Intersection Delay, s/veh | LOS	15.2						C					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2018	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.88
Time Analyzed	AM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	1	14	35	26	79	16	193	214	24	1	25	1
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	57			138			490			31		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.051			0.122			0.435			0.027		
Final Departure Headway, hd (s)	5.00			5.24			4.56			5.04		
Final Degree of Utilization, x	0.079			0.200			0.620			0.043		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.00			3.24			2.56			3.04		

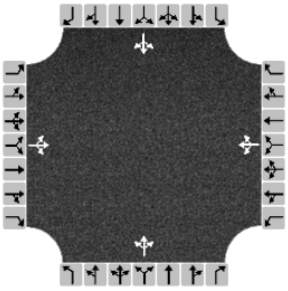
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	57			138			490			31		
Capacity	721			687			790			715		
95% Queue Length, Q_{95} (veh)	0.3			0.7			4.4			0.1		
Control Delay (s/veh)	8.4			9.5			14.7			8.3		
Level of Service, LOS	A			A			B			A		
Approach Delay (s/veh)	8.4			9.5			14.7			8.3		
Approach LOS	A			A			B			A		
Intersection Delay, s/veh | LOS	12.9						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.88
Time Analyzed	AM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	1	19	35	35	106	21	197	230	32	2	27	1
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	63			184			522			34		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.056			0.164			0.464			0.030		
Final Departure Headway, hd (s)	5.25			5.38			4.71			5.29		
Final Degree of Utilization, x	0.091			0.275			0.683			0.050		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.25			3.38			2.71			3.29		

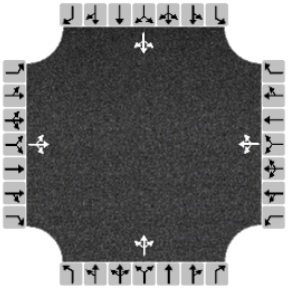
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	63			184			522			34		
Capacity	685			669			764			680		
95% Queue Length, Q_{95} (veh)	0.3			1.1			5.5			0.2		
Control Delay (s/veh)	8.8			10.4			17.2			8.6		
Level of Service, LOS	A			B			C			A		
Approach Delay (s/veh)	8.8			10.4			17.2			8.6		
Approach LOS	A			B			C			A		
Intersection Delay, s/veh | LOS	14.6						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.88
Time Analyzed	AM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	1	19	35	35	106	21	197	230	32	2	27	1
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	63			184			522			34		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.056			0.164			0.464			0.030		
Final Departure Headway, hd (s)	5.25			5.38			4.71			5.29		
Final Degree of Utilization, x	0.091			0.275			0.683			0.050		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.25			3.38			2.71			3.29		

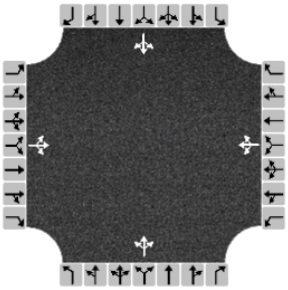
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	63			184			522			34		
Capacity	685			669			764			680		
95% Queue Length, Q_{95} (veh)	0.3			1.1			5.5			0.2		
Control Delay (s/veh)	8.8			10.4			17.2			8.6		
Level of Service, LOS	A			B			C			A		
Approach Delay (s/veh)	8.8			10.4			17.2			8.6		
Approach LOS	A			B			C			A		
Intersection Delay, s/veh | LOS	14.6						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.88
Time Analyzed	AM Peak Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	1	19	35	40	106	17	197	193	69	2	22	1
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	63			185			522			28		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.056			0.165			0.464			0.025		
Final Departure Headway, hd (s)	5.22			5.38			4.66			5.29		
Final Degree of Utilization, x	0.091			0.277			0.675			0.042		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.22			3.38			2.66			3.29		

