

APPENDIX F

YEAR 2040 TRAFFIC CONDITIONS INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX F-1

**YEAR 2040 WITH ADOPTED SPECIFIC PLAN
TRAFFIC CONDITIONS**

Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	178.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.403

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	504	1171	579	473	1872	557	315	395	497	584	464	347
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	504	1171	579	473	1872	557	315	395	497	584	464	347
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	293	145	118	468	139	79	99	124	146	116	87
Total Analysis Volume [veh/h]	504	1171	579	473	1872	557	315	395	497	584	464	347
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	26	43	0	25	42	0	0	20	20	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	39	39	21	38	38	16	16	42	28	28	28
g / C, Green / Cycle	0.18	0.33	0.33	0.18	0.32	0.32	0.13	0.13	0.35	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.28	0.33	0.37	0.27	0.45	0.50	0.18	0.21	0.31	0.17	0.13	0.22
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1667	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	326	1152	514	312	1123	528	237	248	555	803	826	369
d1, Uniform Delay [s]	49.06	40.60	40.60	49.55	41.09	41.09	52.11	52.11	36.95	42.59	40.69	45.30
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.40
l, Upstream Filtering 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
d2, Incremental Delay [s]	259.59	30.74	79.11	248.32	194.14	271.10	175.15	283.78	19.58	1.28	0.60	29.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

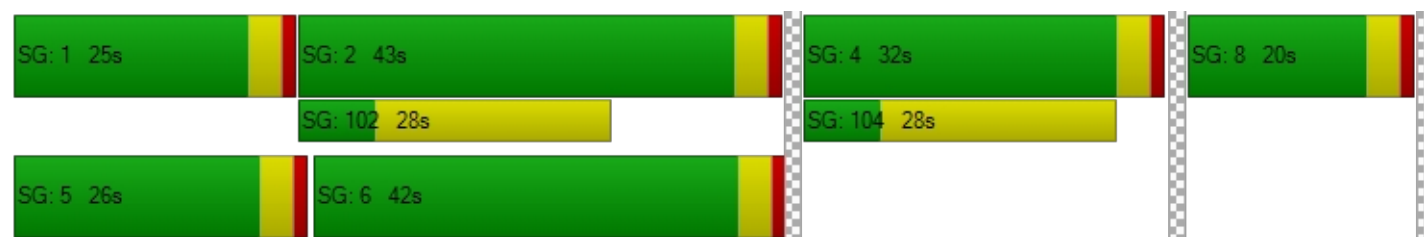
X, volume / capacity	1.54	1.02	1.13	1.52	1.42	1.58	1.33	1.59	0.90	0.73	0.56	0.94
d, Delay for Lane Group [s/veh]	308.66	71.34	119.71	297.88	235.23	312.19	227.26	335.88	56.53	43.87	41.30	74.94
Lane Group LOS	F	F	F	F	F	F	F	F	E	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	33.28	21.66	26.25	30.83	46.63	55.10	18.62	27.05	16.64	8.13	6.13	13.13
50th-Percentile Queue Length [ft]	831.99	541.60	656.30	770.85	1165.75	1377.54	465.48	676.15	415.89	203.19	153.27	328.26
95th-Percentile Queue Length [veh]	51.26	29.63	37.38	47.50	70.08	84.81	28.83	42.08	23.32	12.80	10.19	19.07
95th-Percentile Queue Length [ft]	1281.61	740.69	934.54	1187.39	1751.91	2120.19	720.76	1052.12	583.12	320.08	254.79	476.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	308.66	71.34	119.71	297.88	246.65	312.19	227.26	335.88	56.53	43.87	41.30	74.94
Movement LOS	F	F	F	F	F	F	F	F	E	D	D	E
d_A, Approach Delay [s/veh]	136.83			267.58			192.51			50.74		
Approach LOS	F			F			F			D		
d_I, Intersection Delay [s/veh]	178.92											
Intersection LOS	F											
Intersection V/C	1.403											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1437	253	990	1578	0	600	2	327	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1437	253	990	1578	0	600	2	327	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	359	63	248	395	0	150	1	82	0	0	0
Total Analysis Volume [veh/h]	0	1437	253	990	1578	0	600	2	327	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	24	0	55	79	0	0	26	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	39	39	34	76	21	21	21	
g / C, Green / Cycle	0.37	0.37	0.32	0.73	0.20	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.32	0.33	0.29	0.31	0.17	0.10	0.10	
s, saturation flow rate [veh/h]	3547	1726	3445	5074	3445	1586	1583	
c, Capacity [veh/h]	1301	633	1112	3692	676	311	311	
d1, Uniform Delay [s]	30.86	31.26	33.78	5.65	41.07	37.84	37.85	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	7.92	17.11	2.69	0.36	4.20	1.39	1.40	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.87	0.89	0.89	0.43	0.89	0.53	0.53	
d, Delay for Lane Group [s/veh]	38.78	48.37	36.47	6.02	45.27	39.23	39.25	
Lane Group LOS	D	D	D	A	D	D	D	
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	14.30	16.04	12.13	3.99	7.86	3.89	3.89	
50th-Percentile Queue Length [ft]	357.49	401.07	303.23	99.65	196.57	97.37	97.36	
95th-Percentile Queue Length [veh]	20.50	22.61	17.84	7.18	12.46	7.01	7.01	
95th-Percentile Queue Length [ft]	512.53	565.29	446.02	179.38	311.54	175.26	175.24	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	40.85	48.37	36.47	6.02	0.00	45.27	39.23	39.24	0.00	0.00	0.00
Movement LOS		D	D	D	A		D	D	D			
d_A, Approach Delay [s/veh]	41.98			17.76			43.13			0.00		
Approach LOS	D			B			D			A		
d_I, Intersection Delay [s/veh]	30.19											
Intersection LOS	C											
Intersection V/C	0.890											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	164.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.431

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	771	1323	76	102	1211	563	335	214	519	32	225	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	771	1323	76	102	1211	563	335	214	519	32	225	34
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	193	331	19	26	303	141	84	54	130	8	56	9
Total Analysis Volume [veh/h]	771	1323	76	102	1211	563	335	214	519	32	225	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	37	33	0	48	44	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	66	66	7	40	40	35	35	35	35	35	35
g / C, Green / Cycle	0.28	0.55	0.55	0.06	0.33	0.33	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.43	0.26	0.26	0.03	0.48	0.53	0.30	0.11	0.33	0.04	0.07	0.07
s, saturation flow rate [veh/h]	1774	3547	1812	3445	1863	1674	1116	1863	1583	721	1863	1779
c, Capacity [veh/h]	488	1955	998	197	621	558	305	543	462	60	543	519
d1, Uniform Delay [s]	43.47	16.34	16.38	54.93	39.98	39.98	49.38	33.99	42.48	59.96	32.36	32.42
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.48	0.11	0.50	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	270.69	0.82	1.63	2.10	207.13	268.63	79.09	0.46	80.30	7.15	0.23	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

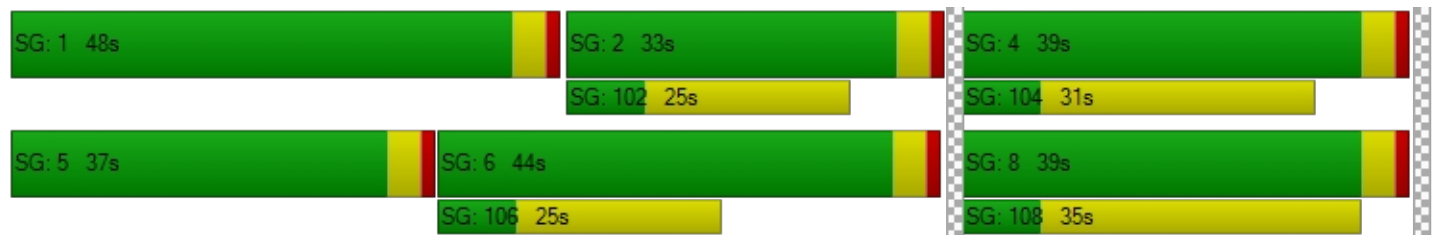
X, volume / capacity	1.58	0.47	0.48	0.52	1.44	1.58	1.10	0.39	1.12	0.53	0.24	0.25
d, Delay for Lane Group [s/veh]	314.16	17.16	18.00	57.04	247.11	308.61	128.46	34.46	122.77	67.11	32.59	32.66
Lane Group LOS	F	B	B	E	F	F	F	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	51.01	7.76	8.22	1.56	53.71	57.79	16.00	5.08	23.81	1.09	2.95	2.89
50th-Percentile Queue Length [ft]	1275.30	193.94	205.40	38.95	1342.74	1444.75	399.96	126.99	595.21	27.33	73.87	72.31
95th-Percentile Queue Length [veh]	78.18	12.33	12.92	2.80	80.51	88.88	23.83	8.78	34.16	1.97	5.32	5.21
95th-Percentile Queue Length [ft]	1954.47	308.13	322.92	70.10	2012.72	2221.89	595.80	219.40	854.03	49.20	132.96	130.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	314.16	17.41	18.00	57.04	263.21	308.61	128.46	34.46	122.77	67.11	32.62	32.66
Movement LOS	F	B	B	E	F	F	F	C	F	E	C	C
d_A, Approach Delay [s/veh]	122.87			265.63			106.86			36.42		
Approach LOS	F			F			F			D		
d_I, Intersection Delay [s/veh]	164.60											
Intersection LOS	F											
Intersection V/C	1.431											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	273	293	747	174	236	861
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	273	293	747	174	236	861
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	73	187	44	59	215
Total Analysis Volume [veh/h]	273	293	747	174	236	861
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	57	0	22	0	11	33
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	44	44	14	62
g / C, Green / Cycle	0.22	0.22	0.49	0.49	0.16	0.69
(v / s)_i Volume / Saturation Flow Rate	0.15	0.19	0.17	0.18	0.13	0.17
s, saturation flow rate [veh/h]	1774	1583	3547	1693	1774	5074
c, Capacity [veh/h]	385	344	1746	834	279	3522
d1, Uniform Delay [s]	32.61	33.86	14.03	14.17	36.88	5.08
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.41	5.99	0.56	1.25	6.94	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.85	0.35	0.37	0.85	0.24
d, Delay for Lane Group [s/veh]	35.03	39.85	14.59	15.43	43.82	5.24
Lane Group LOS	D	D	B	B	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	5.65	6.58	3.52	3.71	5.31	1.46
50th-Percentile Queue Length [ft]	141.14	164.38	88.05	92.77	132.64	36.62
95th-Percentile Queue Length [veh]	9.54	10.78	6.34	6.68	9.08	2.64
95th-Percentile Queue Length [ft]	238.56	269.51	158.49	166.98	227.07	65.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.03	39.85	14.74	15.43	43.82	5.24
Movement LOS	D	D	B	B	D	A
d_A, Approach Delay [s/veh]	37.53		14.87		13.54	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	19.27					
Intersection LOS	B					
Intersection V/C	0.576					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	265.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.667

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	71	748	62	692	478	750	606	256	70	170	287	933
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	748	62	692	478	750	606	256	70	170	287	933
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	187	16	173	120	188	152	64	18	43	72	233
Total Analysis Volume [veh/h]	71	748	62	692	478	750	606	256	70	170	287	933
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	16	43	0	25	32	0	33	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	35	35	12	41	41	21	43	43	14	36	36
g / C, Green / Cycle	0.05	0.29	0.29	0.10	0.34	0.34	0.18	0.36	0.36	0.11	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.15	0.20	0.26	0.47	0.34	0.06	0.06	0.10	0.06	0.59
s, saturation flow rate [veh/h]	1774	3547	1791	3445	1863	1583	1774	3547	1667	1774	5074	1583
c, Capacity [veh/h]	94	1039	525	345	634	538	311	1278	601	201	1513	472
d1, Uniform Delay [s]	56.04	35.34	35.38	54.00	35.16	39.60	49.51	26.19	26.22	52.21	31.33	42.12
k, delay calibration	0.11	0.50	0.50	0.39	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.30	1.84	3.65	459.46	8.13	187.92	439.45	0.06	0.14	9.46	0.06	446.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

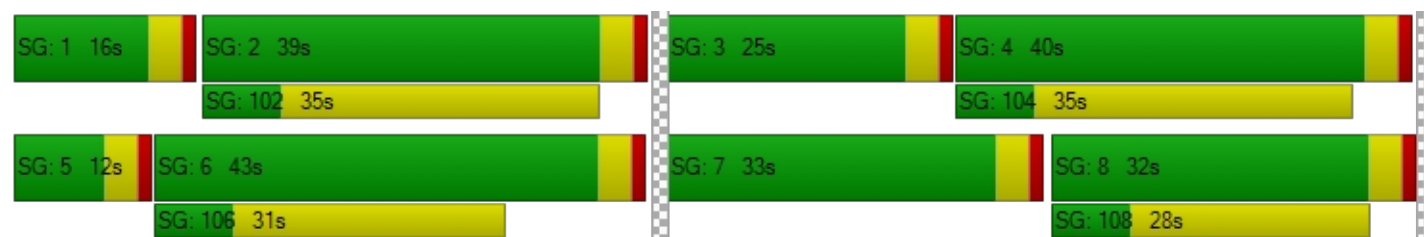
X, volume / capacity	0.75	0.52	0.52	2.00	0.75	1.39	1.95	0.17	0.18	0.85	0.19	1.98
d, Delay for Lane Group [s/veh]	67.34	37.18	39.03	513.46	43.29	227.52	488.96	26.26	26.35	61.67	31.39	488.78
Lane Group LOS	E	D	D	F	D	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.42	6.82	7.20	27.25	13.74	43.72	47.19	2.18	2.09	5.54	2.09	72.38
50th-Percentile Queue Length [ft]	60.45	170.44	179.94	681.22	343.38	1093.04	1179.74	54.48	52.28	138.61	52.14	1809.39
95th-Percentile Queue Length [veh]	4.35	11.10	11.60	43.27	19.81	65.82	73.72	3.92	3.76	9.41	3.75	114.50
95th-Percentile Queue Length [ft]	108.82	277.50	289.94	1081.66	495.33	1645.51	1842.91	98.06	94.10	235.16	93.85	2862.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.34	37.70	39.03	513.46	43.29	227.52	488.96	26.27	26.35	61.67	31.39	488.78
Movement LOS	E	D	D	F	D	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	40.18			284.71			327.12			342.11		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	265.95											
Intersection LOS	F											
Intersection V/C	1.667											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	27.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	839	8	25	653	2	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	839	8	25	653	2	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	210	2	6	163	1	7
Total Analysis Volume [veh/h]	839	8	25	653	2	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.01	0.01	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.73	0.00	27.02	11.69
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.10	0.00	0.20	0.20
95th-Percentile Queue Length [ft]	0.00	0.00	2.46	0.00	4.95	4.95
d_A, Approach Delay [s/veh]	0.00		0.36		12.68	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	D					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	125.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	11	1374	8	16	935	9	8	1	1	3	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	1374	8	16	935	9	8	1	1	3	1	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	344	2	4	234	2	2	0	0	1	0	1
Total Analysis Volume [veh/h]	11	1374	8	16	935	9	8	1	1	3	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.06	0.01	0.00	0.07	0.03	0.00	0.04	0.03	0.01
d_M, Delay for Movement [s/veh]	13.88	0.00	0.00	20.07	0.00	0.00	42.67	125.18	17.44	55.78	124.05	19.25
Movement LOS	B	A	A	C	A	A	E	F	C	F	F	C
95th-Percentile Queue Length [veh]	0.08	0.00	0.00	0.20	0.00	0.00	0.35	0.35	0.35	0.27	0.27	0.27
95th-Percentile Queue Length [ft]	2.03	0.00	0.00	4.99	0.00	0.00	8.76	8.76	8.76	6.68	6.68	6.68
d_A, Approach Delay [s/veh]	0.11			0.33			48.40			46.05		
Approach LOS	A			A			E			E		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.297

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	4	678	38	8	276	15	16	4	1	35	19	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	678	38	8	276	15	16	4	1	35	19	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	170	10	2	69	4	4	1	0	9	5	15
Total Analysis Volume [veh/h]	4	678	38	8	276	15	16	4	1	35	19	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	33	0	11	33	33	11	34	0	12	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	64	64	1	65	71	2	4	4	4	6	6
g / C, Green / Cycle	0.01	0.71	0.71	0.01	0.72	0.79	0.03	0.05	0.05	0.05	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.19	0.00	0.08	0.01	0.01	0.00	0.00	0.02	0.01	0.04
s, saturation flow rate [veh/h]	1774	1863	1828	1774	3547	1583	1774	1863	1740	1774	1863	1583
c, Capacity [veh/h]	16	1327	1302	27	2550	1252	48	89	83	83	126	107
d1, Uniform Delay [s]	44.40	4.63	4.63	43.90	3.86	2.00	43.07	40.93	40.93	41.80	39.60	40.69
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.47	0.51	0.52	5.71	0.09	0.00	3.99	0.13	0.14	3.38	0.55	4.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

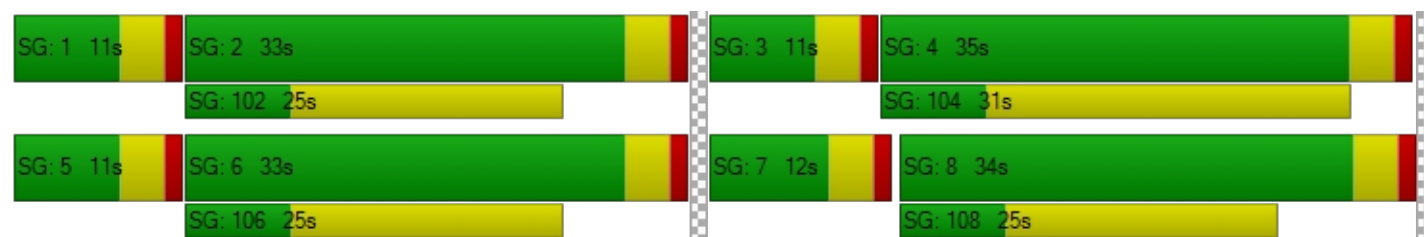
X, volume / capacity	0.26	0.27	0.27	0.29	0.11	0.01	0.33	0.03	0.03	0.42	0.15	0.54
d, Delay for Lane Group [s/veh]	52.87	5.13	5.15	49.61	3.94	2.00	47.06	41.05	41.07	45.17	40.15	44.90
Lane Group LOS	D	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.12	2.10	2.07	0.22	0.64	0.04	0.40	0.06	0.06	0.83	0.41	1.36
50th-Percentile Queue Length [ft]	3.11	52.48	51.67	5.46	16.10	0.91	10.00	1.39	1.39	20.68	10.30	33.93
95th-Percentile Queue Length [veh]	0.22	3.78	3.72	0.39	1.16	0.07	0.72	0.10	0.10	1.49	0.74	2.44
95th-Percentile Queue Length [ft]	5.60	94.46	93.01	9.83	28.98	1.65	18.00	2.50	2.51	37.22	18.54	61.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.87	5.14	5.15	49.61	3.94	2.00	47.06	41.06	41.07	45.17	40.15	44.90
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.40			5.07			45.63			44.18		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.82											
Intersection LOS	A											
Intersection V/C	0.297											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.411

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	89	1427	60	7	878	19	10	1	41	56	4	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1427	60	7	878	19	10	1	41	56	4	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	357	15	2	220	5	3	0	10	14	1	2
Total Analysis Volume [veh/h]	89	1427	60	7	878	19	10	1	41	56	4	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	33	0	11	29	0	11	21	0	25	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	63	63	1	58	58	2	5	5	5	8	8
g / C, Green / Cycle	0.07	0.70	0.70	0.01	0.64	0.64	0.02	0.05	0.05	0.06	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.28	0.00	0.17	0.17	0.01	0.00	0.03	0.03	0.00	0.01
s, saturation flow rate [veh/h]	1774	3547	1825	1774	3547	1843	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	125	2471	1271	25	2271	1180	33	97	82	106	174	148
d1, Uniform Delay [s]	41.01	5.73	5.73	44.02	7.00	7.00	43.67	40.55	41.60	41.15	37.15	37.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	7.26	0.48	0.93	6.17	0.28	0.54	5.04	0.04	4.61	4.00	0.05	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

