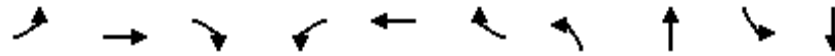


Appendix 5

Turn Lane Warrants and Queuing Results

Queues
1: Kenwood Road & Galbraith Road

2020 AM Background
Kenwood Road Development

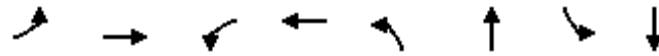


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	235	155	76	182	89	165	517	345	830
v/c Ratio	0.24	0.66	0.36	0.33	0.56	0.14	0.45	0.38	0.63	0.52
Control Delay	27.1	45.2	26.7	29.8	43.8	4.7	13.9	21.7	15.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	45.2	26.7	29.8	43.8	4.7	13.9	21.7	15.3	18.7
Queue Length 50th (ft)	29	134	69	34	102	0	40	113	95	177
Queue Length 95th (ft)	65	227	129	72	187	29	84	195	179	273
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490		305		385
Base Capacity (vph)	320	715	452	227	620	749	398	1687	627	2101
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.33	0.34	0.33	0.29	0.12	0.41	0.31	0.55	0.40

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 AM Background
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	2	21	3	9	796	15	950
v/c Ratio	0.01	0.00	0.09	0.01	0.02	0.27	0.03	0.32
Control Delay	20.5	0.0	21.9	26.7	4.1	5.4	4.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	0.0	21.9	26.7	4.1	5.4	4.1	5.8
Queue Length 50th (ft)	1	0	6	1	0	0	1	0
Queue Length 95th (ft)	6	0	26	10	8	222	11	278
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	286	804	343	736	512	3040	601	3079
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.00	0.06	0.00	0.02	0.26	0.02	0.31
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	99	26	832	928
v/c Ratio	0.46	0.06	0.30	0.34
Control Delay	23.2	0.7	2.2	2.8
Queue Delay	0.5	0.0	0.4	0.0
Total Delay	23.7	0.7	2.5	2.8
Queue Length 50th (ft)	14	0	7	67
Queue Length 95th (ft)	69	m1	13	101
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	446	436	2762	2764
Starvation Cap Reductn	0	0	1254	0
Spillback Cap Reductn	134	0	0	151
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.06	0.55	0.36

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2020 AM Background
Kenwood Road Development

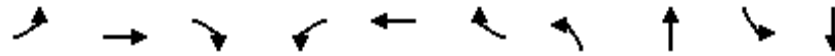


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	146	519	137	339	116	136	835	128	878
v/c Ratio	0.41	0.72	0.47	0.46	0.19	0.41	0.57	0.40	0.62
Control Delay	31.4	52.0	32.7	46.2	5.0	18.7	29.8	18.4	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Total Delay	31.4	52.0	32.7	46.2	5.0	18.7	29.8	18.4	30.2
Queue Length 50th (ft)	86	211	80	132	0	51	257	48	221
Queue Length 95th (ft)	122	257	114	170	36	100	398	91	431
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	445	935	371	882	625	333	1462	351	1414
Starvation Cap Reductn	0	0	0	0	0	0	0	0	280
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.56	0.37	0.38	0.19	0.41	0.57	0.36	0.77

Intersection Summary

Queues
1: Kenwood Road & Galbraith Road

2020 Midday Background
Kenwood Road Development

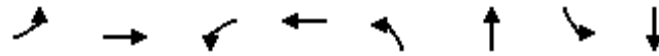


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	83	241	253	97	193	177	223	678	192	583
v/c Ratio	0.29	0.65	0.55	0.40	0.58	0.27	0.48	0.47	0.45	0.39
Control Delay	25.2	41.7	27.9	29.0	42.1	4.4	13.9	20.4	12.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	41.7	27.9	29.0	42.1	4.4	13.9	20.4	12.9	17.6
Queue Length 50th (ft)	34	128	110	40	103	0	55	140	46	111
Queue Length 95th (ft)	72	216	191	82	186	42	116	244	100	182
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490		305		385
Base Capacity (vph)	329	745	472	240	647	817	482	1760	592	2188
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.32	0.54	0.40	0.30	0.22	0.46	0.39	0.32	0.27

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 Midday Background
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	36	184	49	26	951	51	774
v/c Ratio	0.10	0.16	0.57	0.21	0.07	0.58	0.16	0.44
Control Delay	24.1	21.8	32.9	37.1	9.0	18.3	9.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	21.8	32.9	37.1	9.0	18.3	9.7	14.9
Queue Length 50th (ft)	12	6	84	26	6	223	12	121
Queue Length 95th (ft)	33	34	145	60	17	297	28	230
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	291	538	322	565	392	2463	337	2551
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.07	0.57	0.09	0.07	0.39	0.15	0.30
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	114	83	1086	963
v/c Ratio	0.53	0.20	0.40	0.35
Control Delay	32.3	1.7	1.2	3.1
Queue Delay	0.2	0.0	0.5	0.0
Total Delay	32.5	1.7	1.8	3.1
Queue Length 50th (ft)	35	4	30	71
Queue Length 95th (ft)	93	m6	m32	120
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	447	413	2742	2731
Starvation Cap Reductn	0	0	1119	0
Spillback Cap Reductn	62	0	0	142
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.20	0.67	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



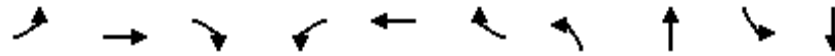
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	245	773	299	551	313	251	963	239	743
v/c Ratio	0.62	0.86	0.88	0.57	0.41	0.87	0.92	0.94	0.68
Control Delay	29.4	54.1	61.7	42.9	13.7	54.9	54.1	87.7	35.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Total Delay	29.4	54.1	61.7	42.9	13.7	54.9	54.1	87.7	37.9
Queue Length 50th (ft)	123	309	191	203	79	132	384	~178	271
Queue Length 95th (ft)	184	390	#362	280	167	#257	#513	#350	248
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	461	933	346	965	765	290	1049	255	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0	233
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.83	0.86	0.57	0.41	0.87	0.92	0.94	0.86

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2020 PM Background
Kenwood Road Development

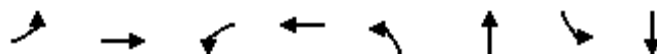


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	151	295	213	93	253	282	151	749	230	777
v/c Ratio	0.51	0.63	0.41	0.36	0.70	0.43	0.45	0.57	0.61	0.54
Control Delay	29.8	39.6	24.9	27.6	48.2	13.6	16.3	26.6	19.2	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	39.6	24.9	27.6	48.2	13.6	16.3	26.6	19.2	22.7
Queue Length 50th (ft)	67	168	95	40	150	66	43	190	70	186
Queue Length 95th (ft)	124	276	166	82	250	132	90	313	134	284
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	308	672	537	258	584	777	365	1618	496	1993
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.44	0.40	0.36	0.43	0.36	0.41	0.46	0.46	0.39

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 PM Background
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	36	177	38	23	1035	62	962
v/c Ratio	0.16	0.17	0.58	0.18	0.07	0.65	0.22	0.53
Control Delay	26.1	17.2	34.7	37.6	8.9	20.7	10.1	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	17.2	34.7	37.6	8.9	20.7	10.1	15.9
Queue Length 50th (ft)	18	2	81	20	5	254	15	163
Queue Length 95th (ft)	44	31	144	51	15	336	32	302
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	278	499	307	534	330	2357	304	2435
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.07	0.58	0.07	0.07	0.44	0.20	0.40
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	94	99	1058	1137
v/c Ratio	0.48	0.29	0.39	0.42
Control Delay	35.2	2.4	1.1	3.3
Queue Delay	1.3	0.0	0.6	0.1
Total Delay	36.5	2.4	1.8	3.4
Queue Length 50th (ft)	34	4	25	90
Queue Length 95th (ft)	88	m4	m17	144
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	438	342	2748	2735
Starvation Cap Reductn	0	0	1206	0
Spillback Cap Reductn	211	0	0	425
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.29	0.69	0.49

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2020 PM Background
Kenwood Road Development



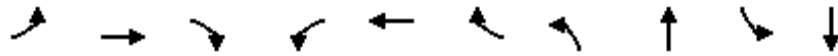
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	321	911	317	540	220	170	921	202	951
v/c Ratio	0.75	0.97	0.92	0.57	0.31	0.83	0.89	0.88	0.87
Control Delay	34.0	67.7	69.3	43.6	12.6	58.7	51.7	76.6	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
Total Delay	34.0	67.7	69.3	43.6	12.6	58.7	51.7	76.6	66.1
Queue Length 50th (ft)	170	392	216	209	52	85	369	138	389
Queue Length 95th (ft)	246	#535	#397	274	114	#210	#485	#272	#389
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	461	941	347	951	713	205	1040	230	1090
Starvation Cap Reductn	0	0	0	0	0	0	0	0	163
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.97	0.91	0.57	0.31	0.83	0.89	0.88	1.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	136	115	66	115	141	116	569	150	468
v/c Ratio	0.16	0.48	0.31	0.25	0.37	0.24	0.21	0.36	0.30	0.29
Control Delay	23.8	37.8	24.6	25.3	35.3	5.2	8.1	14.8	8.7	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	37.8	24.6	25.3	35.3	5.2	8.1	14.8	8.7	13.3
Queue Length 50th (ft)	19	65	46	26	55	0	22	92	28	69
Queue Length 95th (ft)	46	123	87	58	111	39	50	158	63	122
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	370	818	417	266	710	820	598	1948	685	2418
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.17	0.28	0.25	0.16	0.17	0.19	0.29	0.22	0.19

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	37	261	65	17	688	71	524
v/c Ratio	0.12	0.17	0.85	0.30	0.03	0.44	0.17	0.28
Control Delay	25.1	18.0	54.5	39.5	8.7	15.5	9.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	18.0	54.5	39.5	8.7	15.5	9.2	11.0
Queue Length 50th (ft)	14	3	127	35	4	131	17	73
Queue Length 95th (ft)	36	32	#204	75	13	185	36	144
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	279	504	308	540	496	2315	423	2422
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.07	0.85	0.12	0.03	0.30	0.17	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	107	58	953	712
v/c Ratio	0.52	0.11	0.35	0.26
Control Delay	40.0	1.2	1.4	2.8
Queue Delay	0.0	0.0	0.4	0.0
Total Delay	40.0	1.2	1.7	2.8
Queue Length 50th (ft)	47	2	19	48
Queue Length 95th (ft)	104	m5	32	85
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	436	542	2730	2723
Starvation Cap Reductn	0	0	1125	0
Spillback Cap Reductn	1	0	0	3
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.11	0.59	0.26

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

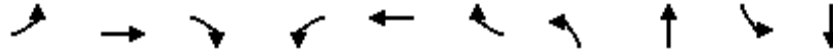


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	208	582	227	388	253	176	850	215	552
v/c Ratio	0.52	0.75	0.67	0.47	0.34	0.43	0.70	0.70	0.44
Control Delay	29.8	50.5	35.9	43.9	6.1	22.4	37.9	42.9	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6
Total Delay	29.8	50.5	35.9	43.9	6.1	22.4	37.9	43.3	28.0
Queue Length 50th (ft)	116	231	127	147	18	77	313	109	137
Queue Length 95th (ft)	157	280	174	190	74	139	404	#233	185
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	473	932	371	899	741	415	1207	308	1264
Starvation Cap Reductn	0	0	0	0	0	0	0	6	358
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.62	0.61	0.43	0.34	0.42	0.70	0.71	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	380	251	123	293	142	266	835	555	1339
v/c Ratio	0.44	0.84	0.51	0.71	0.73	0.19	1.33	0.71	1.33	0.88
Control Delay	33.1	58.9	31.8	54.1	53.5	3.9	208.8	36.0	190.3	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	58.9	31.8	54.1	53.5	3.9	208.8	36.0	190.3	37.1
Queue Length 50th (ft)	55	264	135	63	201	0	~216	284	~453	475
Queue Length 95th (ft)	106	412	229	#141	325	38	#429	386	#756	637
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	270	565	497	173	491	762	200	1334	416	1665
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.67	0.51	0.71	0.60	0.19	1.33	0.63	1.33	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	58	365	176	38	1293	166	1085
v/c Ratio	0.15	0.19	1.25	0.70	0.14	0.89	0.71	0.60
Control Delay	32.5	17.4	174.9	63.1	12.0	34.7	40.8	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	17.4	174.9	63.1	12.0	34.7	40.8	21.0
Queue Length 50th (ft)	27	7	~320	125	10	420	64	305
Queue Length 95th (ft)	63	46	#595	226	29	614	#202	454
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	404	542	291	400	287	1920	257	2097
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.11	1.25	0.44	0.13	0.67	0.65	0.52