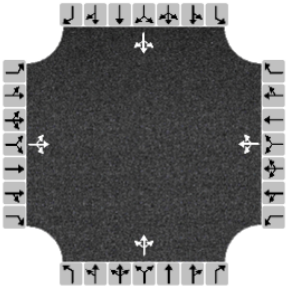
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	63			185			522			28		
Capacity	689			669			773			681		
95% Queue Length, Q_{95} (veh)	0.3			1.1			5.3			0.1		
Control Delay (s/veh)	8.7			10.4			16.7			8.5		
Level of Service, LOS	A			B			C			A		
Approach Delay (s/veh)	8.7			10.4			16.7			8.5		
Approach LOS	A			B			C			A		
Intersection Delay, s/veh | LOS	14.4						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2018	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.84
Time Analyzed	PM Peak		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	77	281	24	10	9	31	39	28	30	276	9
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	449			51			117			375		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.399			0.046			0.104			0.333		
Final Departure Headway, hd (s)	4.99			6.10			5.83			5.49		
Final Degree of Utilization, x	0.622			0.087			0.189			0.571		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	2.99			4.10			3.83			3.49		

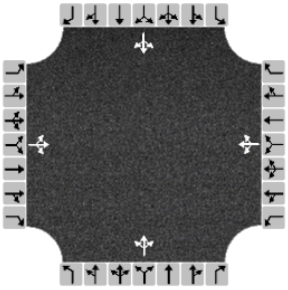
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	449			51			117			375		
Capacity	721			591			618			656		
95% Queue Length, Q_{95} (veh)	4.4			0.3			0.7			3.6		
Control Delay (s/veh)	15.9			9.7			10.2			15.5		
Level of Service, LOS	C			A			B			C		
Approach Delay (s/veh)	15.9			9.7			10.2			15.5		
Approach LOS	C			A			B			C		
Intersection Delay, s/veh | LOS	14.8						B					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.84
Time Analyzed	PM Peak No Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	105	287	39	16	14	32	40	38	41	282	9
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	489			82			131			395		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.435			0.073			0.116			0.351		
Final Departure Headway, hd (s)	5.27			6.44			6.19			5.82		
Final Degree of Utilization, x	0.717			0.147			0.225			0.639		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.27			4.44			4.19			3.82		

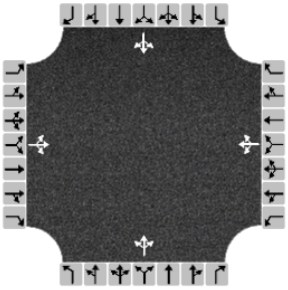
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	489			82			131			395		
Capacity	683			559			581			619		
95% Queue Length, Q_{95} (veh)	6.1			0.5			0.9			4.6		
Control Delay (s/veh)	20.5			10.5			11.0			18.5		
Level of Service, LOS	C			B			B			C		
Approach Delay (s/veh)	20.5			10.5			11.0			18.5		
Approach LOS	C			B			B			C		
Intersection Delay, s/veh | LOS	17.9						C					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Rehl Rd at Tucker Station
Agency/Co.	Diane B. Zimmerman Traffic Engineering LLC	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Tucker Station Road
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.84
Time Analyzed	PM Peak Build		
Project Description	Plantside Dr Ext		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	105	287	84	16	12	32	36	42	33	237	9
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	489			133			131			332		
Percent Heavy Vehicles	2			2			2			2		

Departure Headway and Service Time

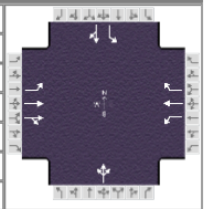
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.435			0.119			0.116			0.295		
Final Departure Headway, hd (s)	5.22			6.33			6.22			5.95		
Final Degree of Utilization, x	0.709			0.234			0.226			0.549		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.22			4.33			4.22			3.95		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	489			133			131			332		
Capacity	690			569			579			605		
95% Queue Length, Q_{95} (veh)	5.9			0.9			0.9			3.3		
Control Delay (s/veh)	19.9			11.2			11.0			15.9		
Level of Service, LOS	C			B			B			C		
Approach Delay (s/veh)	19.9			11.2			11.0			15.9		
Approach LOS	C			B			B			C		
Intersection Delay, s/veh | LOS	16.5						C					