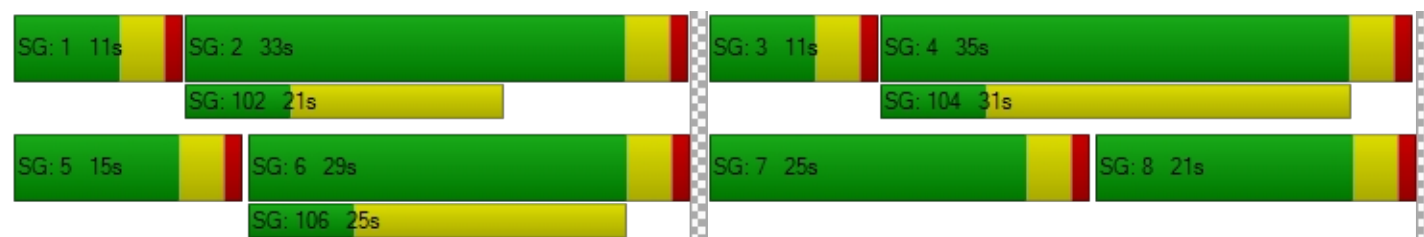
X, volume / capacity	0.71	0.40	0.40	0.28	0.26	0.26	0.30	0.01	0.50	0.53	0.02	0.05
d, Delay for Lane Group [s/veh]	48.27	6.21	6.66	50.19	7.28	7.54	48.71	40.59	46.21	45.15	37.21	37.41
Lane Group LOS	D	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.16	3.33	3.58	0.20	2.24	2.41	0.26	0.02	0.98	1.31	0.08	0.17
50th-Percentile Queue Length [ft]	54.07	83.15	89.55	4.89	55.96	60.36	6.61	0.55	24.58	32.82	2.05	4.14
95th-Percentile Queue Length [veh]	3.89	5.99	6.45	0.35	4.03	4.35	0.48	0.04	1.77	2.36	0.15	0.30
95th-Percentile Queue Length [ft]	97.33	149.67	161.18	8.79	100.73	108.66	11.90	0.99	44.24	59.07	3.69	7.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.27	6.35	6.66	50.19	7.36	7.54	48.71	40.59	46.21	45.15	37.21	37.41
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.73			7.70			46.58			43.77		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.05											
Intersection LOS	B											
Intersection V/C	0.411											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 11: Mission Trail at Olive Street

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.425

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	5	1200	170	24	896	9	15	7	9	134	10	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1200	170	24	896	9	15	7	9	134	10	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	300	43	6	224	2	4	2	2	34	3	14
Total Analysis Volume [veh/h]	5	1200	170	24	896	9	15	7	9	134	10	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	22	0	11	22	0	0	57	0	0	57	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	61	61	3	63	63	14	14	14	14
g / C, Green / Cycle	0.01	0.68	0.68	0.04	0.70	0.70	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.00	0.26	0.26	0.01	0.17	0.17	0.01	0.01	0.10	0.04
s, saturation flow rate [veh/h]	1774	3547	1747	1774	3547	1853	1329	1695	1392	1620
c, Capacity [veh/h]	17	2406	1185	63	2498	1306	202	259	247	247
d1, Uniform Delay [s]	44.28	6.28	6.28	42.45	4.72	4.72	37.55	32.61	38.54	33.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.53	0.46	0.93	3.78	0.22	0.43	0.15	0.10	1.84	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

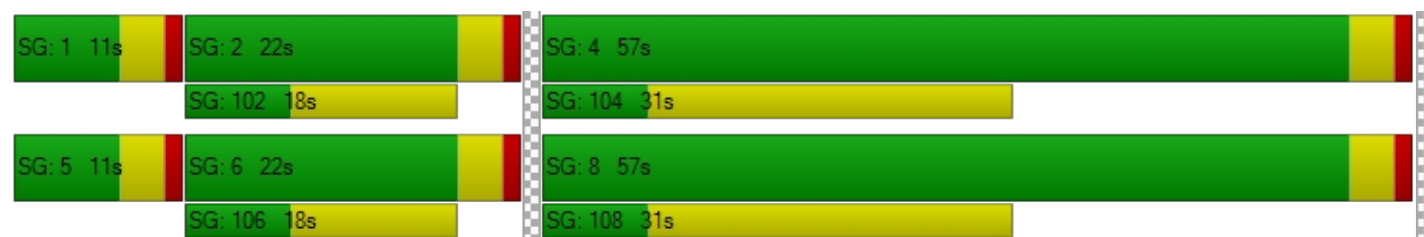
X, volume / capacity	0.30	0.38	0.38	0.38	0.24	0.24	0.07	0.06	0.54	0.27
d, Delay for Lane Group [s/veh]	53.82	6.74	7.21	46.23	4.95	5.15	37.70	32.71	40.38	34.28
Lane Group LOS	D	A	A	D	A	A	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.15	3.34	3.45	0.58	1.68	1.84	0.31	0.30	2.96	1.32
50th-Percentile Queue Length [ft]	3.86	83.55	86.22	14.56	42.11	45.90	7.74	7.57	74.01	32.97
95th-Percentile Queue Length [veh]	0.28	6.02	6.21	1.05	3.03	3.30	0.56	0.54	5.33	2.37
95th-Percentile Queue Length [ft]	6.94	150.39	155.19	26.21	75.79	82.62	13.92	13.62	133.21	59.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.82	6.85	7.21	46.23	5.02	5.15	37.70	32.71	32.71	40.38	34.28	34.28
Movement LOS	D	A	A	D	A	A	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	7.06			6.08			35.13			38.35		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.53											
Intersection LOS	A											
Intersection V/C	0.425											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	3.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.327

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	4	1330	65	12	1012	8	7	9	6	19	6	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	1330	65	12	1012	8	7	9	6	19	6	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	333	16	3	253	2	2	2	2	5	2	2
Total Analysis Volume [veh/h]	4	1330	65	12	1012	8	7	9	6	19	6	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	49	0	11	49	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	77	77	2	78	78	4	4
g / C, Green / Cycle	0.01	0.81	0.81	0.02	0.82	0.82	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.00	0.26	0.26	0.01	0.19	0.19	0.01	0.02
s, saturation flow rate [veh/h]	1774	3547	1819	1774	3547	1855	1771	1629
c, Capacity [veh/h]	15	2874	1474	38	2918	1527	125	130
d1, Uniform Delay [s]	46.81	2.31	2.31	45.83	1.84	1.84	44.13	44.38
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	0.30	0.58	4.78	0.18	0.35	0.67	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

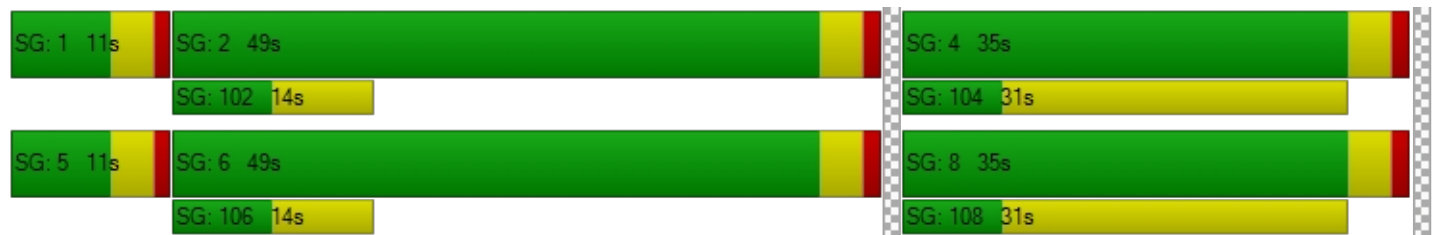
X, volume / capacity	0.26	0.32	0.32	0.32	0.23	0.23	0.18	0.24
d, Delay for Lane Group [s/veh]	55.63	2.61	2.89	50.61	2.02	2.19	44.79	45.32
Lane Group LOS	E	A	A	D	A	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.13	1.42	1.57	0.33	0.80	0.91	0.52	0.74
50th-Percentile Queue Length [ft]	3.27	35.57	39.35	8.18	20.03	22.74	13.06	18.53
95th-Percentile Queue Length [veh]	0.24	2.56	2.83	0.59	1.44	1.64	0.94	1.33
95th-Percentile Queue Length [ft]	5.89	64.02	70.83	14.73	36.06	40.94	23.50	33.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.63	2.69	2.89	50.61	2.08	2.19	44.79	44.79	44.79	45.32	45.32	45.32
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.85			2.64			44.79			45.32		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	3.67											
Intersection LOS	A											
Intersection V/C	0.327											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	12.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1264	202	117	890	119	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1264	202	117	890	119	114
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	316	51	29	223	30	29
Total Analysis Volume [veh/h]	1264	202	117	890	119	114
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	18	0	11	29	61	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	56	56	7	67	15
g / C, Green / Cycle	0.62	0.62	0.08	0.75	0.16
(v / s)_i Volume / Saturation Flow Rate	0.25	0.13	0.07	0.18	0.14
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1675
c, Capacity [veh/h]	3167	988	140	3792	275
d1, Uniform Delay [s]	8.47	7.29	40.91	3.49	36.56
k, delay calibration	0.50	0.50	0.23	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.47	23.48	0.15	7.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.20	0.84	0.23	0.85
d, Delay for Lane Group [s/veh]	8.85	7.76	64.39	3.63	43.75
Lane Group LOS	A	A	E	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	3.76	1.63	3.44	1.29	5.43
50th-Percentile Queue Length [ft]	93.93	40.83	85.92	32.14	135.69
95th-Percentile Queue Length [veh]	6.76	2.94	6.19	2.31	9.25
95th-Percentile Queue Length [ft]	169.08	73.49	154.66	57.85	231.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.85	7.76	64.39	3.63	43.75	43.75
Movement LOS	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	8.70		10.69		43.75	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	12.46					
Intersection LOS	B					
Intersection V/C	0.524					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	205	880	681	326	569	183
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	880	681	326	569	183
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	220	170	82	142	46
Total Analysis Volume [veh/h]	205	880	681	326	569	183
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	59	29	29	31	31
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	13	64	47	69	18	35
g / C, Green / Cycle	0.14	0.71	0.52	0.77	0.20	0.39
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.19	0.21	0.17	0.07
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	254	2505	1841	1216	706	1099
d1, Uniform Delay [s]	37.39	5.16	12.89	3.05	34.10	17.80
k, delay calibration	0.11	0.50	0.50	0.22	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.04	0.39	0.57	0.24	2.24	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.35	0.37	0.27	0.81	0.17
d, Delay for Lane Group [s/veh]	43.43	5.55	13.47	3.28	36.34	17.87
Lane Group LOS	D	A	B	A	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	4.73	2.74	4.00	1.27	6.01	1.22
50th-Percentile Queue Length [ft]	118.15	68.55	99.90	31.82	150.37	30.44
95th-Percentile Queue Length [veh]	8.29	4.94	7.19	2.29	10.04	2.19
95th-Percentile Queue Length [ft]	207.29	123.39	179.81	57.27	250.92	54.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.43	5.55	13.47	3.28	36.34	17.87
Movement LOS	D	A	B	A	D	B
d_A, Approach Delay [s/veh]	12.71		10.17		31.84	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	16.87					
Intersection LOS	B					
Intersection V/C	0.545					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	36	753	587	22	515	12	18	357	18	260	402	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	753	587	22	515	12	18	357	18	260	402	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	188	147	6	129	3	5	89	5	65	101	5
Total Analysis Volume [veh/h]	36	753	587	22	515	12	18	357	18	260	402	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	0	11	29	0	31	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	51	51	3	50	50	3	13	13	17	27	27
g / C, Green / Cycle	0.04	0.51	0.51	0.03	0.50	0.50	0.03	0.13	0.13	0.17	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.02	0.38	0.39	0.01	0.14	0.14	0.01	0.10	0.10	0.15	0.11	0.11
s, saturation flow rate [veh/h]	1774	1863	1599	1774	1863	1848	1774	1863	1832	1774	1863	1835
c, Capacity [veh/h]	81	952	817	59	929	922	51	238	234	298	498	490
d1, Uniform Delay [s]	46.57	19.40	19.71	47.39	14.66	14.67	47.71	42.38	42.41	40.59	30.32	30.33
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.84	5.39	6.84	3.87	0.77	0.78	4.09	5.85	6.10	8.07	0.58	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

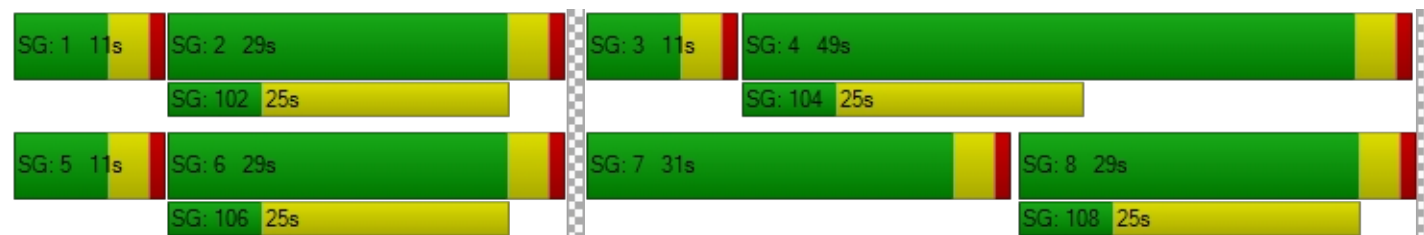
X, volume / capacity	0.45	0.75	0.77	0.37	0.28	0.29	0.35	0.79	0.80	0.87	0.42	0.43
d, Delay for Lane Group [s/veh]	50.41	24.79	26.55	51.26	15.43	15.44	51.81	48.22	48.50	48.65	30.90	30.91
Lane Group LOS	D	C	C	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.93	12.97	11.86	0.58	3.38	3.36	0.50	4.87	4.83	6.84	4.25	4.20
50th-Percentile Queue Length [ft]	23.26	324.15	296.58	14.58	84.55	84.06	12.42	121.73	120.84	170.94	106.28	104.88
95th-Percentile Queue Length [veh]	1.67	18.87	17.51	1.05	6.09	6.05	0.89	8.49	8.44	11.13	7.63	7.55
95th-Percentile Queue Length [ft]	41.87	471.79	437.79	26.24	152.18	151.31	22.36	212.21	210.97	278.15	190.81	188.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.41	24.89	26.55	51.26	15.44	15.44	51.81	48.35	48.50	48.65	30.90	30.91
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	26.26			16.87			48.52			37.69		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	30.05											
Intersection LOS	C											
Intersection V/C	0.777											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	40.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	139	425	212	444	259	80	134	655	174	151	393	471
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	425	212	444	259	80	134	655	174	151	393	471
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	106	53	111	65	20	34	164	44	38	98	118
Total Analysis Volume [veh/h]	139	425	212	444	259	80	134	655	174	151	393	471
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	36	32	0	20	16	0	18	39	0	14	35	35
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	10	36	36	16	42	42	10	27	27	10	27	47
g / C, Green / Cycle	0.10	0.34	0.34	0.15	0.40	0.40	0.09	0.26	0.26	0.10	0.26	0.45
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.18	0.13	0.09	0.09	0.08	0.23	0.23	0.09	0.11	0.30
s, saturation flow rate [veh/h]	1774	1863	1657	3445	1863	1714	1774	1863	1730	1774	3547	1583
c, Capacity [veh/h]	174	634	564	527	736	677	167	481	446	171	925	715
d1, Uniform Delay [s]	46.42	27.95	27.98	43.33	21.27	21.27	46.73	37.65	37.65	46.95	32.34	22.51
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.24	0.24	0.30	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.05	3.16	3.59	3.73	0.77	0.84	8.74	11.90	12.65	30.19	0.31	4.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.80	0.53	0.53	0.84	0.24	0.24	0.80	0.89	0.89	0.88	0.43	0.66
d, Delay for Lane Group [s/veh]	54.47	31.11	31.56	47.06	22.04	22.11	55.48	49.55	50.30	77.14	32.66	27.22
Lane Group LOS	D	C	C	D	C	C	E	D	D	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.93	7.27	6.57	5.84	3.03	2.81	3.83	12.08	11.31	5.32	4.17	9.74
50th-Percentile Queue Length [ft]	98.23	181.79	164.15	146.08	75.69	70.20	95.63	302.11	282.87	132.93	104.31	243.46
95th-Percentile Queue Length [veh]	7.07	11.69	10.77	9.81	5.45	5.05	6.89	17.79	16.83	9.10	7.51	14.86
95th-Percentile Queue Length [ft]	176.82	292.35	269.20	245.19	136.24	126.35	172.13	444.63	420.79	227.47	187.77	371.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.47	31.21	31.56	47.06	22.06	22.11	55.48	49.81	50.30	77.14	32.66	27.22
Movement LOS	D	C	C	D	C	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	35.47			36.24			50.69			36.75		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.15											
Intersection LOS	D											
Intersection V/C	0.746											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	59.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	22	61	426	214	31	13	54	1300	41	360	1009	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	61	426	214	31	13	54	1300	41	360	1009	114
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	15	107	54	8	3	14	325	10	90	252	29
Total Analysis Volume [veh/h]	22	61	426	214	31	13	54	1300	41	360	1009	114
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	37	0	19	38	0	11	35	0	29	53	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	33	33	15	44	6	31	31	25	50	50
g / C, Green / Cycle	0.03	0.27	0.27	0.13	0.37	0.05	0.26	0.26	0.21	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.27	0.12	0.02	0.03	0.25	0.25	0.20	0.21	0.21
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1770	1774	3547	1834	1774	3547	1768
c, Capacity [veh/h]	54	511	435	222	654	86	911	471	373	1484	739
d1, Uniform Delay [s]	57.12	32.64	43.20	52.24	24.48	56.00	44.14	44.14	46.95	25.74	25.74
k, delay calibration	0.11	0.11	0.44	0.38	0.11	0.11	0.50	0.50	0.42	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.90	0.10	35.76	44.70	0.04	7.19	23.49	34.77	34.87	1.23	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.12	0.98	0.96	0.07	0.62	0.97	0.97	0.97	0.51	0.51
d, Delay for Lane Group [s/veh]	62.03	32.75	78.96	96.94	24.52	63.19	67.63	78.92	81.82	26.97	28.20
Lane Group LOS	E	C	E	F	C	E	E	E	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.73	1.36	16.73	9.15	0.83	1.78	15.85	17.86	14.21	8.10	8.32
50th-Percentile Queue Length [ft]	18.23	33.93	418.18	228.74	20.65	44.45	396.16	446.55	355.30	202.46	208.10
95th-Percentile Queue Length [veh]	1.31	2.44	23.43	14.11	1.49	3.20	22.37	24.79	20.39	12.77	13.06
95th-Percentile Queue Length [ft]	32.81	61.08	585.86	352.76	37.17	80.01	559.37	619.84	509.87	319.14	326.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.03	32.75	78.96	96.94	24.52	24.52	63.19	71.24	78.92	81.82	27.29	28.20
Movement LOS	E	C	E	F	C	C	E	E	E	F	C	C
d_A, Approach Delay [s/veh]	72.69			84.59			71.16			40.59		
Approach LOS	E			F			E			D		
d_I, Intersection Delay [s/veh]	59.89											
Intersection LOS	E											
Intersection V/C	0.971											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	86.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.267

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	203	1	393	0	1020	931	528	1107	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	203	1	393	0	1020	931	528	1107	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	51	0	98	0	255	233	132	277	0
Total Analysis Volume [veh/h]	0	0	0	203	1	393	0	1020	931	528	1107	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	27	0	0	57	0	31	88	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	53	53	27	84
g / C, Green / Cycle		0.20	0.20	0.46	0.46	0.23	0.73
(v / s)_i Volume / Saturation Flow Rate		0.11	0.25	0.29	0.59	0.30	0.22
s, saturation flow rate [veh/h]		1774	1584	3547	1583	1774	5074
c, Capacity [veh/h]		355	317	1637	731	415	3705
d1, Uniform Delay [s]		41.53	45.98	23.39	30.95	44.05	5.35
k, delay calibration		0.13	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.72	133.08	1.80	133.72	140.50	0.21
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