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	185	133	1605	1248
v/c Ratio	0.72	0.49	0.61	0.48
Control Delay	60.8	9.2	6.5	6.1
Queue Delay	6.2	0.0	7.7	0.2
Total Delay	67.0	9.2	14.3	6.2
Queue Length 50th (ft)	132	27	279	168
Queue Length 95th (ft)	204	m50	m325	269
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	378	274	2610	2586
Starvation Cap Reductn	0	0	969	0
Spillback Cap Reductn	141	0	0	472
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.49	0.98	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	343	839	291	446	527	239	1165	284	942
v/c Ratio	0.84	0.97	0.94	0.50	0.75	0.81	1.07	1.02	0.88
Control Delay	48.9	73.4	77.2	46.6	36.1	54.0	90.2	98.6	50.3
Queue Delay	3.7	0.0	0.0	0.0	1.4	0.0	13.8	0.0	21.9
Total Delay	52.5	73.4	77.2	46.6	37.5	54.0	104.0	98.6	72.2
Queue Length 50th (ft)	218	384	215	183	346	149	~602	~229	308
Queue Length 95th (ft)	#312	#524	#396	239	498	#272	#743	#421	#538
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	407	863	310	884	703	311	1092	278	1076
Starvation Cap Reductn	0	0	0	0	0	0	0	0	163
Spillback Cap Reductn	25	0	0	0	60	0	103	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.97	0.94	0.50	0.82	0.77	1.18	1.02	1.03

Intersection Summary

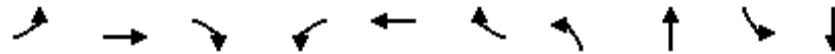
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	476	345	150	409	454	245	1208	371	1253
v/c Ratio	0.85	0.95	0.65	1.15	0.94	0.63	1.23	0.99	1.15	0.83
Control Delay	66.2	74.7	37.9	155.1	77.8	27.1	169.3	62.8	132.4	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	74.7	37.9	155.1	77.8	27.1	169.3	62.8	132.4	35.8
Queue Length 50th (ft)	97	392	225	~98	338	242	~193	527	~322	472
Queue Length 95th (ft)	#216	#604	329	#241	#534	360	#365	#687	#523	571
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	197	514	527	131	446	724	199	1237	323	1526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.93	0.65	1.15	0.92	0.63	1.23	0.98	1.15	0.82

Intersection Summary

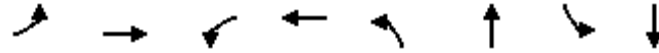
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	71	446	112	35	1175	154	1079
v/c Ratio	0.21	0.27	1.46	0.56	0.13	0.81	0.61	0.61
Control Delay	30.5	19.2	254.4	58.0	11.7	31.2	25.2	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	19.2	254.4	58.0	11.7	31.2	25.2	21.0
Queue Length 50th (ft)	38	10	~300	73	9	359	43	293
Queue Length 95th (ft)	83	55	#712	149	27	530	118	432
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	469	588	305	392	286	1773	283	1942
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.12	1.46	0.29	0.12	0.66	0.54	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	109	1300	1404
v/c Ratio	0.68	0.47	0.49	0.53
Control Delay	60.5	9.6	4.1	5.9
Queue Delay	3.3	0.0	0.9	0.2
Total Delay	63.8	9.6	5.1	6.1
Queue Length 50th (ft)	112	5	32	187
Queue Length 95th (ft)	181	m48	m232	299
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	376	233	2656	2642
Starvation Cap Reductn	0	0	988	0
Spillback Cap Reductn	138	0	0	469
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.66	0.47	0.78	0.65

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

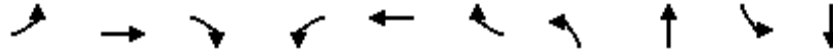


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	290	824	328	482	376	234	1061	352	1061
v/c Ratio	0.77	1.01	1.06	0.57	0.53	0.90	0.95	1.22	0.91
Control Delay	44.1	84.7	106.8	49.3	25.0	72.9	61.3	162.4	50.2
Queue Delay	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	29.1
Total Delay	44.6	84.7	106.8	49.3	25.1	72.9	61.3	162.4	79.3
Queue Length 50th (ft)	182	~393	~279	204	189	161	479	~352	313
Queue Length 95th (ft)	#271	#536	#476	264	290	#318	#624	#551	#609
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	382	814	310	850	708	264	1115	289	1168
Starvation Cap Reductn	0	0	0	0	0	0	0	0	164
Spillback Cap Reductn	8	0	0	0	25	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.01	1.06	0.57	0.55	0.89	0.95	1.22	1.06

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	380	251	123	293	142	266	835	555	1339
v/c Ratio	0.44	0.84	0.51	0.71	0.73	0.19	1.33	0.71	1.33	0.88
Control Delay	33.1	58.9	31.8	54.1	53.5	3.9	208.8	36.0	190.3	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	58.9	31.8	54.1	53.5	3.9	208.8	36.0	190.3	37.1
Queue Length 50th (ft)	55	264	135	63	201	0	~216	284	~453	475
Queue Length 95th (ft)	106	412	229	#141	325	38	#429	386	#756	637
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	270	565	497	173	491	762	200	1334	416	1665
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.67	0.51	0.71	0.60	0.19	1.33	0.63	1.33	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	58	365	176	38	1293	166	1085
v/c Ratio	0.15	0.19	1.25	0.70	0.14	0.89	0.71	0.60
Control Delay	32.5	17.4	174.9	63.1	12.0	34.7	40.8	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	17.4	174.9	63.1	12.0	34.7	40.8	21.0
Queue Length 50th (ft)	27	7	~320	125	10	420	64	305
Queue Length 95th (ft)	63	46	#595	226	29	614	#202	454
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	404	542	291	400	287	1920	257	2097
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.11	1.25	0.44	0.13	0.67	0.65	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	185	133	1605	1248
v/c Ratio	0.72	0.49	0.61	0.48
Control Delay	60.8	11.0	7.7	6.1
Queue Delay	6.2	0.0	2.7	0.2
Total Delay	67.0	11.0	10.3	6.2
Queue Length 50th (ft)	132	60	424	168
Queue Length 95th (ft)	204	m58	319	269
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	378	274	2610	2586
Starvation Cap Reductn	0	0	852	0
Spillback Cap Reductn	141	0	0	472
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.49	0.91	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

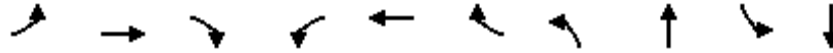


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	343	839	291	446	527	239	843	322	284	942
v/c Ratio	0.83	0.95	0.94	0.49	0.75	0.84	0.76	0.40	0.96	0.88
Control Delay	46.6	67.9	77.2	45.6	36.1	58.2	47.7	18.1	77.9	51.2
Queue Delay	2.0	0.0	0.0	0.0	1.1	0.0	5.7	0.0	3.4	25.5
Total Delay	48.6	67.9	77.2	45.6	37.2	58.2	53.4	18.1	81.2	76.7
Queue Length 50th (ft)	215	380	214	181	346	153	362	133	213	308
Queue Length 95th (ft)	#298	#512	#396	236	498	#287	443	209	#378	#538
Internal Link Dist (ft)		1509		1765			545			274
Turn Bay Length (ft)	220		300			370		250	170	
Base Capacity (vph)	414	886	310	910	703	297	1109	815	295	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	5	163
Spillback Cap Reductn	18	0	0	0	51	0	210	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.95	0.94	0.49	0.81	0.80	0.94	0.40	0.98	1.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	476	345	150	409	454	245	1208	371	1253
v/c Ratio	0.85	0.95	0.65	1.15	0.94	0.63	1.23	0.99	1.15	0.83
Control Delay	66.2	74.7	37.9	155.1	77.8	27.1	169.3	62.8	132.4	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	74.7	37.9	155.1	77.8	27.1	169.3	62.8	132.4	35.8
Queue Length 50th (ft)	97	392	225	~98	338	242	~193	527	~322	472
Queue Length 95th (ft)	#216	#604	329	#241	#534	360	#365	#687	#523	571
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	197	514	527	131	446	724	199	1237	323	1526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.93	0.65	1.15	0.92	0.63	1.23	0.98	1.15	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	71	446	112	35	1175	154	1079
v/c Ratio	0.21	0.27	1.46	0.56	0.13	0.81	0.61	0.61
Control Delay	30.5	19.2	254.4	58.0	11.7	31.2	25.2	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	19.2	254.4	58.0	11.7	31.2	25.2	21.0
Queue Length 50th (ft)	38	10	~300	73	9	359	43	293
Queue Length 95th (ft)	83	55	#712	149	27	530	118	432
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	469	588	305	392	286	1773	283	1942
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.12	1.46	0.29	0.12	0.66	0.54	0.56

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	109	1300	1404
v/c Ratio	0.68	0.47	0.49	0.53
Control Delay	60.5	13.5	4.3	5.9
Queue Delay	3.4	0.0	0.6	0.3
Total Delay	63.9	13.5	4.8	6.1
Queue Length 50th (ft)	112	5	33	187
Queue Length 95th (ft)	181	m65	257	299
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	376	233	2656	2642
Starvation Cap Reductn	0	0	842	0
Spillback Cap Reductn	139	0	0	508
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.67	0.47	0.72	0.66

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



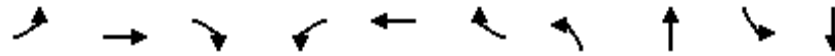
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	290	824	328	482	376	234	758	303	352	1061
v/c Ratio	0.70	0.83	1.14	0.51	0.47	0.88	0.85	0.42	1.00	1.01
Control Delay	34.4	51.4	131.9	44.8	19.8	69.3	59.7	18.6	92.4	72.5
Queue Delay	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	23.3	32.4
Total Delay	34.7	51.4	131.9	44.8	19.8	69.3	59.7	18.6	115.7	104.9
Queue Length 50th (ft)	169	352	~287	197	169	163	347	109	~303	~320
Queue Length 95th (ft)	231	418	#473	246	259	#366	428	191	#537	#667
Internal Link Dist (ft)		1509		1765			545			274
Turn Bay Length (ft)	220		300			370		250	170	
Base Capacity (vph)	429	1094	287	1006	799	267	889	715	351	1048
Starvation Cap Reductn	0	0	0	0	0	0	0	0	24	135
Spillback Cap Reductn	10	0	0	0	30	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.75	1.14	0.48	0.49	0.88	0.85	0.42	1.08	1.16

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2020 AM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	233	180	98	179	86	196	560	339	881
v/c Ratio	0.22	0.67	0.42	0.42	0.50	0.13	0.57	0.42	0.66	0.57
Control Delay	26.7	46.1	27.9	32.3	41.4	4.7	17.6	22.7	16.7	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	46.1	27.9	32.3	41.4	4.7	17.6	22.7	16.7	20.3
Queue Length 50th (ft)	29	132	80	44	100	0	49	123	93	196
Queue Length 95th (ft)	65	225	148	89	185	29	98	212	175	294
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	352	690	441	232	599	762	358	1626	587	2033
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.34	0.41	0.42	0.30	0.11	0.55	0.34	0.58	0.43

Intersection Summary

Queues
3: Kenwood Road & Happiness Way

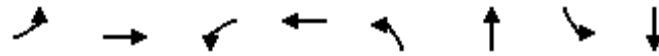
2020 AM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	137	89	748	1049
v/c Ratio	0.43	0.33	0.37	0.52
Control Delay	18.2	9.5	5.8	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.2	9.5	5.8	7.0
Queue Length 50th (ft)	24	10	48	75
Queue Length 95th (ft)	67	40	89	138
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	1105	445	3303	3270
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.20	0.23	0.32
Intersection Summary				

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 AM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	26	21	3	75	862	15	1029
v/c Ratio	0.06	0.06	0.08	0.01	0.19	0.32	0.03	0.49
Control Delay	24.2	0.2	24.8	31.3	6.6	7.8	6.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	0.2	24.8	31.3	6.6	7.8	6.5	13.0
Queue Length 50th (ft)	6	0	7	1	0	0	1	78
Queue Length 95th (ft)	24	0	26	10	34	245	11	314
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	307	718	330	629	395	2867	496	2873
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.04	0.06	0.00	0.19	0.30	0.03	0.36
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane

2020 AM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	99	26	964	1021
v/c Ratio	0.46	0.07	0.35	0.37
Control Delay	23.2	0.7	1.9	2.9
Queue Delay	0.5	0.0	0.4	0.0
Total Delay	23.7	0.7	2.3	2.9
Queue Length 50th (ft)	14	1	10	77
Queue Length 95th (ft)	69	m1	14	114
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	446	392	2762	2764
Starvation Cap Reductn	0	0	1139	0
Spillback Cap Reductn	143	0	0	212
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.07	0.59	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2020 AM Build
Kenwood Road Development

