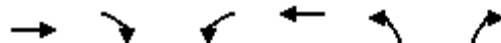


2014 Existing Condition
1: Trailwood Village Dr. & Kingwood Dr.

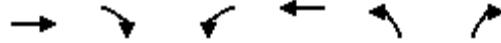
AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø2	ø3	ø4	ø5	ø7	ø8
Lane Configurations	↑↑		↙	↑↑	↘	↗						
Volume (vph)	640	76	19	1845	140	49						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900						
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	0.95						
Frt	0.984				0.995	0.850						
Flt Protected			0.950		0.954							
Satd. Flow (prot)	3483	0	1770	3539	1768	1504						
Flt Permitted			0.950		0.954							
Satd. Flow (perm)	3483	0	1770	3539	1768	1504						
Right Turn on Red		Yes				Yes						
Satd. Flow (RTOR)	14				1	52						
Link Speed (mph)	40			40	30							
Link Distance (ft)	225			355	1092							
Travel Time (s)	3.8			6.1	24.8							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92						
Growth Factor	108%	108%	108%	108%	108%	108%						
Adj. Flow (vph)	751	89	22	2166	164	58						
Shared Lane Traffic (%)						10%						
Lane Group Flow (vph)	840	0	22	2166	170	52						
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Right	Left	Left	Left	Right						
Median Width(ft)	40			40	12							
Link Offset(ft)	0			0	0							
Crosswalk Width(ft)	16			16	16							
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00						
Turning Speed (mph)		9	15		15	9						
Number of Detectors	2		1	2	1	1						
Detector Template	Thru		Left	Thru	Left	Right						
Leading Detector (ft)	100		20	100	20	20						
Trailing Detector (ft)	0		0	0	0	0						
Detector 1 Position(ft)	0		0	0	0	0						
Detector 1 Size(ft)	6		20	6	20	20						
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0						
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0						
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0						
Detector 2 Position(ft)	94			94								
Detector 2 Size(ft)	6			6								
Detector 2 Type	Cl+Ex			Cl+Ex								
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0								
Turn Type	NA		Prot	NA	NA	Perm						
Protected Phases	2 7		1	6	3 8		2	3	4	5	7	8
Permitted Phases						3 8						
Detector Phase	2 7		1	6	3 8	3 8						
Switch Phase												
Minimum Initial (s)			3.0	2.0			10.0	1.0	5.0	3.0	1.0	5.0

2014 Existing Condition
1: Trailwood Village Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø2	ø3	ø4	ø5	ø7	ø8
Minimum Split (s)			10.0	22.0			29.0	14.5	11.0	9.0	7.0	11.0
Total Split (s)			30.0	60.0			60.0	25.0	29.0	30.0	29.0	25.0
Total Split (%)			20.8%	41.7%			42%	17%	20%	21%	20%	17%
Maximum Green (s)			24.0	54.0			54.0	19.0	23.0	24.0	23.0	19.0
Yellow Time (s)			4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0	0.0								
Total Lost Time (s)			6.0	6.0								
Lead/Lag			Lead	Lag			Lag			Lead		
Lead-Lag Optimize?			Yes	Yes			Yes			Yes		
Vehicle Extension (s)			3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode			None	C-Max			C-Max	None	None	None	None	None
Walk Time (s)				5.0			5.0					
Flash Dont Walk (s)				11.0			11.0					
Pedestrian Calls (#/hr)				0			0					
Act Effect Green (s)	100.8		7.3	75.1	19.0	19.0						
Actuated g/C Ratio	0.70		0.05	0.52	0.13	0.13						
v/c Ratio	0.34		0.24	1.17	0.73	0.21						
Control Delay	1.3		71.5	116.5	78.0	15.9						
Queue Delay	0.1		0.0	0.4	16.8	0.0						
Total Delay	1.4		71.5	116.9	94.7	15.9						
LOS	A		E	F	F	B						
Approach Delay	1.4			116.5	76.3							
Approach LOS	A			F	E							

Intersection Summary

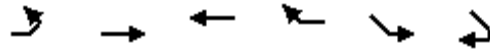
Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 84.0
 Intersection LOS: F
 Intersection Capacity Utilization 74.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Trailwood Village Dr. & Kingwood Dr.



2014 Existing Condition
2: Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑			
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3539	0	0	0
Link Speed (mph)		40	40		40	
Link Distance (ft)		799	656		804	
Travel Time (s)		13.6	11.2		13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		70	70		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
4: Green Oak Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	636	62	0	0	0	0	104	25	100	40	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987							0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3493	0	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3493	0	0	0	0	0	1863	1583	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11							159			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2489			270			515			89	
Travel Time (s)		42.4			4.6			11.7			2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	47	747	73	0	0	0	0	122	29	117	47	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	820	0	0	0	0	0	122	29	117	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2	1	1	2	
Detector Template	Left	Thru						Thru	Right	Left	Thru	
Leading Detector (ft)	20	100						100	20	20	100	
Trailing Detector (ft)	0	0						0	0	0	0	
Detector 1 Position(ft)	0	0						0	0	0	0	
Detector 1 Size(ft)	20	6						6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Prot	NA						NA	Perm	Prot	NA	
Protected Phases	15	2						8		1 4	4	
Permitted Phases										8		

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphp)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Growth Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		

2014 Existing Condition
4: Green Oak Dr. & Kingwood Dr.

AM Peak Hour

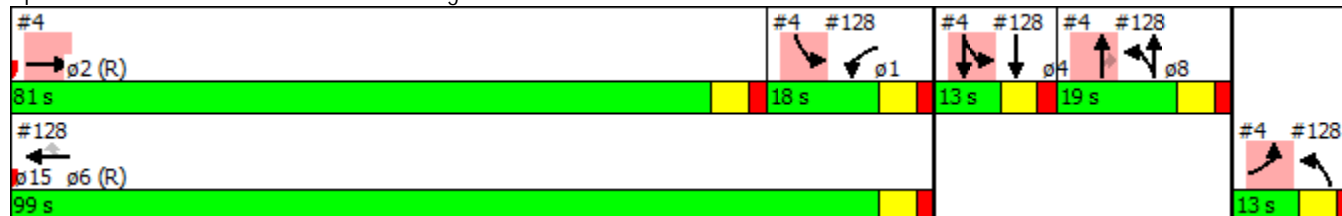


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	15	2						8	8	14	4	
Switch Phase												
Minimum Initial (s)	5.0	4.0						5.0	5.0		5.0	
Minimum Split (s)	11.0	20.0						19.0	19.0		11.0	
Total Split (s)	13.0	81.0						19.0	19.0		13.0	
Total Split (%)	9.0%	56.3%						13.2%	13.2%		9.0%	
Maximum Green (s)	7.0	75.0						13.0	13.0		7.0	
Yellow Time (s)	4.0	4.0						4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0						2.0	2.0		2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0						6.0	6.0		6.0	
Lead/Lag		Lead						Lag	Lag		Lead	
Lead-Lag Optimize?		Yes						Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0						3.0	3.0		3.0	
Recall Mode	None	C-Max						None	None		None	
Walk Time (s)		4.0						6.0	6.0			
Flash Dont Walk (s)		10.0						7.0	7.0			
Pedestrian Calls (#/hr)		0						0	0			
Act Effct Green (s)	6.8	75.9						12.4	12.4	25.0	7.0	
Actuated g/C Ratio	0.05	0.53						0.09	0.09	0.17	0.05	
v/c Ratio	0.57	0.44						0.76	0.10	0.38	0.52	
Control Delay	75.4	34.6						93.0	0.7	21.9	40.8	
Queue Delay	3.5	0.0						0.0	0.0	0.0	0.0	
Total Delay	79.0	34.6						93.0	0.7	21.9	40.8	
LOS	E	C						F	A	C	D	
Approach Delay		37.0						75.3			27.3	
Approach LOS		D						E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	40.6
Intersection LOS:	D
Intersection Capacity Utilization:	99.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 4: Green Oak Dr. & Kingwood Dr.



Lane Group	ø1	ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	4.0
Minimum Split (s)	11.0	10.0
Total Split (s)	18.0	99.0
Total Split (%)	13%	69%
Maximum Green (s)	12.0	93.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	C-Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
6: Northpark Dr. & Sorters

AM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	93	120	71	0	362	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected	0.950					0.971
Satd. Flow (prot)	1770	1583	1863	0	0	1809
Flt Permitted	0.950					0.971
Satd. Flow (perm)	1770	1583	1863	0	0	1809
Link Speed (mph)	40		30			30
Link Distance (ft)	1488		70			496
Travel Time (s)	25.4		1.6			11.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	130	77	0	393	270
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	130	77	0	0	663
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.6%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
8: Lake Houston Parkway & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	224	468	246	586	11	495	105	119	10	255	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Frt		0.898			0.997			0.920			0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3178	0	1770	3529	0	3433	3256	0	3433	3334	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3178	0	1770	3529	0	3433	3256	0	3433	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		338			1			129			86	
Link Speed (mph)		45			40			30			40	
Link Distance (ft)		2785			2651			426			1141	
Travel Time (s)		42.2			45.2			9.7			19.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	243	509	267	637	12	538	114	129	11	277	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	752	0	267	649	0	538	243	0	11	454	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2014 Existing Condition
11: Woodland Hills & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	537	190	174	1414	79	381	228	140	94	268	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.95
Frt		0.961			0.992			0.943			0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3401	0	1770	3511	0	3433	3337	0	1770	3352	0
Flt Permitted	0.062			0.231			0.950			0.950		
Satd. Flow (perm)	115	3401	0	430	3511	0	3433	3337	0	1770	3352	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			6			81			61	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		944			4882			3685			2491	
Travel Time (s)		14.3			74.0			71.8			48.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	584	207	189	1537	86	414	248	152	102	291	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	791	0	189	1623	0	414	400	0	102	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6								
Detector Phase	5	2		1	6		3	8		7	4	

2014 Existing Condition
11: Woodland Hills & Northpark Dr.

AM Peak Hour

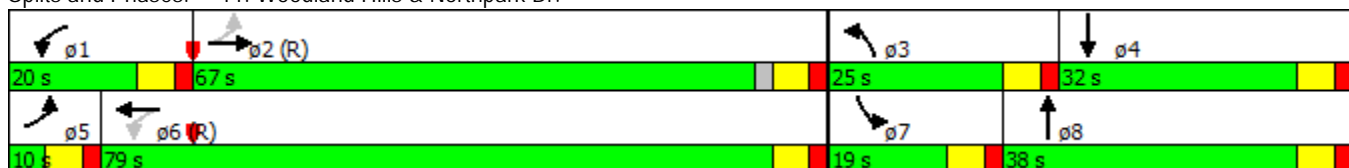


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	22.0		10.0	22.0		10.0	22.3		10.0	22.3	
Total Split (s)	10.0	67.0		20.0	79.0		25.0	38.0		19.0	32.0	
Total Split (%)	6.8%	45.9%		13.7%	54.1%		17.1%	26.0%		13.0%	21.9%	
Maximum Green (s)	4.0	61.0		14.0	73.0		19.0	32.0		13.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	68.7	64.7		83.0	75.0		19.0	33.1		11.9	26.0	
Actuated g/C Ratio	0.47	0.44		0.57	0.51		0.13	0.23		0.08	0.18	
v/c Ratio	0.40	0.52		0.53	0.90		0.93	0.49		0.71	0.69	
Control Delay	27.8	29.3		20.9	40.4		90.4	41.3		90.8	54.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.8	29.3		20.9	40.4		90.4	41.3		90.8	54.7	
LOS	C	C		C	D		F	D		F	D	
Approach Delay		29.3			38.4			66.2			61.4	
Approach LOS		C			D			E			E	

Intersection Summary

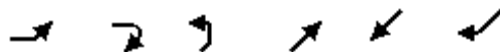
Area Type: Other
 Cycle Length: 146
 Actuated Cycle Length: 146
 Offset: 52 (36%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 45.3 Intersection LOS: D
 Intersection Capacity Utilization 87.9% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 11: Woodland Hills & Northpark Dr.



2014 Existing Condition
13: Kingwood Dr. & Mills Branch

AM Peak Hour



Lane Group	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	32	0	225	44	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	0.95	0.95	1.00	1.00
Frt						
Flt Protected	0.950			0.960		
Satd. Flow (prot)	3433	0	0	3398	0	0
Flt Permitted	0.950			0.960		
Satd. Flow (perm)	3433	0	0	3398	0	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	199			1077	310	
Travel Time (s)	4.5			18.4	5.3	
Peak Hour Factor	0.57	0.92	0.80	0.79	0.92	0.92
Adj. Flow (vph)	56	0	281	56	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	337	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	40			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.5%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
14: US 59 SBFR & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔↔	↑↑					↔	↑↑↑↑	↔
Volume (vph)	0	228	192	1764	333	0	0	0	0	452	311	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	0		0	0		0
Storage Lanes	0		2	2		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.95	1.00	1.00	1.00	1.00	0.86	0.81	0.86
Frt		0.931									0.996	0.850
Flt Protected				0.950						0.950	0.980	
Satd. Flow (prot)	0	5966	0	3433	3539	0	0	0	0	1522	4418	1362
Flt Permitted				0.950						0.950	0.980	
Satd. Flow (perm)	0	5966	0	3433	3539	0	0	0	0	1522	4418	1362
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46									2	249
Link Speed (mph)		40			30			55			55	
Link Distance (ft)		3907			296			398			255	
Travel Time (s)		66.6			6.7			4.9			3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	248	209	1917	362	0	0	0	0	491	338	135
Shared Lane Traffic (%)										50%		10%
Lane Group Flow (vph)	0	457	0	1917	362	0	0	0	0	245	598	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	1
Detector Template		Thru		Left	Thru					Left	Thru	Right
Leading Detector (ft)		100		20	100					20	100	20
Trailing Detector (ft)		0		0	0					0	0	0
Detector 1 Position(ft)		0		0	0					0	0	0
Detector 1 Size(ft)		6		20	6					20	6	20
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type		NA		Prot	NA					Perm	NA	Perm
Protected Phases		2		1 11 21	1 2 11						3 4	
Permitted Phases										3 4		3 4
Detector Phase		2		1 11 21	1 2 11					3 4	3 4	3 4

2014 Existing Condition
 14: US 59 SBFR & Northpark Dr.

AM Peak Hour

Lane Group	ø1	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21
Switch Phase											
Minimum Initial (s)	3.0	1.0	5.0	2.7	5.0	1.0	1.0	3.0	3.0	4.0	1.0
Minimum Split (s)	21.3	7.0	22.7	8.7	27.0	7.0	8.0	9.0	9.0	20.0	7.0
Total Split (s)	74.0	7.0	30.0	8.7	27.0	7.0	8.0	11.0	30.0	54.0	7.0
Total Split (%)	51%	5%	21%	6%	19%	5%	6%	8%	21%	37%	5%
Maximum Green (s)	68.0	1.0	24.0	2.7	21.0	1.0	2.0	5.0	24.0	48.0	1.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)											
Total Lost Time (s)											
Lead/Lag	Lag	Lead		Lag	Lead	Lead		Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	None	None	None	C-Max	None	None	None	None	None	None
Walk Time (s)			5.0		5.0						
Flash Dont Walk (s)			11.0		16.0						
Pedestrian Calls (#/hr)			0		0						
Act Effct Green (s)											
Actuated g/C Ratio											
v/c Ratio											
Control Delay											
Queue Delay											
Total Delay											
LOS											
Approach Delay											
Approach LOS											
Intersection Summary											

2014 Existing Condition
17: US 59 NBFR & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	617	0	0	1823	226	145	126	434	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	0		0	0		0
Storage Lanes	2		0	0		2	2		2	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.86	0.86	0.97	0.95	0.88	1.00	1.00	1.00
Frt					0.983				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	3539	0	0	6299	0	3433	3539	2787	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	0	0	6299	0	3433	3539	2787	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					32				472			
Link Speed (mph)		30			45			55			55	
Link Distance (ft)		296			1797			365			309	
Travel Time (s)		6.7			27.2			4.5			3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	671	0	0	1982	246	158	137	472	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	671	0	0	2228	0	158	137	472	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5 15	5 6 15			6 16			7 8				
Permitted Phases							7 8		7 8			
Detector Phase	5 15	5 6 15			6 16		7 8	7 8	7 8			

2014 Existing Condition
 17: US 59 NBFR & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)												
Minimum Split (s)												
Total Split (s)												
Total Split (%)												
Maximum Green (s)												
Yellow Time (s)												
All-Red Time (s)												
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)												
Recall Mode												
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	31.7	59.7			76.0		19.0	19.0	19.0			
Actuated g/C Ratio	0.22	0.41			0.53		0.13	0.13	0.13			
v/c Ratio	0.10	0.46			0.67		0.35	0.30	0.61			
Control Delay	20.7	2.1			26.2		59.7	58.7	8.3			
Queue Delay	0.0	0.7			0.1		0.0	0.0	0.0			
Total Delay	20.7	2.8			26.3		59.7	58.7	8.3			
LOS	C	A			C		E	E	A			
Approach Delay		4.7			26.3			27.9				
Approach LOS		A			C			C				

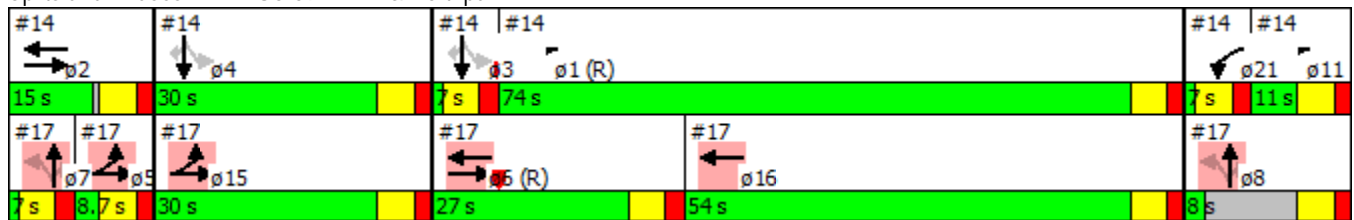
Intersection Summary

Area Type: Other
 Cycle Length: 144.7
 Actuated Cycle Length: 144.7
 Offset: 110 (76%), Referenced to phase 1:WBTL and 6:, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 22.3
 Intersection Capacity Utilization 72.8%
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service C

Splits and Phases: 17: US 59 NBFR & Northpark Dr.