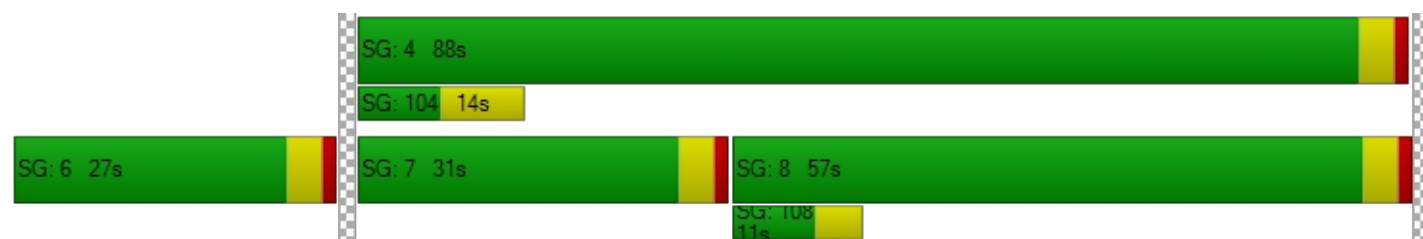
X, volume / capacity		0.57	1.24	0.62	1.27	1.27	0.30
d, Delay for Lane Group [s/veh]		43.25	179.06	25.18	164.66	184.55	5.56
Lane Group LOS		D	F	C	F	F	A
Critical Lane Group		No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		5.37	20.70	10.66	46.60	27.87	2.77
50th-Percentile Queue Length [ft]		134.15	517.62	266.54	1164.88	696.72	69.37
95th-Percentile Queue Length [veh]		9.16	31.33	16.02	68.07	41.43	4.99
95th-Percentile Queue Length [ft]		229.12	783.27	400.41	1701.76	1035.82	124.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	43.25	179.06	179.06	0.00	25.18	164.66	184.55	5.56	0.00
Movement LOS				D	F	F		C	F	F	A	
d_A, Approach Delay [s/veh]	0.00			132.88			91.74			63.36		
Approach LOS	A			F			F			E		
d_I, Intersection Delay [s/veh]	86.52											
Intersection LOS	F											
Intersection V/C	1.267											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	474	2	199	0	0	0	297	926	0	0	1152	301
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	474	2	199	0	0	0	297	926	0	0	1152	301
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	1	50	0	0	0	74	232	0	0	288	75
Total Analysis Volume [veh/h]	474	2	199	0	0	0	297	926	0	0	1152	301
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	64	0	0	0	0	11	26	0	0	15	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27		17	55	34	34
g / C, Green / Cycle	0.30	0.30		0.19	0.61	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.27	0.13		0.17	0.18	0.27	0.29
s, saturation flow rate [veh/h]	1774	1586		1774	5074	3547	1679
c, Capacity [veh/h]	529	473		341	3109	1333	631
d1, Uniform Delay [s]	30.24	25.38		35.26	8.26	24.13	24.66
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.61	0.61		6.82	0.25	3.49	8.71
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

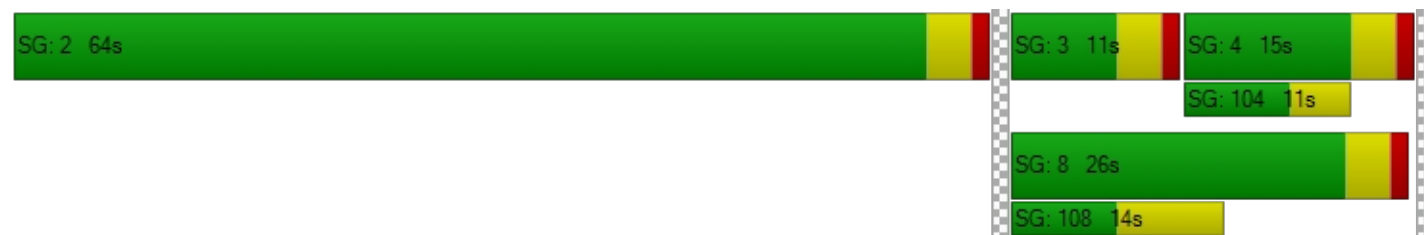
X, volume / capacity	0.90	0.42		0.87	0.30	0.73	0.77
d, Delay for Lane Group [s/veh]	35.85	25.98		42.08	8.51	27.63	33.36
Lane Group LOS	D	C		D	A	C	C
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	10.31	3.45		6.82	2.64	9.12	10.18
50th-Percentile Queue Length [ft]	257.72	86.36		170.56	65.94	228.02	254.59
95th-Percentile Queue Length [veh]	15.57	6.22		11.11	4.75	14.07	15.42
95th-Percentile Queue Length [ft]	389.36	155.45		277.66	118.69	351.85	385.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.85	25.98	25.98	0.00	0.00	0.00	42.08	8.51	0.00	0.00	28.54	33.36
Movement LOS	D	C	C				D	A			C	C
d_A, Approach Delay [s/veh]	32.91			0.00			16.66			29.54		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	25.52											
Intersection LOS	C											
Intersection V/C	0.834											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	20	858	459	32	561	93	120	205	22	449	79	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	858	459	32	561	93	120	205	22	449	79	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	215	115	8	140	23	30	51	6	112	20	24
Total Analysis Volume [veh/h]	20	858	459	32	561	93	120	205	22	449	79	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	29	0	11	29	0	0	60	0	0	60	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	36	36	4	37	37	48	48	48	48	48
g / C, Green / Cycle	0.03	0.36	0.36	0.04	0.37	0.37	0.48	0.48	0.48	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.01	0.24	0.29	0.02	0.18	0.18	0.10	0.11	0.01	0.38	0.10
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1772	1206	1863	1583	1172	1699
c, Capacity [veh/h]	53	1257	561	73	681	648	567	902	767	547	823
d1, Uniform Delay [s]	47.59	27.50	29.36	46.80	24.52	24.54	19.31	14.93	13.48	28.66	14.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.23	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.38	3.02	12.52	4.06	2.52	2.67	0.18	0.13	0.01	6.51	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.68	0.82	0.44	0.49	0.49	0.21	0.23	0.03	0.82	0.21
d, Delay for Lane Group [s/veh]	51.97	30.52	41.88	50.87	27.04	27.22	19.50	15.06	13.49	35.17	14.93
Lane Group LOS	D	C	D	D	C	C	B	B	B	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.55	9.03	11.67	0.86	6.48	6.22	1.83	2.67	0.26	10.93	2.25
50th-Percentile Queue Length [ft]	13.78	225.84	291.70	21.41	161.92	155.43	45.76	66.77	6.47	273.13	56.24
95th-Percentile Queue Length [veh]	0.99	13.96	17.27	1.54	10.65	10.31	3.29	4.81	0.47	16.35	4.05
95th-Percentile Queue Length [ft]	24.81	349.07	431.75	38.54	266.27	257.66	82.37	120.18	11.64	408.65	101.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.97	30.52	41.88	50.87	27.11	27.22	19.50	15.06	13.49	35.17	14.93	14.93
Movement LOS	D	C	D	D	C	C	B	B	B	D	B	B
d_A, Approach Delay [s/veh]	34.74			28.23			16.50			29.51		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	30.05											
Intersection LOS	C											
Intersection V/C	0.785											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	87.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.139

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	546	672	538	122	163	671
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	546	672	538	122	163	671
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	168	135	31	41	168
Total Analysis Volume [veh/h]	546	672	538	122	163	671
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	35	68	33	0	47	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	64	29	29	43	43
g / C, Green / Cycle	0.27	0.56	0.25	0.25	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.31	0.19	0.29	0.08	0.09	0.42
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	478	1977	471	401	661	590
d1, Uniform Delay [s]	41.98	13.88	42.93	34.74	24.89	36.04
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	86.07	0.47	86.25	1.95	0.19	80.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

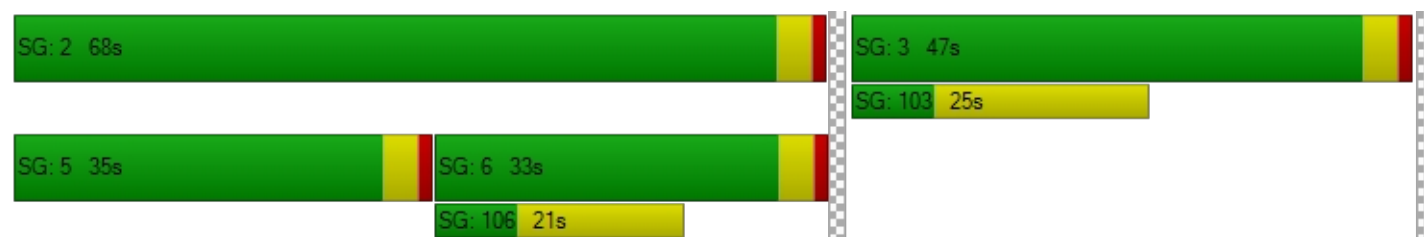
X, volume / capacity	1.14	0.34	1.14	0.30	0.25	1.14
d, Delay for Lane Group [s/veh]	128.05	14.35	129.17	36.69	25.08	116.82
Lane Group LOS	F	B	F	D	C	F
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	24.23	4.42	23.97	2.87	3.11	29.37
50th-Percentile Queue Length [ft]	605.80	110.52	599.18	71.78	77.74	734.25
95th-Percentile Queue Length [veh]	34.92	7.87	34.53	5.17	5.60	41.68
95th-Percentile Queue Length [ft]	873.03	196.73	863.13	129.21	139.94	1042.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	128.05	14.35	129.17	36.69	25.08	116.82
Movement LOS	F	B	F	D	C	F
d_A, Approach Delay [s/veh]	65.32		112.08		98.89	
Approach LOS	E		F		F	
d_I, Intersection Delay [s/veh]	87.02					
Intersection LOS	F					
Intersection V/C	1.139					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	57.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.015

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	481	184	104	71	25	13	4	1095	109	115	956	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	481	184	104	71	25	13	4	1095	109	115	956	42
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	46	26	18	6	3	1	274	27	29	239	11
Total Analysis Volume [veh/h]	481	184	104	71	25	13	4	1095	109	115	956	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	64	0	0	64	0	19	44	0	12	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	60	60	1	40	40	8	47	47
g / C, Green / Cycle	0.50	0.50	0.01	0.33	0.33	0.07	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.52	0.08	0.00	0.33	0.33	0.06	0.27	0.27
s, saturation flow rate [veh/h]	1479	1349	1774	1863	1804	1774	1863	1835
c, Capacity [veh/h]	788	724	13	618	599	121	732	721
d1, Uniform Delay [s]	31.31	16.16	59.26	39.85	39.89	55.69	30.28	30.28
k, delay calibration	0.50	0.11	0.11	0.50	0.50	0.32	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	26.68	0.10	12.93	33.45	34.44	53.37	5.20	5.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

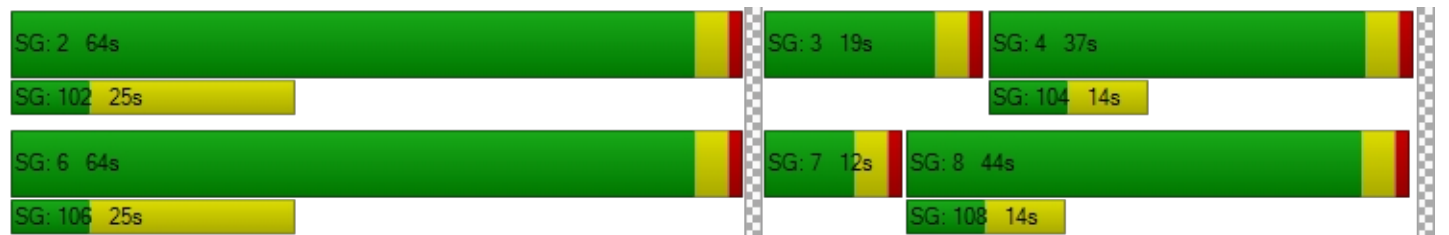
X, volume / capacity	0.98	0.15	0.31	0.99	0.99	0.95	0.69	0.69
d, Delay for Lane Group [s/veh]	57.99	16.26	72.20	73.31	74.33	109.06	35.48	35.56
Lane Group LOS	E	B	E	E	E	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	27.93	1.64	0.16	22.74	22.23	5.18	12.53	12.37
50th-Percentile Queue Length [ft]	698.33	41.06	4.12	568.42	555.81	129.52	313.36	309.26
95th-Percentile Queue Length [veh]	36.60	2.96	0.30	30.56	29.97	8.91	18.34	18.14
95th-Percentile Queue Length [ft]	915.02	73.90	7.42	763.92	749.13	222.84	458.51	453.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.99	57.99	57.99	16.26	16.26	16.26	72.20	73.76	74.33	109.06	35.52	35.56
Movement LOS	E	E	E	B	B	B	E	E	E	F	D	D
d_A, Approach Delay [s/veh]	57.99			16.26			73.81			43.12		
Approach LOS	E			B			E			D		
d_I, Intersection Delay [s/veh]	57.36											
Intersection LOS	E											
Intersection V/C	1.015											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.914

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	15	20	7	84	22	852	1084	350	16	5	216	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	20	7	84	22	852	1084	350	16	5	216	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	5	2	21	6	213	271	88	4	1	54	21
Total Analysis Volume [veh/h]	15	20	7	84	22	852	1084	350	16	5	216	84
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	29	0	0	29	29	69	91	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	91	87	87	87	21	21	21
g / C, Green / Cycle	0.21	0.21	0.76	0.72	0.72	0.72	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.54	0.68	0.10	0.10	0.00	0.08	0.09
s, saturation flow rate [veh/h]	844	995	1583	1589	1863	1834	1012	1863	1691
c, Capacity [veh/h]	217	261	1201	1160	1350	1330	191	326	296
d1, Uniform Delay [s]	39.15	42.86	7.57	15.00	5.04	5.04	45.74	44.54	44.72
k, delay calibration	0.11	0.11	0.47	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	1.01	3.36	14.79	0.21	0.21	0.25	4.86	5.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.41	0.71	0.93	0.14	0.14	0.03	0.47	0.49
d, Delay for Lane Group [s/veh]	39.58	43.87	10.93	29.79	5.25	5.25	45.99	49.40	50.53
Lane Group LOS	D	D	B	C	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.04	2.93	10.60	22.27	1.36	1.35	0.14	4.57	4.42
50th-Percentile Queue Length [ft]	25.91	73.26	265.10	556.84	34.05	33.70	3.62	114.37	110.43
95th-Percentile Queue Length [veh]	1.87	5.28	15.94	30.01	2.45	2.43	0.26	8.08	7.86
95th-Percentile Queue Length [ft]	46.65	131.88	398.61	750.34	61.30	60.66	6.52	202.06	196.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.58	39.58	39.58	43.87	43.87	10.93	29.79	5.25	5.25	45.99	49.73	50.53
Movement LOS	D	D	D	D	D	B	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	39.58			14.58			23.60			49.89		
Approach LOS	D			B			C			D		
d_I, Intersection Delay [s/veh]	23.62											
Intersection LOS	C											
Intersection V/C	0.914											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	72.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.105

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	376	559	256	912	712	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	376	559	256	912	712	93
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	140	64	228	178	23
Total Analysis Volume [veh/h]	376	559	256	912	712	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	27	93	66	0	27	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	89	62	62	23	23
g / C, Green / Cycle	0.19	0.74	0.52	0.52	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.21	0.16	0.07	0.58	0.21	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	340	2630	1831	817	661	304
d1, Uniform Delay [s]	48.48	4.76	15.13	29.01	48.48	41.62
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	80.03	0.18	0.16	68.24	41.63	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.21	0.14	1.12	1.08	0.31
d, Delay for Lane Group [s/veh]	128.50	4.94	15.29	97.25	90.11	42.18
Lane Group LOS	F	A	B	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	17.69	1.97	1.87	37.86	13.66	2.42
50th-Percentile Queue Length [ft]	442.36	49.21	46.65	946.38	341.43	60.60
95th-Percentile Queue Length [veh]	25.90	3.54	3.36	52.19	20.48	4.36
95th-Percentile Queue Length [ft]	647.61	88.57	83.97	1304.80	512.11	109.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	128.50	4.94	15.29	97.25	90.11	42.18
Movement LOS	F	A	B	F	F	D
d_A, Approach Delay [s/veh]	54.63		79.29		84.57	
Approach LOS	D		E		F	
d_I, Intersection Delay [s/veh]	72.82					
Intersection LOS	E					
Intersection V/C	1.105					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	303	33	136	213	45	246
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	33	136	213	45	246
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	8	34	53	11	62
Total Analysis Volume [veh/h]	303	33	136	213	45	246
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.11	0.00	0.14	0.29
d_M, Delay for Movement [s/veh]	0.00	0.00	8.32	0.00	19.77	13.13
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.50	0.25	2.14	2.14
95th-Percentile Queue Length [ft]	0.00	0.00	12.47	6.24	53.50	53.50
d_A, Approach Delay [s/veh]	0.00		3.24		14.15	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	5.38					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 5.4
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	274	22	13	168	13	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	274	22	13	168	13	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	6	3	42	3	3
Total Analysis Volume [veh/h]	274	22	13	168	13	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	13		13		279	
Exiting Flow Rate [veh/h]	13		13		279	
Demand Flow Rate [veh/h]	274	22	13	168	13	11
Adjusted Demand Flow Rate [veh/h]	274	22	13	168	13	11

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	302		185		25	
Capacity of Entry and Bypass Lanes [veh/h]	1116		1116		855	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1094		1094		838	
X, volume / capacity	0.27		0.17		0.03	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	1.10	0.59	0.09
95th-Percentile Queue Length [ft]	27.54	14.80	2.21
Approach Delay [s/veh]	5.86	4.77	4.57
Approach LOS	A	A	A
Intersection Delay [s/veh]	5.41		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 4.3
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	97	8	16	135	6	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	8	16	135	6	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	2	4	34	2	3
Total Analysis Volume [veh/h]	97	8	16	135	6	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	16		6		99	
Exiting Flow Rate [veh/h]	16		6		99	
Demand Flow Rate [veh/h]	97	8	16	135	6	11
Adjusted Demand Flow Rate [veh/h]	97	8	16	135	6	11

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	108		155		18	
Capacity of Entry and Bypass Lanes [veh/h]	1112		1124		1024	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1090		1102		1004	
X, volume / capacity	0.10		0.14		0.02	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.32	0.47	0.05
95th-Percentile Queue Length [ft]	7.97	11.87	1.29
Approach Delay [s/veh]	4.14	4.47	3.73
Approach LOS	A	A	A
Intersection Delay [s/veh]	4.30		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.283

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	127	22	12	291	354	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	22	12	291	354	88
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	6	3	73	89	22
Total Analysis Volume [veh/h]	127	22	12	291	354	88
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.41	12.97	8.27	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.32	1.32	0.47	0.24	0.00	0.00
95th-Percentile Queue Length [ft]	32.89	32.89	11.75	5.88	0.00	0.00
d_A, Approach Delay [s/veh]	15.90		0.33		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.76					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.067

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	570	12	4	470	21	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	570	12	4	470	21	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	143	3	1	118	5	2
Total Analysis Volume [veh/h]	570	12	4	470	21	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.07	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.66	0.00	17.37	10.15
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.94	0.47	0.22	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	23.43	11.71	5.38	0.64
d_A, Approach Delay [s/veh]	0.00		0.07		15.76	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.352