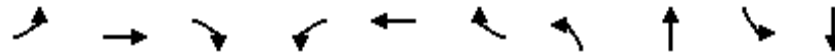


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	519	137	339	158	136	885	158	940
v/c Ratio	0.51	0.71	0.47	0.50	0.25	0.44	0.63	0.50	0.67
Control Delay	33.6	51.5	32.7	48.9	4.7	19.6	33.0	23.4	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	33.6	51.5	32.7	48.9	4.7	19.6	33.0	23.4	31.9
Queue Length 50th (ft)	113	211	80	136	0	51	290	60	235
Queue Length 95th (ft)	154	257	114	175	42	100	443	131	471
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	432	935	378	881	640	312	1403	335	1395
Starvation Cap Reductn	0	0	0	0	0	0	0	0	241
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.56	0.36	0.38	0.25	0.44	0.63	0.47	0.81

Intersection Summary

Queues
1: Kenwood Road & Galbraith Road

2020 Midday Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	83	240	273	116	193	176	248	712	191	618
v/c Ratio	0.27	0.66	0.61	0.47	0.53	0.26	0.57	0.50	0.48	0.42
Control Delay	24.8	42.8	29.9	31.3	40.0	4.3	16.6	21.4	13.8	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	42.8	29.9	31.3	40.0	4.3	16.6	21.4	13.8	18.7
Queue Length 50th (ft)	34	128	121	49	103	0	62	148	46	120
Queue Length 95th (ft)	72	215	208	95	186	42	129	259	100	195
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	355	720	460	245	625	830	446	1700	561	2118
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.33	0.59	0.47	0.31	0.21	0.56	0.42	0.34	0.29

Intersection Summary

Queues
3: Kenwood Road & Happiness Way

2020 Midday Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	163	99	701	1022
v/c Ratio	0.47	0.37	0.36	0.53
Control Delay	19.7	11.2	6.4	7.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.7	11.2	6.4	7.7
Queue Length 50th (ft)	34	13	47	77
Queue Length 95th (ft)	84	49	89	143
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	1081	452	3303	3264
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.22	0.21	0.31

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 Midday Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	57	184	49	75	1002	51	841
v/c Ratio	0.15	0.25	0.56	0.18	0.23	0.66	0.19	0.55
Control Delay	24.7	18.3	32.7	36.5	10.9	22.1	10.6	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	18.3	32.7	36.5	10.9	22.1	10.6	20.2
Queue Length 50th (ft)	19	6	84	26	18	241	12	192
Queue Length 95th (ft)	45	42	146	60	39	326	29	261
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	312	502	331	520	328	2308	277	2345
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.11	0.56	0.09	0.23	0.43	0.18	0.36
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane

2020 Midday Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	114	83	1186	1044
v/c Ratio	0.53	0.22	0.43	0.38
Control Delay	32.3	1.8	1.3	3.2
Queue Delay	0.2	0.0	0.7	0.0
Total Delay	32.5	1.8	2.0	3.2
Queue Length 50th (ft)	35	4	31	80
Queue Length 95th (ft)	93	m5	m27	133
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	447	377	2742	2734
Starvation Cap Reductn	0	0	1082	0
Spillback Cap Reductn	73	0	0	16
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.22	0.71	0.38

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	276	773	299	551	343	251	1001	264	799
v/c Ratio	0.69	0.86	0.88	0.59	0.47	0.91	0.96	1.03	0.74
Control Delay	32.0	54.1	61.5	44.2	18.2	63.0	60.4	109.4	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1
Total Delay	32.0	54.1	61.5	44.2	18.2	63.0	60.4	109.4	41.4
Queue Length 50th (ft)	142	309	192	207	119	~134	411	~221	205
Queue Length 95th (ft)	209	390	#359	280	217	#293	#554	#404	276
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	451	933	347	934	735	277	1046	256	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	209
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.83	0.86	0.59	0.47	0.91	0.96	1.03	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

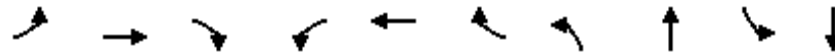
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2020 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	151	293	229	108	252	280	183	793	227	812
v/c Ratio	0.53	0.68	0.47	0.45	0.70	0.44	0.55	0.60	0.63	0.57
Control Delay	30.3	42.8	26.3	30.4	47.9	14.2	19.2	27.2	19.9	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	42.8	26.3	30.4	47.9	14.2	19.2	27.2	19.9	23.5
Queue Length 50th (ft)	67	166	101	46	149	69	54	204	69	200
Queue Length 95th (ft)	124	273	179	92	248	135	107	335	132	300
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	305	674	503	240	585	774	351	1616	488	2000
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.43	0.46	0.45	0.43	0.36	0.52	0.49	0.47	0.41

Intersection Summary

Queues
3: Kenwood Road & Happiness Way

2020 PM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	176	99	902	1114
v/c Ratio	0.51	0.41	0.45	0.56
Control Delay	21.7	13.0	7.0	8.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.7	13.0	7.0	8.0
Queue Length 50th (ft)	39	14	68	92
Queue Length 95th (ft)	101	55	127	170
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	926	396	3303	3267
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.19	0.25	0.27	0.34
Intersection Summary				

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	60	177	38	68	1080	62	1041
v/c Ratio	0.18	0.26	0.56	0.18	0.26	0.70	0.25	0.67
Control Delay	25.8	15.1	35.8	38.7	11.4	23.1	11.4	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	15.1	35.8	38.7	11.4	23.1	11.4	22.6
Queue Length 50th (ft)	26	2	81	20	16	271	15	258
Queue Length 95th (ft)	60	39	148	51	35	361	33	344
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	348	493	317	512	267	2301	256	2337
Starvation Cap Reductn	0	0	0	0	0	0	0	4
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.12	0.56	0.07	0.25	0.47	0.24	0.45
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	94	99	1148	1234
v/c Ratio	0.48	0.32	0.42	0.45
Control Delay	35.2	3.9	1.9	3.5
Queue Delay	3.5	0.0	0.9	0.2
Total Delay	38.6	3.9	2.8	3.7
Queue Length 50th (ft)	34	4	23	103
Queue Length 95th (ft)	88	m27	m188	164
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	438	307	2748	2738
Starvation Cap Reductn	0	0	1217	0
Spillback Cap Reductn	267	0	0	562
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.32	0.75	0.57

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2020 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	349	911	317	540	248	170	955	233	1017
v/c Ratio	0.83	0.90	1.13	0.62	0.35	0.85	0.93	0.91	0.90
Control Delay	42.4	54.6	127.8	46.3	12.6	65.6	57.0	80.7	49.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	4.4	2.5	42.5
Total Delay	42.4	54.6	127.8	46.3	12.6	65.6	61.4	83.2	91.7
Queue Length 50th (ft)	192	373	~260	213	58	93	397	169	422
Queue Length 95th (ft)	#322	#486	#451	275	124	#229	#533	#310	#531
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	431	1034	281	876	714	200	1031	256	1126
Starvation Cap Reductn	0	0	0	0	0	0	0	5	193
Spillback Cap Reductn	0	0	0	0	1	0	46	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.88	1.13	0.62	0.35	0.85	0.97	0.93	1.09

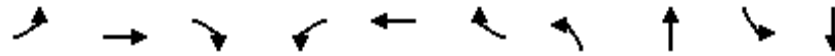
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	136	135	89	115	141	142	605	150	508
v/c Ratio	0.16	0.48	0.36	0.33	0.37	0.24	0.27	0.38	0.31	0.31
Control Delay	23.8	37.9	25.0	27.2	35.3	5.2	8.4	15.1	8.9	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	37.9	25.0	27.2	35.3	5.2	8.4	15.1	8.9	13.9
Queue Length 50th (ft)	19	65	54	35	55	0	27	99	28	77
Queue Length 95th (ft)	46	123	100	73	111	39	60	170	63	134
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490		305		385
Base Capacity (vph)	370	818	417	266	710	820	572	1942	673	2420
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.17	0.32	0.33	0.16	0.17	0.25	0.31	0.22	0.21

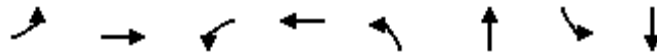
Intersection Summary

Queues
3: Kenwood Road & Happiness Way



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	144	102	585	651
v/c Ratio	0.39	0.27	0.33	0.37
Control Delay	14.7	8.4	6.5	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.7	8.4	6.5	6.6
Queue Length 50th (ft)	22	11	34	37
Queue Length 95th (ft)	57	37	66	74
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	1606	702	3303	3250
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.15	0.18	0.20
Intersection Summary				

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	57	261	65	74	744	71	595
v/c Ratio	0.16	0.25	0.79	0.29	0.18	0.49	0.20	0.39
Control Delay	24.7	15.8	46.7	39.7	10.1	17.7	10.4	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	15.8	46.7	39.7	10.1	17.7	10.4	17.6
Queue Length 50th (ft)	20	3	127	35	18	149	17	121
Queue Length 95th (ft)	47	39	#246	74	38	208	36	170
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	310	498	329	522	426	2281	364	2338
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.11	0.79	0.12	0.17	0.33	0.20	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	107	58	1065	794
v/c Ratio	0.52	0.12	0.39	0.29
Control Delay	40.0	1.2	1.1	2.9
Queue Delay	0.0	0.0	0.5	0.0
Total Delay	40.0	1.2	1.6	2.9
Queue Length 50th (ft)	47	2	22	55
Queue Length 95th (ft)	104	m4	31	97
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	436	496	2730	2723
Starvation Cap Reductn	0	0	1067	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.12	0.64	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

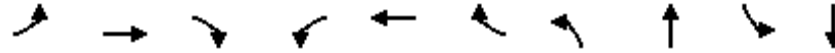


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	242	582	227	388	288	176	892	241	609
v/c Ratio	0.59	0.75	0.67	0.51	0.39	0.45	0.81	0.74	0.48
Control Delay	31.8	50.5	36.0	46.1	11.2	23.4	44.8	54.3	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	31.8	50.5	36.0	46.1	11.2	23.4	44.8	54.3	28.6
Queue Length 50th (ft)	138	231	127	151	55	77	348	158	151
Queue Length 95th (ft)	182	280	174	195	133	139	436	#335	202
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	458	932	372	881	742	390	1098	324	1263
Starvation Cap Reductn	0	0	0	0	0	0	0	0	329
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.62	0.61	0.44	0.39	0.45	0.81	0.74	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	378	276	145	291	139	297	878	550	1390
v/c Ratio	0.44	0.84	0.56	0.84	0.72	0.18	1.50	0.73	1.36	0.91
Control Delay	33.5	59.2	33.7	71.4	53.9	4.0	277.0	37.0	204.2	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	59.2	33.7	71.4	53.9	4.0	277.0	37.0	204.2	39.7
Queue Length 50th (ft)	59	278	162	81	211	0	~280	308	~487	515
Queue Length 95th (ft)	106	409	254	#186	323	38	#493	413	#767	#724
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	269	560	495	172	486	756	198	1320	404	1651
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.68	0.56	0.84	0.60	0.18	1.50	0.67	1.36	0.84

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way

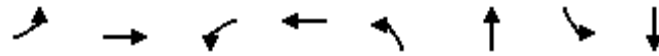


Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	145	95	1208	1636
v/c Ratio	0.56	0.63	0.50	0.68
Control Delay	38.5	29.0	5.7	7.9
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	38.5	29.0	5.8	8.0
Queue Length 50th (ft)	47	20	110	187
Queue Length 95th (ft)	146	#143	206	350
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	528	189	3051	3031
Starvation Cap Reductn	0	0	466	135
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.50	0.47	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	66	82	365	176	104	1359	166	1164
v/c Ratio	0.20	0.24	1.25	0.74	0.46	0.90	0.79	0.71
Control Delay	34.0	14.5	174.5	69.8	18.7	37.7	55.1	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	34.0	14.5	174.5	69.8	18.7	37.7	55.1	27.8
Queue Length 50th (ft)	41	8	~365	143	32	496	84	371
Queue Length 95th (ft)	78	52	#586	231	70	#750	#232	533
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	368	506	293	361	236	1742	227	1888
Starvation Cap Reductn	0	0	0	0	0	0	0	326
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.16	1.25	0.49	0.44	0.78	0.73	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	185	133	1738	1340
v/c Ratio	0.72	0.55	0.67	0.52
Control Delay	60.8	17.0	10.8	6.4
Queue Delay	1.4	0.0	22.3	0.1
Total Delay	62.2	17.0	33.1	6.5
Queue Length 50th (ft)	132	62	484	189
Queue Length 95th (ft)	204	m60	m440	301
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	378	244	2610	2589
Starvation Cap Reductn	0	0	932	0
Spillback Cap Reductn	75	0	0	235
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.55	1.04	0.57