2014 Existing Condition
 17: US 59 NBFR & Northpark Dr.

AM Peak Hour

Lane Group	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21				
Switch Phase																
Minimum Initial (s)	3.0	7.0	1.0	5.0	2.7	5.0	1.0	1.0	3.0	3.0	4.0	1.0				
Minimum Split (s)	21.3	14.0	7.0	22.7	8.7	27.0	7.0	8.0	9.0	9.0	20.0	7.0				
Total Split (s)	74.0	15.0	7.0	30.0	8.7	27.0	7.0	8.0	11.0	30.0	54.0	7.0				
Total Split (%)	51%	10%	5%	21%	6%	19%	5%	6%	8%	21%	37%	5%				
Maximum Green (s)	68.0	9.0	1.0	24.0	2.7	21.0	1.0	2.0	5.0	24.0	48.0	1.0				
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Lost Time Adjust (s)																
Total Lost Time (s)																
Lead/Lag	Lag		Lead		Lag		Lead		Lead		Lag		Lag		Lead	
Lead-Lag Optimize?	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
Recall Mode	C-Max	None	None	None	None	C-Max	None	None	None	None	None	None				
Walk Time (s)					5.0		5.0									
Flash Dont Walk (s)					11.0		16.0									
Pedestrian Calls (#/hr)					0		0									
Act Effct Green (s)																
Actuated g/C Ratio																
v/c Ratio																
Control Delay																
Queue Delay																
Total Delay																
LOS																
Approach Delay																
Approach LOS																
Intersection Summary																

2014 Existing Condition
19: US 59 NBFR & Hamblen

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↗		↑↑	↗			
Volume (vph)	3	43	0	0	0	217	0	637	125	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.865			0.850			
Flt Protected		0.997										
Satd. Flow (prot)	0	1857	0	0	0	1611	0	3539	1583	0	0	0
Flt Permitted		0.997										
Satd. Flow (perm)	0	1857	0	0	0	1611	0	3539	1583	0	0	0
Link Speed (mph)		35			35			55				55
Link Distance (ft)		168			123			612				7207
Travel Time (s)		3.3			2.4			7.6				89.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	47	0	0	0	236	0	692	136	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	0	236	0	692	136	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 44.4% ICU Level of Service A

Analysis Period (min) 15

2014 Existing Condition
20: Loop 494 & Northpark Dr.

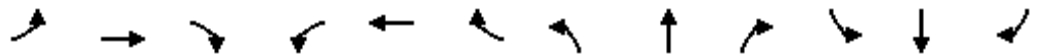
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	862	108	191	1731	72	40	60	146	148	166	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3518	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3479	0	1770	3518	0	1770	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5				205			159
Link Speed (mph)		45			45			30				30
Link Distance (ft)		1797			1638			3315				2861
Travel Time (s)		27.2			24.8			75.3				65.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	937	117	208	1882	78	43	65	159	161	180	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	1054	0	208	1960	0	43	65	159	161	180	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									8			4
Detector Phase	5	2		1	6		3	8	8	7	4	4

2014 Existing Condition
20: Loop 494 & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0		10.0	22.0		10.3	22.3	22.3	10.3	22.3	22.3
Total Split (s)	10.0	64.0		33.0	87.0		12.8	25.0	25.0	22.0	34.2	34.2
Total Split (%)	6.9%	44.4%		22.9%	60.4%		8.9%	17.4%	17.4%	15.3%	23.8%	23.8%
Maximum Green (s)	4.0	58.0		27.0	81.0		6.8	19.0	19.0	16.0	28.2	28.2
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	Max	Max	None	Max	Max
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effect Green (s)	4.0	63.4		21.6	81.0		6.6	19.6	19.6	15.4	30.8	30.8
Actuated g/C Ratio	0.03	0.44		0.15	0.56		0.05	0.14	0.14	0.11	0.21	0.21
v/c Ratio	0.88	0.69		0.78	0.99		0.54	0.26	0.41	0.85	0.45	0.41
Control Delay	163.6	35.6		81.6	39.5		91.1	59.2	5.5	98.9	54.8	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	163.6	35.6		81.6	39.5		91.1	59.2	5.5	98.9	54.8	13.9
LOS	F	D		F	D		F	E	A	F	D	B
Approach Delay		40.6			43.5			32.4			53.6	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 83 (58%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 43.3 Intersection LOS: D
 Intersection Capacity Utilization 85.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 20: Loop 494 & Northpark Dr.



2014 Existing Condition
23: Brookdale & Northpark Dr.

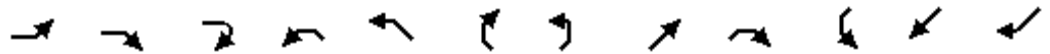
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	684	22	7	1255	27	28	16	14	34	42	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.995			0.997			0.964			0.895	
Flt Protected	0.950			0.950				0.976			0.993	
Satd. Flow (prot)	1770	3522	0	1770	3529	0	0	3330	0	0	3145	0
Flt Permitted	0.120			0.341				0.752			0.901	
Satd. Flow (perm)	224	3522	0	635	3529	0	0	2566	0	0	2854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3			15			99	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		4882			2785			1365			843	
Travel Time (s)		74.0			42.2			31.0			19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	743	24	8	1364	29	30	17	15	37	46	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	767	0	8	1393	0	0	62	0	0	275	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		3	8		7	4	

2014 Existing Condition
26: Northpark Dr. & Mills Branch

AM Peak Hour



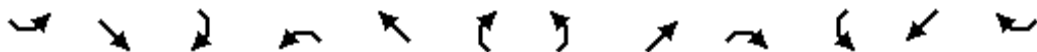
Lane Group	EBL	EBR	EBR2	NWL2	NWL	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	149	142	284	150	0	0	0	0	88	138	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0			0	0	0		0	150		0
Storage Lanes	0	1			1	0	0		0	1		0
Taper Length (ft)	25				25		25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865										0.976
Flt Protected					0.950					0.950		
Satd. Flow (prot)	0	1611	0	0	1770	0	0	0	0	1770	3454	0
Flt Permitted					0.950					0.950		
Satd. Flow (perm)	0	1611	0	0	1770	0	0	0	0	1770	3454	0
Link Speed (mph)	30				30			40			30	
Link Distance (ft)	674				163			1792			311	
Travel Time (s)	15.3				3.7			30.5			7.1	
Peak Hour Factor	0.92	0.92	0.85	0.92	0.94	0.92	0.92	0.92	0.92	0.58	0.82	0.69
Adj. Flow (vph)	0	162	167	309	160	0	0	0	0	152	168	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	329	0	0	469	0	0	0	0	152	200	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0				12			12			12	
Link Offset(ft)	0				0			0			0	
Crosswalk Width(ft)	16				16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9	15	15	9	15		9	15		9
Sign Control	Stop				Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.6%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
29: Northpark Dr. & Rock Springs

AM Peak Hour

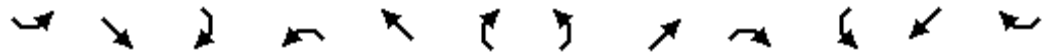


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑		↖	↑↑					↖	↑↑	
Volume (vph)	0	60	216	64	109	0	0	0	0	6	497	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.882										0.979
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	3122	0	1770	3539	0	0	0	0	1770	3465	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	3122	0	1770	3539	0	0	0	0	1770	3465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		235										15
Link Speed (mph)		30			30			40				40
Link Distance (ft)		292			173			576				1792
Travel Time (s)		6.6			3.9			9.8				30.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	65	235	70	118	0	0	0	0	7	540	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	70	118	0	0	0	0	7	627	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1		2
Detector Template		Thru		Left	Thru					Left		Thru
Leading Detector (ft)		100		20	100					20		100
Trailing Detector (ft)		0		0	0					0		0
Detector 1 Position(ft)		0		0	0					0		0
Detector 1 Size(ft)		6		20	6					20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0					0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0					0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Prot	NA					Prot		NA
Protected Phases		4		15 8	8					1		6
Permitted Phases												
Detector Phase		4		15 8	8					1		6

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Detector Phase		

2014 Existing Condition
29: Northpark Dr. & Rock Springs

AM Peak Hour

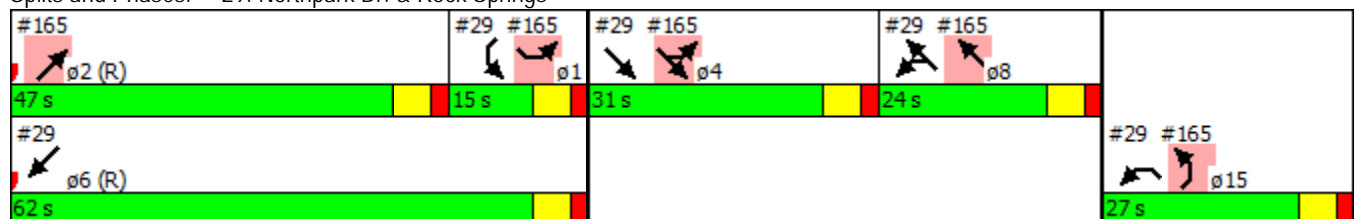


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)		5.0			5.0					5.0	4.0	
Minimum Split (s)		22.0			21.0					11.0	18.0	
Total Split (s)		31.0			24.0					15.0	62.0	
Total Split (%)		21.5%			16.7%					10.4%	43.1%	
Maximum Green (s)		25.0			18.0					9.0	56.0	
Yellow Time (s)		4.0			4.0					4.0	4.0	
All-Red Time (s)		2.0			2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		6.0			6.0					6.0	6.0	
Lead/Lag		Lead			Lag					Lag		
Lead-Lag Optimize?		Yes			Yes					Yes		
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Recall Mode		None			Max					Max	C-Max	
Walk Time (s)		5.0			5.0						5.0	
Flash Dont Walk (s)		11.0			10.0						7.0	
Pedestrian Calls (#/hr)		0			0						0	
Act Effect Green (s)		9.3		60.7	33.7					9.0	56.0	
Actuated g/C Ratio		0.06		0.42	0.23					0.06	0.39	
v/c Ratio		0.71		0.09	0.14					0.06	0.46	
Control Delay		25.5		2.5	47.9					65.0	33.3	
Queue Delay		0.0		1.1	1.2					0.0	0.0	
Total Delay		25.5		3.6	49.0					65.0	33.3	
LOS		C		A	D					E	C	
Approach Delay		25.5			32.1						33.7	
Approach LOS		C			C						C	

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 114 (79%), Referenced to phase 2:NET and 6:, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 31.2
 Intersection LOS: C
 Intersection Capacity Utilization 44.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 29: Northpark Dr. & Rock Springs



Lane Group	ø2	ø15
Switch Phase		
Minimum Initial (s)	4.0	5.0
Minimum Split (s)	18.0	11.0
Total Split (s)	47.0	27.0
Total Split (%)	33%	19%
Maximum Green (s)	41.0	21.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	Max
Walk Time (s)	5.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
32: Kingwood Dr. & Mills Branch

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑						↑↑	
Volume (vph)	0	32	323	5	220	0	0	0	0	0	41	37
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.869									0.939	
Flt Protected					0.998							
Satd. Flow (prot)	0	3076	0	0	3532	0	0	0	0	0	3323	0
Flt Permitted					0.998							
Satd. Flow (perm)	0	3076	0	0	3532	0	0	0	0	0	3323	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		6684			199			1106			329	
Travel Time (s)		151.9			4.5			18.9			5.6	
Peak Hour Factor	0.92	0.57	0.83	0.42	0.80	0.92	0.92	0.92	0.92	0.92	0.64	0.84
Adj. Flow (vph)	0	56	389	12	275	0	0	0	0	0	64	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	445	0	0	287	0	0	0	0	0	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		40			20			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.4%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
35: Russel Palmer & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑	↗		↖	
Volume (vph)	0	900	86	0	0	0	0	126	74	11	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.987							0.850			
Fl _t Protected											0.993	
Satd. Flow (prot)	0	3493	0	0	0	0	0	1863	1583	0	1850	0
Fl _t Permitted											0.946	
Satd. Flow (perm)	0	3493	0	0	0	0	0	1863	1583	0	1762	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13							80			
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		117			2967			1145			106	
Travel Time (s)		1.8			45.0			26.0			2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	978	93	0	0	0	0	137	80	12	72	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1071	0	0	0	0	0	137	80	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2						2	1	1	2	
Detector Template		Thru						Thru	Right	Left	Thru	
Leading Detector (ft)		100						100	20	20	100	
Trailing Detector (ft)		0						0	0	0	0	
Detector 1 Position(ft)		0						0	0	0	0	
Detector 1 Size(ft)		6						6	20	20	6	
Detector 1 Type		Cl+Ex						Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0						0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0						0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0						0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases									8	4		
Detector Phase		2						8	8	4	4	

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Detector Phase		

2014 Existing Condition
35: Russel Palmer & Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		15.0						5.0	5.0	5.0	5.0	
Minimum Split (s)		21.3						11.6	11.6	11.3	11.3	
Total Split (s)		95.0						28.0	28.0	28.0	28.0	
Total Split (%)		66.0%						19.4%	19.4%	19.4%	19.4%	
Maximum Green (s)		89.0						22.0	22.0	22.0	22.0	
Yellow Time (s)		4.0						4.0	4.0	4.0	4.0	
All-Red Time (s)		2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		6.0						6.0	6.0		6.0	
Lead/Lag		Lag										
Lead-Lag Optimize?		Yes										
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Recall Mode		C-Max						Max	Max	None	None	
Act Effect Green (s)		92.2						22.0	22.0		22.0	
Actuated g/C Ratio		0.64						0.15	0.15		0.15	
v/c Ratio		0.48						0.48	0.26		0.31	
Control Delay		14.4						62.2	12.7		117.0	
Queue Delay		0.0						0.0	0.0		127.4	
Total Delay		14.4						62.2	12.7		244.4	
LOS		B						E	B		F	
Approach Delay		14.4						43.9			244.4	
Approach LOS		B						D			F	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	33.1
Intersection LOS:	C
Intersection Capacity Utilization	51.4%
ICU Level of Service	A
Analysis Period (min)	15

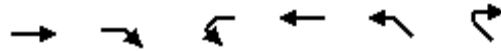
Splits and Phases: 35: Russel Palmer & Northpark Dr.



Lane Group	ø1	ø6
Switch Phase		
Minimum Initial (s)	5.0	15.0
Minimum Split (s)	11.3	21.3
Total Split (s)	21.0	116.0
Total Split (%)	15%	81%
Maximum Green (s)	15.0	110.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	C-Max
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
36: Northpark Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑↑		
Volume (vph)	1156	0	0	1994	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3539	0	0
Link Speed (mph)	45			40	45	
Link Distance (ft)	1638			2834	2834	
Travel Time (s)	24.8			48.3	42.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1257	0	0	2167	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1257	0	0	2167	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.3%
Analysis Period (min)	15
	ICU Level of Service B

2014 Existing Condition
43: Sorters Rd & US 59 SBFR

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↖	↑↑						↙↑	↗
Volume (vph)	0	21	183	221	182	0	0	0	0	77	2	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	200		0	0		0	0		150
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t		0.866										0.850
Fl _t Protected				0.950							0.953	
Satd. Flow (prot)	0	4404	0	1770	3539	0	0	0	0	0	3373	1583
Fl _t Permitted				0.607							0.953	
Satd. Flow (perm)	0	4404	0	1131	3539	0	0	0	0	0	3373	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		199										74
Link Speed (mph)		35		35				55			55	
Link Distance (ft)		893		863				983			6715	
Travel Time (s)		17.4		16.8				12.2			83.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	23	199	240	198	0	0	0	0	84	2	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	240	198	0	0	0	0	0	86	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12				0			0	
Link Offset(ft)		0		0				0			0	
Crosswalk Width(ft)		16		16				16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		4			8						6	
Permitted Phases				8						6		6
Minimum Split (s)		22.0		22.0	22.0					22.0	22.0	22.0
Total Split (s)		22.0		22.0	22.0					22.0	22.0	22.0
Total Split (%)		50.0%		50.0%	50.0%					50.0%	50.0%	50.0%
Maximum Green (s)		16.0		16.0	16.0					16.0	16.0	16.0
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0						6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Flash Dont Walk (s)		11.0		11.0	11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0		0	0					0	0	0
Act Effect Green (s)		16.0		16.0	16.0						16.0	16.0
Actuated g/C Ratio		0.36		0.36	0.36						0.36	0.36
v/c Ratio		0.13		0.58	0.15						0.07	0.04
Control Delay		2.8		13.7	4.2						3.8	0.2

2014 Existing Condition
 43: Sorters Rd & US 59 SBFR

AM Peak Hour

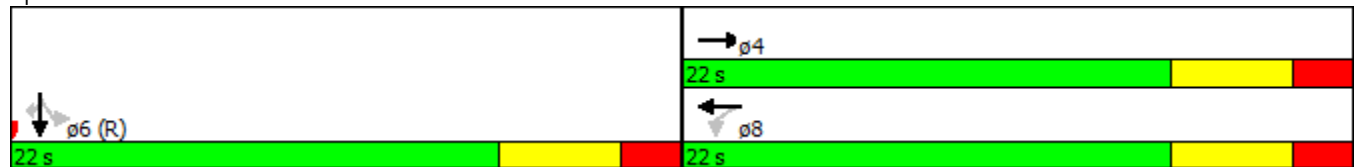


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0		0.0	0.0						0.0	0.0
Total Delay		2.8		13.7	4.2						3.8	0.2
LOS		A		B	A						A	A
Approach Delay		2.8			9.4						3.1	
Approach LOS		A			A						A	

Intersection Summary

Area Type:	Other
Cycle Length:	44
Actuated Cycle Length:	44
Offset:	0 (0%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	6.6
Intersection LOS:	A
Intersection Capacity Utilization	36.1%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 43: Sorters Rd & US 59 SBFR



2014 Existing Condition
45: Loop 494 & Sorters Rd

AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	61	42	317	492	22	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150	180			225
Storage Lanes	2	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.88	0.97	0.95	0.95	1.00
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	2787	3433	3539	3539	1583
Fl _t Permitted	0.950		0.741			
Satd. Flow (perm)	3433	2787	2678	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		46				93
Link Speed (mph)	35			45	45	
Link Distance (ft)	863			804	572	
Travel Time (s)	16.8			12.2	8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	46	345	535	24	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	46	345	535	24	93
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	36			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	NA	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.05	0.04	0.35	0.42	0.02	0.15
Control Delay	5.6	2.4	11.5	11.7	9.1	3.6

2014 Existing Condition
45: Loop 494 & Sorters Rd

AM Peak Hour

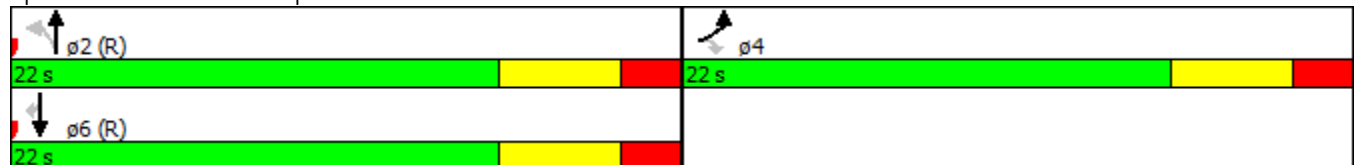


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	2.4	11.5	11.7	9.1	3.6
LOS	A	A	B	B	A	A
Approach Delay	4.3			11.7	4.7	
Approach LOS	A			B	A	

Intersection Summary

Area Type:	Other
Cycle Length:	44
Actuated Cycle Length:	44
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	10.2
Intersection Capacity Utilization	29.0%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	A

Splits and Phases: 45: Loop 494 & Sorters Rd



2014 Existing Condition
49: Hamblen & Laurel Springs

AM Peak Hour



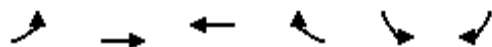
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	36	136	422	18	17	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.881	
Flt Protected		0.990			0.994	
Satd. Flow (prot)	0	1844	1852	0	1631	0
Flt Permitted		0.990			0.994	
Satd. Flow (perm)	0	1844	1852	0	1631	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		1799	1596		734	
Travel Time (s)		35.0	31.1		16.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	148	459	20	18	135
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	187	479	0	153	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.0%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
53: Kingwood Dr. & Woodland Grove Dr.