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	178	242	147	67	157	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	242	147	67	157	248
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	61	37	17	39	62
Total Analysis Volume [veh/h]	178	242	147	67	157	248
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	57	0	22	0	11	33
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	52	52	10	66
g / C, Green / Cycle	0.18	0.18	0.57	0.57	0.11	0.73
(v / s)_i Volume / Saturation Flow Rate	0.10	0.15	0.06	0.06	0.09	0.07
s, saturation flow rate [veh/h]	1774	1583	1863	1677	1774	3547
c, Capacity [veh/h]	323	289	1068	962	197	2585
d1, Uniform Delay [s]	33.46	35.53	8.69	8.75	39.05	3.56
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.46	6.42	0.19	0.23	7.24	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.84	0.10	0.11	0.80	0.10
d, Delay for Lane Group [s/veh]	34.92	41.95	8.88	8.98	46.29	3.63
Lane Group LOS	C	D	A	A	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	3.61	5.53	0.94	0.95	3.73	0.55
50th-Percentile Queue Length [ft]	90.17	138.32	23.44	23.76	93.24	13.64
95th-Percentile Queue Length [veh]	6.49	9.39	1.69	1.71	6.71	0.98
95th-Percentile Queue Length [ft]	162.31	234.76	42.19	42.77	167.84	24.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.92	41.95	8.90	8.98	46.29	3.63
Movement LOS	C	D	A	A	D	A
d_A, Approach Delay [s/veh]	38.97		8.93		20.17	
Approach LOS	D		A		C	
d_I, Intersection Delay [s/veh]	25.45					
Intersection LOS	C					
Intersection V/C	0.352					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	280.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.770

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	568	1832	664	435	1327	291	619	700	633	528	573	628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	568	1832	664	435	1327	291	619	700	633	528	573	628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	142	458	166	109	332	73	155	175	158	132	143	157
Total Analysis Volume [veh/h]	568	1832	664	435	1327	291	619	700	633	528	573	628
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	26	38	0	21	33	0	0	29	29	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	34	34	17	29	29	25	25	51	28	28	28
g / C, Green / Cycle	0.18	0.28	0.28	0.14	0.24	0.24	0.21	0.21	0.42	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.32	0.52	0.42	0.25	0.31	0.31	0.35	0.38	0.40	0.15	0.16	0.40
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1698	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	326	1006	449	253	860	412	368	387	672	803	827	369
d1, Uniform Delay [s]	49.03	43.02	43.02	51.51	45.50	45.50	47.60	47.60	33.14	41.71	42.12	46.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	346.96	373.29	226.97	341.25	129.24	145.82	318.21	374.96	23.05	0.92	1.05	326.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

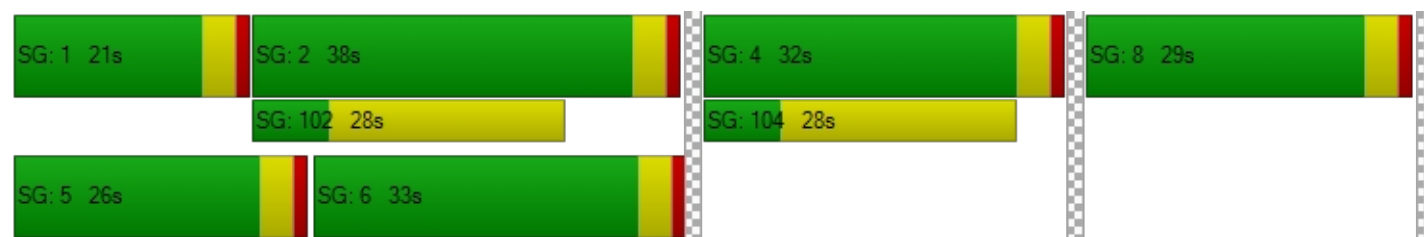
X, volume / capacity	1.74	1.82	1.48	1.72	1.27	1.29	1.68	1.81	0.94	0.66	0.69	1.70
d, Delay for Lane Group [s/veh]	395.99	416.31	269.99	392.76	174.74	191.32	365.80	422.56	56.20	42.63	43.17	372.77
Lane Group LOS	F	F	F	F	F	F	F	F	E	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	41.12	66.92	41.49	31.52	28.14	28.84	43.48	51.74	21.50	7.18	7.87	44.44
50th-Percentile Queue Length [ft]	1028.00	1672.98	1037.32	787.94	703.40	720.88	1086.91	1293.61	537.43	179.40	196.82	1110.96
95th-Percentile Queue Length [veh]	63.92	104.39	63.45	49.27	41.76	42.95	67.30	80.25	29.10	11.57	12.47	69.37
95th-Percentile Queue Length [ft]	1598.06	2609.69	1586.15	1231.76	1043.90	1073.73	1682.59	2006.16	727.53	289.24	311.87	1734.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	395.99	416.31	269.99	392.76	177.72	191.32	365.80	422.56	56.20	42.63	43.17	372.77
Movement LOS	F	F	F	F	F	F	F	F	E	D	D	F
d_A, Approach Delay [s/veh]	380.83			225.21			285.76			162.72		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	280.56											
Intersection LOS	F											
Intersection V/C	1.770											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.938

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1853	263	599	1984	0	919	0	335	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1853	263	599	1984	0	919	0	335	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	463	66	150	496	0	230	0	84	0	0	0
Total Analysis Volume [veh/h]	0	1853	263	599	1984	0	919	0	335	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	27	81	0	0	39	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	51	51	23	78	34	34	34	
g / C, Green / Cycle	0.43	0.43	0.19	0.65	0.28	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.40	0.40	0.17	0.39	0.27	0.11	0.11	
s, saturation flow rate [veh/h]	3547	1748	3445	5074	3445	1583	1583	
c, Capacity [veh/h]	1516	747	649	3294	979	450	450	
d1, Uniform Delay [s]	32.63	32.94	47.82	12.12	41.92	34.37	34.37	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.57	21.76	6.13	0.82	5.15	0.51	0.51	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.93	0.94	0.92	0.60	0.94	0.37	0.37	
d, Delay for Lane Group [s/veh]	44.19	54.70	53.95	12.94	47.07	34.88	34.88	
Lane Group LOS	D	D	D	B	D	C	C	
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	21.41	23.67	9.31	9.82	13.84	3.99	3.99	
50th-Percentile Queue Length [ft]	535.18	591.82	232.79	245.44	346.01	99.79	99.79	
95th-Percentile Queue Length [veh]	29.00	31.65	14.32	14.96	19.94	7.18	7.18	
95th-Percentile Queue Length [ft]	724.88	791.30	357.90	373.91	498.54	179.62	179.62	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	46.70	54.70	53.95	12.94	0.00	47.07	34.88	34.88	0.00	0.00	0.00
Movement LOS		D	D	D	B		D	C	C			
d_A, Approach Delay [s/veh]	47.70			22.45			43.81			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	35.92											
Intersection LOS	D											
Intersection V/C	0.938											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	254.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.749

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	705	1556	85	164	1682	473	412	365	803	157	283	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	705	1556	85	164	1682	473	412	365	803	157	283	124
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	389	21	41	421	118	103	91	201	39	71	31
Total Analysis Volume [veh/h]	705	1556	85	164	1682	473	412	365	803	157	283	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	22	45	0	11	34	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	41	41	7	30	30	35	35	35	35	35	35
g / C, Green / Cycle	0.19	0.43	0.43	0.07	0.32	0.32	0.37	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.40	0.31	0.31	0.05	0.58	0.62	0.42	0.20	0.51	0.33	0.11	0.12
s, saturation flow rate [veh/h]	1774	3547	1814	3445	1863	1729	974	1863	1583	479	1863	1674
c, Capacity [veh/h]	338	1530	783	257	588	546	331	685	582	76	685	616
d1, Uniform Delay [s]	38.48	22.11	22.21	42.74	32.53	32.53	37.92	23.63	30.05	47.53	21.44	21.49
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.50	0.38	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	499.49	2.78	5.51	2.63	381.32	445.17	132.94	0.66	181.14	515.14	0.26	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

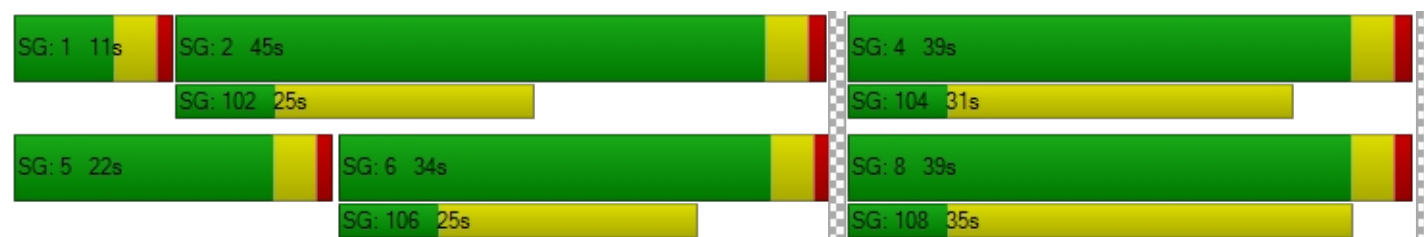
X, volume / capacity	2.09	0.71	0.71	0.64	1.83	1.97	1.24	0.53	1.38	2.07	0.31	0.32
d, Delay for Lane Group [s/veh]	537.97	24.90	27.72	45.36	413.84	477.69	170.87	24.29	211.19	562.67	21.70	21.79
Lane Group LOS	F	C	C	D	F	F	F	C	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	54.57	10.02	10.98	1.95	75.32	79.58	20.01	6.39	42.01	12.62	3.36	3.09
50th-Percentile Queue Length [ft]	1364.25	250.51	274.48	48.77	1882.90	1989.47	500.22	159.71	1050.15	315.50	83.94	77.14
95th-Percentile Queue Length [veh]	85.57	15.21	16.41	3.51	117.75	125.73	31.10	10.53	63.48	22.72	6.04	5.55
95th-Percentile Queue Length [ft]	2139.37	380.30	410.33	87.79	2943.82	3143.19	777.62	263.34	1587.00	567.89	151.10	138.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	537.97	25.76	27.72	45.36	436.79	477.69	170.87	24.29	211.19	562.67	21.72	21.79
Movement LOS	F	C	C	D	F	F	F	C	F	F	C	C
d_A, Approach Delay [s/veh]	179.75			417.45			157.50			172.32		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	254.93											
Intersection LOS	F											
Intersection V/C	1.749											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	299	268	1355	446	370	1023
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	299	268	1355	446	370	1023
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	67	339	112	93	256
Total Analysis Volume [veh/h]	299	268	1355	446	370	1023
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	35	0	22	0	33	55
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	39	39	21	64
g / C, Green / Cycle	0.20	0.20	0.43	0.43	0.23	0.71
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.34	0.36	0.21	0.20
s, saturation flow rate [veh/h]	1774	1583	3547	1647	1774	5074
c, Capacity [veh/h]	356	317	1534	712	415	3607
d1, Uniform Delay [s]	34.62	34.65	21.92	22.82	33.39	4.72
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.38	6.13	4.06	11.65	6.78	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.84	0.78	0.84	0.89	0.28
d, Delay for Lane Group [s/veh]	40.01	40.78	25.99	34.47	40.16	4.92
Lane Group LOS	D	D	C	C	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	6.69	6.06	10.50	12.34	8.07	1.63
50th-Percentile Queue Length [ft]	167.17	151.55	262.57	308.40	201.82	40.77
95th-Percentile Queue Length [veh]	10.93	10.10	15.82	18.10	12.73	2.94
95th-Percentile Queue Length [ft]	273.19	252.49	395.44	452.40	318.31	73.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.01	40.78	26.95	34.47	40.16	4.92
Movement LOS	D	D	C	C	D	A
d_A, Approach Delay [s/veh]	40.37		28.81		14.28	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	25.17					
Intersection LOS	C					
Intersection V/C	0.857					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	344.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.754

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	176	932	78	1130	913	691	782	506	89	168	400	767
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	932	78	1130	913	691	782	506	89	168	400	767
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	233	20	283	228	173	196	127	22	42	100	192
Total Analysis Volume [veh/h]	176	932	78	1130	913	691	782	506	89	168	400	767
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	19	47	0	23	40	0	22	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	15	43	43	19	41	41	13	35	35
g / C, Green / Cycle	0.06	0.29	0.29	0.13	0.36	0.36	0.16	0.34	0.34	0.11	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.19	0.33	0.43	0.50	0.44	0.11	0.11	0.09	0.08	0.48
s, saturation flow rate [veh/h]	1774	3547	1790	3445	1863	1617	1774	3547	1724	1774	5074	1583
c, Capacity [veh/h]	104	1038	524	431	669	581	281	1200	583	196	1474	460
d1, Uniform Delay [s]	56.50	37.02	37.04	52.50	38.45	38.45	50.50	29.62	29.62	52.43	32.79	42.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.16	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	350.70	3.11	6.07	736.47	103.29	181.82	812.13	0.16	0.33	14.41	0.10	309.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

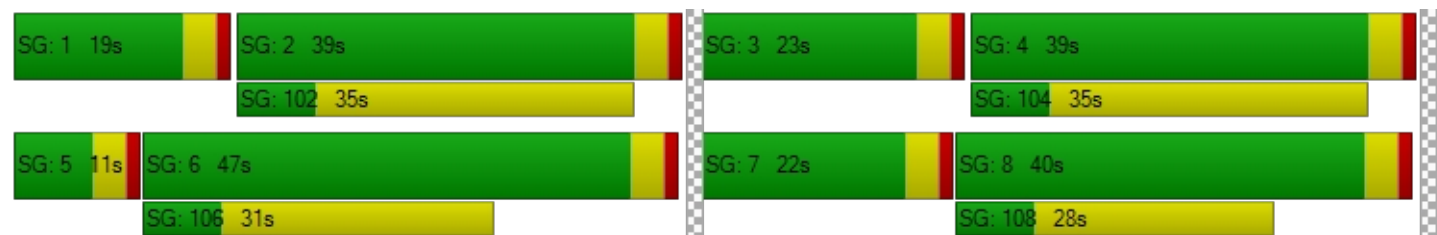
X, volume / capacity	1.70	0.65	0.65	2.62	1.20	1.38	2.78	0.33	0.33	0.86	0.27	1.67
d, Delay for Lane Group [s/veh]	407.20	40.13	43.11	788.97	141.73	220.27	862.64	29.78	29.96	66.84	32.89	352.51
Lane Group LOS	F	D	D	F	F	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	13.25	9.02	9.55	50.56	38.51	46.10	71.80	4.35	4.26	5.75	3.02	53.05
50th-Percentile Queue Length [ft]	331.37	225.40	238.67	1264.03	962.86	1152.62	1794.99	108.75	106.42	143.81	75.42	1326.15
95th-Percentile Queue Length [veh]	21.86	13.94	14.61	78.75	54.77	69.08	111.36	7.77	7.64	9.69	5.43	82.57
95th-Percentile Queue Length [ft]	546.52	348.51	365.35	1968.82	1369.19	1726.88	2783.91	194.26	191.02	242.15	135.76	2064.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	407.20	40.96	43.11	788.97	151.28	220.27	862.64	29.82	29.96	66.84	32.89	352.51
Movement LOS	F	D	D	F	F	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	95.45			432.28			502.79			220.79		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	344.11											
Intersection LOS	F											
Intersection V/C	1.754											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	55.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	1080	19	38	1076	9	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1080	19	38	1076	9	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	270	5	10	269	2	15
Total Analysis Volume [veh/h]	1080	19	38	1076	9	60
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.06	0.01	0.12	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	11.07	0.00	55.36	16.47
Movement LOS	A	A	B	A	F	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.19	0.00	0.92	0.92
95th-Percentile Queue Length [ft]	0.00	0.00	4.79	0.00	23.06	23.06
d_A, Approach Delay [s/veh]	0.00		0.38		21.54	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.84					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	433.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.305

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	8	1192	10	35	1606	25	21	4	17	4	1	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	1192	10	35	1606	25	21	4	17	4	1	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	298	3	9	402	6	5	1	4	1	0	2
Total Analysis Volume [veh/h]	8	1192	10	35	1606	25	21	4	17	4	1	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.11	0.02	0.00	0.53	0.31	0.06	0.09	0.08	0.02
d_M, Delay for Movement [s/veh]	24.59	0.00	0.00	17.98	0.00	0.00	249.01	433.33	171.67	96.11	293.99	25.57
Movement LOS	C	A	A	C	A	A	F	F	F	F	F	D
95th-Percentile Queue Length [veh]	0.13	0.00	0.00	0.37	0.00	0.00	3.67	3.67	3.67	0.65	0.65	0.65
95th-Percentile Queue Length [ft]	3.25	0.00	0.00	9.37	0.00	0.00	91.79	91.79	91.79	16.17	16.17	16.17
d_A, Approach Delay [s/veh]	0.16			0.38			235.26			64.90		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	3.96											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	1	465	83	195	734	52	8	40	2	53	8	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	465	83	195	734	52	8	40	2	53	8	100
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	116	21	49	184	13	2	10	1	13	2	25
Total Analysis Volume [veh/h]	1	465	83	195	734	52	8	40	2	53	8	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	25	43	43	11	29	0	17	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	61	61	13	74	79	1	5	5	5	9	9
g / C, Green / Cycle	0.00	0.61	0.61	0.13	0.74	0.79	0.01	0.05	0.05	0.05	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.15	0.15	0.11	0.21	0.03	0.00	0.01	0.01	0.03	0.00	0.06
s, saturation flow rate [veh/h]	1774	1863	1766	1774	3547	1583	1774	1863	1832	1774	1863	1583
c, Capacity [veh/h]	4	1130	1072	231	2604	1249	26	91	89	97	165	141
d1, Uniform Delay [s]	49.81	9.11	9.12	42.55	4.45	2.31	48.81	45.79	45.80	46.11	41.73	44.35
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	23.71	0.52	0.56	8.24	0.27	0.01	6.61	1.28	1.33	4.76	0.12	6.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

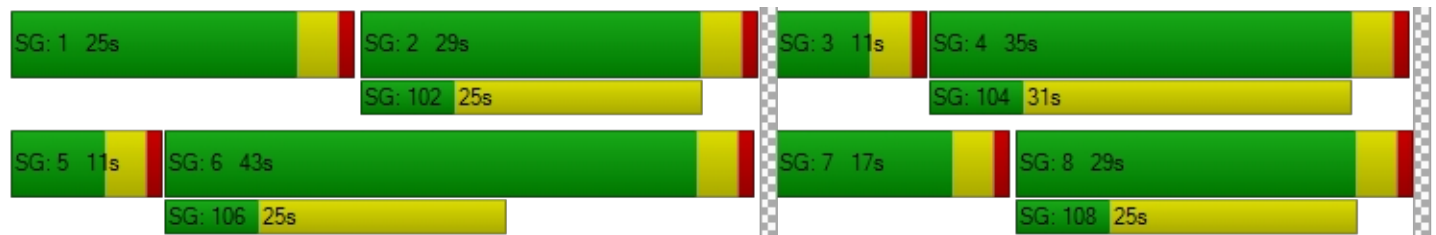
X, volume / capacity	0.22	0.25	0.25	0.85	0.28	0.04	0.31	0.23	0.23	0.55	0.05	0.71
d, Delay for Lane Group [s/veh]	73.52	9.63	9.68	50.78	4.73	2.32	55.42	47.07	47.12	50.87	41.85	50.86
Lane Group LOS	E	A	A	D	A	A	E	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.05	2.81	2.70	5.19	2.17	0.16	0.24	0.53	0.53	1.41	0.19	2.65
50th-Percentile Queue Length [ft]	1.35	70.18	67.54	129.84	54.24	4.11	6.11	13.33	13.32	35.15	4.65	66.24
95th-Percentile Queue Length [veh]	0.10	5.05	4.86	8.93	3.91	0.30	0.44	0.96	0.96	2.53	0.33	4.77
95th-Percentile Queue Length [ft]	2.44	126.32	121.58	223.28	97.64	7.40	11.00	23.99	23.98	63.28	8.36	119.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	73.52	9.65	9.68	50.78	4.73	2.32	55.42	47.10	47.12	50.87	41.85	50.86
Movement LOS	E	A	A	D	A	A	E	D	D	D	D	D
d_A, Approach Delay [s/veh]	9.77			13.75			48.43			50.41		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	16.88											
Intersection LOS	B											
Intersection V/C	0.392											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	154	1208	68	26	1761	18	72	7	210	100	11	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	1208	68	26	1761	18	72	7	210	100	11	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	302	17	7	440	5	18	2	53	25	3	6
Total Analysis Volume [veh/h]	154	1208	68	26	1761	18	72	7	210	100	11	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	32	0	11	29	0	12	36	0	11	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	50	50	3	44	44	6	14	14	6	15	15
g / C, Green / Cycle	0.11	0.56	0.56	0.04	0.49	0.49	0.07	0.16	0.16	0.07	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.24	0.01	0.33	0.33	0.04	0.00	0.13	0.06	0.01	0.02
s, saturation flow rate [veh/h]	1774	3547	1812	1774	3547	1853	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	188	1970	1007	67	1730	904	116	292	248	128	304	259
d1, Uniform Delay [s]	39.44	11.68	11.68	42.31	17.63	17.64	41.00	32.14	36.91	41.10	31.71	32.01
k, delay calibration	0.23	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.16	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	16.53	0.68	1.33	3.59	2.14	4.04	5.27	0.03	7.70	14.02	0.05	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