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



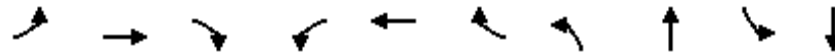
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	385	839	291	446	568	239	893	322	313	715	290
v/c Ratio	0.96	0.87	1.16	0.52	0.75	0.65	0.90	0.44	0.92	0.64	0.35
Control Delay	68.0	55.9	145.6	47.0	33.1	29.7	61.4	21.3	69.4	44.7	11.1
Queue Delay	38.6	0.0	0.0	0.0	1.7	0.0	47.0	0.0	12.3	4.7	0.2
Total Delay	106.6	55.9	145.6	47.0	34.7	29.7	108.4	21.3	81.7	49.4	11.4
Queue Length 50th (ft)	249	360	~258	181	350	125	426	138	251	279	34
Queue Length 95th (ft)	#398	445	#448	236	502	184	#567	227	#413	395	184
Internal Link Dist (ft)		1509		1765			545			274	
Turn Bay Length (ft)	220		300			370			170		
Base Capacity (vph)	400	1002	250	909	769	443	990	728	357	1109	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	35	316	135
Spillback Cap Reductn	48	0	0	0	83	0	203	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.84	1.16	0.49	0.83	0.54	1.13	0.44	0.97	0.90	0.43

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2020 Black Friday PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	475	361	164	408	453	276	1251	367	1288
v/c Ratio	0.86	0.95	0.69	1.26	0.94	0.63	1.44	1.02	1.14	0.85
Control Delay	67.0	75.3	39.6	197.0	78.3	27.3	250.4	70.1	130.6	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	75.3	39.6	197.0	78.3	27.3	250.4	70.1	130.6	36.9
Queue Length 50th (ft)	97	390	239	~123	337	241	~260	~590	~316	493
Queue Length 95th (ft)	#217	#602	348	#274	#533	359	#442	#728	#517	597
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	196	512	524	130	444	721	192	1229	321	1521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.93	0.69	1.26	0.92	0.63	1.44	1.02	1.14	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	190	111	1477	1761
v/c Ratio	0.74	0.82	0.58	0.69
Control Delay	59.3	57.4	7.4	9.4
Queue Delay	0.0	0.0	0.9	0.8
Total Delay	59.3	57.4	8.3	10.1
Queue Length 50th (ft)	121	46	213	301
Queue Length 95th (ft)	202	#98	350	495
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	358	136	2554	2535
Starvation Cap Reductn	0	0	709	423
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.53	0.82	0.80	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2020 Black Friday PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	95	446	112	80	1220	154	1159
v/c Ratio	0.25	0.33	1.32	0.58	0.36	0.87	0.67	0.71
Control Delay	31.8	16.9	194.0	61.2	15.7	35.8	33.4	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	31.8	16.9	194.0	61.2	15.7	35.8	33.4	26.6
Queue Length 50th (ft)	52	10	~431	79	22	397	46	335
Queue Length 95th (ft)	99	59	#696	152	52	579	#151	506
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	454	559	339	363	236	1644	251	1793
Starvation Cap Reductn	0	0	0	0	0	0	0	212
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.17	1.32	0.31	0.34	0.74	0.61	0.73

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	109	1390	1501
v/c Ratio	0.68	0.53	0.52	0.57
Control Delay	60.5	20.3	7.2	6.3
Queue Delay	1.3	0.0	1.0	0.2
Total Delay	61.8	20.3	8.3	6.5
Queue Length 50th (ft)	112	45	206	211
Queue Length 95th (ft)	181	m75	284	337
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	376	206	2656	2642
Starvation Cap Reductn	0	0	928	0
Spillback Cap Reductn	90	0	0	353
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.53	0.80	0.66

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2020 Black Friday PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	824	328	482	404	234	791	303	383	899	228
v/c Ratio	0.81	0.84	1.26	0.54	0.52	0.82	0.84	0.42	1.07	0.78	0.29
Control Delay	44.2	52.3	176.8	46.3	22.6	49.8	57.4	18.6	104.7	45.4	11.8
Queue Delay	1.0	0.0	0.0	0.0	0.1	0.0	4.6	0.0	12.9	30.8	0.2
Total Delay	45.2	52.3	176.8	46.3	22.7	49.8	62.0	18.6	117.7	76.2	12.0
Queue Length 50th (ft)	195	352	~312	197	201	123	359	109	~358	320	44
Queue Length 95th (ft)	#281	423	#500	248	300	#285	441	191	#584	480	154
Internal Link Dist (ft)		1509		1765			545			274	
Turn Bay Length (ft)	220		300			370		250	170		
Base Capacity (vph)	395	1071	260	982	779	287	938	715	359	1154	795
Starvation Cap Reductn	0	0	0	0	0	0	0	0	29	299	173
Spillback Cap Reductn	12	0	0	0	41	0	94	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.77	1.26	0.49	0.55	0.82	0.94	0.42	1.16	1.05	0.37

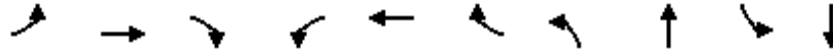
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 AM Background
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	376	249	122	290	142	264	826	551	1327
v/c Ratio	0.43	0.84	0.50	0.70	0.72	0.19	1.31	0.70	1.31	0.88
Control Delay	32.8	58.4	31.6	52.6	53.1	3.9	201.0	35.7	181.8	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	58.4	31.6	52.6	53.1	3.9	201.0	35.7	181.8	36.4
Queue Length 50th (ft)	53	257	131	61	195	0	~208	277	~434	462
Queue Length 95th (ft)	105	407	227	#138	321	38	#425	381	#746	628
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	271	568	496	175	493	762	201	1340	420	1673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.66	0.50	0.70	0.59	0.19	1.31	0.62	1.31	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

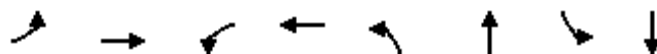
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 AM Background
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	3	33	5	14	1273	24	1521
v/c Ratio	0.01	0.01	0.13	0.02	0.05	0.52	0.07	0.60
Control Delay	32.0	0.0	30.2	38.0	5.7	11.0	5.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	0.0	30.2	38.0	5.7	11.0	5.5	10.4
Queue Length 50th (ft)	1	0	11	2	2	136	3	185
Queue Length 95th (ft)	10	0	45	15	10	416	14	565
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	234	680	296	614	276	2774	349	2823
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.00	0.11	0.01	0.05	0.46	0.07	0.54
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane

2040 AM Background
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	41	1330	1484
v/c Ratio	0.66	0.19	0.50	0.56
Control Delay	45.9	9.2	9.9	5.8
Queue Delay	0.9	0.0	7.5	3.1
Total Delay	46.8	9.2	17.4	8.9
Queue Length 50th (ft)	80	8	365	181
Queue Length 95th (ft)	147	m22	m450	307
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	430	212	2657	2660
Starvation Cap Reductn	0	0	1283	0
Spillback Cap Reductn	108	0	0	1040
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	0.19	0.97	0.92

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 AM Background
Kenwood Road Development



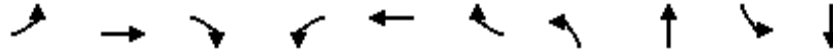
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	233	829	220	542	186	217	1337	205	1403
v/c Ratio	0.89	0.90	1.16	0.58	0.28	0.96	0.96	0.97	1.05
Control Delay	67.0	59.0	147.1	43.4	15.1	84.1	51.5	85.8	73.8
Queue Delay	15.7	0.0	0.0	0.0	0.0	0.0	43.4	0.0	22.9
Total Delay	82.7	59.0	147.1	43.4	15.1	84.1	95.0	85.8	96.7
Queue Length 50th (ft)	139	348	~168	206	54	135	553	~131	~663
Queue Length 95th (ft)	#276	#458	#334	266	111	#306	#716	#298	#830
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	261	935	189	957	668	227	1397	211	1342
Starvation Cap Reductn	0	0	0	0	0	0	0	0	334
Spillback Cap Reductn	25	0	0	0	9	0	295	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.89	1.16	0.57	0.28	0.96	1.21	0.97	1.39

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 AM Background with Imp
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	376	249	122	290	142	264	826	551	1327
v/c Ratio	0.43	0.84	0.50	0.70	0.72	0.19	1.31	0.70	1.31	0.88
Control Delay	32.8	58.4	31.6	52.6	53.1	3.9	201.0	35.7	181.8	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	58.4	31.6	52.6	53.1	3.9	201.0	35.7	181.8	36.4
Queue Length 50th (ft)	53	257	131	61	195	0	~208	277	~434	462
Queue Length 95th (ft)	105	407	227	#138	321	38	#425	381	#746	628
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	271	568	496	175	493	762	201	1340	420	1673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.66	0.50	0.70	0.59	0.19	1.31	0.62	1.31	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 AM Background with Imp
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	3	33	5	14	1273	24	1521
v/c Ratio	0.01	0.01	0.13	0.02	0.05	0.52	0.07	0.60
Control Delay	32.0	0.0	30.2	38.0	5.7	11.0	5.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	0.0	30.2	38.0	5.7	11.0	5.5	10.4
Queue Length 50th (ft)	1	0	11	2	2	136	3	185
Queue Length 95th (ft)	10	0	45	15	10	416	14	565
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	234	680	296	614	276	2774	349	2823
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.00	0.11	0.01	0.05	0.46	0.07	0.54
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	41	1330	1484
v/c Ratio	0.66	0.19	0.50	0.56
Control Delay	45.9	13.4	16.5	5.8
Queue Delay	0.0	0.0	2.2	0.1
Total Delay	45.9	13.4	18.7	5.9
Queue Length 50th (ft)	80	20	439	181
Queue Length 95th (ft)	147	m39	543	307
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	430	212	2657	2660
Starvation Cap Reductn	0	0	1135	0
Spillback Cap Reductn	4	0	0	253
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.19	0.87	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 AM Background with Imp
Kenwood Road Development

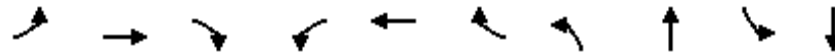


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	718	111	220	542	186	217	989	348	205	1092	311
v/c Ratio	0.62	0.85	0.20	0.66	0.68	0.30	0.69	0.49	0.40	0.62	0.54	0.38
Control Delay	62.4	57.1	9.8	66.4	50.1	16.5	68.8	29.5	15.5	60.2	33.4	14.3
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	3.4	0.7
Total Delay	63.1	57.1	9.8	66.4	50.1	16.5	68.8	30.1	15.5	60.2	36.8	15.0
Queue Length 50th (ft)	97	301	15	93	218	57	92	227	130	86	220	91
Queue Length 95th (ft)	141	377	55	137	283	116	137	271	204	128	382	209
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220			300			370			170		
Base Capacity (vph)	393	876	544	337	818	626	319	2027	876	344	2009	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	797	252
Spillback Cap Reductn	32	0	0	0	0	11	0	614	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.82	0.20	0.65	0.66	0.30	0.68	0.70	0.40	0.60	0.90	0.54

Intersection Summary

Queues

1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	386	405	154	310	284	357	1084	308	931
v/c Ratio	0.55	0.84	0.81	0.90	0.77	0.40	1.19	0.90	0.90	0.62
Control Delay	36.9	59.2	45.9	80.8	57.1	17.4	137.4	47.0	62.5	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	59.2	45.9	80.8	57.1	17.4	137.4	47.0	62.5	25.9
Queue Length 50th (ft)	73	283	264	85	228	100	~204	421	188	275
Queue Length 95th (ft)	127	419	403	#205	346	179	#434	#581	#390	368
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	257	563	502	172	489	729	299	1332	353	1661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.69	0.81	0.90	0.63	0.39	1.19	0.81	0.87	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	57	293	79	41	1522	82	1238
v/c Ratio	0.19	0.29	1.08	0.42	0.17	0.84	0.45	0.64
Control Delay	35.2	25.7	117.2	54.3	9.0	26.9	19.8	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	25.7	117.2	54.3	9.0	26.9	19.8	18.5
Queue Length 50th (ft)	28	12	~216	54	10	484	20	338
Queue Length 95th (ft)	60	52	#312	105	23	#665	57	438
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	254	421	271	425	252	1855	195	1991
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.14	1.08	0.19	0.16	0.82	0.42	0.62

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	183	133	1737	1542
v/c Ratio	0.70	0.70	0.66	0.59
Control Delay	49.6	16.4	7.1	6.9
Queue Delay	0.1	0.0	43.4	44.0
Total Delay	49.7	16.4	50.6	50.9
Queue Length 50th (ft)	102	38	250	217
Queue Length 95th (ft)	173	m40	m238	361
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	437	191	2613	2604
Starvation Cap Reductn	0	0	1018	0
Spillback Cap Reductn	21	0	0	1188
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.70	1.09	1.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 Midday Background
Kenwood Road Development