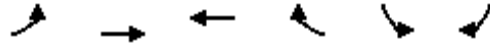
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø1	ø3	ø4	ø6	ø7	ø8
Lane Configurations	↖	↗↗	↖↖		↙↙							
Volume (vph)	33	691	1976	9	20	239						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900						
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	0.95						
Frt			0.999		0.861							
Flt Protected	0.950				0.996							
Satd. Flow (prot)	1770	3539	3536	0	3099	0						
Flt Permitted	0.950				0.996							
Satd. Flow (perm)	1770	3539	3536	0	3099	0						
Right Turn on Red				Yes		Yes						
Satd. Flow (RTOR)			1		272							
Link Speed (mph)		40	40		30							
Link Distance (ft)		315	225		626							
Travel Time (s)		5.4	3.8		14.2							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92						
Growth Factor	108%	108%	108%	108%	108%	108%						
Adj. Flow (vph)	39	811	2320	11	23	281						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	811	2331	0	304	0						
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Left	Right	Left	Right						
Median Width(ft)		40	40		24							
Link Offset(ft)		0	0		0							
Crosswalk Width(ft)		16	16		16							
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00						
Turning Speed (mph)	15			9	15	9						
Number of Detectors	1	2	2		1							
Detector Template	Left	Thru	Thru		Left							
Leading Detector (ft)	20	100	100		20							
Trailing Detector (ft)	0	0	0		0							
Detector 1 Position(ft)	0	0	0		0							
Detector 1 Size(ft)	20	6	6		20							
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex							
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0							
Detector 1 Queue (s)	0.0	0.0	0.0		0.0							
Detector 1 Delay (s)	0.0	0.0	0.0		0.0							
Detector 2 Position(ft)		94	94									
Detector 2 Size(ft)		6	6									
Detector 2 Type		Cl+Ex	Cl+Ex									
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0									
Turn Type	Prot	NA	NA		NA							
Protected Phases	5	2	3 6		4 7		1	3	4	6	7	8
Permitted Phases												
Detector Phase	5	2	3 6		4 7							
Switch Phase												
Minimum Initial (s)	3.0	10.0					3.0	1.0	5.0	2.0	1.0	5.0

2014 Existing Condition
53: Kingwood Dr. & Woodland Grove Dr.

AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø1	ø3	ø4	ø6	ø7	ø8
Minimum Split (s)	9.0	29.0					10.0	14.5	11.0	22.0	7.0	11.0
Total Split (s)	30.0	60.0					30.0	25.0	29.0	60.0	29.0	25.0
Total Split (%)	20.8%	41.7%					21%	17%	20%	42%	20%	17%
Maximum Green (s)	24.0	54.0					24.0	19.0	23.0	54.0	23.0	19.0
Yellow Time (s)	4.0	4.0					4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0										
Total Lost Time (s)	6.0	6.0										
Lead/Lag	Lead	Lag					Lead			Lag		
Lead-Lag Optimize?	Yes	Yes					Yes			Yes		
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max					None	None	None	C-Max	None	None
Walk Time (s)		5.0								5.0		
Flash Dont Walk (s)		11.0								11.0		
Pedestrian Calls (#/hr)		0								0		
Act Effect Green (s)	8.6	78.8	100.1		19.6							
Actuated g/C Ratio	0.06	0.55	0.70		0.14							
v/c Ratio	0.37	0.42	0.95		0.46							
Control Delay	74.1	21.5	10.8		11.3							
Queue Delay	0.0	0.0	44.2		0.0							
Total Delay	74.1	21.5	55.0		11.3							
LOS	E	C	D		B							
Approach Delay		23.9	55.0		11.3							
Approach LOS		C	D		B							

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 53: Kingwood Dr. & Woodland Grove Dr.



2014 Existing Condition
54: Woodland Hills & Hamblen

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	4	0	0	0	6	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865							
Flt Protected											0.950	
Satd. Flow (prot)	1863	0	0	0	1611	0	0	1863	0	0	1770	0
Flt Permitted											0.950	
Satd. Flow (perm)	1863	0	0	0	1611	0	0	1863	0	0	1770	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		6657			997			912			3265	
Travel Time (s)		129.7			19.4			17.8			63.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	4	0	0	0	7	0	0
Shared Lane Traffic (%)	0%											
Lane Group Flow (vph)	0	0	0	0	4	0	0	0	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
57: Redbud & Hamblen

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	38	5	28	2	6	2	14	77	1	0	89	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.947			0.975			0.999			0.997	
Flt Protected		0.974			0.991			0.993				
Satd. Flow (prot)	0	1718	0	0	1800	0	0	1848	0	0	1857	0
Flt Permitted		0.974			0.991			0.993				
Satd. Flow (perm)	0	1718	0	0	1800	0	0	1848	0	0	1857	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		753			6657			361			271	
Travel Time (s)		14.7			129.7			8.2			6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	5	30	2	7	2	15	84	1	0	97	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	11	0	0	100	0	0	99	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
60: Forest Cove & Hamblen

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	62	62	5	1	96	3	12	7	2	3	19	242
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996			0.988			0.876	
Flt Protected		0.976						0.973			0.999	
Satd. Flow (prot)	0	1809	0	0	1855	0	0	1791	0	0	1630	0
Flt Permitted		0.976						0.973			0.999	
Satd. Flow (perm)	0	1809	0	0	1855	0	0	1791	0	0	1630	0
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1966			1019			472			603	
Travel Time (s)		38.3			19.9			10.7			13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	67	5	1	104	3	13	8	2	3	21	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	108	0	0	23	0	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.4%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
64: Woodland Hills & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	482	36	143	1353	68	43	103	112	84	126	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3504	0	1770	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.092			0.406			0.584			0.638		
Satd. Flow (perm)	171	3504	0	756	3514	0	1088	1863	1583	1188	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8				131			49
Link Speed (mph)		40			40			35			35	
Link Distance (ft)		266			1473			2549			2207	
Travel Time (s)		4.5			25.1			49.7			43.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	161	566	42	168	1588	80	50	121	131	99	148	488
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	608	0	168	1668	0	50	121	131	99	148	488
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		70			75			20			30	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			8				4
Permitted Phases	2			6			8		8	4		4
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	105.0	105.0		105.0	105.0		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	72.9%	72.9%		72.9%	72.9%		27.1%	27.1%	27.1%	27.1%	27.1%	27.1%
Maximum Green (s)	99.0	99.0		99.0	99.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	99.0	99.0		99.0	99.0		33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.69	0.69		0.69	0.69		0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	1.38	0.25		0.32	0.69		0.20	0.28	0.28	0.36	0.35	1.22

2014 Existing Condition
64: Woodland Hills & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	238.1	8.6		11.1	15.2		47.5	48.0	8.5	51.3	49.2	161.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	238.1	8.6		11.1	15.2		47.5	48.0	8.5	51.3	49.2	161.1
LOS	F	A		B	B		D	D	A	D	D	F
Approach Delay		56.7			14.8			30.8			123.8	
Approach LOS		E			B			C			F	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	39 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Pretimed
Maximum v/c Ratio:	1.38
Intersection Signal Delay:	47.0
Intersection LOS:	D
Intersection Capacity Utilization	88.9%
ICU Level of Service	E
Analysis Period (min)	15

Splits and Phases: 64: Woodland Hills & Kingwood Dr.



2014 Existing Condition
69: Kingwood Dr. & High Valley

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	NBR2	SWL	SWR	ø1
Lane Configurations												
Volume (vph)	56	43	0	0	163	68	7	290	43	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00	1.00	1.00	
Frt					0.956			0.850				
Flt Protected	0.950	0.993					0.950					
Satd. Flow (prot)	1681	1757	0	0	3383	0	0	2787	0	0	0	
Flt Permitted	0.950	0.993					0.950					
Satd. Flow (perm)	1681	1757	0	0	3383	0	0	2787	0	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)					38			159				
Link Speed (mph)		30			30		40			40		
Link Distance (ft)		93			765		1292			1077		
Travel Time (s)		2.1			17.4		22.0			18.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	61	47	0	0	177	74	8	315	47	0	0	
Shared Lane Traffic (%)	13%											
Lane Group Flow (vph)	53	55	0	0	251	0	8	362	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			12		0			0		
Link Offset(ft)		0			0		0			0		
Crosswalk Width(ft)		16			16		16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Turn Type	Prot	NA			NA		NA	custom				
Protected Phases	1 4	4			8		15	2				1
Permitted Phases												
Minimum Split (s)		11.0			19.0		11.0	20.0				11.0
Total Split (s)		17.0			28.0		16.0	67.0				16.0
Total Split (%)		11.8%			19.4%		11.1%	46.5%				11%
Maximum Green (s)		11.0			22.0		10.0	61.0				10.0
Yellow Time (s)		4.0			4.0		4.0	4.0				4.0
All-Red Time (s)		2.0			2.0		2.0	2.0				2.0
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		6.0			6.0			6.0				
Lead/Lag		Lead			Lag		Lead					Lag
Lead-Lag Optimize?		Yes			Yes		Yes					Yes
Walk Time (s)					6.0		4.0					
Flash Dont Walk (s)					7.0		10.0					
Pedestrian Calls (#/hr)					0		0					
Act Effct Green (s)	27.0	27.0			22.0		0.0	61.0				
Actuated g/C Ratio	0.19	0.19			0.15		0.00	0.42				
v/c Ratio	0.17	0.17			0.46		no cap	0.28				
Control Delay	24.7	24.9			49.9			28.9				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	24.7	24.9			49.9		Error	28.9				
LOS	C	C			D		F	C				

Lane Group	ø6
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	10.0
Total Split (s)	83.0
Total Split (%)	58%
Maximum Green (s)	77.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

2014 Existing Condition
 69: Kingwood Dr. & High Valley

AM Peak Hour

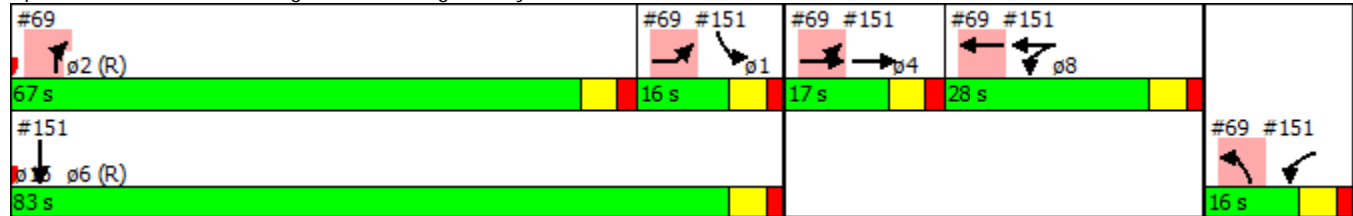


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	NBR2	SWL	SWR	ø1
Approach Delay		24.8			49.9			Err				
Approach LOS		C			D			F				

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	90 (63%), Referenced to phase 2:NBR and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	Err
Intersection Signal Delay:	Err
Intersection LOS:	F
Intersection Capacity Utilization:	Err%
ICU Level of Service:	H
Analysis Period (min):	15

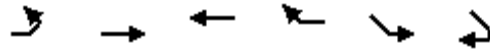
Splits and Phases: 69: Kingwood Dr. & High Valley



Lane Group	ø6
Approach Delay	
Approach LOS	
Intersection Summary	

2014 Existing Condition
73: Kingwood Dr.

AM Peak Hour



















Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑			
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3539	0	0	0
Link Speed (mph)		40	40		40	
Link Distance (ft)		291	315		343	
Travel Time (s)		5.0	5.4		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		40	40		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
74: Kingwood Dr. & Willow Terrace













AM Peak Hour

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	24	297	185	0	0	0	16	39	0	0	446	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95
Frt		0.942									0.989	
Flt Protected	0.950							0.986				
Satd. Flow (prot)	1770	3334	0	0	0	0	0	3490	0	0	3500	0
Flt Permitted	0.950							0.986				
Satd. Flow (perm)	1770	3334	0	0	0	0	0	3490	0	0	3500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95										5
Link Speed (mph)		40			40			30				30
Link Distance (ft)		1403			525			105				533
Travel Time (s)		23.9			8.9			2.4				12.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	323	201	0	0	0	17	42	0	0	485	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	524	0	0	0	0	0	59	0	0	522	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA					Prot	NA			NA	
Protected Phases	15	2					14	4			8	
Permitted Phases												
Minimum Split (s)	11.0	20.0						11.0			19.0	
Total Split (s)	25.0	48.0						14.0			42.0	
Total Split (%)	17.4%	33.3%						9.7%			29.2%	
Maximum Green (s)	19.0	42.0						8.0			36.0	
Yellow Time (s)	4.0	4.0						4.0			4.0	
All-Red Time (s)	2.0	2.0						2.0			2.0	
Lost Time Adjust (s)	0.0	0.0						0.0			0.0	
Total Lost Time (s)	6.0	6.0						6.0			6.0	
Lead/Lag		Lead						Lead			Lag	
Lead-Lag Optimize?		Yes						Yes			Yes	
Walk Time (s)		4.0									6.0	
Flash Dont Walk (s)		10.0									7.0	
Pedestrian Calls (#/hr)		0									0	
Act Effct Green (s)	19.0	42.0						23.0			36.0	
Actuated g/C Ratio	0.13	0.29						0.16			0.25	
v/c Ratio	0.11	0.50						0.11			0.59	
Control Delay	48.4	72.7						14.4			50.4	

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Minimum Split (s)	11.0	10.0
Total Split (s)	15.0	63.0
Total Split (%)	10%	44%
Maximum Green (s)	9.0	57.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
74: Kingwood Dr. & Willow Terrace

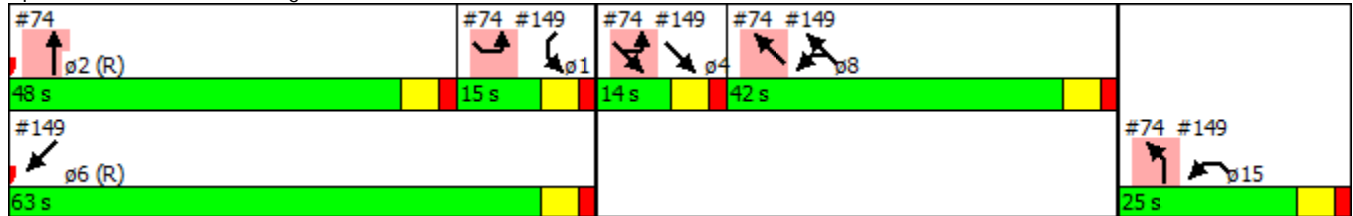
AM Peak Hour

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Queue Delay	0.0	0.0						2.4			0.0	
Total Delay	48.4	72.7						16.8			50.4	
LOS	D	E						B			D	
Approach Delay		71.5						16.8			50.4	
Approach LOS		E						B			D	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	12 (8%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	58.9
Intersection LOS:	E
Intersection Capacity Utilization	37.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 74: Kingwood Dr. & Willow Terrace



Lane Group	ø1	ø6
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
77: Timber Shade Dr. & Kingwood Dr.

AM Peak Hour

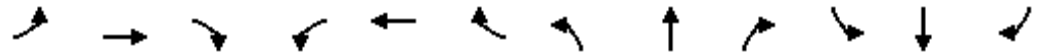


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	476	23	0	0	0	0	44	3	12	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.993						0.991				
Flt Protected	0.950										0.976	
Satd. Flow (prot)	1770	3514	0	0	0	0	0	3507	0	0	3454	0
Flt Permitted	0.950										0.976	
Satd. Flow (perm)	1770	3514	0	0	0	0	0	3507	0	0	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						3				
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		814			1647			741			83	
Travel Time (s)		13.9			28.1			16.8			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	517	25	0	0	0	0	48	3	13	14	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	542	0	0	0	0	0	51	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA						NA		Prot	NA	
Protected Phases	15	2						8		14	4	
Permitted Phases												
Minimum Split (s)	11.0	20.0						19.0			11.0	
Total Split (s)	17.0	78.0						20.0			16.0	
Total Split (%)	11.8%	54.2%						13.9%			11.1%	
Maximum Green (s)	11.0	72.0						14.0			10.0	
Yellow Time (s)	4.0	4.0						4.0			4.0	
All-Red Time (s)	2.0	2.0						2.0			2.0	
Lost Time Adjust (s)	0.0	0.0						0.0			0.0	
Total Lost Time (s)	6.0	6.0						6.0			6.0	
Lead/Lag		Lead						Lag			Lead	
Lead-Lag Optimize?		Yes						Yes			Yes	
Walk Time (s)		4.0						6.0				
Flash Dont Walk (s)		10.0						7.0				
Pedestrian Calls (#/hr)		0						0				
Act Effct Green (s)	11.0	72.0						14.0			23.0	
Actuated g/C Ratio	0.08	0.50						0.10			0.16	
v/c Ratio	0.25	0.31						0.15			0.05	
Control Delay	67.7	21.7						57.2			20.6	

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Minimum Split (s)	11.0	10.0
Total Split (s)	13.0	91.0
Total Split (%)	9%	63%
Maximum Green (s)	7.0	85.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
77: Timber Shade Dr. & Kingwood Dr.

AM Peak Hour

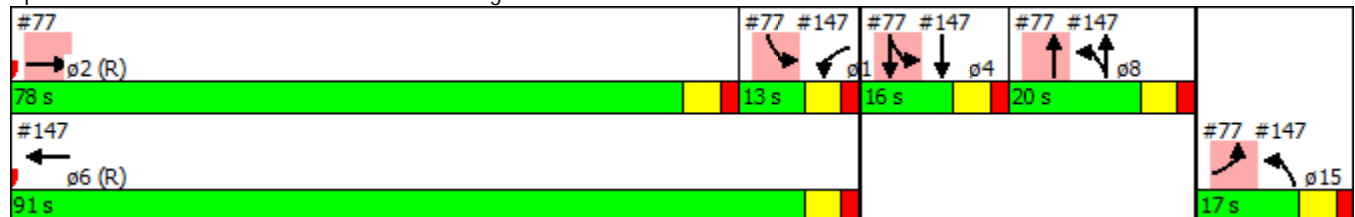


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0						0.0			0.0	
Total Delay	67.7	21.7						57.2			20.6	
LOS	E	C						E			C	
Approach Delay		24.4						57.2			20.6	
Approach LOS		C						E			C	

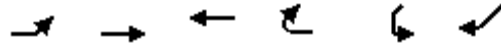
Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	12 (8%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	26.8
Intersection LOS:	C
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 77: Timber Shade Dr. & Kingwood Dr.