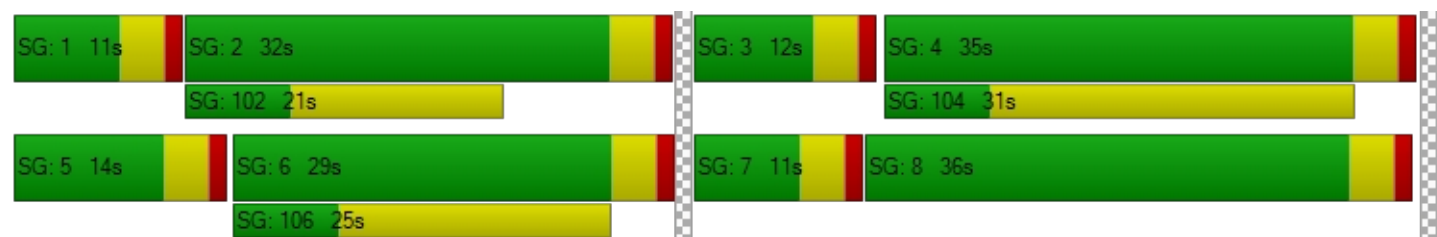
X, volume / capacity	0.82	0.43	0.43	0.39	0.68	0.68	0.62	0.02	0.85	0.78	0.04	0.09
d, Delay for Lane Group [s/veh]	55.97	12.36	13.02	45.91	19.77	21.68	46.27	32.17	44.61	55.13	31.76	32.16
Lane Group LOS	E	B	B	D	B	C	D	C	D	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.15	4.74	5.02	0.63	9.15	10.04	1.71	0.13	4.94	2.65	0.20	0.45
50th-Percentile Queue Length [ft]	103.71	118.44	125.60	15.66	228.66	250.99	42.71	3.27	123.51	66.32	5.09	11.27
95th-Percentile Queue Length [veh]	7.47	8.31	8.70	1.13	14.11	15.24	3.08	0.24	8.59	4.78	0.37	0.81
95th-Percentile Queue Length [ft]	186.68	207.69	217.50	28.18	352.65	380.90	76.88	5.88	214.64	119.38	9.17	20.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.97	12.56	13.02	45.91	20.41	21.68	46.27	32.17	44.61	55.13	31.76	32.16
Movement LOS	E	B	B	D	C	C	D	C	D	E	C	C
d_A, Approach Delay [s/veh]	17.26			20.79			44.72			49.14		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.736											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 11: Mission Trail at Olive Street

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	12	1196	195	126	1530	21	21	11	13	147	20	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	1196	195	126	1530	21	21	11	13	147	20	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	299	49	32	383	5	5	3	3	37	5	25
Total Analysis Volume [veh/h]	12	1196	195	126	1530	21	21	11	13	147	20	98
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	22	0	33	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	55	55	8	61	61	15	15	15	15
g / C, Green / Cycle	0.02	0.61	0.61	0.09	0.68	0.68	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.01	0.26	0.26	0.07	0.29	0.29	0.02	0.01	0.11	0.07
s, saturation flow rate [veh/h]	1774	3547	1732	1774	3547	1850	1269	1700	1381	1625
c, Capacity [veh/h]	37	2158	1054	161	2406	1255	176	285	259	272
d1, Uniform Delay [s]	43.45	9.36	9.36	40.06	6.53	6.53	39.07	31.65	38.15	33.65
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.00	0.64	1.30	8.06	0.55	1.05	0.30	0.13	1.95	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

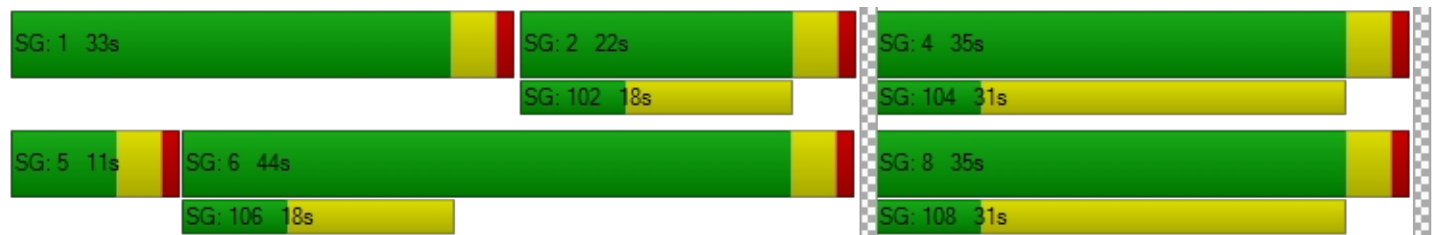
X, volume / capacity	0.33	0.43	0.43	0.78	0.42	0.42	0.12	0.08	0.57	0.43
d, Delay for Lane Group [s/veh]	48.45	10.00	10.66	48.12	7.08	7.58	39.37	31.78	40.10	34.74
Lane Group LOS	D	A	B	D	A	A	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.31	4.58	4.67	3.05	3.88	4.23	0.45	0.45	3.24	2.36
50th-Percentile Queue Length [ft]	7.81	114.60	116.80	76.33	97.09	105.67	11.14	11.15	81.03	59.02
95th-Percentile Queue Length [veh]	0.56	8.10	8.22	5.50	6.99	7.60	0.80	0.80	5.83	4.25
95th-Percentile Queue Length [ft]	14.05	202.38	205.43	137.40	174.76	189.96	20.06	20.06	145.85	106.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.45	10.14	10.66	48.12	7.24	7.58	39.37	31.78	31.78	40.10	34.74	34.74
Movement LOS	D	B	B	D	A	A	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	10.54			10.32			35.32			37.71		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	12.89											
Intersection LOS	B											
Intersection V/C	0.509											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	2	1341	16	14	1684	4	9	12	11	16	25	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1341	16	14	1684	4	9	12	11	16	25	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	335	4	4	421	1	2	3	3	4	6	3
Total Analysis Volume [veh/h]	2	1341	16	14	1684	4	9	12	11	16	25	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	54	0	11	54	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	80	80	2	82	82	5	5
g / C, Green / Cycle	0.00	0.80	0.80	0.02	0.82	0.82	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.00	0.25	0.25	0.01	0.31	0.31	0.02	0.03
s, saturation flow rate [veh/h]	1774	3547	1852	1774	3547	1860	1706	1736
c, Capacity [veh/h]	8	2845	1485	41	2911	1527	140	142
d1, Uniform Delay [s]	49.62	2.62	2.62	48.10	2.34	2.34	45.49	46.05
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.68	0.29	0.55	4.85	0.38	0.72	0.82	1.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.31	0.31	0.34	0.38	0.38	0.23	0.38
d, Delay for Lane Group [s/veh]	66.30	2.91	3.17	52.94	2.71	3.06	46.32	47.73
Lane Group LOS	E	A	A	D	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	0.09	1.66	1.84	0.40	1.83	2.06	0.79	1.37
50th-Percentile Queue Length [ft]	2.14	41.56	46.12	9.94	45.68	51.56	19.85	34.19
95th-Percentile Queue Length [veh]	0.15	2.99	3.32	0.72	3.29	3.71	1.43	2.46
95th-Percentile Queue Length [ft]	3.85	74.82	83.01	17.89	82.22	92.80	35.73	61.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.30	2.99	3.17	52.94	2.83	3.06	46.32	46.32	46.32	47.73	47.73	47.73
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	3.09			3.24			46.32			47.73		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	4.38											
Intersection LOS	A											
Intersection V/C	0.391											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	12.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1226	181	150	1546	129	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1226	181	150	1546	129	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	307	45	38	387	32	34
Total Analysis Volume [veh/h]	1226	181	150	1546	129	134
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	18	0	22	40	50	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	52	52	9	66	16
g / C, Green / Cycle	0.58	0.58	0.10	0.73	0.18
(v / s)_i Volume / Saturation Flow Rate	0.24	0.11	0.08	0.30	0.16
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1671
c, Capacity [veh/h]	2938	917	187	3697	305
d1, Uniform Delay [s]	10.52	9.01	39.38	4.77	35.71
k, delay calibration	0.50	0.50	0.11	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.48	7.85	0.35	7.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.20	0.80	0.42	0.86
d, Delay for Lane Group [s/veh]	10.96	9.49	47.24	5.12	42.86
Lane Group LOS	B	A	D	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.23	1.68	3.60	3.01	6.09
50th-Percentile Queue Length [ft]	105.75	42.05	90.06	75.19	152.20
95th-Percentile Queue Length [veh]	7.60	3.03	6.48	5.41	10.13
95th-Percentile Queue Length [ft]	190.08	75.68	162.10	135.34	253.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.96	9.49	47.24	5.12	42.86	42.86
Movement LOS	B	A	D	A	D	D
d_A, Approach Delay [s/veh]	10.77		8.84		42.86	
Approach LOS	B		A		D	
d_I, Intersection Delay [s/veh]	12.30					
Intersection LOS	B					
Intersection V/C	0.558					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	189	934	1043	612	471	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	189	934	1043	612	471	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	234	261	153	118	55
Total Analysis Volume [veh/h]	189	934	1043	612	471	219
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	32	61	29	29	29	29
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	12	64	48	70	18	34
g / C, Green / Cycle	0.13	0.72	0.54	0.78	0.19	0.37
(v / s)_i Volume / Saturation Flow Rate	0.11	0.26	0.29	0.39	0.14	0.08
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	239	2538	1903	1229	674	1050
d1, Uniform Delay [s]	37.72	4.94	13.70	3.67	33.74	19.10
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.81	0.41	1.14	1.44	1.33	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.37	0.55	0.50	0.70	0.21
d, Delay for Lane Group [s/veh]	43.53	5.35	14.84	5.11	35.07	19.19
Lane Group LOS	D	A	B	A	D	B
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	4.35	2.81	6.72	3.19	4.83	1.53
50th-Percentile Queue Length [ft]	108.82	70.31	167.88	79.69	120.75	38.29
95th-Percentile Queue Length [veh]	7.77	5.06	10.97	5.74	8.43	2.76
95th-Percentile Queue Length [ft]	194.36	126.56	274.13	143.44	210.86	68.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.53	5.35	14.84	5.11	35.07	19.19
Movement LOS	D	A	B	A	D	B
d_A, Approach Delay [s/veh]	11.78		11.24		30.03	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	15.15					
Intersection LOS	B					
Intersection V/C	0.630					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	61.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.957

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	32	628	455	24	837	6	8	606	136	527	533	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	628	455	24	837	6	8	606	136	527	533	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	157	114	6	209	2	2	152	34	132	133	6
Total Analysis Volume [veh/h]	32	628	455	24	837	6	8	606	136	527	533	22
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	39	0	11	31	0	11	29	0	41	59	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	38	38	4	37	37	2	25	25	37	60	60
g / C, Green / Cycle	0.04	0.32	0.32	0.03	0.31	0.31	0.01	0.21	0.21	0.31	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.31	0.31	0.01	0.23	0.23	0.00	0.21	0.21	0.30	0.15	0.15
s, saturation flow rate [veh/h]	1774	1863	1606	1774	1863	1858	1774	1863	1746	1774	1863	1837
c, Capacity [veh/h]	69	589	508	58	578	576	25	391	366	547	938	925
d1, Uniform Delay [s]	56.48	40.75	40.81	56.94	36.92	36.92	58.59	47.17	47.21	40.88	17.40	17.40
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.43	0.43	0.43	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.85	33.69	37.17	4.69	7.92	7.93	7.10	37.36	39.57	28.03	0.18	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.47	0.99	0.99	0.42	0.73	0.73	0.32	0.98	0.98	0.96	0.30	0.30
d, Delay for Lane Group [s/veh]	61.32	74.44	77.98	61.63	44.83	44.85	65.69	84.53	86.78	68.91	17.57	17.58
Lane Group LOS	E	E	E	E	D	D	E	F	F	E	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.02	21.72	19.28	0.77	11.86	11.83	0.29	15.35	14.66	19.38	4.54	4.48
50th-Percentile Queue Length [ft]	25.52	543.02	481.97	19.34	296.51	295.85	7.26	383.79	366.49	484.60	113.50	111.96
95th-Percentile Queue Length [veh]	1.84	29.36	26.48	1.39	17.51	17.48	0.52	21.78	20.94	26.60	8.03	7.95
95th-Percentile Queue Length [ft]	45.94	734.11	661.99	34.81	437.71	436.89	13.07	544.43	523.47	665.11	200.86	198.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.32	74.71	77.98	61.63	44.84	44.85	65.69	85.36	86.78	68.91	17.58	17.58
Movement LOS	E	E	E	E	D	D	E	F	F	E	B	B
d_A, Approach Delay [s/veh]	75.66			45.31			85.41			42.58		
Approach LOS	E			D			F			D		
d_I, Intersection Delay [s/veh]	61.29											
Intersection LOS	E											
Intersection V/C	0.957											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	51.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TLO			TLO			TLO			TLO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	234	282	213	629	280	157	149	709	226	276	645	586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	282	213	629	280	157	149	709	226	276	645	586
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	71	53	157	70	39	37	177	57	69	161	147
Total Analysis Volume [veh/h]	234	282	213	629	280	157	149	709	226	276	645	586
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	38	32	0	27	21	0	15	38	0	23	46	46
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	18	29	29	23	34	34	11	33	33	19	41	68
g / C, Green / Cycle	0.15	0.24	0.24	0.19	0.28	0.28	0.09	0.28	0.28	0.16	0.34	0.57
(v / s)_i Volume / Saturation Flow Rate	0.13	0.14	0.14	0.18	0.12	0.12	0.08	0.26	0.26	0.16	0.18	0.37
s, saturation flow rate [veh/h]	1774	1863	1601	3445	1863	1641	1774	1863	1710	1774	3547	1583
c, Capacity [veh/h]	266	448	385	661	526	463	164	513	472	281	1213	898
d1, Uniform Delay [s]	49.95	40.36	40.42	47.97	35.32	35.32	54.00	42.65	42.67	50.33	31.77	17.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.32	0.40	0.40	0.41	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	9.08	5.64	6.67	8.40	2.68	3.04	37.56	25.00	26.65	44.20	0.36	3.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.88	0.59	0.60	0.95	0.44	0.44	0.91	0.95	0.95	0.98	0.53	0.65
d, Delay for Lane Group [s/veh]	59.03	45.99	47.08	56.37	38.00	38.36	91.56	67.65	69.32	94.53	32.13	21.53
Lane Group LOS	E	D	D	E	D	D	F	E	E	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	7.53	7.64	6.74	10.03	5.98	5.32	6.16	17.58	16.38	11.68	7.56	11.64
50th-Percentile Queue Length [ft]	188.36	191.05	168.50	250.73	149.44	132.95	154.07	439.53	409.44	292.08	189.02	290.91
95th-Percentile Queue Length [veh]	12.04	12.18	11.00	15.22	9.99	9.10	10.23	24.46	23.01	17.29	12.07	17.23
95th-Percentile Queue Length [ft]	300.90	304.39	274.94	380.58	249.68	227.50	255.85	611.44	575.36	432.22	301.76	430.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.03	46.06	47.08	56.37	38.06	38.36	91.56	68.17	69.32	94.53	32.13	21.53
Movement LOS	E	D	D	E	D	D	F	E	E	F	C	C
d_A, Approach Delay [s/veh]	50.52			48.91			71.63			39.44		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	51.54											
Intersection LOS	D											
Intersection V/C	0.858											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	55.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.957

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	66	60	400	241	42	34	42	1497	48	272	1378	184
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	60	400	241	42	34	42	1497	48	272	1378	184
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	15	100	60	11	9	11	374	12	68	345	46
Total Analysis Volume [veh/h]	66	60	400	241	42	34	42	1497	48	272	1378	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	36	0	21	36	0	11	40	0	23	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	32	32	17	43	5	36	36	19	50	50
g / C, Green / Cycle	0.05	0.27	0.27	0.14	0.36	0.04	0.30	0.30	0.16	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.25	0.14	0.04	0.02	0.29	0.29	0.15	0.29	0.30
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1726	1774	3547	1833	1774	3547	1753
c, Capacity [veh/h]	92	494	420	251	613	78	1060	548	286	1475	729
d1, Uniform Delay [s]	56.02	33.47	43.35	51.15	26.11	56.17	41.39	41.39	49.89	29.02	29.07
k, delay calibration	0.11	0.11	0.42	0.39	0.11	0.11	0.50	0.50	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.90	0.11	29.82	40.60	0.09	5.65	19.73	29.97	36.84	2.90	5.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

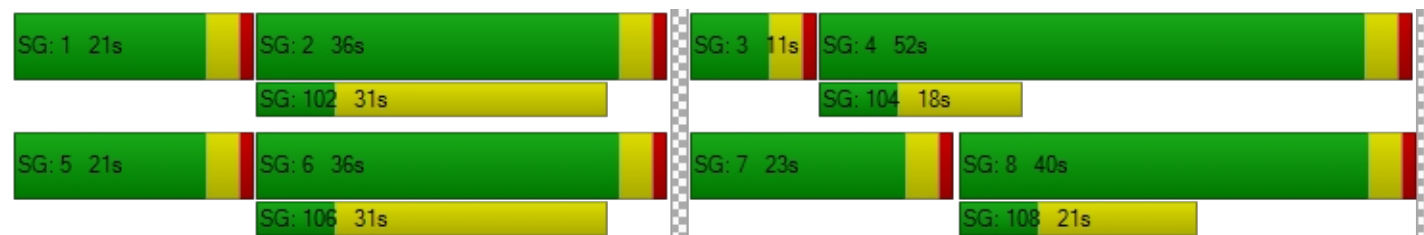
X, volume / capacity	0.72	0.12	0.95	0.96	0.12	0.54	0.96	0.96	0.95	0.71	0.71
d, Delay for Lane Group [s/veh]	65.92	33.58	73.16	91.76	26.20	61.82	61.11	71.36	86.73	31.92	34.88
Lane Group LOS	E	C	E	F	C	E	E	E	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.22	1.35	15.04	10.01	1.50	1.37	17.53	19.68	10.99	12.87	13.38
50th-Percentile Queue Length [ft]	55.55	33.86	376.05	250.25	37.38	34.23	438.19	492.02	274.68	321.67	334.39
95th-Percentile Queue Length [veh]	4.00	2.44	21.40	15.20	2.69	2.46	24.39	26.96	16.42	18.75	19.37
95th-Percentile Queue Length [ft]	100.00	60.95	535.07	379.97	67.28	61.62	609.85	673.91	410.58	468.74	484.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.92	33.58	73.16	91.76	26.20	26.20	61.82	64.39	71.36	86.73	32.64	34.88
Movement LOS	E	C	E	F	C	C	E	E	E	F	C	C
d_A, Approach Delay [s/veh]	67.74			76.04			64.53			40.88		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	55.61											
Intersection LOS	E											
Intersection V/C	0.957											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	48.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.093