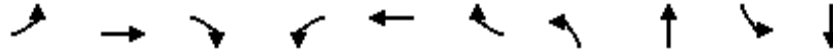


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	391	1237	478	882	501	402	1541	383	1191
v/c Ratio	1.03	1.33	1.38	1.00	0.76	2.04	1.47	1.67	1.10
Control Delay	91.6	190.9	219.4	78.7	36.3	508.4	248.7	339.9	92.1
Queue Delay	25.2	0.0	0.0	0.0	4.3	0.0	0.0	0.0	2.4
Total Delay	116.8	190.9	219.4	78.7	40.7	508.4	248.7	339.9	94.5
Queue Length 50th (ft)	~302	~701	~487	~393	305	~487	~917	~427	~586
Queue Length 95th (ft)	#506	#842	#704	#538	453	#693	#1060	#628	#727
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	380	933	347	881	661	197	1049	230	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	124
Spillback Cap Reductn	31	0	0	0	98	0	6	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	1.33	1.38	1.00	0.89	2.04	1.48	1.67	1.24

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	386	405	154	310	284	357	1084	308	931
v/c Ratio	0.55	0.84	0.81	0.90	0.77	0.40	1.19	0.90	0.90	0.62
Control Delay	36.9	59.2	45.9	80.8	57.1	17.4	137.4	47.0	62.5	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	59.2	45.9	80.8	57.1	17.4	137.4	47.0	62.5	25.9
Queue Length 50th (ft)	73	283	264	85	228	100	~204	421	188	275
Queue Length 95th (ft)	127	419	403	#205	346	179	#434	#581	#390	368
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	257	563	502	172	489	729	299	1332	353	1661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.69	0.81	0.90	0.63	0.39	1.19	0.81	0.87	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	49	57	293	79	41	1522	82	1238
v/c Ratio	0.19	0.29	1.08	0.42	0.17	0.84	0.45	0.64
Control Delay	35.2	25.7	117.2	54.3	9.0	26.9	19.8	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	25.7	117.2	54.3	9.0	26.9	19.8	18.5
Queue Length 50th (ft)	28	12	~216	54	10	484	20	338
Queue Length 95th (ft)	60	52	#312	105	23	#665	57	438
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	254	421	271	425	252	1855	195	1991
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.14	1.08	0.19	0.16	0.82	0.42	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	183	133	1737	1542
v/c Ratio	0.70	0.70	0.66	0.59
Control Delay	49.6	33.4	12.9	6.9
Queue Delay	0.0	0.0	4.0	0.1
Total Delay	49.6	33.4	16.8	7.0
Queue Length 50th (ft)	102	55	335	217
Queue Length 95th (ft)	173	m#126	445	361
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	437	191	2613	2604
Starvation Cap Reductn	0	0	777	0
Spillback Cap Reductn	2	0	0	122
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.70	0.95	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 Midday Background with Imp
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	391	922	315	478	882	501	402	1005	536	383	884	307
v/c Ratio	0.86	1.04	0.51	0.88	0.91	0.66	0.91	0.69	0.68	0.83	0.60	0.44
Control Delay	74.0	88.6	23.4	72.0	58.7	27.1	80.1	43.7	27.3	61.5	36.3	22.0
Queue Delay	10.4	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	1.7	0.4
Total Delay	84.4	88.6	23.4	72.0	58.7	29.0	80.1	43.7	27.3	61.5	38.0	22.3
Queue Length 50th (ft)	168	~442	137	205	377	267	174	276	294	163	234	149
Queue Length 95th (ft)	#251	#575	222	#297	#495	398	#267	328	428	#236	283	237
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	454	884	617	541	973	759	444	1450	792	473	1478	697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	403	108
Spillback Cap Reductn	48	0	0	0	0	132	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	1.04	0.51	0.88	0.91	0.80	0.91	0.69	0.68	0.81	0.82	0.52

Intersection Summary

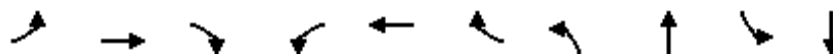
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	241	472	341	150	405	450	241	1199	368	1243
v/c Ratio	1.21	0.94	0.65	1.12	0.94	0.62	1.20	0.99	1.13	0.82
Control Delay	161.3	72.9	37.5	146.2	77.0	26.9	156.5	62.5	126.5	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	161.3	72.9	37.5	146.2	77.0	26.9	156.5	62.5	126.5	35.5
Queue Length 50th (ft)	~197	387	222	~92	334	238	~182	521	~315	465
Queue Length 95th (ft)	#370	#595	325	#235	#526	357	#355	#680	#516	564
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	199	516	527	134	448	723	201	1241	325	1533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.91	0.65	1.12	0.90	0.62	1.20	0.97	1.13	0.81

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	57	284	61	37	1655	99	1540
v/c Ratio	0.28	0.30	1.09	0.35	0.20	0.94	0.59	0.78
Control Delay	37.2	19.7	122.6	52.6	10.1	35.6	34.1	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	19.7	122.6	52.6	10.1	35.6	34.1	22.6
Queue Length 50th (ft)	40	3	~205	42	9	577	27	494
Queue Length 95th (ft)	79	43	#301	86	21	#801	#90	628
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	247	395	260	399	186	1768	177	1982
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.14	1.09	0.15	0.20	0.94	0.56	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	152	159	1692	1819
v/c Ratio	0.65	1.21	0.64	0.69
Control Delay	53.7	128.5	8.5	8.2
Queue Delay	0.1	0.0	29.6	48.8
Total Delay	53.7	128.5	38.2	57.0
Queue Length 50th (ft)	96	~147	320	292
Queue Length 95th (ft)	161	m#127	m247	477
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	424	131	2635	2622
Starvation Cap Reductn	0	0	1031	0
Spillback Cap Reductn	13	0	0	1349
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	1.21	1.05	1.43

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



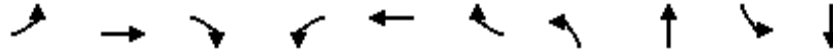
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	513	1457	508	864	351	272	1475	324	1522
v/c Ratio	1.35	1.56	1.46	0.98	0.53	1.38	1.42	1.41	1.40
Control Delay	206.5	291.2	255.1	73.9	25.6	228.8	227.6	229.7	214.2
Queue Delay	2.6	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4
Total Delay	209.2	291.2	255.1	73.9	26.3	228.8	227.6	229.7	214.6
Queue Length 50th (ft)	~519	~911	~540	382	169	~256	~868	~322	~901
Queue Length 95th (ft)	#741	#1052	#762	#521	266	#437	#1009	#507	#1043
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	380	932	347	881	661	197	1040	230	1090
Starvation Cap Reductn	0	0	0	0	0	0	0	0	94
Spillback Cap Reductn	81	0	0	0	105	0	6	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.72	1.56	1.46	0.98	0.63	1.38	1.43	1.41	1.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	241	472	341	150	405	450	241	1199	368	1243
v/c Ratio	1.21	0.94	0.65	1.12	0.94	0.62	1.20	0.99	1.13	0.82
Control Delay	161.3	72.9	37.5	146.2	77.0	26.9	156.5	62.5	126.5	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	161.3	72.9	37.5	146.2	77.0	26.9	156.5	62.5	126.5	35.5
Queue Length 50th (ft)	~197	387	222	~92	334	238	~182	521	~315	465
Queue Length 95th (ft)	#370	#595	325	#235	#526	357	#355	#680	#516	564
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	199	516	527	134	448	723	201	1241	325	1533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.91	0.65	1.12	0.90	0.62	1.20	0.97	1.13	0.81

Intersection Summary

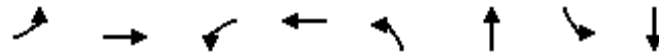
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	57	284	61	37	1655	99	1540
v/c Ratio	0.28	0.30	1.09	0.35	0.20	0.94	0.59	0.78
Control Delay	37.2	19.7	122.6	52.6	10.1	35.6	34.1	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	19.7	122.6	52.6	10.1	35.6	34.1	22.6
Queue Length 50th (ft)	40	3	~205	42	9	577	27	494
Queue Length 95th (ft)	79	43	#301	86	21	#801	#90	628
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	247	395	260	399	186	1768	177	1982
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.14	1.09	0.15	0.20	0.94	0.56	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	152	159	1692	1819
v/c Ratio	0.65	1.21	0.64	0.69
Control Delay	53.7	163.7	17.1	8.2
Queue Delay	0.0	0.0	8.5	20.0
Total Delay	53.7	163.7	25.6	28.2
Queue Length 50th (ft)	96	~150	452	292
Queue Length 95th (ft)	161	m#236	536	477
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	424	131	2635	2622
Starvation Cap Reductn	0	0	917	0
Spillback Cap Reductn	8	0	0	856
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	1.21	0.98	1.03

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 PM Background with Imp
Kenwood Road Development

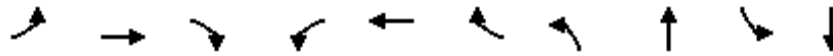


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	513	1137	320	508	864	351	272	1028	447	324	1249	273
v/c Ratio	0.85	0.98	0.48	0.95	0.79	0.47	0.89	0.82	0.61	0.93	0.96	0.38
Control Delay	65.8	65.3	20.4	81.8	46.9	20.3	87.9	52.3	27.2	78.9	55.8	22.5
Queue Delay	53.9	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	43.1	0.2
Total Delay	119.7	65.3	20.4	81.8	46.9	20.6	87.9	52.3	27.2	78.9	98.9	22.7
Queue Length 50th (ft)	217	497	131	221	350	151	119	300	234	142	382	135
Queue Length 95th (ft)	#299	#651	210	#329	432	238	#199	357	351	#230	#481	221
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	612	1157	672	536	1088	750	306	1247	728	349	1303	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	256	87
Spillback Cap Reductn	263	0	0	0	0	80	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.47	0.98	0.48	0.95	0.79	0.52	0.89	0.82	0.61	0.93	1.19	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

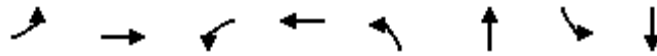
Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	217	185	107	185	226	186	911	240	749
v/c Ratio	0.26	0.63	0.44	0.43	0.52	0.34	0.48	0.65	0.67	0.49
Control Delay	26.8	43.5	27.7	32.1	41.9	9.2	14.4	25.8	20.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	43.5	27.7	32.1	41.9	9.2	14.4	25.8	20.6	19.0
Queue Length 50th (ft)	33	116	79	46	99	30	43	209	58	151
Queue Length 95th (ft)	76	215	158	100	196	87	98	391	140	250
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	349	709	444	247	615	801	408	1688	491	2097
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.31	0.42	0.43	0.30	0.28	0.46	0.54	0.49	0.36

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	59	417	105	28	1101	113	838
v/c Ratio	0.18	0.26	1.32	0.48	0.08	0.76	0.46	0.49
Control Delay	26.7	17.9	193.5	46.2	9.4	24.5	15.3	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	17.9	193.5	46.2	9.4	24.5	15.3	17.7
Queue Length 50th (ft)	22	5	~221	58	7	268	28	190
Queue Length 95th (ft)	55	43	#442	120	19	380	57	266
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	295	470	316	485	349	2083	260	2172
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.13	1.32	0.22	0.08	0.53	0.43	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	171	92	1525	1139
v/c Ratio	0.68	0.29	0.58	0.43
Control Delay	50.5	7.3	8.1	5.1
Queue Delay	1.2	0.0	9.0	0.1
Total Delay	51.7	7.3	17.1	5.2
Queue Length 50th (ft)	99	8	225	126
Queue Length 95th (ft)	168	m47	m430	211
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	437	318	2626	2619
Starvation Cap Reductn	0	0	1076	0
Spillback Cap Reductn	121	0	0	469
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.29	0.98	0.53

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	333	932	363	621	405	282	1361	345	884
v/c Ratio	0.82	1.00	1.05	0.67	0.60	1.26	1.30	1.50	0.81
Control Delay	42.3	75.0	98.2	47.0	27.9	175.8	177.5	276.4	46.8
Queue Delay	7.5	0.0	0.0	0.0	0.0	0.0	1.1	0.0	49.5
Total Delay	49.8	75.0	98.2	47.0	27.9	175.8	178.6	276.4	96.3
Queue Length 50th (ft)	178	404	~286	251	214	~226	~752	~358	278
Queue Length 95th (ft)	#309	#554	#485	319	326	#407	#893	#553	461
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	426	932	347	925	680	223	1047	230	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	297
Spillback Cap Reductn	61	0	0	0	8	0	203	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	1.00	1.05	0.67	0.60	1.26	1.61	1.50	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

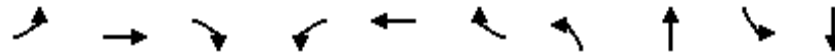
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