Lane Group	ø1	ø6
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88
Frt						
Flt Protected						
Satd. Flow (prot)	3614	0	0	0	0	3278
Flt Permitted						
Satd. Flow (perm)	3614	0	0	0	0	3278
Link Speed (mph)		40	40		40	
Link Distance (ft)		583	814		839	
Travel Time (s)		9.9	13.9		14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
81: US 59 SBFR

AM Peak Hour



Lane Group	NBT	NBR	SBU	SBL	SBT	NWL	NWR
Lane Configurations			↵		↑↑↑↑		
Volume (vph)	0	0	131	0	887	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.81	1.00	1.00
Frt							
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1770	0	7544	0	0
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1770	0	7544	0	0
Link Speed (mph)	55				55	30	
Link Distance (ft)	255				1812	318	
Travel Time (s)	3.2				22.5	7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	142	0	964	0	0
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	142	0	964	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Left	Left	Right
Median Width(ft)	12				12	0	
Link Offset(ft)	0				0	0	
Crosswalk Width(ft)	16				16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	9	15		15	9
Sign Control	Stop				Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.1%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
83: US 59 NBFR

AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	131	0	0	423	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	5085	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	5085	0	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	318			309	1638	
Travel Time (s)	7.2			3.8	20.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	0	0	460	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	0	460	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Yield			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.1%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
84: US 59 SBFR

AM Peak Hour



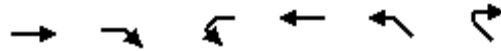
Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations							6		7	
Volume (vph)	0	0	0	0	0	0	2267	0	233	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	1.00	1.00	1.00
Frt										
Flt Protected									0.950	
Satd. Flow (prot)	0	0	0	0	0	0	8494	0	1770	0
Flt Permitted									0.950	
Satd. Flow (perm)	0	0	0	0	0	0	8494	0	1770	0
Link Speed (mph)	30			55			55		30	
Link Distance (ft)	48			6181			398		362	
Travel Time (s)	1.1			76.6			4.9		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	2464	0	253	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	0	0	0	0	2464	0	253	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		12	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		9	15		9	15	9
Sign Control	Stop			Stop			Free		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.5%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
87: Kingwood Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations		↑↑		↑↑		
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3278	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	3278	0	3539	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	1473			523	4245	
Travel Time (s)	25.1			8.9	96.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	75			70	70	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
 88: Kingwood Dr. & Kingwood High School

AM Peak Hour



Lane Group	SEL	SER	NEL	NET	SWT	SWR	ø6	ø8
Lane Configurations	↔↔		↔	↔↔				
Volume (vph)	94	0	72	821	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00		
Frt								
Flt Protected	0.950		0.950					
Satd. Flow (prot)	3433	0	1770	3539	0	0		
Flt Permitted	0.950		0.950					
Satd. Flow (perm)	3433	0	1770	3539	0	0		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)								
Link Speed (mph)	30			40	40			
Link Distance (ft)	110			162	902			
Travel Time (s)	2.5			2.8	15.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	102	0	78	892	0	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	102	0	78	892	0	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	24			12	12			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Turn Type	NA		Prot	NA				
Protected Phases	4		15	2			6	8
Permitted Phases								
Minimum Split (s)	11.0		10.0	10.0			10.0	11.0
Total Split (s)	13.0		20.0	101.0			101.0	11.0
Total Split (%)	9.0%		13.8%	69.7%			70%	8%
Maximum Green (s)	7.0		14.0	95.0			95.0	5.0
Yellow Time (s)	4.0		4.0	4.0			4.0	4.0
All-Red Time (s)	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0				
Total Lost Time (s)	6.0		6.0	6.0				
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Act Effect Green (s)	7.0		14.0	95.0				
Actuated g/C Ratio	0.05		0.10	0.66				
v/c Ratio	0.62		0.46	0.38				
Control Delay	36.3		71.3	12.1				
Queue Delay	1.3		0.0	0.0				
Total Delay	37.6		71.3	12.1				
LOS	D		E	B				
Approach Delay	37.6			16.9				
Approach LOS	D			B				

2014 Existing Condition
 88: Kingwood Dr. & Kingwood High School

AM Peak Hour

Intersection Summary

Area Type:	Other		
Cycle Length:	145		
Actuated Cycle Length:	145		
Offset:	0 (0%), Referenced to phase 2:NET and 6:, Start of Green		
Natural Cycle:	75		
Control Type:	Pretimed		
Maximum v/c Ratio:	0.72		
Intersection Signal Delay:	18.8	Intersection LOS:	B
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Splits and Phases: 88: Kingwood Dr. & Kingwood High School

#88 ↗ ρ2 (R) 101 s	#88 #139 ↖ ρ4 13 s	#139 ↗ ρ8 11 s	
#139 ↘ ρ6 (R) 101 s			#88 #139 ↖ ρ15 20 s



Lane Group	EBU	EBL	SBL	SBR	SWR
Lane Configurations					
Volume (vph)	0	893	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		100	0	0	0
Storage Lanes		2	0	0	0
Taper Length (ft)		25	25		
Lane Util. Factor	1.00	0.97	1.00	1.00	1.00
Frt					
Frt Protected		0.950			
Satd. Flow (prot)	1863	3433	0	0	0
Frt Permitted		0.950			
Satd. Flow (perm)	1863	3433	0	0	0
Link Speed (mph)		40	30		40
Link Distance (ft)		380	137		162
Travel Time (s)		6.5	3.1		2.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	971	0	0	0
Shared Lane Traffic (%)					
Lane Group Flow (vph)	0	971	0	0	0
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Right
Median Width(ft)		36	0		0
Link Offset(ft)		0	0		0
Crosswalk Width(ft)		16	16		16
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15	15	9	9
Sign Control		Free	Stop		Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.5%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
91: Lake Kingwood Trail & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	797	38	0	0	0	0	46	24	77	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00
Frt		0.993						0.949				
Flt Protected	0.950										0.958	
Satd. Flow (prot)	1770	3514	0	0	0	0	0	3359	0	0	3391	0
Flt Permitted	0.950										0.958	
Satd. Flow (perm)	1770	3514	0	0	0	0	0	3359	0	0	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						26				
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		985			1267			554			108	
Travel Time (s)		16.8			21.6			12.6			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	866	41	0	0	0	0	50	26	84	12	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	907	0	0	0	0	0	76	0	0	96	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Detector 1 Position(ft)	0	0						0		0	0	
Detector 1 Size(ft)	20	6						6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0						0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0						0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Prot	NA						NA		Prot	NA	
Protected Phases	15	2						8		1 4	4	
Permitted Phases												
Detector Phase	15	2						8		1 4	4	

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Detector Phase		

2014 Existing Condition
91: Lake Kingwood Trail & Kingwood Dr.

AM Peak Hour

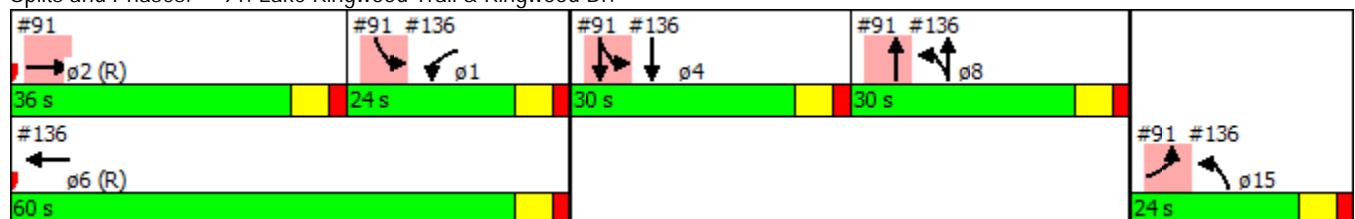


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	4.0						5.0			5.0	
Minimum Split (s)	11.0	20.0						19.0			11.0	
Total Split (s)	24.0	36.0						30.0			30.0	
Total Split (%)	16.7%	25.0%						20.8%			20.8%	
Maximum Green (s)	18.0	30.0						24.0			24.0	
Yellow Time (s)	4.0	4.0						4.0			4.0	
All-Red Time (s)	2.0	2.0						2.0			2.0	
Lost Time Adjust (s)	0.0	0.0						0.0			0.0	
Total Lost Time (s)	6.0	6.0						6.0			6.0	
Lead/Lag		Lead						Lag			Lead	
Lead-Lag Optimize?		Yes						Yes			Yes	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Recall Mode	None	C-Max						None			None	
Walk Time (s)		4.0						6.0				
Flash Dont Walk (s)		10.0						7.0				
Pedestrian Calls (#/hr)		0						0				
Act Effct Green (s)	6.6	79.4						7.7			33.5	
Actuated g/C Ratio	0.05	0.55						0.05			0.23	
v/c Ratio	0.15	0.47						0.37			0.12	
Control Delay	69.5	22.0						49.0			2.5	
Queue Delay	0.0	0.0						0.0			0.2	
Total Delay	69.5	22.0						49.0			2.7	
LOS	E	C						D			A	
Approach Delay		22.6						49.0			2.7	
Approach LOS		C						D			A	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	22.7
Intersection LOS:	C
Intersection Capacity Utilization:	44.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 91: Lake Kingwood Trail & Kingwood Dr.



Lane Group	ø1	ø6
Switch Phase		
Minimum Initial (s)	5.0	4.0
Minimum Split (s)	11.0	10.0
Total Split (s)	24.0	60.0
Total Split (%)	17%	42%
Maximum Green (s)	18.0	54.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	C-Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphp)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Growth Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		

2014 Existing Condition
 96: Chestnut Ridge Dr. & Kingwood Dr.

AM Peak Hour

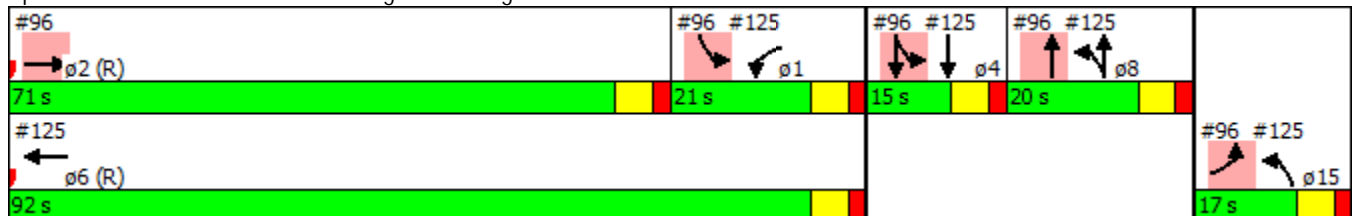


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	15	2						8		14	4	
Switch Phase												
Minimum Initial (s)	5.0	4.0						5.0			5.0	
Minimum Split (s)	11.0	20.0						19.0			11.0	
Total Split (s)	17.0	71.0						20.0			15.0	
Total Split (%)	11.8%	49.3%						13.9%			10.4%	
Maximum Green (s)	11.0	65.0						14.0			9.0	
Yellow Time (s)	4.0	4.0						4.0			4.0	
All-Red Time (s)	2.0	2.0						2.0			2.0	
Lost Time Adjust (s)	0.0	0.0						0.0			0.0	
Total Lost Time (s)	6.0	6.0						6.0			6.0	
Lead/Lag		Lead						Lag			Lead	
Lead-Lag Optimize?		Yes						Yes			Yes	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Recall Mode	None	C-Max						None			None	
Walk Time (s)		4.0						6.0				
Flash Dont Walk (s)		10.0						7.0				
Pedestrian Calls (#/hr)		0						0				
Act Effct Green (s)	10.7	65.8						14.0			29.5	
Actuated g/C Ratio	0.07	0.46						0.10			0.20	
v/c Ratio	0.80	0.54						0.91			0.37	
Control Delay	104.4	29.7						102.9			10.7	
Queue Delay	0.0	0.0						0.0			0.0	
Total Delay	104.4	29.7						102.9			10.7	
LOS	F	C						F			B	
Approach Delay		37.8						102.9			10.7	
Approach LOS		D						F			B	

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 20 (14%), Referenced to phase 2:EBT and 6:, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 53.1%
 ICU Level of Service A
 Analysis Period (min) 15

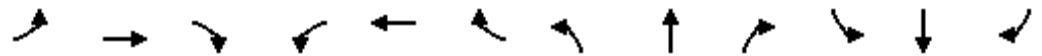
Splits and Phases: 96: Chestnut Ridge Dr. & Kingwood Dr.



Lane Group	ø1	ø6
Detector Phase		
Switch Phase		
Minimum Initial (s)	5.0	4.0
Minimum Split (s)	11.0	10.0
Total Split (s)	21.0	92.0
Total Split (%)	15%	64%
Maximum Green (s)	15.0	86.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	C-Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
98: Kingwood Place Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑		↙	↑↑		↙	↑↑		↙	↑↑	
Volume (vph)	15	156	12	358	533	264	2	26	103	60	39	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	50		0	50		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.989			0.950			0.880				0.965
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3500	0	1770	3362	0	1770	3115	0	1770	3415	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3500	0	1770	3362	0	1770	3115	0	1770	3415	0
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1981			1012			655			695	
Travel Time (s)		33.8			17.3			14.9			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	170	13	389	579	287	2	28	112	65	42	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	183	0	389	866	0	2	140	0	65	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.2%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
102: Kingwood Dr.

AM Peak Hour



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	0	0	3539
Flt Permitted						
Satd. Flow (perm)	1863	0	0	0	0	3539
Link Speed (mph)	30		40			40
Link Distance (ft)	137		129			202
Travel Time (s)	3.1		2.2			3.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Yield		Free			Free

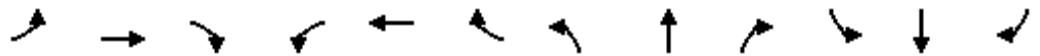
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.5%
Analysis Period (min)	15
	ICU Level of Service A

Lane Group	ø1	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21
Lane Configurations											
Volume (vph)											
Ideal Flow (vphpl)											
Lane Util. Factor											
Frt											
Flt Protected											
Satd. Flow (prot)											
Flt Permitted											
Satd. Flow (perm)											
Right Turn on Red											
Satd. Flow (RTOR)											
Link Speed (mph)											
Link Distance (ft)											
Travel Time (s)											
Peak Hour Factor											
Adj. Flow (vph)											
Shared Lane Traffic (%)											
Lane Group Flow (vph)											
Enter Blocked Intersection											
Lane Alignment											
Median Width(ft)											
Link Offset(ft)											
Crosswalk Width(ft)											
Two way Left Turn Lane											
Headway Factor											
Turning Speed (mph)											
Number of Detectors											
Detector Template											
Leading Detector (ft)											
Trailing Detector (ft)											
Detector 1 Position(ft)											
Detector 1 Size(ft)											
Detector 1 Type											
Detector 1 Channel											
Detector 1 Extend (s)											
Detector 1 Queue (s)											
Detector 1 Delay (s)											
Detector 2 Position(ft)											
Detector 2 Size(ft)											
Detector 2 Type											
Detector 2 Channel											
Detector 2 Extend (s)											
Turn Type											
Protected Phases	1	3	4	5	6	7	8	11	15	16	21
Permitted Phases											
Detector Phase											
Switch Phase											
Minimum Initial (s)	3.0	1.0	5.0	3.0	8.0	1.0	1.0	3.0	3.0	4.0	1.0
Minimum Split (s)	9.0	7.0	11.7	9.0	26.0	7.0	26.7	9.0	9.0	10.0	7.0

2014 Existing Condition
104: US 59 SBFR & Kingwood Dr.

AM Peak Hour

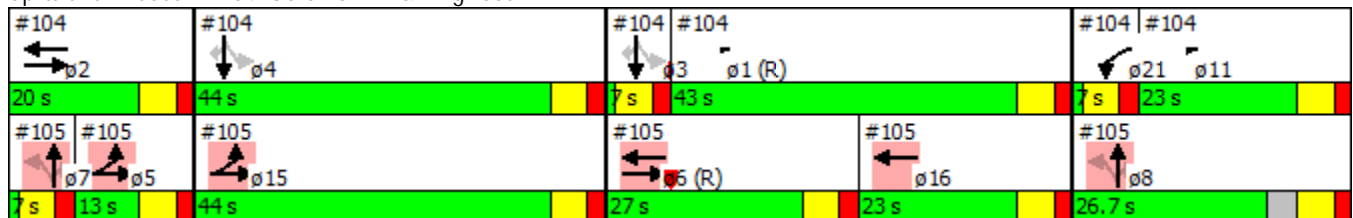


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)		20.0										
Total Split (%)		13.9%										
Maximum Green (s)		14.0										
Yellow Time (s)		4.0										
All-Red Time (s)		2.0										
Lost Time Adjust (s)		0.0										
Total Lost Time (s)		6.0										
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0										
Recall Mode		None										
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		14.0		71.0	78.0					41.0	41.0	41.0
Actuated g/C Ratio		0.10		0.49	0.54					0.28	0.28	0.28
v/c Ratio		0.46		0.97	0.43					0.48	0.48	0.32
Control Delay		48.8		27.3	2.6					45.9	40.1	2.1
Queue Delay		0.0		41.9	0.6					71.5	55.8	3.4
Total Delay		48.8		69.2	3.2					117.3	95.9	5.5
LOS		D		E	A					F	F	A
Approach Delay		48.8			47.3						84.0	
Approach LOS		D			D						F	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 1:WBTL and 6:, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	57.1
Intersection LOS:	E
Intersection Capacity Utilization	72.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 104: US 59 SBFR & Kingwood Dr.