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	May 23, 2018	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.88
Urban Street	Taylorsville Road	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Tucker Station Road	File Name	AM 17.xus		
Project Description	Plantside Dr Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	40	513	2	0	754	399	19	11	8	109	2	31

Signal Information					EB			WB			NB		
Cycle, s	120.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	0.0	5.5		70.6	13.9	5.3	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	2.5	3.5		4.3	3.6	3.6	0.0		
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	3.0		1.9	2.4	2.4	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		12.0		10.0
Phase Duration, s	12.0	88.7	0.0	76.8		11.3		19.9
Change Period, ($Y+R_c$), s	6.5	6.2	5.5	6.2		6.0		6.0
Max Allow Headway (*MAH*), s	4.4	0.0	0.0	0.0		4.5		5.0
Queue Clearance Time (g_s), s	3.1					4.8		9.9
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.1		0.8
Phase Call Probability	0.78					0.76		1.00
Max Out Probability	0.00					0.00		0.00

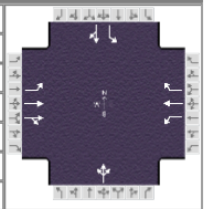
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	45	293	292	0	857	453		43		124	38	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1841	1838	1810	1870	1585		1788		1795	1549	
Queue Service Time (g_s), s	1.1	7.1	7.1	0.0	41.8	19.8		2.8		7.9	2.6	
Cycle Queue Clearance Time (g_c), s	1.1	7.1	7.1	0.0	41.8	19.8		2.8		7.9	2.6	
Green Ratio (*g/C*)	0.65	0.69	0.69	0.54	0.59	0.59		0.04		0.12	0.12	
Capacity (*c*), veh/h	299	1266	1264	557	1100	932		80		209	180	
Volume-to-Capacity Ratio (*X*)	0.152	0.231	0.231	0.000	0.779	0.486		0.543		0.594	0.208	
Back of Queue (*Q*), ft/ln (95 th percentile)	19.1	110.5	106.9	0	605.7	276		62.2		163.4	48	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.8	4.3	4.3	0.0	23.8	10.9		2.5		6.5	1.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.22	0.22	0.00	0.00	0.00		0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	16.1	7.0	7.0	0.0	18.8	14.3		56.1		50.3	48.0	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.0	5.5	1.8		6.8		3.8	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	
Control Delay (*d*), s/veh	16.4	7.4	7.4	0.0	24.3	16.1		62.9		54.2	48.8	
Level of Service (LOS)	B	A	A		C	B		E		D	D	
Approach Delay, s/veh / LOS	8.0	A		21.4	C		62.9	E		52.9	D	
Intersection Delay, s/veh / LOS	20.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.89	B	2.33	B	2.15	B
Bicycle LOS Score / LOS	1.01	A	2.65	C	0.56	A	0.75	A

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:22:52 PM

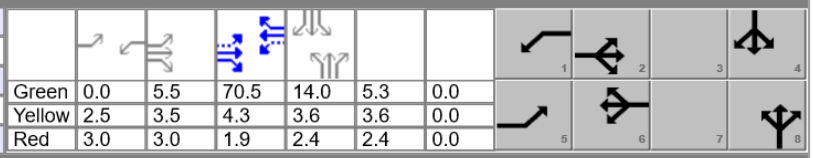
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	May 23, 2018	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.88
Urban Street	Taylorsville Road	Analysis Year	2020 No Build	Analysis Period	1> 7:00
Intersection	Tucker Station Road	File Name	AM 20 NB.xus		
Project Description	Plantside Dr Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	41	523	2	0	769	407	19	11	8	116	2	33