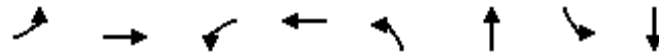
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	217	185	107	185	226	186	911	240	749
v/c Ratio	0.26	0.63	0.44	0.43	0.52	0.34	0.48	0.65	0.67	0.49
Control Delay	26.8	43.5	27.7	32.1	41.9	9.2	14.4	25.8	20.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	43.5	27.7	32.1	41.9	9.2	14.4	25.8	20.6	19.0
Queue Length 50th (ft)	33	116	79	46	99	30	43	209	58	151
Queue Length 95th (ft)	76	215	158	100	196	87	98	391	140	250
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	349	709	444	247	615	801	408	1688	491	2097
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.31	0.42	0.43	0.30	0.28	0.46	0.54	0.49	0.36

Intersection Summary

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	59	417	105	28	1101	113	838
v/c Ratio	0.18	0.26	1.32	0.48	0.08	0.76	0.46	0.49
Control Delay	26.7	17.9	193.5	46.2	9.4	24.5	15.3	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	17.9	193.5	46.2	9.4	24.5	15.3	17.7
Queue Length 50th (ft)	22	5	~221	58	7	268	28	190
Queue Length 95th (ft)	55	43	#442	120	19	380	57	266
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	295	470	316	485	349	2083	260	2172
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.13	1.32	0.22	0.08	0.53	0.43	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	171	92	1525	1139
v/c Ratio	0.68	0.29	0.58	0.43
Control Delay	50.5	10.3	13.4	5.1
Queue Delay	0.0	0.0	2.7	0.0
Total Delay	50.5	10.3	16.1	5.1
Queue Length 50th (ft)	99	39	401	126
Queue Length 95th (ft)	168	m37	458	211
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	437	318	2626	2619
Starvation Cap Reductn	0	0	947	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.29	0.91	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

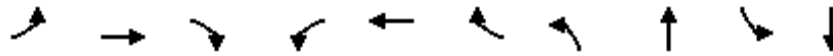


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	333	725	207	363	621	405	282	898	463	345	682	202
v/c Ratio	0.85	0.85	0.37	1.08	0.79	0.64	0.85	0.46	0.54	0.93	0.34	0.25
Control Delay	76.1	57.4	17.3	125.2	54.8	31.1	81.1	29.8	19.8	86.5	29.3	11.4
Queue Delay	39.6	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.7	0.4
Total Delay	115.6	57.4	17.3	125.2	54.8	31.2	81.1	30.2	19.8	86.5	30.0	11.8
Queue Length 50th (ft)	143	305	62	~175	257	221	123	202	208	152	132	42
Queue Length 95th (ft)	#221	382	127	#276	327	338	#203	242	309	#256	213	132
Internal Link Dist (ft)		1509			1765			545				274
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	393	876	560	337	818	633	331	1955	854	369	1981	824
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	904	276
Spillback Cap Reductn	80	0	0	0	0	11	0	521	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.83	0.37	1.08	0.76	0.65	0.85	0.63	0.54	0.93	0.63	0.37

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

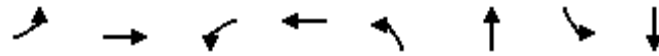


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	609	402	197	470	228	426	1336	889	2142
v/c Ratio	0.90	1.20	0.76	1.53	1.07	0.31	2.37	1.11	2.79	1.43
Control Delay	75.5	147.5	43.4	299.8	107.6	16.4	652.6	101.4	831.6	226.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	147.5	43.4	299.8	107.6	16.4	652.6	101.4	831.6	226.4
Queue Length 50th (ft)	103	~621	276	~182	~436	78	~545	~678	~1244	~1286
Queue Length 95th (ft)	#238	#852	399	#345	#650	140	#757	#817	#1498	#1423
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	193	508	531	129	441	725	180	1199	319	1499
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	1.20	0.76	1.53	1.07	0.31	2.37	1.11	2.79	1.43

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	92	585	281	61	2069	266	1738
v/c Ratio	0.34	0.23	1.79	0.94	0.45	1.39	1.39	1.03
Control Delay	36.6	14.3	397.5	94.1	28.3	209.6	233.5	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	14.3	397.5	94.1	28.3	209.6	233.5	63.0
Queue Length 50th (ft)	50	12	~769	247	21	~1259	~269	~893
Queue Length 95th (ft)	91	59	#1035	#438	57	#1453	#470	#1101
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	279	445	327	304	146	1488	192	1686
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.21	1.79	0.92	0.42	1.39	1.39	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	295	212	2568	1996
v/c Ratio	0.86	2.94	1.06	0.83
Control Delay	71.2	893.9	47.1	17.1
Queue Delay	10.8	0.0	18.2	47.9
Total Delay	82.0	893.9	65.3	65.1
Queue Length 50th (ft)	230	~295	~1364	625
Queue Length 95th (ft)	#364	m#164	m368	757
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	376	72	2424	2403
Starvation Cap Reductn	0	0	842	81
Spillback Cap Reductn	60	0	0	1049
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	2.94	1.62	1.47

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	550	1343	466	713	843	383	1865	454	1509
v/c Ratio	1.75	1.56	1.50	0.81	1.20	1.28	1.71	1.63	1.44
Control Delay	378.5	290.3	274.4	56.8	135.9	183.8	352.6	322.3	231.8
Queue Delay	8.1	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.7
Total Delay	386.6	290.3	274.4	56.8	139.6	183.8	352.7	322.3	232.5
Queue Length 50th (ft)	~691	~897	~542	322	~889	~392	~1308	~547	~841
Queue Length 95th (ft)	#923	#1040	#762	399	#1146	#599	#1447	m#731	#1041
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	314	863	310	884	703	300	1092	278	1047
Starvation Cap Reductn	0	0	0	0	0	0	0	0	136
Spillback Cap Reductn	137	0	0	0	270	0	10	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.11	1.56	1.50	0.81	1.95	1.28	1.72	1.63	1.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues
1: Kenwood Road & Galbraith Road

2040 BF Mid Background with Imp
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	609	402	197	470	228	426	1061	275	889	1803	339
v/c Ratio	0.66	0.81	0.73	0.98	0.68	0.29	0.89	0.70	0.46	1.06	0.88	0.38
Control Delay	68.8	55.3	39.8	116.0	52.0	16.1	73.9	40.9	29.9	94.2	39.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	55.3	39.8	116.0	52.0	16.1	73.9	40.9	29.9	94.2	39.8	16.0
Queue Length 50th (ft)	73	250	259	86	190	86	180	285	162	~427	512	138
Queue Length 95th (ft)	112	321	377	#170	253	144	#269	342	244	#564	591	209
Internal Link Dist (ft)		1520			1356			454			521	
Turn Bay Length (ft)	260		250	200		490	305		250	385		250
Base Capacity (vph)	304	836	560	202	731	788	506	1539	599	836	2053	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.73	0.72	0.98	0.64	0.29	0.84	0.69	0.46	1.06	0.88	0.38

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 BF Mid Background with Imp
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	92	585	281	61	1301	768	266	1550	188
v/c Ratio	0.36	0.43	1.04	0.80	0.37	0.96	0.62	1.09	0.66	0.19
Control Delay	36.1	22.4	100.4	64.0	20.4	53.8	3.8	120.6	27.0	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	22.4	100.4	64.0	20.4	53.8	3.8	120.6	27.0	2.5
Queue Length 50th (ft)	46	13	~260	220	20	525	15	~195	343	1
Queue Length 95th (ft)	83	65	#425	323	48	#785	80	#418	469	36
Internal Link Dist (ft)		148		118		1047			518	
Turn Bay Length (ft)					50		250	200		250
Base Capacity (vph)	220	368	560	519	170	1354	1236	243	2357	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.25	1.04	0.54	0.36	0.96	0.62	1.09	0.66	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	295	212	2568	1996
v/c Ratio	0.86	2.19	1.06	0.58
Control Delay	71.2	575.3	55.5	9.5
Queue Delay	0.4	0.0	17.4	0.4
Total Delay	71.6	575.3	72.9	9.9
Queue Length 50th (ft)	230	~312	~1364	292
Queue Length 95th (ft)	#364	m#397	#1490	333
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	376	97	2424	3454
Starvation Cap Reductn	0	0	328	0
Spillback Cap Reductn	5	0	0	812
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	2.19	1.23	0.76

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 BF Mid Background with Imp
Kenwood Road Development

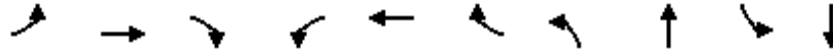


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	550	960	383	466	713	843	383	1350	515	454	1089	420
v/c Ratio	0.86	0.82	0.64	0.89	0.71	0.77	0.82	0.86	0.63	0.92	0.68	0.51
Control Delay	69.3	57.4	31.9	77.0	56.4	39.1	73.6	51.1	25.8	71.6	36.7	24.1
Queue Delay	54.8	0.0	0.0	0.0	0.0	10.4	0.0	0.0	0.0	0.0	3.2	0.4
Total Delay	124.1	57.4	31.9	77.0	56.4	49.5	73.6	51.1	25.8	71.6	40.0	24.5
Queue Length 50th (ft)	252	305	215	217	224	347	176	422	288	214	318	254
Queue Length 95th (ft)	#339	361	322	#309	273	440	#247	484	414	#316	372	372
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	644	1169	599	526	1004	1100	474	1576	819	492	1611	828
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	408	119
Spillback Cap Reductn	331	0	0	0	0	236	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.76	0.82	0.64	0.89	0.71	0.98	0.81	0.86	0.63	0.92	0.91	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	266	762	551	240	654	727	391	1932	593	2006
v/c Ratio	1.38	1.50	1.04	1.86	1.48	1.00	2.17	1.58	1.86	1.33
Control Delay	227.5	268.9	86.8	439.4	264.4	66.6	567.6	295.0	424.6	183.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	227.5	268.9	86.8	439.4	264.4	66.6	567.6	295.0	424.6	183.7
Queue Length 50th (ft)	~250	~889	~465	~262	~759	~566	~483	~1216	~718	~1157
Queue Length 95th (ft)	#428	#1132	#621	#434	#993	#844	#688	#1354	#951	#1296
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	193	508	531	129	441	725	180	1223	319	1509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.38	1.50	1.04	1.86	1.48	1.00	2.17	1.58	1.86	1.33

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	115	713	179	55	1880	247	1726
v/c Ratio	0.36	0.33	2.14	0.80	0.38	1.31	1.20	1.04
Control Delay	33.9	15.7	547.1	78.3	23.5	177.3	162.1	65.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	15.7	547.1	78.3	23.5	177.3	162.1	65.9
Queue Length 50th (ft)	73	18	~932	144	18	~1047	~204	~841
Queue Length 95th (ft)	121	70	#1247	237	49	#1356	#428	#1157
Internal Link Dist (ft)		148		118		1047		518
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	393	507	333	314	156	1430	205	1657
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.23	2.14	0.57	0.35	1.31	1.20	1.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	252	174	2080	2248
v/c Ratio	0.81	3.55	0.84	0.92
Control Delay	69.7	1172.9	14.2	22.4
Queue Delay	4.6	0.0	47.4	46.6
Total Delay	74.3	1172.9	61.6	69.0
Queue Length 50th (ft)	205	~284	518	788
Queue Length 95th (ft)	299	m#189	m322	#1200
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)		65		
Base Capacity (vph)	366	49	2466	2455
Starvation Cap Reductn	0	0	907	83
Spillback Cap Reductn	62	0	0	1039
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	3.55	1.33	1.59

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	464	1318	525	771	602	374	1697	563	1696
v/c Ratio	1.52	1.62	1.69	0.92	0.87	1.42	1.52	1.94	1.46
Control Delay	282.1	317.9	354.6	69.0	46.4	241.6	272.4	454.6	237.0
Queue Delay	6.1	0.0	0.0	0.0	50.9	0.0	0.0	0.0	0.7
Total Delay	288.2	317.9	354.6	69.0	97.4	241.6	272.4	454.6	237.7
Queue Length 50th (ft)	~543	~900	~654	363	443	~410	~1125	~745	~991
Queue Length 95th (ft)	#765	#1042	#882	#482	#674	#617	#1266	m#852	#1242
Internal Link Dist (ft)		1509		1765			545		274
Turn Bay Length (ft)	220		300			370		170	
Base Capacity (vph)	305	814	310	835	693	264	1115	290	1163
Starvation Cap Reductn	0	0	0	0	0	0	0	0	167
Spillback Cap Reductn	110	0	0	0	245	0	10	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.38	1.62	1.69	0.92	1.34	1.42	1.54	1.94	1.70