Lane Group	ø1	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21
Total Split (s)	43.0	7.0	44.0	13.0	27.0	7.0	26.7	23.0	44.0	23.0	7.0
Total Split (%)	30%	5%	31%	9%	19%	5%	19%	16%	31%	16%	5%
Maximum Green (s)	37.0	1.0	38.0	7.0	21.0	1.0	20.7	17.0	38.0	17.0	1.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)											
Total Lost Time (s)											
Lead/Lag	Lag	Lead		Lag	Lead	Lead		Lag		Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes		Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	None	None	None	C-Max	Max	None	None	None	None	None
Walk Time (s)					5.0		6.0				
Flash Dont Walk (s)					15.0		14.0				
Pedestrian Calls (#/hr)					0		0				
Act Effect Green (s)											
Actuated g/C Ratio											
v/c Ratio											
Control Delay											
Queue Delay											
Total Delay											
LOS											
Approach Delay											
Approach LOS											
Intersection Summary											

Lane Group	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21
Lane Configurations												
Volume (vph)												
Ideal Flow (vphpl)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Right Turn on Red												
Satd. Flow (RTOR)												
Link Speed (mph)												
Link Distance (ft)												
Travel Time (s)												
Peak Hour Factor												
Adj. Flow (vph)												
Shared Lane Traffic (%)												
Lane Group Flow (vph)												
Enter Blocked Intersection												
Lane Alignment												
Median Width(ft)												
Link Offset(ft)												
Crosswalk Width(ft)												
Two way Left Turn Lane												
Headway Factor												
Turning Speed (mph)												
Number of Detectors												
Detector Template												
Leading Detector (ft)												
Trailing Detector (ft)												
Detector 1 Position(ft)												
Detector 1 Size(ft)												
Detector 1 Type												
Detector 1 Channel												
Detector 1 Extend (s)												
Detector 1 Queue (s)												
Detector 1 Delay (s)												
Detector 2 Position(ft)												
Detector 2 Size(ft)												
Detector 2 Type												
Detector 2 Channel												
Detector 2 Extend (s)												
Turn Type												
Protected Phases	1	2	3	4	5	6	7	8	11	15	16	21
Permitted Phases												
Detector Phase												
Switch Phase												
Minimum Initial (s)	3.0	7.0	1.0	5.0	3.0	8.0	1.0	1.0	3.0	3.0	4.0	1.0
Minimum Split (s)	9.0	13.0	7.0	11.7	9.0	26.0	7.0	26.7	9.0	9.0	10.0	7.0

2014 Existing Condition
 105: US 59 NBFR & Kingwood Dr.

AM Peak Hour

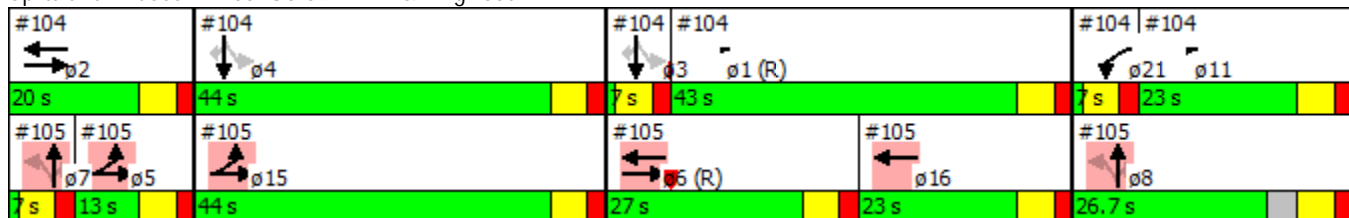


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)												
Total Split (%)												
Maximum Green (s)												
Yellow Time (s)												
All-Red Time (s)												
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)												
Recall Mode												
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	40.3	78.0			54.7		31.0	31.0	31.0			
Actuated g/C Ratio	0.28	0.54			0.38		0.22	0.22	0.22			
v/c Ratio	0.08	0.26			0.87		0.75	0.35	0.50			
Control Delay	11.9	2.9			48.4		68.4	49.1	5.6			
Queue Delay	0.0	0.5			7.8		66.7	20.9	1.8			
Total Delay	11.9	3.3			56.2		135.1	70.1	7.4			
LOS	B	A			E		F	E	A			
Approach Delay		4.5			56.2			56.4				
Approach LOS		A			E			E				

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 1:WBTL and 6:, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	48.3
Intersection LOS:	D
Intersection Capacity Utilization:	72.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 105: US 59 NBFR & Kingwood Dr.



Lane Group	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø11	ø15	ø16	ø21
Total Split (s)	43.0	20.0	7.0	44.0	13.0	27.0	7.0	26.7	23.0	44.0	23.0	7.0
Total Split (%)	30%	14%	5%	31%	9%	19%	5%	19%	16%	31%	16%	5%
Maximum Green (s)	37.0	14.0	1.0	38.0	7.0	21.0	1.0	20.7	17.0	38.0	17.0	1.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag	Lag		Lead		Lag	Lead	Lead		Lag		Lag	Lead
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes		Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	None	None	None	None	C-Max	Max	None	None	None	None	None
Walk Time (s)						5.0		6.0				
Flash Dont Walk (s)						15.0		14.0				
Pedestrian Calls (#/hr)						0		0				
Act Effect Green (s)												
Actuated g/C Ratio												
v/c Ratio												
Control Delay												
Queue Delay												
Total Delay												
LOS												
Approach Delay												
Approach LOS												
Intersection Summary												

2014 Existing Condition
107: Kingwood Dr.

AM Peak Hour















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	10	245	114	17	56	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.983			
Flt Protected	0.950					0.987
Satd. Flow (prot)	1770	1583	1831	0	0	1839
Flt Permitted	0.950					0.987
Satd. Flow (perm)	1770	1583	1831	0	0	1839
Link Speed (mph)	40		35			35
Link Distance (ft)	1981		3652			1853
Travel Time (s)	33.8		71.1			36.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	266	124	18	61	176
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	266	142	0	0	237
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.0%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
110: Hidden Pines & Northpark Dr.

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑	↗	↘	↑	
Volume (vph)	42	875	49	0	0	0	0	125	65	32	62	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992							0.850			
Flt Protected		0.998								0.950		
Satd. Flow (prot)	0	3504	0	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.998								0.950		
Satd. Flow (perm)	0	3504	0	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2967			1422			1041			125	
Travel Time (s)		45.0			21.5			23.7			2.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	951	53	0	0	0	0	136	71	35	67	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1050	0	0	0	0	0	136	71	35	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	101.3%
ICU Level of Service	G
Analysis Period (min)	15

2014 Existing Condition
111: Lake Houston Parkway & Rustic Woods

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑		↑	↑↑				
Volume (vph)	24	33	0	0	131	28	72	854	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.974			0.995				
Flt Protected		0.979					0.950					
Satd. Flow (prot)	0	3465	0	0	3447	0	1770	3522	0	0	0	0
Flt Permitted		0.979					0.950					
Satd. Flow (perm)	0	3465	0	0	3447	0	1770	3522	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					14			3				
Link Speed (mph)		30			30			40				40
Link Distance (ft)		82			559			1308				4598
Travel Time (s)		1.9			12.7			22.3				78.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	36	0	0	142	30	78	928	33	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	62	0	0	172	0	78	961	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA		Prot	NA				
Protected Phases	1 4	4			8		15	2				
Permitted Phases												
Minimum Split (s)		11.0			19.0		11.0	20.0				
Total Split (s)		17.0			21.0		22.0	71.0				
Total Split (%)		11.8%			14.6%		15.3%	49.3%				
Maximum Green (s)		11.0			15.0		16.0	65.0				
Yellow Time (s)		4.0			4.0		4.0	4.0				
All-Red Time (s)		2.0			2.0		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		6.0			6.0		6.0	6.0				
Lead/Lag		Lead			Lag			Lead				
Lead-Lag Optimize?		Yes			Yes			Yes				
Walk Time (s)					6.0			4.0				
Flash Dont Walk (s)					7.0			10.0				
Pedestrian Calls (#/hr)					0			0				
Act Effct Green (s)		24.0			15.0		16.0	65.0				
Actuated g/C Ratio		0.17			0.10		0.11	0.45				
v/c Ratio		0.11			0.46		0.40	0.60				
Control Delay		26.6			60.1		66.2	31.7				

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Minimum Split (s)	11.0	10.0
Total Split (s)	13.0	84.0
Total Split (%)	9%	58%
Maximum Green (s)	7.0	78.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
 111: Lake Houston Parkway & Rustic Woods

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		26.6			60.1		66.2	31.7				
LOS		C			E		E	C				
Approach Delay		26.6			60.1			34.3				
Approach LOS		C			E			C				

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	90 (63%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	37.4
Intersection LOS:	D
Intersection Capacity Utilization	48.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 111: Lake Houston Parkway & Rustic Woods

#111 ↑ ϕ2 (R) 71 s	#111#175 ↗ ϕ1 13 s	#111#175 ↘ ϕ4 17 s	#111#175 ← ϕ8 21 s	
#175 ↓ ϕ6 (R) 84 s				#111#175 ↖ ϕ15 22 s

Lane Group	ø1	ø6
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
115: Loop 494 & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	653	95	161	1707	66	16	41	264	88	168	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	160		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1770	3518	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.050			0.239			0.465			0.683		
Satd. Flow (perm)	93	3472	0	445	3518	0	866	1863	1583	1272	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			5				266			159
Link Speed (mph)		40			40			45				45
Link Distance (ft)		1514			523			675				922
Travel Time (s)		25.8			8.9			10.2				14.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	7	767	112	189	2004	77	19	48	310	103	197	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	879	0	189	2081	0	19	48	310	103	197	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		4

2014 Existing Condition
115: Loop 494 & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0		10.0	22.0		10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	10.0	85.0		20.0	95.0		10.0	29.0	29.0	10.0	29.0	29.0
Total Split (%)	6.9%	59.0%		13.9%	66.0%		6.9%	20.1%	20.1%	6.9%	20.1%	20.1%
Maximum Green (s)	4.0	79.0		14.0	89.0		4.0	23.0	23.0	4.0	23.0	23.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	Max	Max	None	Max	Max
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	86.1	82.1		99.0	97.0		27.0	23.0	23.0	29.4	27.0	27.0
Actuated g/C Ratio	0.60	0.57		0.69	0.67		0.19	0.16	0.16	0.20	0.19	0.19
v/c Ratio	0.07	0.44		0.47	0.88		0.10	0.16	0.65	0.38	0.56	0.62
Control Delay	14.5	25.1		15.1	36.5		44.8	53.9	17.3	52.7	61.7	28.7
Queue Delay	0.0	0.0		0.0	47.1		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	25.1		15.1	83.6		44.8	53.9	17.3	52.7	61.7	28.7
LOS	B	C		B	F		D	D	B	D	E	C
Approach Delay		25.0			77.9			23.3			44.7	
Approach LOS		C			E			C			D	

Intersection Summary

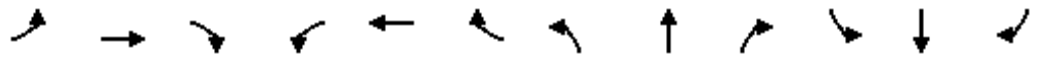
Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 49 (34%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 56.9
 Intersection LOS: E
 Intersection Capacity Utilization 86.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 115: Loop 494 & Kingwood Dr.



2014 Existing Condition
118: Royal Forest /Royal Forest & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	823	44	18	1813	18	33	5	8	1	2	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850		0.869	
Flt Protected	0.950			0.950				0.958				
Satd. Flow (prot)	1770	3539	1583	1770	3536	0	0	1785	1583	0	1619	0
Flt Permitted	0.950			0.950				0.518			0.998	
Satd. Flow (perm)	1770	3539	1583	1770	3536	0	0	965	1583	0	1615	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		1				114		103	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		523			284			392			750	
Travel Time (s)		8.9			4.8			8.9			17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	162	966	52	21	2128	21	39	6	9	1	2	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	966	52	21	2149	0	0	45	9	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8		8	4		

2014 Existing Condition
 118: Royal Forest /Royal Forest & Kingwood Dr.

AM Peak Hour

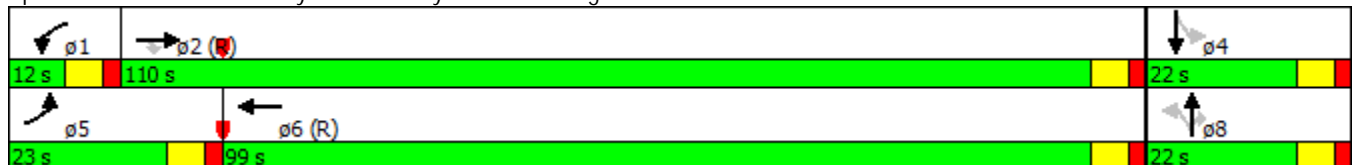


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0		22.0	22.0	22.0	22.0	22.0	
Total Split (s)	23.0	110.0	110.0	12.0	99.0		22.0	22.0	22.0	22.0	22.0	
Total Split (%)	16.0%	76.4%	76.4%	8.3%	68.8%		15.3%	15.3%	15.3%	15.3%	15.3%	
Maximum Green (s)	17.0	104.0	104.0	6.0	93.0		16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	Max	Max	
Walk Time (s)		5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	
Act Effect Green (s)	16.0	108.8	108.8	5.9	94.0			16.0	16.0		16.0	
Actuated g/C Ratio	0.11	0.76	0.76	0.04	0.65			0.11	0.11		0.11	
v/c Ratio	0.83	0.36	0.04	0.29	0.93			0.42	0.03		0.39	
Control Delay	84.5	13.1	4.9	79.7	47.4			72.7	0.2		15.6	
Queue Delay	0.0	0.4	0.0	0.0	45.4			1.7	0.0		0.8	
Total Delay	84.5	13.5	4.9	79.7	92.8			74.4	0.2		16.4	
LOS	F	B	A	E	F			E	A		B	
Approach Delay		22.9			92.7			62.0			16.4	
Approach LOS		C			F			E			B	

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 100 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 66.4
 Intersection LOS: E
 Intersection Capacity Utilization 86.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 118: Royal Forest /Royal Forest & Kingwood Dr.



2014 Existing Condition
121: US 59 SBFR

AM Peak Hour

	↑	↖	↗	↘	↓	↙	↕
Lane Group	NBT	NBR	SBU	SBL	SBT	NWL	NWR
Lane Configurations			↖		↓↓↓↓		
Volume (vph)	0	0	104	0	918	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.81	1.00	1.00
Frt							
Flt Protected			0.950				
Satd. Flow (prot)	0	0	1770	0	7544	0	0
Flt Permitted			0.950				
Satd. Flow (perm)	0	0	1770	0	7544	0	0
Right Turn on Red		Yes		Yes		Yes	Yes
Satd. Flow (RTOR)							
Link Speed (mph)	55				55	30	
Link Distance (ft)	202				6181	296	
Travel Time (s)	2.5				76.6	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	113	0	998	0	0
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	113	0	998	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	R NA	Left	Left	Left	Right
Median Width(ft)	12				12	0	
Link Offset(ft)	0				0	0	
Crosswalk Width(ft)	16				16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	9	15		15	9
Turn Type			Perm		NA		
Protected Phases					6		
Permitted Phases			6				
Minimum Split (s)			22.0		22.0		
Total Split (s)			22.0		22.0		
Total Split (%)			100.0%		100.0%		
Maximum Green (s)			16.0		16.0		
Yellow Time (s)			4.0		4.0		
All-Red Time (s)			2.0		2.0		
Lost Time Adjust (s)			0.0		0.0		
Total Lost Time (s)			6.0		6.0		
Lead/Lag							
Lead-Lag Optimize?							
Walk Time (s)			5.0		5.0		
Flash Dont Walk (s)			11.0		11.0		
Pedestrian Calls (#/hr)			0		0		
Act Effct Green (s)			22.0		22.0		
Actuated g/C Ratio			1.00		1.00		
v/c Ratio			0.06		0.13		
Control Delay			0.1		0.0		
Queue Delay			0.0		0.0		
Total Delay			0.1		0.0		
LOS			A		A		



Lane Group	NBT	NBR	SBU	SBL	SBT	NWL	NWR
Approach Delay					0.0		
Approach LOS					A		

Intersection Summary

Area Type:	Other
Cycle Length:	22
Actuated Cycle Length:	22
Offset:	0 (0%), Referenced to phase 2: and 6:SBTU, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.13
Intersection Signal Delay:	0.0
Intersection LOS:	A
Intersection Capacity Utilization	41.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 121: US 59 SBFR



2014 Existing Condition
122: US 59 NBFR

AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	104	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	5085	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	5085	0	0
Right Turn on Red	Yes	Yes				Yes
Satd. Flow (RTOR)	1091					
Link Speed (mph)	30			55	55	
Link Distance (ft)	296			199	6172	
Travel Time (s)	6.7			2.5	76.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	NA					
Protected Phases	4			2		
Permitted Phases						
Minimum Split (s)	22.0			22.0		
Total Split (s)	22.0			22.0		
Total Split (%)	50.0%			50.0%		
Maximum Green (s)	16.0			16.0		
Yellow Time (s)	4.0			4.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	0.0			0.0		
Total Lost Time (s)	6.0			6.0		
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0			5.0		
Flash Dont Walk (s)	11.0			11.0		
Pedestrian Calls (#/hr)	0			0		
Act Effct Green (s)	16.0					
Actuated g/C Ratio	0.36					
v/c Ratio	0.08					
Control Delay	0.1					
Queue Delay	0.0					
Total Delay	0.1					
LOS	A					

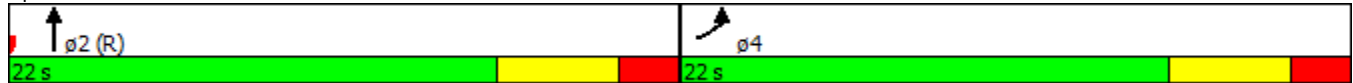


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	0.1					
Approach LOS	A					

Intersection Summary

Area Type:	Other
Cycle Length:	44
Actuated Cycle Length:	44
Offset:	0 (0%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.08
Intersection Signal Delay:	0.1
Intersection LOS:	A
Intersection Capacity Utilization	19.1%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 122: US 59 NBFR



2014 Existing Condition
123: US 59 SBFR

AM Peak Hour



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑↑	↘	
Volume (vph)	0	0	0	1888	317	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	5085	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	5085	1770	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	6715			184	304	
Travel Time (s)	83.2			2.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2052	345	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2052	345	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type				NA	NA	
Protected Phases				6	8	
Permitted Phases						
Minimum Split (s)				22.0	22.0	
Total Split (s)				22.0	22.0	
Total Split (%)				50.0%	50.0%	
Maximum Green (s)				16.0	16.0	
Yellow Time (s)				4.0	4.0	
All-Red Time (s)				2.0	2.0	
Lost Time Adjust (s)				0.0	0.0	
Total Lost Time (s)				6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)				5.0	5.0	
Flash Dont Walk (s)				11.0	11.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)				16.0	16.0	
Actuated g/C Ratio				0.36	0.36	
v/c Ratio				1.11	0.54	
Control Delay				75.7	14.9	
Queue Delay				1.0	0.0	
Total Delay				76.7	14.9	
LOS				E	B	

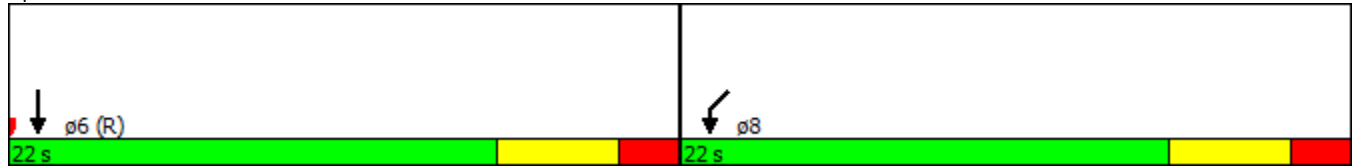


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Approach Delay				76.7	14.9	
Approach LOS				E	B	

Intersection Summary

Area Type:	Other
Cycle Length:	44
Actuated Cycle Length:	44
Offset:	0 (0%), Referenced to phase 2: and 6:SBT, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	1.11
Intersection Signal Delay:	67.8
Intersection LOS:	E
Intersection Capacity Utilization	56.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 123: US 59 SBFR



2014 Existing Condition
124: US 59 NBFR

AM Peak Hour



Lane Group	NBU	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	A		B				
Volume (vph)	317	0	1002	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.76	1.00	1.00	1.00	1.00
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	1770	0	8494	0	0	0	0
Flt Permitted	0.950						
Satd. Flow (perm)	1770	0	8494	0	0	0	0
Right Turn on Red		Yes			Yes	Yes	Yes
Satd. Flow (RTOR)							
Link Speed (mph)			55	55		30	
Link Distance (ft)			423	180		304	
Travel Time (s)			5.2	2.2		6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	345	0	1089	0	0	0	0
Shared Lane Traffic (%)							
Lane Group Flow (vph)	345	0	1089	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			12	12		0	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15			9	15	9
Turn Type	Perm		NA				
Protected Phases			2				
Permitted Phases	2						
Minimum Split (s)	22.0		22.0				
Total Split (s)	22.0		22.0				
Total Split (%)	100.0%		100.0%				
Maximum Green (s)	16.0		16.0				
Yellow Time (s)	4.0		4.0				
All-Red Time (s)	2.0		2.0				
Lost Time Adjust (s)	0.0		0.0				
Total Lost Time (s)	6.0		6.0				
Lead/Lag							
Lead-Lag Optimize?							
Walk Time (s)	5.0		5.0				
Flash Dont Walk (s)	11.0		11.0				
Pedestrian Calls (#/hr)	0		0				
Act Effct Green (s)	22.0		22.0				
Actuated g/C Ratio	1.00		1.00				
v/c Ratio	0.19		0.13				
Control Delay	0.2		0.0				
Queue Delay	0.0		0.0				
Total Delay	0.2		0.0				
LOS	A		A				