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



Green	0.0	5.5	70.5	14.0	5.3	0.0
Yellow	2.5	3.5	4.3	3.6	3.6	0.0
Red	3.0	3.0	1.9	2.4	2.4	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		12.0		10.0
Phase Duration, s	12.0	88.7	0.0	76.7		11.3		20.0
Change Period, ($Y+R_c$), s	6.5	6.2	5.5	6.2		6.0		6.0
Max Allow Headway (*MAH*), s	4.4	0.0	0.0	0.0		4.5		5.0
Queue Clearance Time (g_s), s	3.1					4.8		10.4
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.1		0.8
Phase Call Probability	0.79					0.76		1.00
Max Out Probability	0.00					0.00		0.00

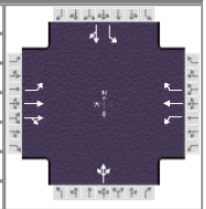
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	47	298	298	0	874	463		43		132	40	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1841	1838	1810	1870	1585		1788		1795	1548	
Queue Service Time (g_s), s	1.1	7.3	7.3	0.0	43.4	20.4		2.8		8.4	2.8	
Cycle Queue Clearance Time (g_c), s	1.1	7.3	7.3	0.0	43.4	20.4		2.8		8.4	2.8	
Green Ratio (*g/C*)	0.65	0.69	0.69	0.54	0.59	0.59		0.04		0.12	0.12	
Capacity (*c*), veh/h	288	1266	1264	551	1099	931		80		209	180	
Volume-to-Capacity Ratio (*X*)	0.162	0.236	0.236	0.000	0.795	0.497		0.543		0.631	0.221	
Back of Queue (*Q*), ft/ln (95 th percentile)	20.6	112.7	109.4	0	629.3	283.4		62.2		175.7	51.1	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.8	4.4	4.4	0.0	24.8	11.2		2.5		7.0	1.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.23	0.23	0.00	0.00	0.00		0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	16.8	7.0	7.0	0.0	19.2	14.4		56.1		50.6	48.1	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.0	6.0	1.9		6.8		4.4	0.9	
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	
Control Delay (*d*), s/veh	17.1	7.4	7.4	0.0	25.2	16.3		62.9		55.0	49.0	
Level of Service (LOS)	B	A	A		C	B		E		D	D	
Approach Delay, s/veh / LOS	8.1	A		22.1	C		62.9	E		53.6	D	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.89	B	2.33	B	2.15	B
Bicycle LOS Score / LOS	1.02	A	2.69	C	0.56	A	0.77	A

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:22:52 PM

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	May 23, 2018	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Taylorsville Road	Analysis Year	2017	Analysis Period	1> 4:45
Intersection	Tucker Station Road	File Name	PM 17.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	27	846	11	4	654	133	11	2	3	461	18	68

Signal Information					EB			WB			NB		
Cycle, s	110.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	0.8	4.2		46.5	32.0	2.8	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	2.5	0.0		4.3	3.6	3.6	0.0		
Force Mode	Fixed	Simult. Gap N/S	Off	Red	3.0	0.0		1.9	2.4	2.4	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		12.0		10.0
Phase Duration, s	10.5	56.8	6.3	52.7		8.8		38.0
Change Period, ($Y+R_c$), s	6.5	6.2	5.5	6.2		6.0		6.0
Max Allow Headway (*MAH*), s	4.4	0.0	4.4	0.0		4.7		5.1
Queue Clearance Time (g_s), s	2.9		2.1			3.0		29.7
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.0		2.3
Phase Call Probability	0.57		0.12			0.40		1.00
Max Out Probability	0.00		0.00			0.00		0.39