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	287	2	318	0	1261	902	377	1560	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	287	2	318	0	1261	902	377	1560	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	72	1	80	0	315	226	94	390	0
Total Analysis Volume [veh/h]	0	0	0	287	2	318	0	1261	902	377	1560	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	26	0	0	66	0	28	94	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		22	22	62	62	24	90
g / C, Green / Cycle		0.18	0.18	0.52	0.52	0.20	0.75
(v / s)_i Volume / Saturation Flow Rate		0.16	0.20	0.36	0.57	0.21	0.31
s, saturation flow rate [veh/h]		1774	1585	3547	1583	1774	5074
c, Capacity [veh/h]		326	291	1835	819	353	3805
d1, Uniform Delay [s]		47.70	48.97	21.67	28.94	48.05	5.42
k, delay calibration		0.35	0.50	0.50	0.50	0.49	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		20.73	82.33	2.12	62.75	66.42	0.33
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

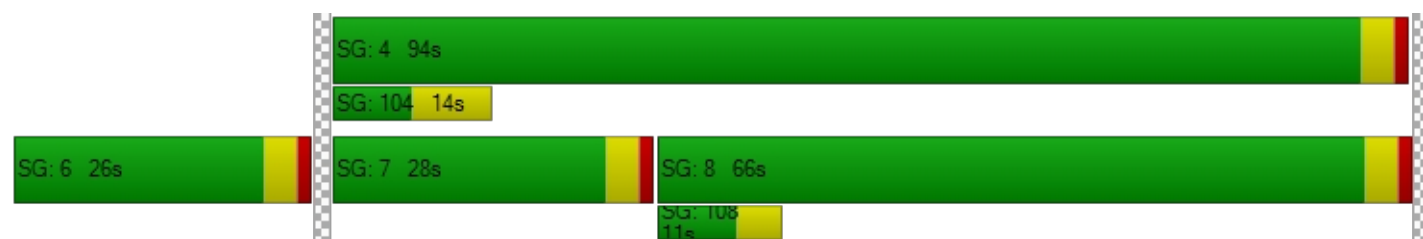
X, volume / capacity		0.88	1.10	0.69	1.10	1.07	0.41
d, Delay for Lane Group [s/veh]		68.44	131.31	23.79	91.69	114.47	5.75
Lane Group LOS		E	F	C	F	F	A
Critical Lane Group		No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		10.21	15.32	13.46	36.71	17.00	4.21
50th-Percentile Queue Length [ft]		255.15	382.96	336.59	917.76	425.02	105.22
95th-Percentile Queue Length [veh]		15.45	22.81	19.48	50.29	24.62	7.57
95th-Percentile Queue Length [ft]		386.13	570.30	487.04	1257.33	615.51	189.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	68.44	131.31	131.31	0.00	23.79	91.69	114.47	5.75	0.00
Movement LOS				E	F	F		C	F	F	A	
d_A, Approach Delay [s/veh]	0.00			101.58			52.11			26.91		
Approach LOS	A			F			D			C		
d_I, Intersection Delay [s/veh]	48.12											
Intersection LOS	D											
Intersection V/C	1.093											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.926

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	673	4	542	0	0	0	288	1273	0	0	1252	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	673	4	542	0	0	0	288	1273	0	0	1252	248
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	168	1	136	0	0	0	72	318	0	0	313	62
Total Analysis Volume [veh/h]	673	4	542	0	0	0	288	1273	0	0	1252	248
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	65	0	0	0	0	21	55	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	49	49		22	63	38	38
g / C, Green / Cycle	0.41	0.41		0.18	0.53	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.38	0.34		0.16	0.25	0.28	0.29
s, saturation flow rate [veh/h]	1774	1585		1774	5074	3547	1713
c, Capacity [veh/h]	722	645		318	2669	1112	537
d1, Uniform Delay [s]	33.95	32.14		48.23	17.98	39.36	39.91
k, delay calibration	0.28	0.23		0.20	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.35	6.44		16.12	0.61	11.53	25.06
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.85		0.91	0.48	0.90	0.93
d, Delay for Lane Group [s/veh]	47.30	38.59		64.35	18.59	50.89	64.97
Lane Group LOS	D	D		E	B	D	E
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	20.96	15.20		9.84	7.47	15.71	17.86
50th-Percentile Queue Length [ft]	524.05	379.96		245.88	186.71	392.71	446.54
95th-Percentile Queue Length [veh]	28.47	21.59		14.98	11.95	22.21	24.79
95th-Percentile Queue Length [ft]	711.77	539.80		374.46	298.75	555.21	619.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.30	38.59	38.59	0.00	0.00	0.00	64.35	18.59	0.00	0.00	53.72	64.97
Movement LOS	D	D	D				E	B			D	E
d_A, Approach Delay [s/veh]	43.40			0.00			27.03			55.58		
Approach LOS	D			A			C			E		
d_I, Intersection Delay [s/veh]	41.70											
Intersection LOS	D											
Intersection V/C	0.926											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	7	689	465	71	834	172	197	94	13	409	160	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	689	465	71	834	172	197	94	13	409	160	126
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	172	116	18	209	43	49	24	3	102	40	32
Total Analysis Volume [veh/h]	7	689	465	71	834	172	197	94	13	409	160	126
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	32	0	11	32	0	0	52	0	0	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	40	40	6	45	45	37	37	37	37	37
g / C, Green / Cycle	0.01	0.42	0.42	0.06	0.47	0.47	0.39	0.39	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.29	0.04	0.28	0.28	0.18	0.05	0.01	0.32	0.17
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1754	1089	1863	1583	1297	1728
c, Capacity [veh/h]	23	1483	662	111	872	821	354	732	622	520	679
d1, Uniform Delay [s]	46.49	19.97	22.78	43.48	18.63	18.63	32.14	18.43	17.65	29.97	20.97
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.19	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.55	1.05	6.14	5.98	2.98	3.16	1.37	0.08	0.01	4.51	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

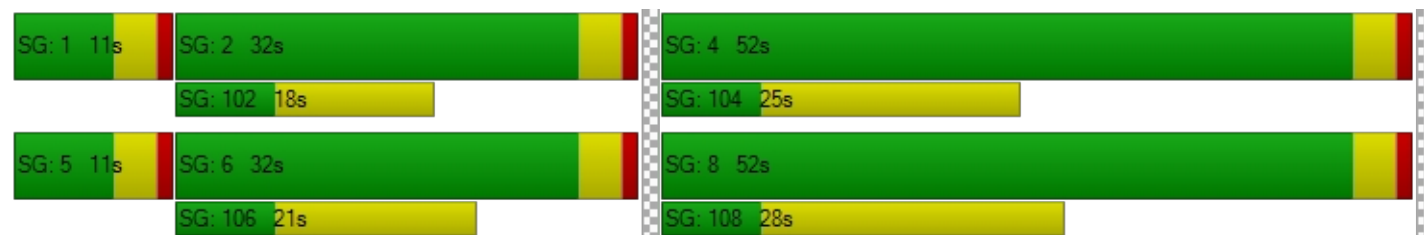
X, volume / capacity	0.31	0.46	0.70	0.64	0.59	0.59	0.56	0.13	0.02	0.79	0.42
d, Delay for Lane Group [s/veh]	54.04	21.02	28.92	49.46	21.60	21.80	33.50	18.51	17.66	34.48	21.39
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.21	5.54	9.32	1.80	8.71	8.25	4.17	1.32	0.17	9.30	4.59
50th-Percentile Queue Length [ft]	5.26	138.46	233.11	45.02	217.69	206.18	104.28	32.96	4.37	232.59	114.68
95th-Percentile Queue Length [veh]	0.38	9.40	14.33	3.24	13.55	12.96	7.51	2.37	0.31	14.31	8.10
95th-Percentile Queue Length [ft]	9.46	234.95	358.30	81.04	338.67	323.92	187.70	59.32	7.86	357.65	202.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.04	21.02	28.92	49.46	21.68	21.80	33.50	18.51	17.66	34.48	21.39	21.39
Movement LOS	D	C	C	D	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	24.38			23.53			28.19			29.09		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.47											
Intersection LOS	C											
Intersection V/C	0.743											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	110.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.209

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	694	627	674	136	89	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	694	627	674	136	89	530
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	174	157	169	34	22	133
Total Analysis Volume [veh/h]	694	627	674	136	89	530
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	43	83	40	0	37	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	79	36	36	33	33
g / C, Green / Cycle	0.32	0.66	0.30	0.30	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.39	0.18	0.36	0.09	0.05	0.33
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	576	2335	559	475	488	436
d1, Uniform Delay [s]	40.50	8.51	41.96	32.12	33.18	43.47
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	107.93	0.28	108.44	1.51	0.18	116.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

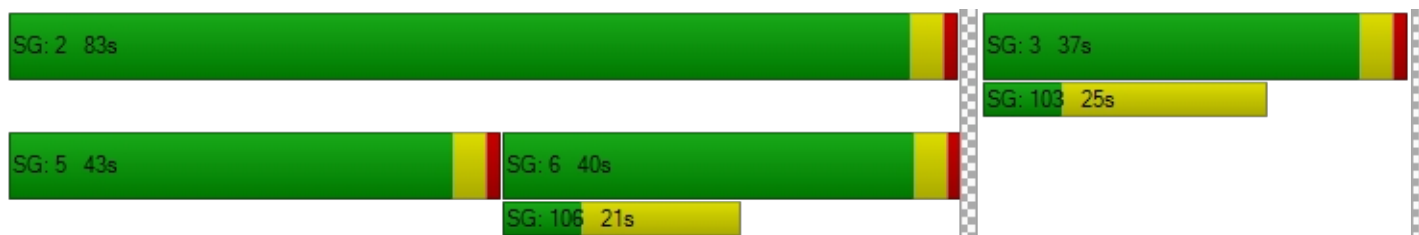
X, volume / capacity	1.20	0.27	1.21	0.29	0.18	1.22
d, Delay for Lane Group [s/veh]	148.43	8.79	150.40	33.63	33.36	160.44
Lane Group LOS	F	A	F	C	C	F
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	33.22	2.98	32.45	3.11	2.02	26.93
50th-Percentile Queue Length [ft]	830.53	74.60	811.34	77.63	50.44	673.30
95th-Percentile Queue Length [veh]	47.88	5.37	46.76	5.59	3.63	39.63
95th-Percentile Queue Length [ft]	1197.06	134.27	1168.94	139.73	90.79	990.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	148.43	8.79	150.40	33.63	33.36	160.44
Movement LOS	F	A	F	C	C	F
d_A, Approach Delay [s/veh]	82.15		130.80		142.17	
Approach LOS	F		F		F	
d_I, Intersection Delay [s/veh]	109.99					
Intersection LOS	F					
Intersection V/C	1.209					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	46.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.993

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	167	78	141	41	224	97	79	923	462	179	1367	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	78	141	41	224	97	79	923	462	179	1367	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	20	35	10	56	24	20	231	116	45	342	5
Total Analysis Volume [veh/h]	167	78	141	41	224	97	79	923	462	179	1367	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	46	0	0	46	0	13	53	0	16	56	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42	7	49	49	12	54	54
g / C, Green / Cycle	0.37	0.37	0.06	0.43	0.43	0.11	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.39	0.22	0.04	0.39	0.40	0.10	0.37	0.37
s, saturation flow rate [veh/h]	991	1671	1774	1863	1659	1774	1863	1854
c, Capacity [veh/h]	407	645	101	791	705	188	883	879
d1, Uniform Delay [s]	40.75	29.17	53.55	31.08	31.65	51.15	25.35	25.37
k, delay calibration	0.50	0.16	0.11	0.50	0.50	0.36	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	33.59	1.14	12.57	16.76	21.97	45.51	6.97	7.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

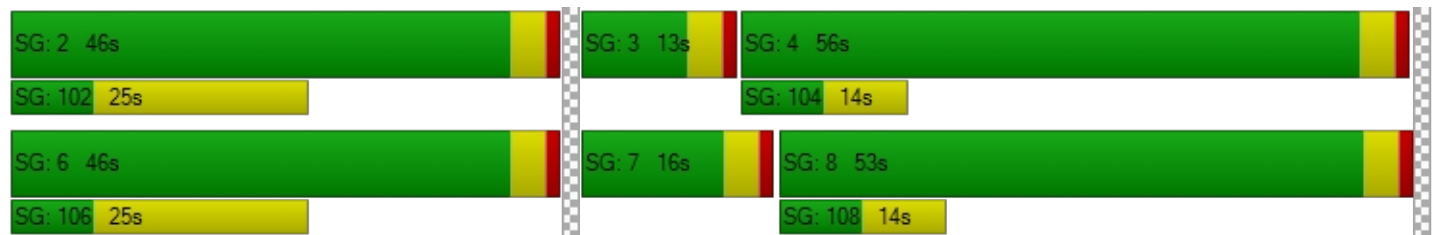
X, volume / capacity	0.95	0.56	0.79	0.91	0.94	0.95	0.79	0.79
d, Delay for Lane Group [s/veh]	74.34	30.30	66.12	47.84	53.62	96.66	32.32	32.42
Lane Group LOS	E	C	E	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	14.87	8.15	2.55	21.16	20.60	7.35	16.34	16.32
50th-Percentile Queue Length [ft]	371.78	203.64	63.69	528.91	514.99	183.79	408.43	408.02
95th-Percentile Queue Length [veh]	21.20	12.83	4.59	28.70	28.04	11.80	22.97	22.95
95th-Percentile Queue Length [ft]	529.89	320.65	114.65	717.49	701.07	294.96	574.14	573.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.34	74.34	74.34	30.30	30.30	30.30	66.12	49.09	53.62	96.66	32.37	32.42
Movement LOS	E	E	E	C	C	C	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	74.34			30.30			51.44			39.73		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	46.90											
Intersection LOS	D											
Intersection V/C	0.993											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.920

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	17	38	5	49	32	1087	943	276	14	9	330	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	38	5	49	32	1087	943	276	14	9	330	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	10	1	12	8	272	236	69	4	2	83	15
Total Analysis Volume [veh/h]	17	38	5	49	32	1087	943	276	14	9	330	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	0	0	35	35	63	85	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	90	81	81	81	21	21	21
g / C, Green / Cycle	0.26	0.26	0.75	0.67	0.67	0.67	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.06	0.69	0.61	0.08	0.08	0.01	0.11	0.11
s, saturation flow rate [veh/h]	1481	1347	1583	1546	1863	1831	1085	1863	1764
c, Capacity [veh/h]	421	396	1193	1035	1257	1236	208	335	317
d1, Uniform Delay [s]	34.16	35.29	11.61	17.85	6.88	6.88	45.14	45.18	45.28
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	0.25	11.90	13.38	0.19	0.19	0.39	7.57	8.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.20	0.91	0.91	0.12	0.12	0.04	0.59	0.61
d, Delay for Lane Group [s/veh]	34.31	35.54	23.51	31.23	7.07	7.07	45.53	52.75	53.62
Lane Group LOS	C	D	C	C	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.37	1.94	22.35	19.85	1.33	1.31	0.26	6.16	6.01
50th-Percentile Queue Length [ft]	34.30	48.42	558.66	496.15	33.16	32.67	6.45	153.92	150.14
95th-Percentile Queue Length [veh]	2.47	3.49	30.10	27.15	2.39	2.35	0.46	10.23	10.02
95th-Percentile Queue Length [ft]	61.74	87.15	752.48	678.80	59.68	58.80	11.61	255.65	250.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.31	34.31	34.31	35.54	35.54	23.51	31.23	7.07	7.07	45.53	53.10	53.62
Movement LOS	C	C	C	D	D	C	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	34.31			24.35			25.54			53.01		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.08											
Intersection LOS	C											
Intersection V/C	0.920											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	74.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.131

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	245	721	501	896	1080	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	721	501	896	1080	192
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	180	125	224	270	48
Total Analysis Volume [veh/h]	245	721	501	896	1080	192
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	19	83	64	0	37	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	79	60	60	33	33
g / C, Green / Cycle	0.13	0.66	0.50	0.50	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.14	0.20	0.14	0.57	0.31	0.12
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	223	2335	1771	791	948	436
d1, Uniform Delay [s]	52.44	8.79	17.51	30.02	43.47	35.86
k, delay calibration	0.48	0.50	0.50	0.50	0.14	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	88.38	0.34	0.40	75.40	66.85	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.31	0.28	1.13	1.14	0.44
d, Delay for Lane Group [s/veh]	140.81	9.14	17.91	105.43	110.32	36.56
Lane Group LOS	F	A	B	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	12.16	3.96	4.12	38.33	22.70	4.73
50th-Percentile Queue Length [ft]	303.97	98.98	103.02	958.30	567.58	118.33
95th-Percentile Queue Length [veh]	18.63	7.13	7.42	53.31	32.96	8.30
95th-Percentile Queue Length [ft]	465.67	178.16	185.44	1332.68	823.97	207.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	140.81	9.14	17.91	105.43	110.32	36.56
Movement LOS	F	A	B	F	F	D
d_A, Approach Delay [s/veh]	42.53		74.04		99.18	
Approach LOS	D		E		F	
d_I, Intersection Delay [s/veh]	74.46					
Intersection LOS	E					
Intersection V/C	1.131					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	67.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	318	54	331	341	67	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	54	331	341	67	260
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	14	83	85	17	65
Total Analysis Volume [veh/h]	318	54	331	341	67	260
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.28	0.00	0.53	0.32
d_M, Delay for Movement [s/veh]	0.00	0.00	9.22	0.00	67.05	43.07
Movement LOS	A	A	A	A	F	E
95th-Percentile Queue Length [veh]	0.00	0.00	1.18	0.59	7.90	7.90
95th-Percentile Queue Length [ft]	0.00	0.00	29.42	14.71	197.51	197.51
d_A, Approach Delay [s/veh]	0.00		4.54		47.98	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	13.67					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 6.7
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	304	30	16	386	35	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	304	30	16	386	35	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	8	4	97	9	4
Total Analysis Volume [veh/h]	304	30	16	386	35	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	16		36		310	
Exiting Flow Rate [veh/h]	16		36		310	
Demand Flow Rate [veh/h]	304	30	16	386	35	17
Adjusted Demand Flow Rate [veh/h]	304	30	16	386	35	17

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	341		411		54	
Capacity of Entry and Bypass Lanes [veh/h]	1112		1091		829	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1090		1069		813	
X, volume / capacity	0.31		0.38		0.06	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	1.31	1.77	0.20
95th-Percentile Queue Length [ft]	32.69	44.26	5.12
Approach Delay [s/veh]	6.29	7.26	5.05
Approach LOS	A	A	A
Intersection Delay [s/veh]	6.70		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 5.1
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	217	13	19	181	11	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	217	13	19	181	11	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	3	5	45	3	6
Total Analysis Volume [veh/h]	217	13	19	181	11	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	19		11		221	
Exiting Flow Rate [veh/h]	19		11		221	
Demand Flow Rate [veh/h]	217	13	19	181	11	22
Adjusted Demand Flow Rate [veh/h]	217	13	19	181	11	22

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	235		204		34	
Capacity of Entry and Bypass Lanes [veh/h]	1109		1118		906	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1087		1096		888	
X, volume / capacity	0.21		0.18		0.04	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.80	0.67	0.12
95th-Percentile Queue Length [ft]	19.99	16.65	2.89
Approach Delay [s/veh]	5.26	4.93	4.40
Approach LOS	A	A	A
Intersection Delay [s/veh]	5.06		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	33.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.592