Lane Group	NBU	NBL	NBT	SBT	SBR	SEL	SER
Approach Delay			0.1				
Approach LOS			A				

Intersection Summary

Area Type:	Other
Cycle Length:	22
Actuated Cycle Length:	22
Offset:	0 (0%), Referenced to phase 2:NBTU and 6:, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.19
Intersection Signal Delay:	0.1
Intersection LOS:	A
Intersection Capacity Utilization	56.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 124: US 59 NBFR



Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphp)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Growth Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	2	15
Permitted Phases		

2014 Existing Condition
125: Chestnut Ridge Dr. & Kingwood Dr.

AM Peak Hour

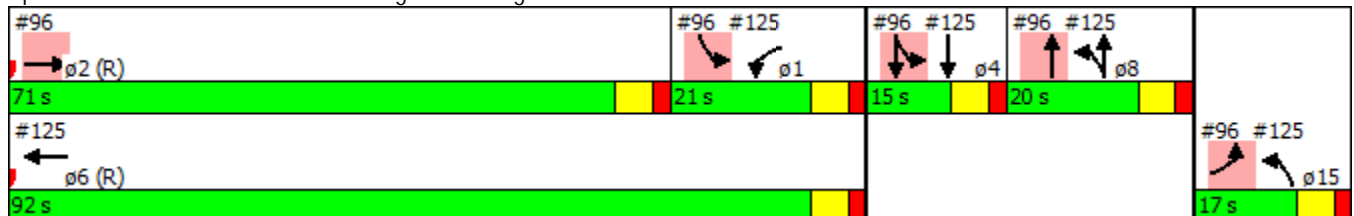


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				1	6		15	8			4	
Switch Phase												
Minimum Initial (s)				5.0	4.0			5.0			5.0	
Minimum Split (s)				11.0	10.0			19.0			11.0	
Total Split (s)				21.0	92.0			20.0			15.0	
Total Split (%)				14.6%	63.9%			13.9%			10.4%	
Maximum Green (s)				15.0	86.0			14.0			9.0	
Yellow Time (s)				4.0	4.0			4.0			4.0	
All-Red Time (s)				2.0	2.0			2.0			2.0	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				6.0	6.0			6.0			6.0	
Lead/Lag				Lag				Lag			Lead	
Lead-Lag Optimize?				Yes				Yes			Yes	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Recall Mode				None	C-Max			None			None	
Walk Time (s)								6.0				
Flash Dont Walk (s)								7.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)				15.0	86.8			30.7			8.5	
Actuated g/C Ratio				0.10	0.60			0.21			0.06	
v/c Ratio				0.58	0.97			0.23			0.82	
Control Delay				56.9	24.2			10.4			59.5	
Queue Delay				0.0	0.0			0.0			0.6	
Total Delay				56.9	24.2			10.4			60.1	
LOS				E	C			B			E	
Approach Delay					25.8			10.4			60.1	
Approach LOS					C			B			E	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	20 (14%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	27.4
Intersection LOS:	C
Intersection Capacity Utilization:	80.4%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 125: Chestnut Ridge Dr. & Kingwood Dr.



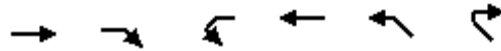
2014 Existing Condition
 125: Chestnut Ridge Dr. & Kingwood Dr.

AM Peak Hour

Lane Group	ø2	ø15
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	5.0
Minimum Split (s)	20.0	11.0
Total Split (s)	71.0	17.0
Total Split (%)	49%	12%
Maximum Green (s)	65.0	11.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	None
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
126: Kingwood Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑			↑↑		
Volume (vph)	832	0	0	1842	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3539	0	0
Link Speed (mph)	40			40	40	
Link Distance (ft)	1032			502	532	
Travel Time (s)	17.6			8.6	9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	904	0	0	2002	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	904	0	0	2002	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.3%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
128: Green Oak Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	72	1718	413	79	75	0	0	112	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		150	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt						0.850					0.959	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	3539	1583	1770	1863	0	0	3394	0
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	3539	1583	1770	1863	0	0	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						226						28
Link Speed (mph)		40			40			30				30
Link Distance (ft)		558			1500			89				282
Travel Time (s)		9.5			25.6			2.0				6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	108%	108%	108%	108%	108%	108%	108%	108%	108%
Adj. Flow (vph)	0	0	0	85	2017	485	93	88	0	0	131	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	85	2017	485	93	88	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2				2
Detector Template				Left	Thru	Right	Left	Thru				Thru
Leading Detector (ft)				20	100	20	20	100				100
Trailing Detector (ft)				0	0	0	0	0				0
Detector 1 Position(ft)				0	0	0	0	0				0
Detector 1 Size(ft)				20	6	20	20	6				6
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0				0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0
Turn Type				Prot	NA	Perm	Prot	NA				NA
Protected Phases				1	6		15	8				4
Permitted Phases							6					

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphp)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Growth Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	2	15
Permitted Phases		

2014 Existing Condition
128: Green Oak Dr. & Kingwood Dr.

AM Peak Hour

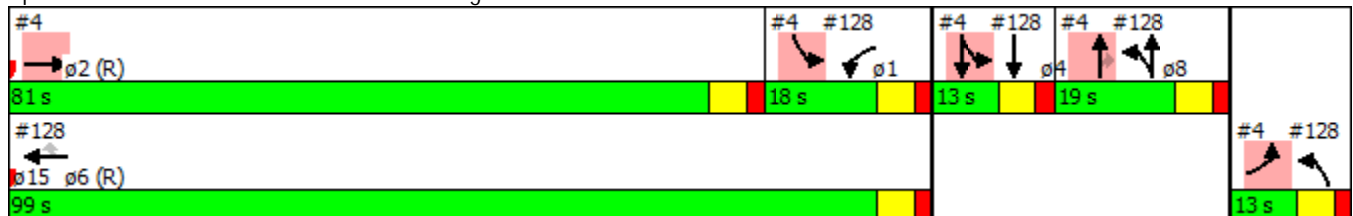


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase				1	6	6	15	8				4
Switch Phase												
Minimum Initial (s)				5.0	4.0	4.0		5.0				5.0
Minimum Split (s)				11.0	10.0	10.0		19.0				11.0
Total Split (s)				18.0	99.0	99.0		19.0				13.0
Total Split (%)				12.5%	68.8%	68.8%		13.2%				9.0%
Maximum Green (s)				12.0	93.0	93.0		13.0				7.0
Yellow Time (s)				4.0	4.0	4.0		4.0				4.0
All-Red Time (s)				2.0	2.0	2.0		2.0				2.0
Lost Time Adjust (s)				0.0	0.0	0.0		0.0				0.0
Total Lost Time (s)				6.0	6.0	6.0		6.0				6.0
Lead/Lag				Lag				Lag				Lead
Lead-Lag Optimize?				Yes				Yes				Yes
Vehicle Extension (s)				3.0	3.0	3.0		3.0				3.0
Recall Mode				None	C-Max	C-Max		None				None
Walk Time (s)								6.0				
Flash Dont Walk (s)								7.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)				12.0	93.9	93.9	25.1	12.4				7.0
Actuated g/C Ratio				0.08	0.65	0.65	0.17	0.09				0.05
v/c Ratio				0.58	0.87	0.44	0.30	0.55				0.94
Control Delay				79.8	26.1	7.4	8.6	53.1				108.1
Queue Delay				15.8	0.0	0.0	0.0	0.0				6.2
Total Delay				95.6	26.1	7.4	8.6	53.1				114.3
LOS				F	C	A	A	D				F
Approach Delay					24.9			30.2				114.3
Approach LOS					C			C				F

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 30.7 Intersection LOS: C
 Intersection Capacity Utilization 99.8% ICU Level of Service F
 Analysis Period (min) 15

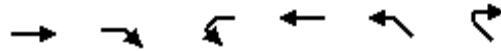
Splits and Phases: 128: Green Oak Dr. & Kingwood Dr.



Lane Group	ø2	ø15
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	5.0
Minimum Split (s)	20.0	11.0
Total Split (s)	81.0	13.0
Total Split (%)	56%	9%
Maximum Green (s)	75.0	7.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	None
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
130: Kingwood Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations		↑↑		↑↑		
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3278	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	3278	0	3539	0	0
Link Speed (mph)	40			30	40	
Link Distance (ft)	355			392	393	
Travel Time (s)	6.1			8.9	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	40			40	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
132: Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑				
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		393	799		60	
Travel Time (s)		6.7	13.6		1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
ICU Level of Service	A
Analysis Period (min)	15

2014 Existing Condition
133: Kingwood Dr.

AM Peak Hour



Lane Group	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations		↑↑				↑↑
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	0	3278	0	0	0	3539
Flt Permitted						
Satd. Flow (perm)	0	3278	0	0	0	3539
Link Speed (mph)	40		30			40
Link Distance (ft)	902		887			1898
Travel Time (s)	15.4		20.2			32.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
136: Lake Kingwood Trail & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	75	1409	89	40	6	0	0	88	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Frt					0.991						0.988	
Flt Protected				0.950				0.959				
Satd. Flow (prot)	0	0	0	1770	3507	0	0	3394	0	0	3497	0
Flt Permitted				0.950				0.959				
Satd. Flow (perm)	0	0	0	1770	3507	0	0	3394	0	0	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5							5
Link Speed (mph)		40			40			30				30
Link Distance (ft)		950			732			108				289
Travel Time (s)		16.2			12.5			2.5				6.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	82	1532	97	43	7	0	0	96	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	82	1629	0	0	50	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Detector 1 Position(ft)				0	0		0	0				0
Detector 1 Size(ft)				20	6		20	6				6
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0				0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0				0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0				0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0
Turn Type				Prot	NA		Prot	NA				NA
Protected Phases				1	6		15	8				4
Permitted Phases												
Detector Phase				1	6		15	8				4

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Detector Phase		

2014 Existing Condition
 136: Lake Kingwood Trail & Kingwood Dr.

AM Peak Hour

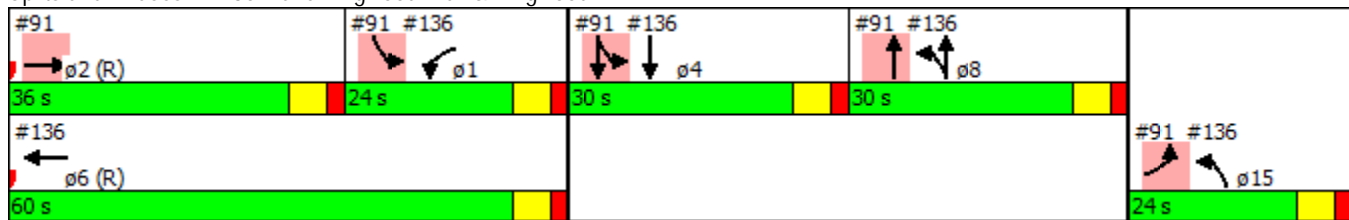


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)				5.0	4.0			5.0			5.0	
Minimum Split (s)				11.0	10.0			19.0			11.0	
Total Split (s)				24.0	60.0			30.0			30.0	
Total Split (%)				16.7%	41.7%			20.8%			20.8%	
Maximum Green (s)				18.0	54.0			24.0			24.0	
Yellow Time (s)				4.0	4.0			4.0			4.0	
All-Red Time (s)				2.0	2.0			2.0			2.0	
Lost Time Adjust (s)				0.0	0.0			0.0			0.0	
Total Lost Time (s)				6.0	6.0			6.0			6.0	
Lead/Lag					Lag			Lag			Lead	
Lead-Lag Optimize?					Yes			Yes			Yes	
Vehicle Extension (s)				3.0	3.0			3.0			3.0	
Recall Mode					None	C-Max		None			None	
Walk Time (s)								6.0				
Flash Dont Walk (s)								7.0				
Pedestrian Calls (#/hr)								0				
Act Effect Green (s)				18.0	103.4			13.2			9.5	
Actuated g/C Ratio				0.12	0.72			0.09			0.07	
v/c Ratio				0.37	0.65			0.16			0.44	
Control Delay				63.2	13.8			25.3			67.1	
Queue Delay				0.0	0.0			0.1			0.0	
Total Delay				63.2	13.8			25.4			67.1	
LOS				E	B			C			E	
Approach Delay					16.2			25.4			67.1	
Approach LOS					B			C			E	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	19.3
Intersection LOS:	B
Intersection Capacity Utilization:	60.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 136: Lake Kingwood Trail & Kingwood Dr.



Lane Group	ø2	ø15
Switch Phase		
Minimum Initial (s)	4.0	5.0
Minimum Split (s)	20.0	11.0
Total Split (s)	36.0	24.0
Total Split (%)	25%	17%
Maximum Green (s)	30.0	18.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	None
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
 139: Kingwood Dr. & Kingwood High School

AM Peak Hour



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑	↑		↑						↑↑	↑
Volume (vph)	0	94	33	1	73	0	0	0	0	0	1525	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected					0.999							
Satd. Flow (prot)	0	3539	1583	0	1861	0	0	0	0	0	3539	1583
Flt Permitted					0.999							
Satd. Flow (perm)	0	3539	1583	0	1861	0	0	0	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113									222
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		317			110			202			887	
Travel Time (s)		7.2			2.5			3.4			20.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	102	36	1	79	0	0	0	0	0	1658	385
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	36	0	80	0	0	0	0	0	1658	385
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Prot	NA						NA	Perm
Protected Phases		4		15	8						6	
Permitted Phases			4									6
Minimum Split (s)		11.0	11.0		11.0						10.0	10.0
Total Split (s)		13.0	13.0		11.0						101.0	101.0
Total Split (%)		9.0%	9.0%		7.6%						69.7%	69.7%
Maximum Green (s)		7.0	7.0		5.0						95.0	95.0
Yellow Time (s)		4.0	4.0		4.0						4.0	4.0
All-Red Time (s)		2.0	2.0		2.0						2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0						0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0						6.0	6.0
Lead/Lag		Lead	Lead		Lag							
Lead-Lag Optimize?		Yes	Yes		Yes							
Act Effect Green (s)		7.0	7.0		25.0						95.0	95.0
Actuated g/C Ratio		0.05	0.05		0.17						0.66	0.66
v/c Ratio		0.60	0.20		0.25						0.72	0.35
Control Delay		82.7	2.4		5.0						18.4	5.2
Queue Delay		0.4	0.0		3.2						0.0	0.0
Total Delay		83.1	2.4		8.2						18.4	5.2
LOS		F	A		A						B	A

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Minimum Split (s)	10.0	10.0
Total Split (s)	101.0	20.0
Total Split (%)	70%	14%
Maximum Green (s)	95.0	14.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

2014 Existing Condition
 139: Kingwood Dr. & Kingwood High School

AM Peak Hour



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Approach Delay		62.0			8.2						15.9	
Approach LOS		E			A						B	

Intersection Summary

Area Type:	Other
Cycle Length:	145
Actuated Cycle Length:	145
Offset:	0 (0%), Referenced to phase 2:NET and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization	65.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 139: Kingwood Dr. & Kingwood High School

#88 ↗ ϕ2 (R)	#88 #139 #139 ↗ ϕ4 ↘ ϕ8	
101 s	13 s	11 s
#139 ↘ ϕ6 (R)		#88 #139 ↘ ϕ15
101 s		20 s

Lane Group	ø2	ø15
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
141: Lake Houston Parkway & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	298	331	154	791	135	450	642	60	169	807	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Fr _t			0.850			0.850			0.850			0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Fl _t Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			321			159			114			159
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		513			546			450			568	
Travel Time (s)		8.7			9.3			7.7			9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	324	360	167	860	147	489	698	65	184	877	288
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	324	360	167	860	147	489	698	65	184	877	288
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Minimum Split (s)	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	16.0	45.0	45.0	18.0	47.0	47.0	32.0	62.0	62.0	19.0	49.0	49.0
Total Split (%)	11.1%	31.3%	31.3%	12.5%	32.6%	32.6%	22.2%	43.1%	43.1%	13.2%	34.0%	34.0%
Maximum Green (s)	10.0	39.0	39.0	12.0	41.0	41.0	26.0	56.0	56.0	13.0	43.0	43.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	10.0	39.0	39.0	12.0	41.0	41.0	26.0	56.0	56.0	13.0	43.0	43.0
Actuated g/C Ratio	0.07	0.27	0.27	0.08	0.28	0.28	0.18	0.39	0.39	0.09	0.30	0.30
v/c Ratio	0.70	0.34	0.54	0.58	0.85	0.26	0.79	0.51	0.09	0.60	0.83	0.49
Control Delay	81.6	43.3	10.0	74.5	51.6	6.0	66.6	35.1	0.5	71.6	55.1	21.0

2014 Existing Condition
 141: Lake Houston Parkway & Kingwood Dr.

AM Peak Hour

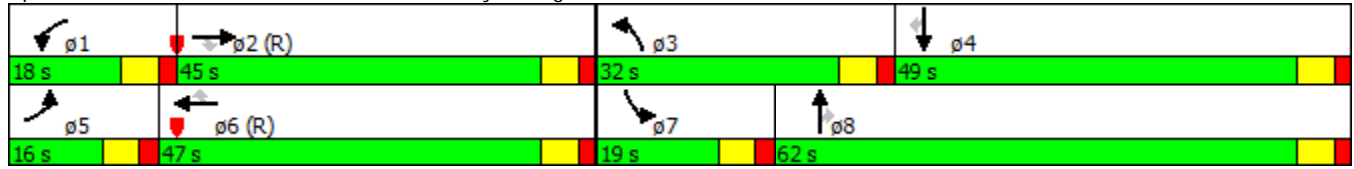


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	43.3	10.0	74.5	51.6	6.0	66.6	35.1	0.5	71.6	55.1	21.0
LOS	F	D	B	E	D	A	E	D	A	E	E	C
Approach Delay		36.8			49.1			45.6			50.1	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	67 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	46.2
Intersection LOS:	D
Intersection Capacity Utilization	81.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 141: Lake Houston Parkway & Kingwood Dr.