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
1: Kenwood Road & Galbraith Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	266	762	551	240	654	727	391	1734	198	593	1821	185
v/c Ratio	1.07	0.93	0.96	1.08	0.83	0.97	0.81	1.03	0.30	0.91	0.94	0.22
Control Delay	133.6	67.0	63.8	138.2	56.9	58.8	66.5	69.8	23.6	69.6	47.8	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.6	67.0	63.8	138.2	56.9	58.8	66.5	69.8	23.6	69.6	47.8	14.1
Queue Length 50th (ft)	~128	333	409	~116	277	558	164	~573	102	252	541	63
Queue Length 95th (ft)	#219	#455	#672	#204	#352	#837	221	#670	159	#353	#655	110
Internal Link Dist (ft)		1520			1356			454			521	
Turn Bay Length (ft)	260		250	200		490	305		250	385		250
Base Capacity (vph)	248	818	593	223	792	755	520	1690	664	669	1936	837
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.93	0.93	1.08	0.83	0.96	0.75	1.03	0.30	0.89	0.94	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	115	713	179	55	1402	478	247	1580	146
v/c Ratio	0.50	0.52	1.22	0.53	0.34	1.00	0.41	1.20	0.68	0.15
Control Delay	40.5	25.3	156.0	50.2	19.2	59.1	2.4	162.1	27.4	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	25.3	156.0	50.2	19.2	59.1	2.4	162.1	27.4	2.5
Queue Length 50th (ft)	71	20	~360	131	18	578	11	~198	360	1
Queue Length 95th (ft)	119	80	#513	208	41	#805	52	#392	452	30
Internal Link Dist (ft)		148		118		1047			518	
Turn Bay Length (ft)					50		250	200		250
Base Capacity (vph)	243	382	586	502	160	1409	1157	205	2329	954
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.30	1.22	0.36	0.34	1.00	0.41	1.20	0.68	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	252	174	2080	2248
v/c Ratio	0.81	2.45	0.84	0.64
Control Delay	69.7	696.3	26.9	9.9
Queue Delay	0.1	0.0	11.9	15.4
Total Delay	69.9	696.3	38.7	25.4
Queue Length 50th (ft)	205	~259	653	328
Queue Length 95th (ft)	299	m#354	743	412
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	366	71	2466	3528
Starvation Cap Reductn	0	0	404	0
Spillback Cap Reductn	4	0	0	1322
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	2.45	1.01	1.02

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 BF PM Background with Imp
Kenwood Road Development



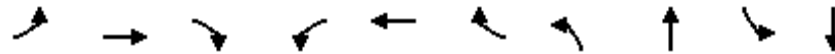
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	464	979	339	525	771	602	374	1212	485	563	1380	316
v/c Ratio	0.76	0.85	0.56	0.92	0.71	0.49	0.89	0.89	0.61	0.94	0.85	0.39
Control Delay	62.5	59.5	24.2	78.6	54.7	25.7	83.8	58.1	23.7	68.8	41.1	19.7
Queue Delay	59.2	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	15.0	39.5	0.3
Total Delay	121.7	59.5	24.2	78.6	54.7	26.1	83.8	58.3	23.7	83.8	80.6	20.0
Queue Length 50th (ft)	205	313	144	245	242	194	175	389	239	266	431	172
Queue Length 95th (ft)	267	369	239	#347	293	255	#268	452	358	#383	494	260
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	654	1169	603	573	1088	1234	420	1358	801	597	1629	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	44	352	173
Spillback Cap Reductn	384	0	0	0	0	205	0	10	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.72	0.84	0.56	0.92	0.71	0.59	0.89	0.90	0.61	1.02	1.08	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 AM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	374	274	143	288	139	295	870	546	1378
v/c Ratio	0.43	0.83	0.55	0.82	0.72	0.18	1.48	0.73	1.34	0.90
Control Delay	33.1	58.4	33.5	67.4	53.3	4.0	270.2	36.8	195.3	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	58.4	33.5	67.4	53.3	4.0	270.2	36.8	195.3	38.9
Queue Length 50th (ft)	57	269	157	77	205	0	~271	303	~467	503
Queue Length 95th (ft)	105	404	251	#180	320	38	#490	407	#755	#712
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	271	563	495	175	488	758	199	1326	407	1659
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.66	0.55	0.82	0.59	0.18	1.48	0.66	1.34	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way

2040 AM Build
Kenwood Road Development



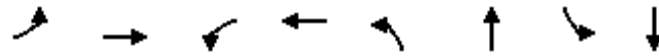
Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	146	93	1196	1623
v/c Ratio	0.56	0.62	0.50	0.68
Control Delay	36.5	27.9	5.8	8.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	36.5	27.9	5.9	8.1
Queue Length 50th (ft)	43	18	106	181
Queue Length 95th (ft)	147	#137	204	345
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	547	195	3118	3097
Starvation Cap Reductn	0	0	405	137
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.48	0.44	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 AM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	27	33	5	80	1339	24	1599
v/c Ratio	0.08	0.07	0.16	0.02	0.37	0.56	0.08	0.73
Control Delay	34.4	0.4	40.1	45.4	14.1	14.3	6.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	34.4	0.4	40.1	45.4	14.1	14.3	6.6	19.3
Queue Length 50th (ft)	11	0	19	3	17	352	5	488
Queue Length 95th (ft)	32	0	46	16	48	452	14	626
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	260	595	263	506	220	2328	291	2327
Starvation Cap Reductn	0	0	0	0	0	0	0	253
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.13	0.01	0.36	0.58	0.08	0.77
Intersection Summary								

Queues
5: Kenwood Road & Orchard Lane

2040 AM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	158	41	1463	1577
v/c Ratio	0.66	0.22	0.55	0.60
Control Delay	49.6	13.6	18.0	6.6
Queue Delay	0.0	0.0	4.7	0.2
Total Delay	49.6	13.6	22.7	6.7
Queue Length 50th (ft)	89	20	487	212
Queue Length 95th (ft)	156	m30	528	354
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	421	186	2639	2641
Starvation Cap Reductn	0	0	1091	0
Spillback Cap Reductn	4	0	0	305
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.22	0.95	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 AM Build
Kenwood Road Development

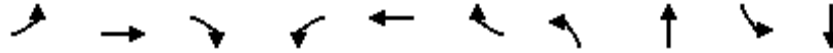


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	274	718	111	220	542	227	217	1039	348	235	1127	339
v/c Ratio	0.71	0.85	0.20	0.66	0.68	0.37	0.69	0.52	0.40	0.70	0.56	0.41
Control Delay	66.2	57.1	9.8	66.4	50.5	19.8	68.8	30.2	15.6	61.7	33.6	16.3
Queue Delay	6.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	5.1	0.8
Total Delay	72.7	57.1	9.8	66.4	50.5	19.8	68.8	31.2	15.6	61.7	38.7	17.1
Queue Length 50th (ft)	115	301	15	93	218	83	92	242	130	100	245	104
Queue Length 95th (ft)	164	377	55	137	283	151	137	287	204	145	376	267
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	393	876	544	337	818	623	319	2012	871	347	2009	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	804	247
Spillback Cap Reductn	77	0	0	0	0	13	0	645	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.82	0.20	0.65	0.66	0.37	0.68	0.76	0.40	0.68	0.94	0.58

Intersection Summary

Queues
1: Kenwood Road & Galbraith Road

2040 Midday Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	385	425	174	310	283	382	1118	307	966
v/c Ratio	0.55	0.84	0.84	1.00	0.77	0.41	1.33	0.90	0.97	0.65
Control Delay	36.4	58.5	48.9	105.1	56.8	18.2	191.2	44.7	78.7	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	58.5	48.9	105.1	56.8	18.2	191.2	44.7	78.7	26.6
Queue Length 50th (ft)	69	271	269	~93	220	97	~244	416	186	286
Queue Length 95th (ft)	127	419	#444	#247	346	185	#500	553	#420	388
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	258	571	503	174	496	696	288	1431	316	1685
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.67	0.84	1.00	0.63	0.41	1.33	0.78	0.97	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way

2040 Midday Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	177	102	1139	1594
v/c Ratio	0.61	0.69	0.49	0.69
Control Delay	42.2	36.3	6.6	9.2
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	42.2	36.3	6.7	9.2
Queue Length 50th (ft)	66	25	113	200
Queue Length 95th (ft)	190	#164	222	389
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	519	190	3009	2986
Starvation Cap Reductn	0	0	446	136
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.54	0.44	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 Midday Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	63	78	293	79	90	1573	82	1305
v/c Ratio	0.25	0.37	1.10	0.42	0.40	0.85	0.49	0.70
Control Delay	36.2	23.0	123.5	54.3	13.3	27.7	24.3	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	36.2	23.0	123.5	54.3	13.3	27.7	24.3	22.3
Queue Length 50th (ft)	36	12	~222	55	22	517	20	369
Queue Length 95th (ft)	73	58	#308	105	44	#740	65	488
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	252	421	266	414	227	1841	171	1865
Starvation Cap Reductn	0	0	0	0	0	0	0	280
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.19	1.10	0.19	0.40	0.85	0.48	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane

2040 Midday Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	183	133	1837	1622
v/c Ratio	0.70	0.79	0.71	0.63
Control Delay	52.2	46.3	17.7	7.7
Queue Delay	0.0	0.0	23.5	0.1
Total Delay	52.2	46.3	41.3	7.8
Queue Length 50th (ft)	109	74	476	247
Queue Length 95th (ft)	180	m#159	573	406
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	431	168	2599	2593
Starvation Cap Reductn	0	0	833	0
Spillback Cap Reductn	2	0	0	184
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.79	1.04	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 Midday Build
Kenwood Road Development



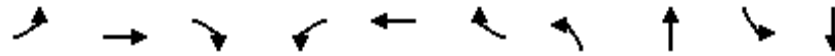
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	423	922	315	478	882	532	402	1043	536	408	914	332
v/c Ratio	0.84	0.93	0.47	0.88	0.86	0.68	0.90	0.82	0.73	0.85	0.69	0.49
Control Delay	68.9	61.2	20.6	72.0	52.6	26.4	78.9	51.8	32.1	62.0	40.7	25.2
Queue Delay	55.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	3.4	0.4
Total Delay	124.4	61.2	20.6	72.0	52.6	28.3	78.9	51.8	32.1	62.0	44.1	25.6
Queue Length 50th (ft)	180	397	129	205	369	285	174	305	315	175	256	177
Queue Length 95th (ft)	#257	#524	208	#297	454	421	#267	362	460	#257	307	275
Internal Link Dist (ft)		1509			1765			545				274
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	510	994	664	541	1027	786	448	1270	737	482	1325	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	309	78
Spillback Cap Reductn	221	0	0	0	0	125	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.46	0.93	0.47	0.88	0.86	0.80	0.90	0.82	0.73	0.85	0.90	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	241	471	358	164	404	449	273	1242	365	1278
v/c Ratio	1.19	0.94	0.67	1.20	0.93	0.65	1.41	0.97	1.26	0.85
Control Delay	154.4	71.5	38.4	170.9	75.9	29.2	243.4	57.9	174.9	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.4	71.5	38.4	170.9	75.9	29.2	243.4	57.9	174.9	37.3
Queue Length 50th (ft)	~194	386	236	~113	333	249	~257	530	~342	487
Queue Length 95th (ft)	#367	#593	345	#264	#524	371	#436	#686	#541	589
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	202	523	531	137	454	693	193	1331	290	1553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.90	0.67	1.20	0.89	0.65	1.41	0.93	1.26	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way

2040 PM Build
Kenwood Road Development



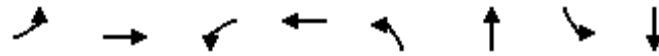
Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	189	110	1454	1746
v/c Ratio	0.74	0.80	0.57	0.69
Control Delay	58.5	53.5	7.3	9.2
Queue Delay	0.0	0.0	0.8	0.8
Total Delay	58.5	53.5	8.1	10.0
Queue Length 50th (ft)	120	43	205	294
Queue Length 95th (ft)	200	#92	339	486
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	361	138	2554	2534
Starvation Cap Reductn	0	0	719	428
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.80	0.79	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	88	81	284	61	83	1700	99	1618
v/c Ratio	0.36	0.38	1.10	0.34	0.52	0.95	0.61	0.85
Control Delay	39.0	18.1	124.9	52.4	27.4	37.7	36.0	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8
Total Delay	39.0	18.1	124.9	52.4	27.4	37.7	36.0	33.4
Queue Length 50th (ft)	52	3	~208	42	20	609	26	543
Queue Length 95th (ft)	96	51	#298	85	68	#837	#103	#763
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	247	410	258	397	163	1785	163	1901
Starvation Cap Reductn	0	0	0	0	0	0	0	239
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.20	1.10	0.15	0.51	0.95	0.61	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane

2040 PM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	152	159	1783	1916
v/c Ratio	0.65	1.41	0.68	0.73
Control Delay	55.8	246.9	8.2	9.2
Queue Delay	0.0	0.0	16.3	0.0
Total Delay	55.8	246.9	24.5	9.2
Queue Length 50th (ft)	101	~81	288	337
Queue Length 95th (ft)	166	#240	466	549
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	420	113	2626	2616
Starvation Cap Reductn	0	0	875	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.41	1.02	0.73