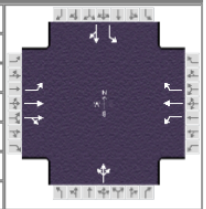
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	28	443	441	4	674	137		16		475	89	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1841	1832	1810	1870	1585		1779		1795	1585	
Queue Service Time (g_s), s	0.9	18.8	18.8	0.1	35.2	6.0		1.0		27.7	4.6	
Cycle Queue Clearance Time (g_c), s	0.9	18.8	18.8	0.1	35.2	6.0		1.0		27.7	4.6	
Green Ratio (*g/C*)	0.46	0.46	0.46	0.43	0.43	0.43		0.03		0.29	0.29	
Capacity (*c*), veh/h	211	848	844	252	807	670		45		539	462	
Volume-to-Capacity Ratio (*X*)	0.132	0.522	0.522	0.016	0.835	0.205		0.368		0.881	0.192	
Back of Queue (*Q*), ft/ln (95 th percentile)	16.8	320.2	309.1	2.6	583.4	99.6		23.3		497.4	83.8	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	12.4	12.4	0.1	23.0	3.9		0.9		19.7	3.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.64	0.64	0.00	0.00	0.00		0.00		3.98	0.17	
Uniform Delay (d_1), s/veh	22.2	21.1	21.1	19.2	28.2	20.1		52.8		36.6	29.3	
Incremental Delay (d_2), s/veh	0.3	2.3	2.3	0.0	10.0	0.7		6.0		12.5	0.3	
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	
Control Delay (*d*), s/veh	22.6	23.4	23.4	19.2	38.2	20.8		58.7		49.1	29.5	
Level of Service (LOS)	C	C	C	B	D	C		E		D	C	
Approach Delay, s/veh / LOS	23.4	C		35.2	D		58.7	E		46.0	D	
Intersection Delay, s/veh / LOS	33.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.68	B	1.91	B	2.32	B	2.15	B
Bicycle LOS Score / LOS	1.24	A	1.83	B	0.51	A	1.42	A

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:31:18 PM

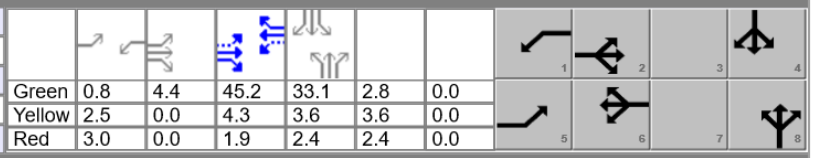
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Diane B. Zimmerman Traffic Engineering			Duration, h	0.25
Analyst	DBZ	Analysis Date	May 23, 2018	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.97
Urban Street	Taylorsville Road	Analysis Year	2020 No Build	Analysis Period	1> 4:45
Intersection	Tucker Station Road	File Name	PM 20 NB.xus		
Project Description	Plantside Drive Extension				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	29	880	11	4	680	140	11	2	3	480	19	71

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off



Green	0.8	4.4	45.2	33.1	2.8	0.0
Yellow	2.5	0.0	4.3	3.6	3.6	0.0
Red	3.0	0.0	1.9	2.4	2.4	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		12.0		10.0
Phase Duration, s	10.7	55.8	6.3	51.4		8.8		39.1
Change Period, ($Y+R_c$), s	6.5	6.2	5.5	6.2		6.0		6.0
Max Allow Headway (*MAH*), s	4.4	0.0	4.4	0.0		4.7		5.1
Queue Clearance Time (g_s), s	3.0		2.1			3.0		30.9
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.0		2.3
Phase Call Probability	0.60		0.12			0.40		1.00
Max Out Probability	0.00		0.00			0.00		0.52