2014 Existing Condition
144: Forest Garden Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	437	44	10	1006	80	107	44	16	78	30	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.986			0.989			0.986			0.897	
Flt Protected	0.950			0.950				0.969			0.989	
Satd. Flow (prot)	1770	3490	0	1770	3500	0	0	3381	0	0	3140	0
Flt Permitted	0.192			0.458				0.632			0.830	
Satd. Flow (perm)	358	3490	0	853	3500	0	0	2205	0	0	2635	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			21			14			102	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		821			549			426			481	
Travel Time (s)		14.0			9.4			9.7			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	475	48	11	1093	87	116	48	17	85	33	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	523	0	11	1180	0	0	181	0	0	378	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	50.0	50.0		50.0	50.0		22.0	22.0		22.0	22.0	
Total Split (%)	69.4%	69.4%		69.4%	69.4%		30.6%	30.6%		30.6%	30.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	44.0	44.0		44.0	44.0			16.0			16.0	
Actuated g/C Ratio	0.61	0.61		0.61	0.61			0.22			0.22	
v/c Ratio	0.62	0.24		0.02	0.55			0.36			0.57	
Control Delay	41.0	7.9		5.7	9.2			24.3			21.8	

2014 Existing Condition
 144: Forest Garden Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	41.0	7.9		5.7	9.2			24.3			21.8	
LOS	D	A		A	A			C			C	
Approach Delay		14.7			9.2			24.3			21.8	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	72
Actuated Cycle Length:	72
Offset:	22 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	13.8
Intersection LOS:	B
Intersection Capacity Utilization	74.0%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 144: Forest Garden Dr. & Kingwood Dr.



2014 Existing Condition
146: Northpark Dr. & Woodridge Pkwy

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑		↑	↑			↑	↑
Volume (vph)	0	0	0	82	1875	49	122	40	0	0	10	10
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996							0.850
Flt Protected					0.998		0.950					
Satd. Flow (prot)	0	0	0	0	3518	0	1770	1863	0	0	1863	1583
Flt Permitted					0.998		0.950					
Satd. Flow (perm)	0	0	0	0	3518	0	1770	1863	0	0	1863	1583
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2961			325			125			384	
Travel Time (s)		44.9			4.9			2.8			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	2038	53	133	43	0	0	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2180	0	133	43	0	0	11	11
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	101.3%
ICU Level of Service	G
Analysis Period (min)	15

2014 Existing Condition
147: Timber Shade Dr. & Kingwood Dr.

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	11	994	11	36	38	0	0	16	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95
Frt					0.998						0.874	
Flt Protected				0.950				0.976				
Satd. Flow (prot)	0	0	0	1770	3532	0	0	3454	0	0	3093	0
Flt Permitted				0.950				0.976				
Satd. Flow (perm)	0	0	0	1770	3532	0	0	3454	0	0	3093	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1							88
Link Speed (mph)		40			40			30				30
Link Distance (ft)		839			1628			83				459
Travel Time (s)		14.3			27.8			1.9				10.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	12	1080	12	39	41	0	0	17	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	12	1092	0	0	80	0	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Prot	NA		Prot	NA				NA
Protected Phases				1	6		15	8				4
Permitted Phases												
Minimum Split (s)				11.0	10.0			19.0				11.0
Total Split (s)				13.0	91.0			20.0				16.0
Total Split (%)				9.0%	63.2%			13.9%				11.1%
Maximum Green (s)				7.0	85.0			14.0				10.0
Yellow Time (s)				4.0	4.0			4.0				4.0
All-Red Time (s)				2.0	2.0			2.0				2.0
Lost Time Adjust (s)				0.0	0.0			0.0				0.0
Total Lost Time (s)				6.0	6.0			6.0				6.0
Lead/Lag				Lag				Lag				Lead
Lead-Lag Optimize?				Yes				Yes				Yes
Walk Time (s)								6.0				
Flash Dont Walk (s)								7.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)				7.0	85.0			31.0				10.0
Actuated g/C Ratio				0.05	0.59			0.22				0.07
v/c Ratio				0.14	0.52			0.11				0.35
Control Delay				53.1	9.3			4.8				20.8

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Minimum Split (s)	20.0	11.0
Total Split (s)	78.0	17.0
Total Split (%)	54%	12%
Maximum Green (s)	72.0	11.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
 147: Timber Shade Dr. & Kingwood Dr.

AM Peak Hour

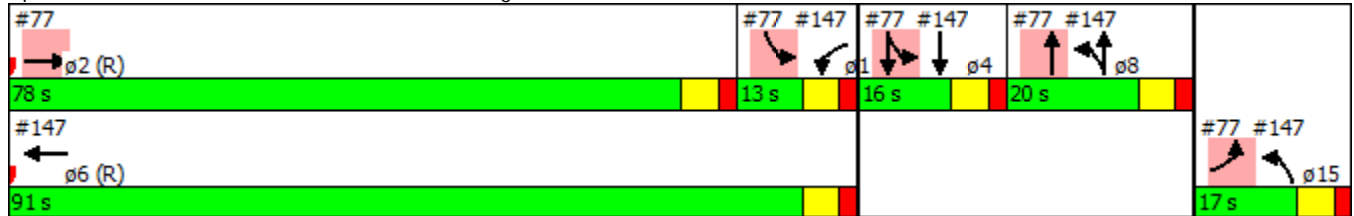


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay				0.0	0.0			0.0			0.0	
Total Delay				53.1	9.3			4.8			20.8	
LOS				D	A			A			C	
Approach Delay					9.7			4.8			20.8	
Approach LOS					A			A			C	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	12 (8%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization	46.5%
ICU Level of Service	A
Analysis Period (min)	15

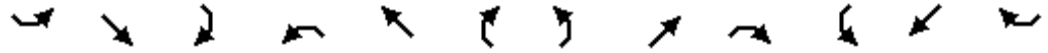
Splits and Phases: 147: Timber Shade Dr. & Kingwood Dr.



Lane Group	ø2	ø15
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
149: Kingwood Dr. & Willow Terrace

AM Peak Hour



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑		↖	↖					↖	↑↑	
Volume (vph)	0	23	52	424	40	0	0	0	0	32	574	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Fr _t		0.896										0.996
Fl _t Protected				0.950	0.960					0.950		
Satd. Flow (prot)	0	3171	0	1681	1699	0	0	0	0	1770	3525	0
Fl _t Permitted				0.950	0.960					0.950		
Satd. Flow (perm)	0	3171	0	1681	1699	0	0	0	0	1770	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57										2
Link Speed (mph)		30			30			40				40
Link Distance (ft)		359			105			1388				466
Travel Time (s)		8.2			2.4			23.7				7.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	25	57	461	43	0	0	0	0	35	624	18
Shared Lane Traffic (%)				46%								
Lane Group Flow (vph)	0	82	0	249	255	0	0	0	0	35	642	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Prot	NA					Prot	NA	
Protected Phases		4		15	8					1	6	
Permitted Phases												
Minimum Split (s)		11.0			19.0					11.0	10.0	
Total Split (s)		14.0			42.0					15.0	63.0	
Total Split (%)		9.7%			29.2%					10.4%	43.8%	
Maximum Green (s)		8.0			36.0					9.0	57.0	
Yellow Time (s)		4.0			4.0					4.0	4.0	
All-Red Time (s)		2.0			2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		6.0			6.0					6.0	6.0	
Lead/Lag		Lead			Lag					Lag		
Lead-Lag Optimize?		Yes			Yes					Yes		
Walk Time (s)					6.0							
Flash Dont Walk (s)					7.0							
Pedestrian Calls (#/hr)					0							
Act Effect Green (s)		8.0		61.0	61.0					9.0	57.0	
Actuated g/C Ratio		0.06		0.42	0.42					0.06	0.40	
v/c Ratio		0.36		0.35	0.35					0.32	0.46	
Control Delay		29.5		1.6	1.6					79.2	38.4	

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Minimum Split (s)	20.0	11.0
Total Split (s)	48.0	25.0
Total Split (%)	33%	17%
Maximum Green (s)	42.0	19.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
 149: Kingwood Dr. & Willow Terrace

AM Peak Hour

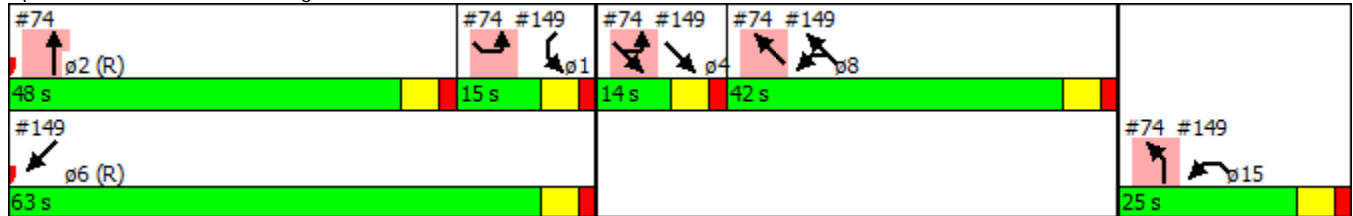


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Queue Delay		0.0		1.1	1.1					0.0	0.0	
Total Delay		29.5		2.7	2.7					79.2	38.4	
LOS		C		A	A					E	D	
Approach Delay		29.5			2.7						40.5	
Approach LOS		C			A						D	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	12 (8%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	24.7
Intersection LOS:	C
Intersection Capacity Utilization	45.9%
ICU Level of Service	A
Analysis Period (min)	15

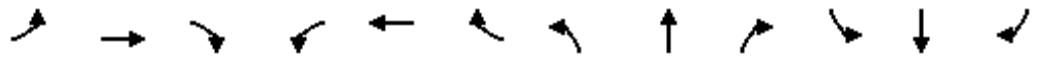
Splits and Phases: 149: Kingwood Dr. & Willow Terrace



Lane Group	ø2	ø15
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
151: Kingwood Dr. & High Valley

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓		↖	↗						↑↓	
Volume (vph)	0	65	31	143	18	0	0	0	0	31	397	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.951									0.991	
Flt Protected				0.950	0.963						0.997	
Satd. Flow (prot)	0	3366	0	1681	1704	0	0	0	0	0	3497	0
Flt Permitted				0.950	0.963						0.997	
Satd. Flow (perm)	0	3366	0	1681	1704	0	0	0	0	0	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34									7	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		302			93			1305			1106	
Travel Time (s)		6.9			2.1			22.2			18.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	71	34	155	20	0	0	0	0	34	432	29
Shared Lane Traffic (%)				44%								
Lane Group Flow (vph)	0	105	0	87	88	0	0	0	0	0	495	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Prot	NA					Prot	NA	
Protected Phases		4		15 8	8					1	6	
Permitted Phases												
Minimum Split (s)		11.0			19.0					11.0	10.0	
Total Split (s)		17.0			28.0					16.0	83.0	
Total Split (%)		11.8%			19.4%					11.1%	57.6%	
Maximum Green (s)		11.0			22.0					10.0	77.0	
Yellow Time (s)		4.0			4.0					4.0	4.0	
All-Red Time (s)		2.0			2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		6.0			6.0						6.0	
Lead/Lag		Lead			Lag					Lag		
Lead-Lag Optimize?		Yes			Yes					Yes		
Walk Time (s)					6.0							
Flash Dont Walk (s)					7.0							
Pedestrian Calls (#/hr)					0							
Act Effect Green (s)		11.0		38.0	38.0						77.0	
Actuated g/C Ratio		0.08		0.26	0.26						0.53	
v/c Ratio		0.36		0.20	0.20						0.48	
Control Delay		46.4		8.1	8.0						23.7	
Queue Delay		0.0		0.0	0.0						0.2	
Total Delay		46.4		8.1	8.0						23.9	
LOS		D		A	A						C	

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Minimum Split (s)	20.0	11.0
Total Split (s)	67.0	16.0
Total Split (%)	47%	11%
Maximum Green (s)	61.0	10.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

2014 Existing Condition
 151: Kingwood Dr. & High Valley

AM Peak Hour

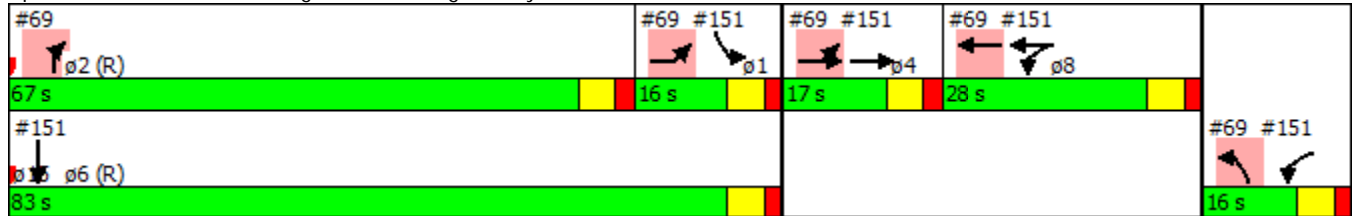


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		46.4			8.0						23.9	
Approach LOS		D			A						C	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	90 (63%), Referenced to phase 2:NBR and 6:, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	Err
Intersection Signal Delay:	23.4
Intersection LOS:	C
Intersection Capacity Utilization Err%	
ICU Level of Service	H
Analysis Period (min)	15

Splits and Phases: 151: Kingwood Dr. & High Valley



Lane Group	ø2	ø15
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
157: US 59 NBFR

AM Peak Hour



Lane Group	NBU	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	A	B					
Volume (vph)	233	705	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.76	1.00	1.00	1.00	1.00	1.00
Frt							
Flt Protected	0.950						
Satd. Flow (prot)	1770	8494	0	0	0	0	0
Flt Permitted	0.950						
Satd. Flow (perm)	1770	8494	0	0	0	0	0
Link Speed (mph)		55			30	55	
Link Distance (ft)		6172			362	365	
Travel Time (s)		76.5			8.2	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	766	0	0	0	0	0
Shared Lane Traffic (%)							
Lane Group Flow (vph)	253	766	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Right	Left	Left	Left	Right
Median Width(ft)		12			12	0	
Link Offset(ft)		0			0	0	
Crosswalk Width(ft)		16			16	16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		9	15		15	9
Sign Control		Free			Stop	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.1%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
159: Russel Palmer & Northpark Dr.

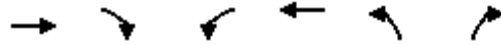
AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø2	ø4
Lane Configurations								
Volume (vph)	0	0	77	1865	126	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Storage Length (ft)		0	150		0	0		
Storage Lanes		0	1		1	0		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00		
Frt								
Flt Protected			0.950		0.950			
Satd. Flow (prot)	0	0	1770	3539	1770	0		
Flt Permitted			0.950		0.950			
Satd. Flow (perm)	0	0	1770	3539	1770	0		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)								
Link Speed (mph)	45			45	30			
Link Distance (ft)	128			2961	106			
Travel Time (s)	1.9			44.9	2.4			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	0	0	84	2027	137	0		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	84	2027	137	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	12			12	12			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)		9	15		15	9		
Number of Detectors			1	2	1			
Detector Template			Left	Thru	Left			
Leading Detector (ft)			20	100	20			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	20			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94				
Detector 2 Size(ft)				6				
Detector 2 Type				Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)				0.0				
Turn Type								
Protected Phases			custom	NA	NA		2	4
Permitted Phases			1					
Detector Phase			1	6	8			

2014 Existing Condition
159: Russel Palmer & Northpark Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø2	ø4
Switch Phase								
Minimum Initial (s)			5.0	15.0	5.0		15.0	5.0
Minimum Split (s)			11.3	21.3	11.6		21.3	11.3
Total Split (s)			21.0	116.0	28.0		95.0	28.0
Total Split (%)			14.6%	80.6%	19.4%		66%	19%
Maximum Green (s)			15.0	110.0	22.0		89.0	22.0
Yellow Time (s)			4.0	4.0	4.0		4.0	4.0
All-Red Time (s)			2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0	0.0	0.0			
Total Lost Time (s)			6.0	6.0	6.0			
Lead/Lag			Lead				Lag	
Lead-Lag Optimize?			Yes				Yes	
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0
Recall Mode			None	C-Max	Max		C-Max	None
Act Effect Green (s)			11.8	110.0	22.0			
Actuated g/C Ratio			0.08	0.76	0.15			
v/c Ratio			0.58	0.75	0.51			
Control Delay			79.2	11.6	8.3			
Queue Delay			125.9	0.0	0.1			
Total Delay			205.1	11.6	8.4			
LOS			F	B	A			
Approach Delay				19.3	8.4			
Approach LOS				B	A			

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	0 (0%), Referenced to phase 2:EBT and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	18.7
Intersection LOS:	B
Intersection Capacity Utilization	68.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 159: Russel Palmer & Northpark Dr.

#159 ø1 21 s	#35 ø2 (R) 95 s	#35 ø4 28 s
#159 ø6 (R) 116 s		#35 #159 ø8 28 s

2014 Existing Condition
161: Northpark Dr.

AM Peak Hour



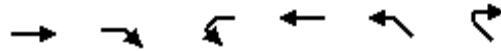
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕				
Volume (vph)	41	986	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected		0.998				
Satd. Flow (prot)	0	3532	0	0	0	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	3532	0	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		2834	117		111	
Travel Time (s)		42.9	1.8		2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	1072	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1117	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	87.4%
Analysis Period (min)	15
	ICU Level of Service E

2014 Existing Condition
162: Northpark Dr.

AM Peak Hour



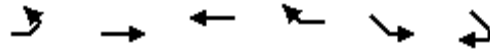
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑↑	↑	
Volume (vph)	0	0	0	1891	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	2834			128	111	
Travel Time (s)	42.9			1.9	2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	2055	45	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2055	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.3%
Analysis Period (min)	15
	ICU Level of Service B

2014 Existing Condition
163: Northpark Dr.

AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑			
Volume (vph)	0	764	1940	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3539	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		1422	944		1100	
Travel Time (s)		21.5	14.3		25.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	830	2109	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	830	2109	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.0%
	ICU Level of Service B
Analysis Period (min)	15

2014 Existing Condition
164: Northpark Dr.

AM Peak Hour



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations			↑↑			↑↑
Volume (vph)	0	0	360	0	0	561
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	3539
Link Speed (mph)	40		40			40
Link Distance (ft)	609		2651			576
Travel Time (s)	10.4		45.2			9.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	391	0	0	610
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	391	0	0	610
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.8%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
165: Northpark Dr. & Rock Springs

AM Peak Hour

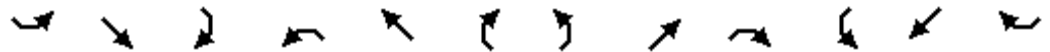


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	44	25	0	0	96	17	76	250	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	150		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t					0.978			0.982				
Fl _t Protected	0.950						0.950					
Satd. Flow (prot)	1770	3539	0	0	3461	0	1770	3476	0	0	0	0
Fl _t Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	3461	0	1770	3476	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			10				
Link Speed (mph)		30			30			40				40
Link Distance (ft)		173			1130			609				1786
Travel Time (s)		3.9			25.7			10.4				30.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	27	0	0	104	18	83	272	37	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	27	0	0	122	0	83	309	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Prot	NA				
Protected Phases	1 4	4			8		15	2				
Permitted Phases												
Detector Phase	1 4	4			8		15	2				

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(ft)		
Detector 2 Size(ft)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Detector Phase		