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	180	20	30	607	360	183
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	20	30	607	360	183
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	8	152	90	46
Total Analysis Volume [veh/h]	180	20	30	607	360	183
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.59	0.03	0.03	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	33.35	26.48	8.63	0.00	0.00	0.00
Movement LOS	D	D	A	A	A	A
95th-Percentile Queue Length [veh]	3.89	3.89	1.34	0.67	0.00	0.00
95th-Percentile Queue Length [ft]	97.29	97.29	33.45	16.72	0.00	0.00
d_A, Approach Delay [s/veh]	32.67		0.41		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	4.92					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	580	32	6	908	23	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	580	32	6	908	23	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	8	2	227	6	1
Total Analysis Volume [veh/h]	580	32	6	908	23	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.11	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.76	0.00	23.57	10.25
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	2.60	1.30	0.35	0.02
95th-Percentile Queue Length [ft]	0.00	0.00	65.05	32.52	8.78	0.44
d_A, Approach Delay [s/veh]	0.00		0.06		21.60	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	90	261	425	229	308	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	261	425	229	308	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	65	106	57	77	48
Total Analysis Volume [veh/h]	90	261	425	229	308	193
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	29	0	22	0	39	61
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	43	43	18	65
g / C, Green / Cycle	0.19	0.19	0.48	0.48	0.20	0.72
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.18	0.20	0.17	0.05
s, saturation flow rate [veh/h]	1774	1583	1863	1658	1774	3547
c, Capacity [veh/h]	337	300	891	793	353	2559
d1, Uniform Delay [s]	31.14	35.40	14.87	15.27	34.97	3.69
k, delay calibration	0.11	0.15	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	9.99	1.17	1.59	6.77	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.87	0.37	0.41	0.87	0.08
d, Delay for Lane Group [s/veh]	31.56	45.38	16.04	16.86	41.74	3.75
Lane Group LOS	C	D	B	B	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.69	6.27	4.32	4.49	7.06	0.44
50th-Percentile Queue Length [ft]	42.19	156.65	107.93	112.16	176.42	10.91
95th-Percentile Queue Length [veh]	3.04	10.37	7.73	7.96	11.41	0.79
95th-Percentile Queue Length [ft]	75.94	259.28	193.13	199.00	285.33	19.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.56	45.38	16.23	16.86	41.74	3.75
Movement LOS	C	D	B	B	D	A
d_A, Approach Delay [s/veh]	41.84		16.45		27.10	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	25.91					
Intersection LOS	C					
Intersection V/C	0.618					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	387.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.577

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	469	1512	1759	764	1864	273	268	613	548	797	513	575
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	469	1512	1759	764	1864	273	268	613	548	797	513	575
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	378	440	191	466	68	67	153	137	199	128	144
Total Analysis Volume [veh/h]	469	1512	1759	764	1864	273	268	613	548	797	513	575
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	23	49	0	21	47	0	0	18	18	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	45	45	17	43	43	14	14	37	28	28	28
g / C, Green / Cycle	0.16	0.37	0.37	0.14	0.36	0.36	0.12	0.12	0.31	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.26	0.43	1.11	0.43	0.40	0.42	0.15	0.33	0.35	0.23	0.14	0.36
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1748	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	282	1328	593	253	1270	626	207	217	489	803	827	369
d1, Uniform Delay [s]	50.52	37.57	37.57	51.51	38.56	38.56	53.05	53.05	41.51	45.94	41.29	46.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	313.99	71.86	889.31	921.78	58.79	94.59	163.61	831.87	78.05	12.99	0.76	263.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.66	1.14	2.97	3.03	1.10	1.17	1.29	2.82	1.12	0.99	0.62	1.56
d, Delay for Lane Group [s/veh]	364.51	109.43	926.88	973.29	97.35	133.15	216.67	884.92	119.56	58.94	42.05	309.72
Lane Group LOS	F	F	F	F	F	F	F	F	F	E	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	33.02	32.34	163.53	72.25	28.68	34.50	15.64	56.76	24.88	13.21	6.89	37.97
50th-Percentile Queue Length [ft]	825.52	808.40	4088.27	1806.14	717.08	862.52	390.88	1419.00	621.97	330.29	172.27	949.27
95th-Percentile Queue Length [veh]	51.38	45.48	262.86	111.37	40.06	49.03	24.44	87.49	35.50	19.17	11.20	58.74
95th-Percentile Queue Length [ft]	1284.38	1136.97	6571.53	2784.28	1001.51	1225.70	610.88	2187.27	887.56	479.31	279.90	1468.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	364.51	109.43	926.88	973.29	106.23	133.15	216.67	884.92	119.56	58.94	42.05	309.72
Movement LOS	F	F	F	F	F	F	F	F	F	E	D	F
d_A, Approach Delay [s/veh]	525.88			337.11			466.09			130.84		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	387.48											
Intersection LOS	F											
Intersection V/C	2.577											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	98.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.240

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	2884	473	692	2377	0	679	5	848	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2884	473	692	2377	0	679	5	848	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	721	118	173	594	0	170	1	212	0	0	0
Total Analysis Volume [veh/h]	0	2884	473	692	2377	0	679	5	848	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	66	0	24	90	0	0	30	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	62	62	20	86	26	26	26	
g / C, Green / Cycle	0.52	0.52	0.17	0.72	0.22	0.22	0.22	
(v / s)_i Volume / Saturation Flow Rate	0.63	0.65	0.20	0.47	0.20	0.27	0.27	
s, saturation flow rate [veh/h]	3547	1733	3445	5074	3445	1586	1583	
c, Capacity [veh/h]	1831	895	575	3636	747	344	343	
d1, Uniform Delay [s]	29.01	29.01	49.97	9.07	45.83	46.98	46.98	
k, delay calibration	0.50	0.50	0.15	0.50	0.11	0.50	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	105.13	121.93	96.73	0.93	4.67	130.53	131.43	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	1.22	1.25	1.20	0.65	0.91	1.24	1.24	
d, Delay for Lane Group [s/veh]	134.14	150.94	146.70	10.00	50.50	177.50	178.41	
Lane Group LOS	F	F	F	A	D	F	F	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh]	51.78	54.79	16.31	10.09	10.30	22.66	22.71	
50th-Percentile Queue Length [ft]	1294.51	1369.78	407.77	252.33	257.58	566.57	567.73	
95th-Percentile Queue Length [veh]	73.67	78.65	24.98	15.30	15.57	34.00	34.08	
95th-Percentile Queue Length [ft]	1841.87	1966.36	624.39	382.59	389.19	849.94	852.11	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	137.91	150.94	146.70	10.00	0.00	50.50	177.50	177.96	0.00	0.00	0.00
Movement LOS		F	F	F	A		D	F	F			
d_A, Approach Delay [s/veh]	139.74			40.82			121.47			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	98.08											
Intersection LOS	F											
Intersection V/C	1.240											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	273.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.861

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	767	2772	168	326	2375	434	445	412	709	99	233	119
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	2772	168	326	2375	434	445	412	709	99	233	119
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	693	42	82	594	109	111	103	177	25	58	30
Total Analysis Volume [veh/h]	767	2772	168	326	2375	434	445	412	709	99	233	119
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	30	67	0	14	51	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	63	63	10	47	47	35	35	35	35	35	35
g / C, Green / Cycle	0.22	0.52	0.52	0.08	0.39	0.39	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.43	0.54	0.56	0.09	0.75	0.80	0.43	0.22	0.45	0.20	0.10	0.10
s, saturation flow rate [veh/h]	1774	3547	1810	3445	1863	1766	1025	1863	1583	500	1863	1656
c, Capacity [veh/h]	385	1859	949	290	729	691	259	543	462	60	543	483
d1, Uniform Delay [s]	46.96	28.53	28.53	54.93	36.50	36.50	51.00	38.63	42.48	59.96	33.37	33.49
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.28	0.50	0.22	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	456.08	31.07	48.84	66.89	422.06	469.33	337.67	5.50	251.59	322.27	0.36	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

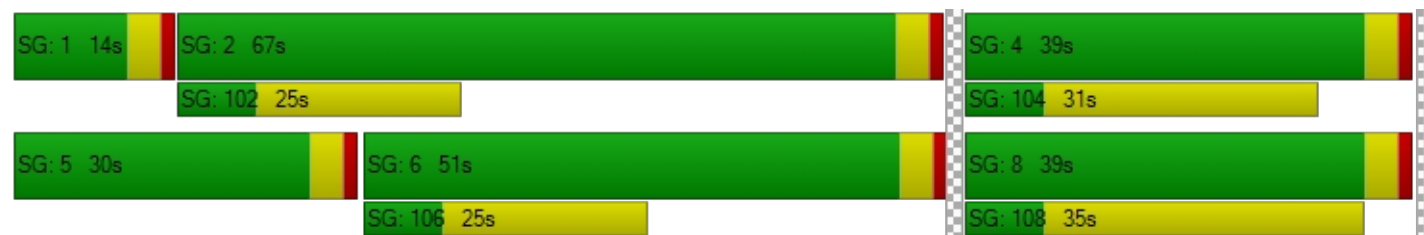
X, volume / capacity	1.99	1.04	1.07	1.13	1.93	2.03	1.72	0.76	1.54	1.65	0.34	0.35
d, Delay for Lane Group [s/veh]	503.04	59.59	77.37	121.82	458.55	505.83	388.66	44.13	294.06	382.23	33.74	33.93
Lane Group LOS	F	F	F	F	F	F	F	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	60.16	33.34	38.71	7.06	106.30	109.88	32.23	11.79	45.78	7.20	4.27	3.95
50th-Percentile Queue Length [ft]	1504.07	833.53	967.77	176.49	2657.44	2746.98	805.84	294.79	1144.53	180.04	106.80	98.63
95th-Percentile Queue Length [veh]	94.06	44.10	51.57	11.89	167.65	174.63	52.58	17.42	70.41	12.96	7.66	7.10
95th-Percentile Queue Length [ft]	2351.48	1102.51	1289.22	297.14	4191.25	4365.75	1314.43	435.58	1760.36	324.08	191.54	177.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	503.04	65.01	77.37	121.82	477.87	505.83	388.66	44.13	294.06	382.23	33.78	33.93
Movement LOS	F	E	E	F	F	F	F	D	F	F	C	C
d_A, Approach Delay [s/veh]	156.20			444.72			255.19			110.31		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	273.46											
Intersection LOS	F											
Intersection V/C	1.861											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	102	416	1032	355	282	1256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	416	1032	355	282	1256
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	104	258	89	71	314
Total Analysis Volume [veh/h]	102	416	1032	355	282	1256
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	57	0	22	0	11	33
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	35	35	16	56
g / C, Green / Cycle	0.29	0.29	0.39	0.39	0.18	0.62
(v / s)_i Volume / Saturation Flow Rate	0.06	0.26	0.26	0.28	0.16	0.25
s, saturation flow rate [veh/h]	1774	1583	3547	1640	1774	5074
c, Capacity [veh/h]	517	461	1390	643	325	3145
d1, Uniform Delay [s]	23.98	30.66	22.51	23.18	35.70	8.65
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	6.71	2.53	6.80	6.98	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.90	0.67	0.72	0.87	0.40
d, Delay for Lane Group [s/veh]	24.17	37.37	25.04	29.97	42.69	9.03
Lane Group LOS	C	D	C	C	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.63	9.23	7.76	8.70	6.28	3.42
50th-Percentile Queue Length [ft]	40.81	230.80	194.07	217.56	157.11	85.40
95th-Percentile Queue Length [veh]	2.94	14.22	12.33	13.54	10.40	6.15
95th-Percentile Queue Length [ft]	73.46	355.38	308.30	338.51	259.89	153.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.17	37.37	25.56	29.97	42.69	9.03
Movement LOS	C	D	C	C	D	A
d_A, Approach Delay [s/veh]	34.77		26.69		15.20	
Approach LOS	C		C		B	
d_I, Intersection Delay [s/veh]	22.77					
Intersection LOS	C					
Intersection V/C	0.812					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	499.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.441

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	221	1637	173	1071	1509	741	894	338	119	287	263	1287
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	221	1637	173	1071	1509	741	894	338	119	287	263	1287
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	409	43	268	377	185	224	85	30	72	66	322
Total Analysis Volume [veh/h]	221	1637	173	1071	1509	741	894	338	119	287	263	1287
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	17	45	0	25	32	0	32	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	13	41	41	21	34	34	21	35	35
g / C, Green / Cycle	0.06	0.29	0.29	0.11	0.34	0.34	0.18	0.29	0.29	0.18	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.12	0.34	0.34	0.31	0.60	0.67	0.50	0.09	0.09	0.16	0.05	0.81
s, saturation flow rate [veh/h]	1774	3547	1773	3445	1863	1669	1774	3547	1625	1774	5074	1583
c, Capacity [veh/h]	104	1039	519	374	639	572	311	1016	466	317	1472	459
d1, Uniform Delay [s]	56.49	42.44	42.44	53.50	39.44	39.44	49.51	33.52	33.52	48.29	31.90	42.61
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.22	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	535.93	82.34	94.49	845.67	349.19	441.25	853.87	0.17	0.37	17.25	0.06	816.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	2.12	1.16	1.17	2.86	1.76	1.97	2.88	0.31	0.31	0.91	0.18	2.80
d, Delay for Lane Group [s/veh]	592.42	124.78	136.93	899.17	388.63	480.69	903.38	33.69	33.89	65.54	31.96	859.54
Lane Group LOS	F	F	F	F	F	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	18.65	27.09	28.85	49.57	80.44	86.69	82.95	3.61	3.34	9.91	1.93	117.66
50th-Percentile Queue Length [ft]	466.34	677.33	721.20	1239.23	2011.02	2167.34	2073.73	90.30	83.47	247.67	48.18	2941.58
95th-Percentile Queue Length [veh]	30.15	38.95	41.35	76.82	124.99	137.13	128.68	6.50	6.01	15.07	3.47	186.90
95th-Percentile Queue Length [ft]	753.82	973.63	1033.71	1920.46	3124.72	3428.35	3217.05	162.53	150.25	376.72	86.72	4672.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	592.42	127.99	136.93	899.17	412.05	480.69	903.38	33.70	33.89	65.54	31.96	859.54
Movement LOS	F	F	F	F	F	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	179.29			584.46			609.21			617.01		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	499.02											
Intersection LOS	F											
Intersection V/C	2.441											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	5,618.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	10.962

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	2271	30	38	1829	61	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2271	30	38	1829	61	65
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	568	8	10	457	15	16
Total Analysis Volume [veh/h]	2271	30	38	1829	61	65
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.18	0.02	10.96	0.34
d_M, Delay for Movement [s/veh]	0.00	0.00	25.27	0.00	5618.24	4990.10
Movement LOS	A	A	D	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.63	0.00	17.12	17.12
95th-Percentile Queue Length [ft]	0.00	0.00	15.63	0.00	427.92	427.92
d_A, Approach Delay [s/veh]	0.00		0.51		5294.20	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	155.57					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	973.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	33	1730	16	34	1417	23	21	3	21	7	1	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	1730	16	34	1417	23	21	3	21	7	1	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	433	4	9	354	6	5	1	5	2	0	2
Total Analysis Volume [veh/h]	33	1730	16	34	1417	23	21	3	21	7	1	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.02	0.00	0.20	0.01	0.00	0.74	0.52	0.07	0.49	0.18	0.03
d_M, Delay for Movement [s/veh]	22.49	0.00	0.00	31.79	0.00	0.00	471.84	973.69	355.66	425.10	806.43	187.95
Movement LOS	C	A	A	D	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh]	0.47	0.00	0.00	0.73	0.00	0.00	4.87	4.87	4.87	1.99	1.99	1.99
95th-Percentile Queue Length [ft]	11.82	0.00	0.00	18.24	0.00	0.00	121.82	121.82	121.82	49.79	49.79	49.79
d_A, Approach Delay [s/veh]	0.42			0.73			451.08			339.85		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	8.22											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	158.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.984

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	8	635	58	1043	688	14	18	11	3	86	10	104
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	635	58	1043	688	14	18	11	3	86	10	104
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	159	15	261	172	4	5	3	1	22	3	26
Total Analysis Volume [veh/h]	8	635	58	1043	688	14	18	11	3	86	10	104
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	45	63	63	11	29	0	17	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	50	50	41	89	97	3	6	6	7	10	10
g / C, Green / Cycle	0.01	0.42	0.42	0.34	0.74	0.80	0.03	0.05	0.05	0.06	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.19	0.59	0.19	0.01	0.01	0.00	0.00	0.05	0.01	0.07
s, saturation flow rate [veh/h]	1774	1863	1809	1774	3547	1583	1774	1863	1731	1774	1863	1583
c, Capacity [veh/h]	25	777	754	605	2639	1273	48	87	81	109	152	129
d1, Uniform Delay [s]	58.59	25.15	25.16	39.54	4.88	2.32	57.43	54.72	54.73	55.54	50.88	54.16
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	7.10	1.90	1.96	332.24	0.24	0.00	4.90	0.39	0.45	11.72	0.18	10.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

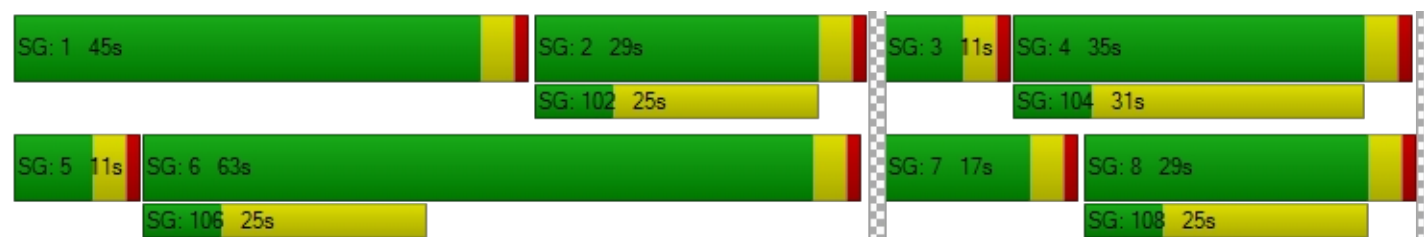
X, volume / capacity	0.32	0.45	0.45	1.72	0.26	0.01	0.38	0.08	0.09	0.79	0.07	0.80
d, Delay for Lane Group [s/veh]	65.69	27.05	27.12	371.77	5.12	2.33	62.33	55.11	55.18	67.26	51.06	65.09
Lane Group LOS	E	C	C	F	A	A	E	E	E	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.29	7.57	7.39	73.39	2.49	0.05	0.60	0.21	0.21	2.92	0.29	3.48
50th-Percentile Queue Length [ft]	7.26	189.33	184.65	1834.86	62.28	1.31	15.06	5.32	5.32	73.07	7.16	86.99
95th-Percentile Queue Length [veh]	0.52	12.09	11.84	114.03	4.48	0.09	1.08	0.38	0.38	5.26	0.52	6.26
95th-Percentile Queue Length [ft]	13.07	302.16	296.07	2850.86	112.10	2.36	27.11	9.58	9.57	131.53	12.89	156.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.69	27.08	27.12	371.77	5.12	2.33	62.33	55.13	55.18	67.26	51.06	65.09
Movement LOS	E	C	C	F	A	A	E	E	E	E	D	E
d_A, Approach Delay [s/veh]	27.52			224.25			59.19			65.32		
Approach LOS	C			F			E			E		
d_I, Intersection Delay [s/veh]	158.91											
Intersection LOS	F											
Intersection V/C	0.984											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	91.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.126

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	207	1440	76	50	1648	42	360	13	772	102	41	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	1440	76	50	1648	42	360	13	772	102	41	52
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	360	19	13	412	11	90	3	193	26	10	13
Total Analysis Volume [veh/h]	207	1440	76	50	1648	42	360	13	772	102	41	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	34	0	20	37	0	31	55	0	11	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	40	40	6	33	33	26	51	51	7	32	32
g / C, Green / Cycle	0.11	0.34	0.34	0.05	0.28	0.28	0.22	0.42	0.42	0.06	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.28	0.03	0.31	0.31	0.20	0.01	0.49	0.06	0.02	0.03
s, saturation flow rate [veh/h]	1774	3547	1815	1774	3547	1839	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	192	1195	612	84	979	507	385	790	671	103	494	420
d1, Uniform Delay [s]	53.50	36.78	36.79	56.04	43.45	43.45	46.15	20.04	34.55	56.45	33.11	33.48
k, delay calibration	0.45	0.50	0.50	0.11	0.50	0.50	0.37	0.11	0.50	0.32	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	83.41	7.14	13.05	6.59	74.38	83.67	26.46	0.01	83.89	66.77	0.07	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