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	30	460	458	4	701	144		16		495	93	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1841	1833	1810	1870	1585		1779		1795	1586	
Queue Service Time (g_s), s	1.0	20.2	20.2	0.1	38.2	6.5		1.0		28.9	4.8	
Cycle Queue Clearance Time (g_c), s	1.0	20.2	20.2	0.1	38.2	6.5		1.0		28.9	4.8	
Green Ratio (*g/C*)	0.45	0.45	0.45	0.42	0.42	0.42		0.03		0.30	0.30	
Capacity (*c*), veh/h	182	829	826	233	786	651		45		557	478	
Volume-to-Capacity Ratio (*X*)	0.164	0.555	0.555	0.018	0.892	0.222		0.368		0.888	0.194	
Back of Queue (*Q*), ft/ln (95 th percentile)	18.6	341.1	329.8	2.7	650.5	107.9		23.3		518.5	86.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.7	13.2	13.2	0.1	25.6	4.2		0.9		20.6	3.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.68	0.68	0.00	0.00	0.00		0.00		4.15	0.17	
Uniform Delay (d_1), s/veh	23.9	22.1	22.1	20.1	30.0	21.0		52.8		36.1	28.5	
Incremental Delay (d_2), s/veh	0.5	2.7	2.7	0.0	14.6	0.8		6.0		13.5	0.3	
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	
Control Delay (*d*), s/veh	24.4	24.8	24.8	20.1	44.6	21.8		58.7		49.6	28.8	
Level of Service (LOS)	C	C	C	C	D	C		E		D	C	
Approach Delay, s/veh / LOS	24.8	C		40.6	D		58.7	E		46.3	D	
Intersection Delay, s/veh / LOS	35.9						D					

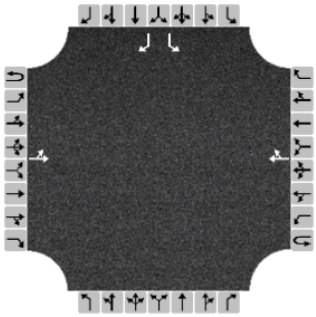
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.68	B	1.92	B	2.32	B	2.15	B
Bicycle LOS Score / LOS	1.27	A	1.89	B	0.51	A	1.46	A

 HCS7™ Streets Version 7.4 Generated: 5/23/2018 12:31:18 PM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Plantside Drive
Time Analyzed	AM Peak	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

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	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume, V (veh/h)		37	53				158	4						1		5
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

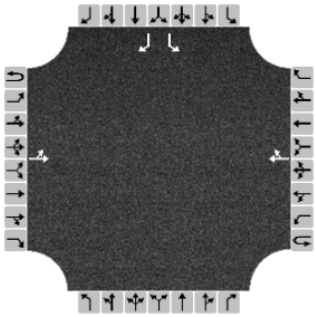
Flow Rate, v (veh/h)		42												1		6
Capacity, c (veh/h)		1403												652		866
v/c Ratio		0.03												0.00		0.01
95% Queue Length, Q_{95} (veh)		0.1												0.0		0.0
Control Delay (s/veh)		7.6												10.5		9.2
Level of Service, LOS		A												B		A
Approach Delay (s/veh)		3.3												9.4		
Approach LOS														A		

HCS7™ TWSC Version 7.4
Plantside at Rehl AM 20.xtw
Generated: 5/23/2018 11:38:32 AM

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Diane Zimmerman	Intersection	Plantside at Rehl
Agency/Co.	Diane B Zimmerman Traffic Engineering	Jurisdiction	
Date Performed	5/23/2018	East/West Street	Rehl Road
Analysis Year	2020	North/South Street	Plantside Drive
Time Analyzed	PM Peak	Peak Hour Factor	0.84
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Plantside Dr Extension		

Lanes



Major Street: East-West

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	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume, V (veh/h)		4	176				67	2						8		45
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5												10		54
Capacity, c (veh/h)		1528												694		985
v/c Ratio		0.00												0.01		0.05
95% Queue Length, Q_{95} (veh)		0.0												0.0		0.2
Control Delay (s/veh)		7.4												10.3		8.9
Level of Service, LOS		A												B		A
Approach Delay (s/veh)		0.2												9.1		
Approach LOS														A		

HCS7™ TWSC Version 7.4
Plantside at Rehl PM 20.xtw

Generated: 5/23/2018 11:40:05 AM