2014 Existing Condition
165: Northpark Dr. & Rock Springs

AM Peak Hour

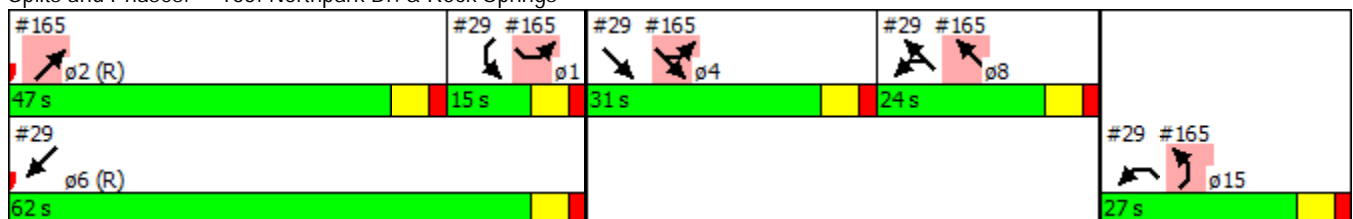


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)		5.0			5.0		5.0	4.0				
Minimum Split (s)		22.0			21.0		11.0	18.0				
Total Split (s)		31.0			24.0		27.0	47.0				
Total Split (%)		21.5%			16.7%		18.8%	32.6%				
Maximum Green (s)		25.0			18.0		21.0	41.0				
Yellow Time (s)		4.0			4.0		4.0	4.0				
All-Red Time (s)		2.0			2.0		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		6.0			6.0		6.0	6.0				
Lead/Lag		Lead			Lag			Lead				
Lead-Lag Optimize?		Yes			Yes			Yes				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Recall Mode		None			Max		Max	C-Max				
Walk Time (s)		5.0			5.0			5.0				
Flash Dont Walk (s)		11.0			10.0			7.0				
Pedestrian Calls (#/hr)		0			0			0				
Act Effct Green (s)	24.3	9.3			33.7		21.0	41.0				
Actuated g/C Ratio	0.17	0.06			0.23		0.15	0.28				
v/c Ratio	0.16	0.12			0.15		0.32	0.31				
Control Delay	34.9	42.8			41.4		59.0	40.1				
Queue Delay	0.3	0.0			0.0		0.0	0.0				
Total Delay	35.2	42.8			41.4		59.0	40.1				
LOS	D	D			D		E	D				
Approach Delay		37.9			41.4			44.1				
Approach LOS		D			D			D				

Intersection Summary

Area Type: Other
 Cycle Length: 144
 Actuated Cycle Length: 144
 Offset: 114 (79%), Referenced to phase 2:NET and 6:, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 42.8
 Intersection LOS: D
 Intersection Capacity Utilization 44.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 165: Northpark Dr. & Rock Springs



Lane Group	ø1	ø6
Switch Phase		
Minimum Initial (s)	5.0	4.0
Minimum Split (s)	11.0	18.0
Total Split (s)	15.0	62.0
Total Split (%)	10%	43%
Maximum Green (s)	9.0	56.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Vehicle Extension (s)	3.0	3.0
Recall Mode	Max	C-Max
Walk Time (s)		5.0
Flash Dont Walk (s)		7.0
Pedestrian Calls (#/hr)		0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
167: Northpark Dr. & Mills Branch

AM Peak Hour



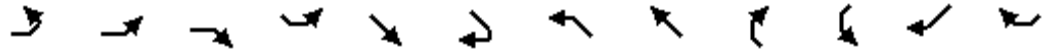
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↕	↕↔				
Volume (vph)	3	146	0	0	434	22	115	43	136	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.988			0.888				
Flt Protected		0.999					0.950					
Satd. Flow (prot)	0	1861	0	0	1840	0	1770	3143	0	0	0	0
Flt Permitted		0.999					0.950					
Satd. Flow (perm)	0	1861	0	0	1840	0	1770	3143	0	0	0	0
Link Speed (mph)		30			30			40				30
Link Distance (ft)		163			1511			1786				359
Travel Time (s)		3.7			34.3			30.4				8.2
Peak Hour Factor	0.75	0.78	0.92	0.92	0.92	0.50	0.72	0.83	0.89	0.92	0.92	0.92
Adj. Flow (vph)	4	187	0	0	472	44	160	52	153	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	516	0	160	205	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.2%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
168: Lake Houston Parkway & Kings Crossing

AM Peak Hour



Lane Group	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR	SWR2
Lane Configurations		RT						LT			RT	
Volume (vph)	57	28	0	0	0	0	11	1070	155	0	290	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.97	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.88	1.00
Frnt								0.981			0.850	
Flt Protected		0.950										
Satd. Flow (prot)	0	3433	0	0	0	0	0	3472	0	0	2787	0
Flt Permitted		0.950										
Satd. Flow (perm)	0	3433	0	0	0	0	0	3472	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								17			157	
Link Speed (mph)		30			40			40		30		
Link Distance (ft)		148			829			954		813		
Travel Time (s)		3.4			14.1			16.3		18.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	30	0	0	0	0	12	1163	168	0	315	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	0	0	0	1343	0	0	351	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			0			0		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Turn Type	Prot	NA					Prot	NA			custom	
Protected Phases	1 4	4					15	2			8	
Permitted Phases												
Minimum Split (s)		22.0					11.0	17.0			22.0	
Total Split (s)		22.0					11.0	80.0			22.0	
Total Split (%)		15.1%					7.5%	54.8%			15.1%	
Maximum Green (s)		16.0					5.0	74.0			16.0	
Yellow Time (s)		4.0					4.0	4.0			4.0	
All-Red Time (s)		2.0					2.0	2.0			2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		6.0						6.0			6.0	
Lead/Lag		Lead						Lead			Lag	
Lead-Lag Optimize?		Yes						Yes			Yes	
Walk Time (s)		5.0						4.0			4.0	
Flash Dont Walk (s)		11.0						7.0			12.0	
Pedestrian Calls (#/hr)		0						0			0	
Act Effct Green (s)		27.0						79.0			16.0	
Actuated g/C Ratio		0.18						0.54			0.11	
v/c Ratio		0.15						2.37dr			0.79	
Control Delay		46.4						204.6			48.1	
Queue Delay		3.5						0.2			7.4	
Total Delay		49.9						204.8			55.5	
LOS		D						F			E	

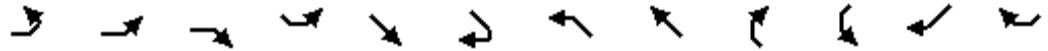
2014 Existing Condition
 168: Lake Houston Parkway & Kings Crossing

AM Peak Hour

Lane Group	ø1	ø6
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	1	6
Permitted Phases		
Minimum Split (s)	11.0	17.0
Total Split (s)	11.0	91.0
Total Split (%)	8%	62%
Maximum Green (s)	5.0	85.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Walk Time (s)		4.0
Flash Dont Walk (s)		7.0
Pedestrian Calls (#/hr)		0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

2014 Existing Condition
 168: Lake Houston Parkway & Kings Crossing

AM Peak Hour



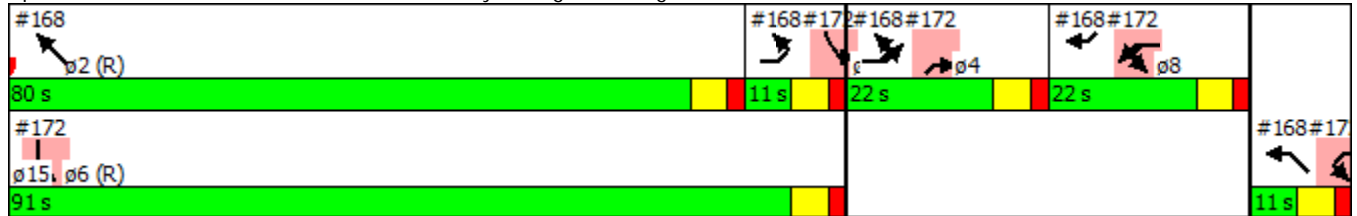
Lane Group	EBL2	EBL	EBR	SEL	SET	SER	NWL	NWT	NWR	SWL	SWR	SWR2
Approach Delay		49.9						204.8				
Approach LOS		D						F				

Intersection Summary

Area Type:	Other
Cycle Length:	146
Actuated Cycle Length:	146
Offset:	48 (33%), Referenced to phase 2:NWT and 6:, Start of Green
Natural Cycle:	145
Control Type:	Pretimed
Maximum v/c Ratio:	1.38
Intersection Signal Delay:	167.5
Intersection LOS:	F
Intersection Capacity Utilization	56.1%
ICU Level of Service	B
Analysis Period (min)	15

dr Defacto Right Lane. Recode with 1 though lane as a right lane.







Splits and Phases: 168: Lake Houston Parkway & Kings Crossing



Lane Group	ø1	ø6
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
171: Lake Houston Parkway

AM Peak Hour

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations		↑↑				↑↑
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	0.88
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	0	3278
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	0	3278
Link Speed (mph)		40	40		40	
Link Distance (ft)		568	1308		1315	
Travel Time (s)		9.7	22.3		22.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

2014 Existing Condition
172: Kings Crossing & Lake Houston Parkway

AM Peak Hour



Lane Group	WBL2	WBL	WBR	SBL2	SBL	SBR	NWL	NWR	NEL	NER	NER2	ø2
Lane Configurations		57			57					76		
Volume (vph)	284	31	0	27	1080	18	0	0	0	59	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.97	1.00	0.95	0.97	0.95	1.00	1.00	1.00	0.88	1.00	
Frt					0.998					0.850		
Flt Protected		0.950			0.953							
Satd. Flow (prot)	0	3433	0	0	3437	0	0	0	0	2787	0	
Flt Permitted		0.950			0.953							
Satd. Flow (perm)	0	3433	0	0	3437	0	0	0	0	2787	0	
Right Turn on Red			Yes			Yes					Yes	
Satd. Flow (RTOR)					112					157		
Link Speed (mph)		30			40		40		30			
Link Distance (ft)		148			871		719		472			
Travel Time (s)		3.4			14.8		12.3		10.7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	309	34	0	29	1174	20	0	0	0	64	4	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	343	0	0	1223	0	0	0	0	68	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right	Right	
Median Width(ft)		24			24		0		0			
Link Offset(ft)		0			0		0		0			
Crosswalk Width(ft)		16			16		16		16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	15	9	15	15	9	15	9	15	9	9	
Turn Type	Prot	NA		Prot	NA					custom		
Protected Phases	15 8	8		1	6					4		2
Permitted Phases												
Minimum Split (s)		22.0		11.0	17.0					22.0		17.0
Total Split (s)		22.0		11.0	91.0					22.0		80.0
Total Split (%)		15.1%		7.5%	62.3%					15.1%		55%
Maximum Green (s)		16.0		5.0	85.0					16.0		74.0
Yellow Time (s)		4.0		4.0	4.0					4.0		4.0
All-Red Time (s)		2.0		2.0	2.0					2.0		2.0
Lost Time Adjust (s)		0.0			0.0					0.0		
Total Lost Time (s)		6.0			6.0					6.0		
Lead/Lag		Lag		Lag						Lead		Lead
Lead-Lag Optimize?		Yes		Yes						Yes		Yes
Walk Time (s)		4.0			4.0					5.0		4.0
Flash Dont Walk (s)		12.0			7.0					11.0		7.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		27.0			85.0					16.0		
Actuated g/C Ratio		0.18			0.58					0.11		
v/c Ratio		0.94dl			1.15					0.15		
Control Delay		29.1			108.8					0.7		
Queue Delay		12.5			0.2					0.0		
Total Delay		41.6			109.0					0.7		
LOS		D			F					A		

Lane Group	ø15
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	15
Permitted Phases	
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	8%
Maximum Green (s)	5.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	

2014 Existing Condition
 172: Kings Crossing & Lake Houston Parkway

AM Peak Hour

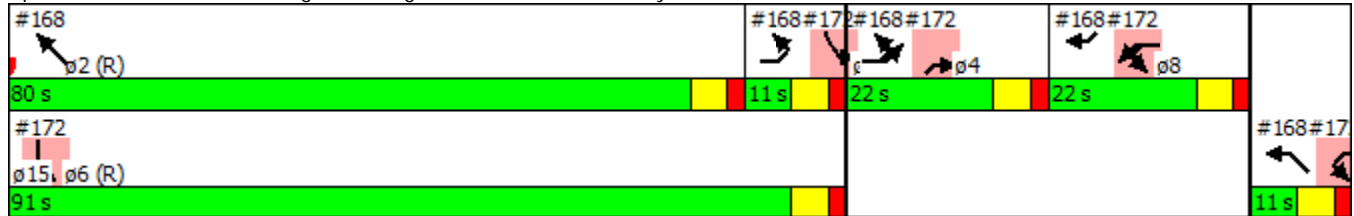


Lane Group	WBL2	WBL	WBR	SBL2	SBL	SBR	NWL	NWR	NEL	NER	NER2	ø2
Approach Delay		41.6			109.0							
Approach LOS		D			F							

Intersection Summary

Area Type:	Other
Cycle Length:	146
Actuated Cycle Length:	146
Offset:	48 (33%), Referenced to phase 2:NWT and 6:, Start of Green
Natural Cycle:	145
Control Type:	Pretimed
Maximum v/c Ratio:	1.38
Intersection Signal Delay:	90.4
Intersection LOS:	F
Intersection Capacity Utilization	57.9%
ICU Level of Service	B
Analysis Period (min)	15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.	

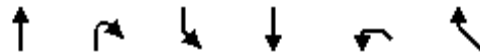
Splits and Phases: 172: Kings Crossing & Lake Houston Parkway



Lane Group	ø15
Approach Delay	
Approach LOS	
Intersection Summary	

2014 Existing Condition
174: Lake Houston Parkway

AM Peak Hour



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				↑↑		↑↑
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	3278
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	3278
Link Speed (mph)	40			40	30	
Link Distance (ft)	672			450	712	
Travel Time (s)	11.5			7.7	16.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
	ICU Level of Service A
Analysis Period (min)	15

2014 Existing Condition
175: Lake Houston Parkway & Rustic Woods

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓			↑↓					↑	↑↓	
Volume (vph)	0	42	134	113	92	0	0	0	0	15	1093	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.886									0.998	
Flt Protected					0.973					0.950		
Satd. Flow (prot)	0	3136	0	0	3444	0	0	0	0	1770	3532	0
Flt Permitted					0.973					0.950		
Satd. Flow (perm)	0	3136	0	0	3444	0	0	0	0	1770	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		146										1
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		576			82			1315			563	
Travel Time (s)		13.1			1.9			22.4			9.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	146	123	100	0	0	0	0	16	1188	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	223	0	0	0	0	16	1201	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Prot	NA					Prot	NA	
Protected Phases		4		15	8					1	6	
Permitted Phases												
Minimum Split (s)		11.0			19.0					11.0	10.0	
Total Split (s)		17.0			21.0					13.0	84.0	
Total Split (%)		11.8%			14.6%					9.0%	58.3%	
Maximum Green (s)		11.0			15.0					7.0	78.0	
Yellow Time (s)		4.0			4.0					4.0	4.0	
All-Red Time (s)		2.0			2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0					0.0	0.0	
Total Lost Time (s)		6.0			6.0					6.0	6.0	
Lead/Lag		Lead			Lag					Lag		
Lead-Lag Optimize?		Yes			Yes					Yes		
Walk Time (s)					6.0							
Flash Dont Walk (s)					7.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)		11.0			37.0					7.0	78.0	
Actuated g/C Ratio		0.08			0.26					0.05	0.54	
v/c Ratio		0.51			0.25					0.19	0.63	
Control Delay		23.0			3.8					71.0	24.7	

Lane Group	ø2	ø15
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	15
Permitted Phases		
Minimum Split (s)	20.0	11.0
Total Split (s)	71.0	22.0
Total Split (%)	49%	15%
Maximum Green (s)	65.0	16.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	
Lead-Lag Optimize?	Yes	
Walk Time (s)	4.0	
Flash Dont Walk (s)	10.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		

2014 Existing Condition
 175: Lake Houston Parkway & Rustic Woods

AM Peak Hour

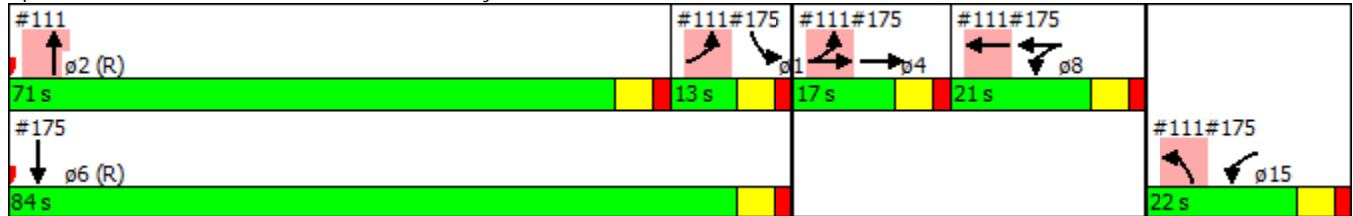


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0					0.0	0.0	
Total Delay		23.0			3.8					71.0	24.7	
LOS		C			A					E	C	
Approach Delay		23.0			3.8						25.4	
Approach LOS		C			A						C	

Intersection Summary

Area Type:	Other
Cycle Length:	144
Actuated Cycle Length:	144
Offset:	90 (63%), Referenced to phase 2:NBT and 6:, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	22.1
Intersection LOS:	C
Intersection Capacity Utilization	57.3%
ICU Level of Service	B
Analysis Period (min)	15

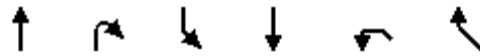
Splits and Phases: 175: Lake Houston Parkway & Rustic Woods



Lane Group	ø2	ø15
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

2014 Existing Condition
178: Lake Houston Parkway

AM Peak Hour



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations			TT			TT
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	0.88
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	3614	0	0	3278
Flt Permitted						
Satd. Flow (perm)	0	0	3614	0	0	3278
Link Speed (mph)	40			40	40	
Link Distance (ft)	216			426	4598	
Travel Time (s)	3.7			7.3	78.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	48			48	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
185: Hamblen

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	121	4	305	217	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					
Flt Protected			0.950			
Satd. Flow (prot)	1855	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1855	0	1770	1863	1863	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	123			358	309	
Travel Time (s)	2.4			7.0	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	4	332	236	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	0	332	236	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.2%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
188: Sorters & Northpark Dr.

AM Peak Hour



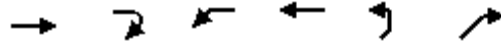
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↔			↑
Volume (vph)	0	0	71	15	0	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977			
Flt Protected						
Satd. Flow (prot)	0	0	1820	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	1820	0	0	1863
Link Speed (mph)	40		35			30
Link Distance (ft)	1492		3855			70
Travel Time (s)	25.4		75.1			1.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	77	16	0	371
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	93	0	0	371
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.3%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
189: Northpark Dr.

AM Peak Hour



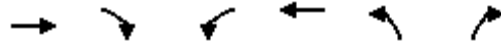
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations				↑↑		↑↑
Volume (vph)	0	0	0	213	0	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	40			40	30	
Link Distance (ft)	1488			3907	1492	
Travel Time (s)	25.4			66.6	33.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	232	0	410
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	232	0	410
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.5%
Analysis Period (min)	15
	ICU Level of Service A

2014 Existing Condition
190: Kingwood Dr.

AM Peak Hour



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑		
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	392			804	60	
Travel Time (s)	6.7			13.7	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15		9	
Sign Control	Stop			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A