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	541	1137	320	508	864	379	272	1062	447	354	1285	303
v/c Ratio	0.93	1.03	0.50	1.00	0.84	0.51	0.93	0.84	0.62	0.93	0.93	0.42
Control Delay	73.1	74.6	19.9	90.9	47.7	19.8	91.6	49.8	25.3	83.7	54.2	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.5	0.3
Total Delay	73.1	74.6	19.9	90.9	47.7	19.8	91.6	49.8	25.3	83.7	99.7	15.6
Queue Length 50th (ft)	214	~495	119	205	328	152	109	287	212	142	354	97
Queue Length 95th (ft)	#320	#631	199	#320	411	243	#193	343	325	#234	#446	164
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	580	1106	645	508	1032	748	293	1257	725	381	1380	724
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	340	97
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.03	0.50	1.00	0.84	0.51	0.93	0.84	0.62	0.93	1.24	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

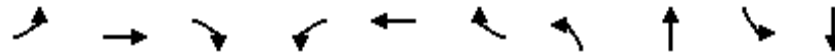
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 SAT Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	217	204	129	185	226	212	947	240	789
v/c Ratio	0.26	0.62	0.47	0.52	0.52	0.34	0.57	0.68	0.70	0.52
Control Delay	26.5	43.1	28.1	35.1	41.6	9.2	17.0	26.0	22.9	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	43.1	28.1	35.1	41.6	9.2	17.0	26.0	22.9	19.7
Queue Length 50th (ft)	33	116	88	56	100	29	50	222	58	163
Queue Length 95th (ft)	74	211	168	114	192	87	111	394	149	266
Internal Link Dist (ft)		1520			1356			454		521
Turn Bay Length (ft)	260			200		490	305		385	
Base Capacity (vph)	350	709	445	248	616	759	389	1789	439	2099
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.31	0.46	0.52	0.30	0.30	0.54	0.53	0.55	0.38

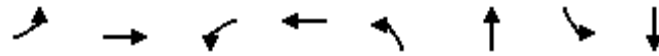
Intersection Summary

Queues
 3: Kenwood Road & Happiness Way



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	153	111	946	992
v/c Ratio	0.46	0.39	0.48	0.50
Control Delay	20.0	11.0	7.0	7.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.0	11.0	7.0	7.2
Queue Length 50th (ft)	30	14	68	72
Queue Length 95th (ft)	85	53	128	136
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	1045	476	3303	3267
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.23	0.29	0.30
Intersection Summary				

Queues
4: Kenwood Road & Kenwood Place/Towne Center



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	80	417	105	85	1156	113	909
v/c Ratio	0.23	0.33	1.33	0.48	0.27	0.78	0.50	0.56
Control Delay	27.8	16.6	198.9	46.6	11.4	25.3	17.5	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	16.6	198.9	46.6	11.4	25.3	17.5	20.2
Queue Length 50th (ft)	28	5	~223	58	21	292	28	212
Queue Length 95th (ft)	69	50	#456	122	45	407	57	297
Internal Link Dist (ft)		203		118		1047		247
Turn Bay Length (ft)					50		200	
Base Capacity (vph)	294	479	313	483	314	2107	229	2161
Starvation Cap Reductn	0	0	0	0	0	0	0	46
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.17	1.33	0.22	0.27	0.55	0.49	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	171	92	1637	1221
v/c Ratio	0.68	0.32	0.62	0.47
Control Delay	50.5	11.8	14.7	5.3
Queue Delay	0.0	0.0	6.9	0.0
Total Delay	50.5	11.8	21.5	5.3
Queue Length 50th (ft)	99	41	446	141
Queue Length 95th (ft)	168	m74	582	234
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	437	287	2626	2619
Starvation Cap Reductn	0	0	943	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.32	0.97	0.47

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 SAT Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	367	725	207	363	621	440	282	940	463	371	712	228
v/c Ratio	0.70	0.85	0.35	0.73	0.74	0.64	0.88	0.59	0.55	0.84	0.41	0.28
Control Delay	59.7	56.6	12.2	61.8	51.6	28.9	85.4	39.2	18.9	68.5	34.9	12.9
Queue Delay	4.5	0.0	0.0	0.0	0.0	0.1	0.0	1.8	0.0	0.0	0.9	0.3
Total Delay	64.2	56.6	12.2	61.8	51.6	29.0	85.4	41.0	18.9	68.5	35.8	13.2
Queue Length 50th (ft)	151	303	39	151	254	236	~131	247	189	159	157	52
Queue Length 95th (ft)	205	380	99	206	324	356	#223	297	294	#238	227	162
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	556	889	586	515	853	687	321	1587	850	446	1752	828
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	720	212
Spillback Cap Reductn	123	0	0	0	0	11	0	459	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.82	0.35	0.70	0.73	0.65	0.88	0.83	0.54	0.83	0.69	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 BF Mid Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	607	427	218	467	225	457	1088	291	884	1854	339
v/c Ratio	0.66	0.81	0.78	0.96	0.65	0.16	0.95	0.71	0.48	1.09	0.92	0.39
Control Delay	68.8	55.3	43.2	108.7	50.3	14.3	83.9	41.4	29.6	103.6	43.6	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	55.3	43.2	108.7	50.3	14.3	83.9	41.4	29.6	103.6	43.6	16.2
Queue Length 50th (ft)	73	250	288	95	187	45	198	294	171	~436	535	137
Queue Length 95th (ft)	112	319	414	#180	248	72	#310	353	256	#571	#653	208
Internal Link Dist (ft)		1520			1356			454			521	
Turn Bay Length (ft)	260		250	200		490	305		250	385		250
Base Capacity (vph)	303	836	548	227	757	1350	481	1539	612	810	2027	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.73	0.78	0.96	0.62	0.17	0.95	0.71	0.48	1.09	0.91	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	161	102	1932	2563
v/c Ratio	0.70	1.76	0.76	1.01
Control Delay	63.2	428.3	10.7	34.4
Queue Delay	0.0	0.0	3.2	28.3
Total Delay	63.2	428.3	13.9	62.7
Queue Length 50th (ft)	115	~73	361	~941
Queue Length 95th (ft)	187	#202	584	#1346
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	382	58	2558	2547
Starvation Cap Reductn	0	0	510	178
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	1.76	0.94	1.08

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 BF Mid Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	97	116	585	281	127	1367	768	266	1618	198
v/c Ratio	0.37	0.33	0.79	0.86	0.81	0.91	0.63	1.69	0.75	0.21
Control Delay	33.8	14.3	43.5	71.7	59.0	40.8	3.6	363.5	29.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	33.8	14.3	43.5	71.7	59.0	40.8	3.6	363.5	29.8	2.2
Queue Length 50th (ft)	54	11	194	215	51	517	6	~269	379	0
Queue Length 95th (ft)	101	65	266	#360	#172	644	55	#463	450	32
Internal Link Dist (ft)		203		118		1047			247	
Turn Bay Length (ft)					50		250	200		250
Base Capacity (vph)	263	420	738	397	157	1744	1214	157	2507	936
Starvation Cap Reductn	0	0	0	0	0	0	0	0	306	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.28	0.79	0.71	0.81	0.78	0.63	1.69	0.74	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	295	212	2701	2088
v/c Ratio	0.82	2.65	1.15	0.62
Control Delay	63.3	793.7	92.2	10.9
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	63.3	793.7	92.5	10.9
Queue Length 50th (ft)	220	~236	~1416	303
Queue Length 95th (ft)	318	#406	#1585	386
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	419	80	2356	3363
Starvation Cap Reductn	0	0	257	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	2.65	1.29	0.62

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 BF Mid Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	591	960	383	466	713	885	383	1400	515	484	1124	448
v/c Ratio	0.89	0.70	0.59	0.99	0.66	0.75	0.83	1.01	0.66	1.01	0.80	0.58
Control Delay	63.7	42.3	22.8	90.0	46.1	29.5	66.6	70.8	23.1	94.7	44.0	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.1	0.6
Total Delay	63.7	42.3	22.8	90.0	46.1	29.5	66.6	70.8	23.1	94.7	89.1	19.3
Queue Length 50th (ft)	231	245	160	188	185	276	150	~407	221	~198	293	175
Queue Length 95th (ft)	#329	296	253	#296	231	365	#226	#515	348	#311	350	269
Internal Link Dist (ft)		1509			1765			545				274
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	663	1364	653	472	1081	1184	461	1380	779	478	1408	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	378	91
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.70	0.59	0.99	0.66	0.75	0.83	1.01	0.66	1.01	1.09	0.66

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Kenwood Road & Galbraith Road

2040 BF PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	266	761	567	254	653	726	423	1760	215	590	1855	185
v/c Ratio	0.97	0.93	0.96	1.02	0.83	0.56	0.82	1.06	0.32	0.91	1.00	0.22
Control Delay	106.5	66.6	63.7	121.0	56.7	24.8	66.3	81.0	24.0	70.2	60.6	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.5	66.6	63.7	121.0	56.7	24.8	66.3	81.0	24.0	70.2	60.6	14.6
Queue Length 50th (ft)	117	332	422	~118	276	227	177	~601	112	251	~604	64
Queue Length 95th (ft)	#207	#454	#691	#207	351	293	237	#698	173	#349	#700	112
Internal Link Dist (ft)		1520			1356			454			521	
Turn Bay Length (ft)	260		250	200		490	305		250	385		250
Base Capacity (vph)	274	821	606	248	795	1301	547	1658	667	671	1853	823
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.93	0.94	1.02	0.82	0.56	0.77	1.06	0.32	0.88	1.00	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
3: Kenwood Road & Happiness Way



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	212	128	2368	2780
v/c Ratio	0.74	2.03	0.99	1.17
Control Delay	57.7	537.1	31.5	97.6
Queue Delay	0.0	0.0	40.3	0.1
Total Delay	57.7	537.1	71.7	97.7
Queue Length 50th (ft)	141	~97	728	~1224
Queue Length 95th (ft)	222	#239	#1164	#1513
Internal Link Dist (ft)	157		191	128
Turn Bay Length (ft)		120		
Base Capacity (vph)	601	63	2401	2386
Starvation Cap Reductn	0	0	264	76
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	2.03	1.11	1.20

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Kenwood Road & Kenwood Place/Towne Center

2040 BF PM Build
Kenwood Road Development



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	139	713	179	101	1447	478	247	1653	152
v/c Ratio	0.45	0.45	1.12	0.71	0.61	0.92	0.43	1.52	0.73	0.16
Control Delay	37.5	17.9	109.3	61.8	32.8	38.0	2.4	284.4	26.0	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	37.5	17.9	109.3	61.8	32.8	38.0	2.4	284.4	26.2	2.0
Queue Length 50th (ft)	81	18	~306	129	28	489	6	~210	335	0
Queue Length 95th (ft)	140	79	#446	213	#103	#696	49	#417	447	27
Internal Link Dist (ft)		203		118		1047			247	
Turn Bay Length (ft)					50		250	200		250
Base Capacity (vph)	314	447	637	399	167	1820	1121	163	2616	956
Starvation Cap Reductn	0	0	0	0	0	0	0	0	337	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.31	1.12	0.45	0.60	0.80	0.43	1.52	0.73	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Kenwood Road & Orchard Lane

2040 BF PM Build
Kenwood Road Development



Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	252	174	2171	2345
v/c Ratio	0.77	2.95	0.90	0.68
Control Delay	62.3	927.5	21.7	11.2
Queue Delay	0.0	0.0	46.1	0.0
Total Delay	62.3	927.5	67.7	11.2
Queue Length 50th (ft)	193	~204	683	345
Queue Length 95th (ft)	273	#363	#1107	479
Internal Link Dist (ft)	1224		274	1047
Turn Bay Length (ft)				
Base Capacity (vph)	413	59	2410	3449
Starvation Cap Reductn	0	0	560	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	2.95	1.17	0.68

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
6: Kenwood Road & Montgomery Road (US 22/SR 3)

2040 BF PM Build
Kenwood Road Development



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	492	979	339	525	771	630	374	1246	485	593	1416	347
v/c Ratio	0.82	0.75	0.52	1.04	0.67	0.49	0.89	1.03	0.65	1.00	0.95	0.45
Control Delay	59.3	44.5	16.9	101.3	44.7	20.6	75.9	77.7	23.7	84.9	55.5	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	0.4
Total Delay	59.3	44.5	16.9	101.3	44.7	20.6	75.9	77.7	23.7	84.9	99.5	15.5
Queue Length 50th (ft)	190	250	100	~227	197	161	151	~377	207	~261	393	114
Queue Length 95th (ft)	#256	302	183	#337	243	219	#251	#473	329	#376	#496	185
Internal Link Dist (ft)		1509			1765			545			274	
Turn Bay Length (ft)	220		250	300		250	370		250	170		250
Base Capacity (vph)	614	1364	654	503	1200	1269	420	1212	743	595	1484	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	394	118
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.72	0.52	1.04	0.64	0.50	0.89	1.03	0.65	1.00	1.30	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.