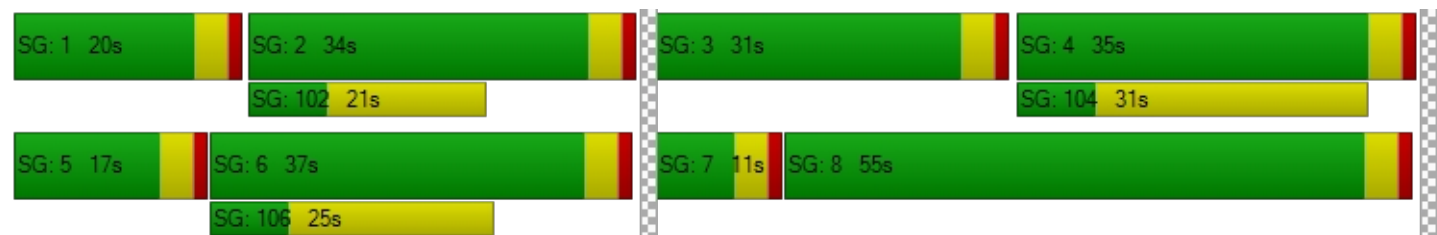
X, volume / capacity	1.08	0.84	0.84	0.60	1.14	1.14	0.94	0.02	1.15	0.99	0.08	0.12
d, Delay for Lane Group [s/veh]	136.91	43.92	49.84	62.62	117.83	127.12	72.60	20.05	118.44	123.22	33.18	33.61
Lane Group LOS	F	D	D	E	F	F	E	C	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	10.24	14.62	15.99	1.64	24.48	26.70	13.31	0.22	34.65	5.00	0.91	1.18
50th-Percentile Queue Length [ft]	255.95	365.61	399.76	40.98	611.96	667.40	332.86	5.38	866.24	125.11	22.87	29.40
95th-Percentile Queue Length [veh]	15.96	20.90	22.55	2.95	35.19	38.01	19.30	0.39	48.87	8.67	1.65	2.12
95th-Percentile Queue Length [ft]	399.00	522.41	563.71	73.76	879.63	950.17	482.47	9.68	1221.71	216.83	41.16	52.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	136.91	45.72	49.84	62.62	120.84	127.12	72.60	20.05	118.44	123.22	33.18	33.61
Movement LOS	F	D	D	E	F	F	E	C	F	F	C	C
d_A, Approach Delay [s/veh]	56.86			119.32			102.91			80.39		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	91.42											
Intersection LOS	F											
Intersection V/C	1.126											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Mission Trail at Olive Street

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	14	1357	190	100	1846	29	34	15	18	141	23	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	1357	190	100	1846	29	34	15	18	141	23	141
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	339	48	25	462	7	9	4	5	35	6	35
Total Analysis Volume [veh/h]	14	1357	190	100	1846	29	34	15	18	141	23	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	22	0	33	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	56	56	7	60	60	15	15	15	15
g / C, Green / Cycle	0.02	0.62	0.62	0.07	0.67	0.67	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.01	0.29	0.29	0.06	0.35	0.35	0.03	0.02	0.10	0.10
s, saturation flow rate [veh/h]	1774	3547	1748	1774	3547	1848	1217	1699	1370	1617
c, Capacity [veh/h]	42	2209	1089	130	2386	1243	141	289	255	276
d1, Uniform Delay [s]	43.25	9.04	9.05	40.95	7.39	7.39	41.80	31.60	38.17	34.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.59	0.72	1.45	9.04	0.80	1.54	0.88	0.17	1.87	2.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

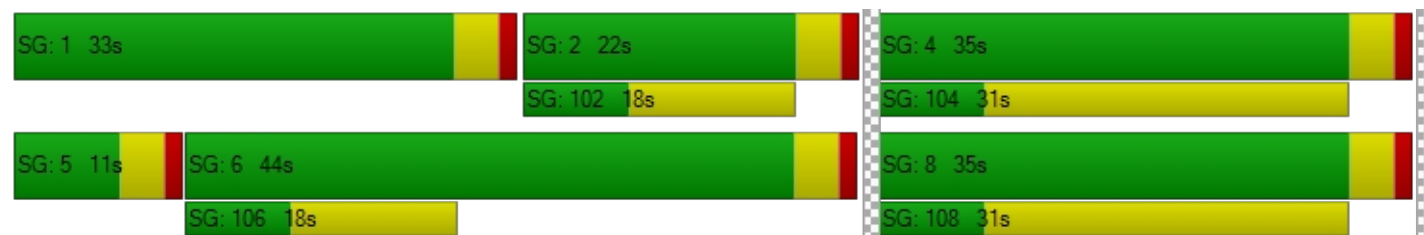
X, volume / capacity	0.33	0.47	0.47	0.77	0.52	0.52	0.24	0.11	0.55	0.60
d, Delay for Lane Group [s/veh]	47.84	9.76	10.50	49.99	8.19	8.93	42.68	31.77	40.04	36.53
Lane Group LOS	D	A	B	D	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.36	5.02	5.18	2.48	5.28	5.77	0.76	0.61	3.10	3.41
50th-Percentile Queue Length [ft]	8.93	125.62	129.43	61.93	132.10	144.21	19.09	15.35	77.58	85.31
95th-Percentile Queue Length [veh]	0.64	8.70	8.91	4.46	9.05	9.71	1.37	1.11	5.59	6.14
95th-Percentile Queue Length [ft]	16.08	217.52	222.72	111.48	226.34	242.69	34.36	27.64	139.64	153.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.84	9.94	10.50	49.99	8.44	8.93	42.68	31.77	31.77	40.04	36.53	36.53
Movement LOS	D	A	B	D	A	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	10.34			10.55			37.31			38.15		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	13.08											
Intersection LOS	B											
Intersection V/C	0.529											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	4.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	8	1506	8	16	2009	6	12	12	16	17	26	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	1506	8	16	2009	6	12	12	16	17	26	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	377	2	4	502	2	3	3	4	4	7	3
Total Analysis Volume [veh/h]	8	1506	8	16	2009	6	12	12	16	17	26	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	74	0	11	74	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	99	99	3	100	100	6	6
g / C, Green / Cycle	0.01	0.83	0.83	0.02	0.84	0.84	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.00	0.28	0.28	0.01	0.37	0.37	0.02	0.03
s, saturation flow rate [veh/h]	1774	3547	1858	1774	3547	1860	1618	1652
c, Capacity [veh/h]	25	2932	1536	43	2969	1557	118	120
d1, Uniform Delay [s]	58.57	2.50	2.50	57.60	2.54	2.54	55.58	56.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.15	0.31	0.60	5.11	0.49	0.92	1.69	2.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.34	0.34	0.37	0.45	0.45	0.34	0.44
d, Delay for Lane Group [s/veh]	65.72	2.82	3.10	62.71	3.02	3.46	57.26	58.54
Lane Group LOS	E	A	A	E	A	A	E	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	0.29	2.11	2.34	0.54	2.86	3.20	1.24	1.66
50th-Percentile Queue Length [ft]	7.27	52.84	58.40	13.51	71.62	79.89	30.91	41.55
95th-Percentile Queue Length [veh]	0.52	3.80	4.20	0.97	5.16	5.75	2.23	2.99
95th-Percentile Queue Length [ft]	13.08	95.12	105.12	24.31	128.91	143.80	55.64	74.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.72	2.91	3.10	62.71	3.17	3.46	57.26	57.26	57.26	58.54	58.54	58.54
Movement LOS	E	A	A	E	A	A	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	3.24			3.64			57.26			58.54		
Approach LOS	A			A			E			E		
d_I, Intersection Delay [s/veh]	4.86											
Intersection LOS	A											
Intersection V/C	0.455											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1352	166	140	1859	133	161
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1352	166	140	1859	133	161
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	338	42	35	465	33	40
Total Analysis Volume [veh/h]	1352	166	140	1859	133	161
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	28	0	17	45	45	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	51	51	9	64	18
g / C, Green / Cycle	0.57	0.57	0.10	0.71	0.20
(v / s)_i Volume / Saturation Flow Rate	0.27	0.10	0.08	0.37	0.18
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1664
c, Capacity [veh/h]	2874	897	174	3599	336
d1, Uniform Delay [s]	11.53	9.45	39.75	6.01	34.83
k, delay calibration	0.50	0.50	0.11	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.46	8.31	0.53	7.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.19	0.80	0.52	0.87
d, Delay for Lane Group [s/veh]	12.09	9.91	48.06	6.54	41.99
Lane Group LOS	B	A	D	A	D
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	5.03	1.59	3.39	4.46	6.77
50th-Percentile Queue Length [ft]	125.69	39.66	84.82	111.62	169.17
95th-Percentile Queue Length [veh]	8.71	2.86	6.11	7.93	11.03
95th-Percentile Queue Length [ft]	217.63	71.39	152.68	198.25	275.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.09	9.91	48.06	6.54	41.99	41.99
Movement LOS	B	A	D	A	D	D
d_A, Approach Delay [s/veh]	11.85		9.45		41.99	
Approach LOS	B		A		D	
d_I, Intersection Delay [s/veh]	12.92					
Intersection LOS	B					
Intersection V/C	0.627					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	145	843	1449	570	645	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	843	1449	570	645	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	211	362	143	161	41
Total Analysis Volume [veh/h]	145	843	1449	570	645	165
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	20	51	31	31	39	39
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	9	60	47	73	22	35
g / C, Green / Cycle	0.10	0.67	0.52	0.81	0.24	0.39
(v / s)_i Volume / Saturation Flow Rate	0.08	0.24	0.41	0.36	0.19	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	186	2382	1853	1277	826	1089
d1, Uniform Delay [s]	39.30	6.37	17.36	2.63	32.03	17.88
k, delay calibration	0.11	0.50	0.50	0.40	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.96	0.41	3.37	0.91	1.66	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

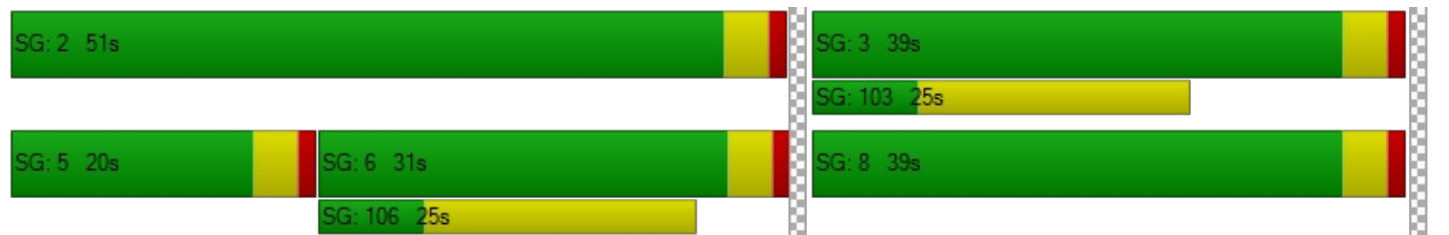
X, volume / capacity	0.78	0.35	0.78	0.45	0.78	0.15
d, Delay for Lane Group [s/veh]	46.27	6.79	20.73	3.55	33.68	17.94
Lane Group LOS	D	A	C	A	C	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	3.44	3.08	11.95	2.06	6.59	1.10
50th-Percentile Queue Length [ft]	86.01	77.04	298.70	51.45	164.80	27.45
95th-Percentile Queue Length [veh]	6.19	5.55	17.62	3.70	10.80	1.98
95th-Percentile Queue Length [ft]	154.82	138.67	440.42	92.61	270.06	49.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.27	6.79	20.73	3.55	33.68	17.94
Movement LOS	D	A	C	A	C	B
d_A, Approach Delay [s/veh]	12.58		15.88		30.48	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	18.12					
Intersection LOS	B					
Intersection V/C	0.782					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	80	719	346	37	642	10	19	366	120	345	385	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	719	346	37	642	10	19	366	120	345	385	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	180	87	9	161	3	5	92	30	86	96	11
Total Analysis Volume [veh/h]	80	719	346	37	642	10	19	366	120	345	385	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	0	11	29	0	36	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	45	45	5	43	43	3	17	17	23	37	37
g / C, Green / Cycle	0.06	0.42	0.42	0.04	0.41	0.41	0.03	0.16	0.16	0.22	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.30	0.02	0.18	0.18	0.01	0.13	0.14	0.19	0.12	0.12
s, saturation flow rate [veh/h]	1774	1863	1661	1774	1863	1853	1774	1863	1709	1774	1863	1797
c, Capacity [veh/h]	108	789	704	80	760	755	52	305	279	382	651	628
d1, Uniform Delay [s]	48.52	24.99	25.03	48.95	22.36	22.36	50.04	42.51	42.64	40.17	25.20	25.21
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.19	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.01	5.41	6.11	4.11	1.78	1.79	4.17	5.61	6.72	12.72	0.30	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

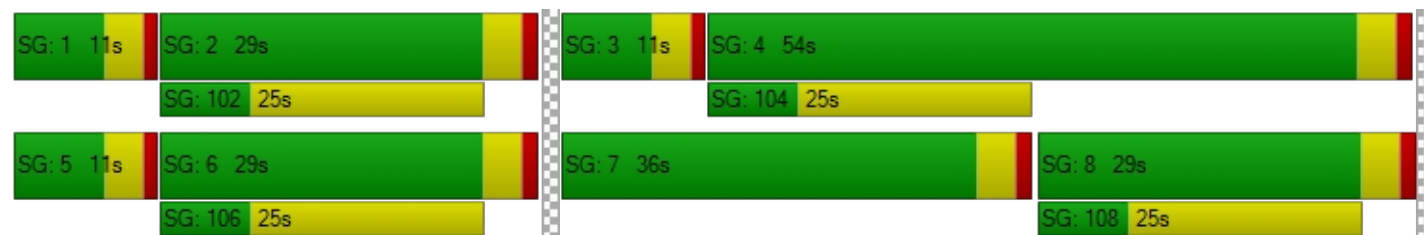
X, volume / capacity	0.74	0.71	0.71	0.46	0.43	0.43	0.36	0.82	0.84	0.90	0.34	0.34
d, Delay for Lane Group [s/veh]	59.53	30.40	31.13	53.06	24.13	24.15	54.21	48.11	49.36	52.89	25.50	25.52
Lane Group LOS	E	C	C	D	C	C	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.33	11.83	10.73	1.01	5.80	5.77	0.55	6.73	6.39	9.93	4.04	3.90
50th-Percentile Queue Length [ft]	58.24	295.63	268.18	25.26	144.99	144.34	13.74	168.15	159.64	248.15	100.90	97.52
95th-Percentile Queue Length [veh]	4.19	17.46	16.10	1.82	9.75	9.71	0.99	10.98	10.53	15.09	7.26	7.02
95th-Percentile Queue Length [ft]	104.84	436.62	402.47	45.46	243.73	242.86	24.73	274.48	263.25	377.33	181.61	175.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.53	30.56	31.13	53.06	24.14	24.15	54.21	48.50	49.36	52.89	25.51	25.52
Movement LOS	E	C	C	D	C	C	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	32.76			25.69			48.92			37.71		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.05											
Intersection LOS	D											
Intersection V/C	0.773											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	47.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.861

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	128	285	187	1138	300	95	107	454	125	184	417	532
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	285	187	1138	300	95	107	454	125	184	417	532
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	71	47	285	75	24	27	114	31	46	104	133
Total Analysis Volume [veh/h]	128	285	187	1138	300	95	107	454	125	184	417	532
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	52	32	0	44	24	0	12	24	0	20	32	32
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	11	29	29	40	58	58	8	21	21	14	27	71
g / C, Green / Cycle	0.09	0.24	0.24	0.33	0.48	0.48	0.07	0.18	0.18	0.12	0.23	0.60
(v / s)_i Volume / Saturation Flow Rate	0.07	0.13	0.14	0.33	0.11	0.11	0.06	0.16	0.16	0.10	0.12	0.34
s, saturation flow rate [veh/h]	1774	1863	1622	3445	1863	1713	1774	1863	1726	1774	3547	1583
c, Capacity [veh/h]	158	444	387	1147	899	827	119	328	304	211	809	941
d1, Uniform Delay [s]	53.70	40.20	40.32	39.87	18.03	18.09	55.60	48.56	48.62	51.95	40.52	14.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.28	0.36	0.36	0.26	0.11	0.47
l, Upstream Filtering 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
d2, Incremental Delay [s]	9.57	5.08	6.07	10.61	0.58	0.66	40.64	25.13	27.65	21.55	0.51	2.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

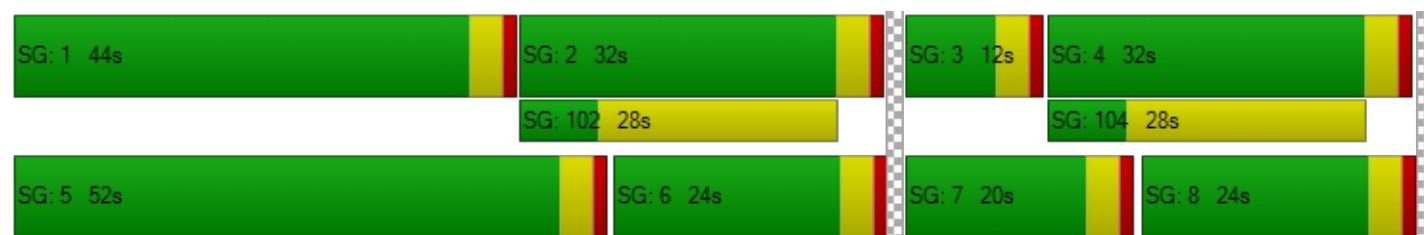
X, volume / capacity	0.81	0.56	0.57	0.99	0.23	0.23	0.90	0.91	0.92	0.87	0.52	0.57
d, Delay for Lane Group [s/veh]	63.27	45.28	46.39	50.47	18.61	18.74	96.24	73.69	76.27	73.50	41.03	17.17
Lane Group LOS	E	D	D	D	B	B	F	E	E	E	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.21	7.13	6.44	18.13	3.42	3.26	4.56	11.06	10.53	6.70	5.45	9.10
50th-Percentile Queue Length [ft]	105.30	178.30	161.05	453.19	85.53	81.40	113.90	276.50	263.14	167.56	136.29	227.62
95th-Percentile Queue Length [veh]	7.58	11.51	10.60	25.11	6.16	5.86	8.06	16.51	15.85	10.95	9.28	14.05
95th-Percentile Queue Length [ft]	189.45	287.80	265.12	627.76	153.96	146.52	201.42	412.85	396.16	273.71	232.02	351.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.27	45.42	46.39	50.47	18.65	18.74	96.24	74.57	76.27	73.50	41.03	17.17
Movement LOS	E	D	D	D	B	B	F	E	E	E	D	B
d_A, Approach Delay [s/veh]	49.53			42.28			78.26			35.10		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	47.57											
Intersection LOS	D											
Intersection V/C	0.861											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	55.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.971

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	48	54	420	191	33	21	45	1684	45	251	1029	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	54	420	191	33	21	45	1684	45	251	1029	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	14	105	48	8	5	11	421	11	63	257	15
Total Analysis Volume [veh/h]	48	54	420	191	33	21	45	1684	45	251	1029	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	35	0	17	36	0	11	42	0	21	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	31	31	13	38	5	38	38	17	50	50
g / C, Green / Cycle	0.05	0.27	0.27	0.11	0.33	0.05	0.33	0.33	0.15	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.27	0.11	0.03	0.03	0.32	0.32	0.14	0.20	0.20
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1743	1774	3547	1838	1774	3547	1811
c, Capacity [veh/h]	85	502	426	201	583	82	1168	605	265	1533	783
d1, Uniform Delay [s]	53.59	31.62	41.79	50.69	26.27	53.65	38.11	38.12	48.47	23.27	23.27
k, delay calibration	0.11	0.11	0.44	0.36	0.11	0.11	0.50	0.50	0.39	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.83	0.09	37.40	43.21	0.07	5.54	21.01	31.09	36.89	1.04	2.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

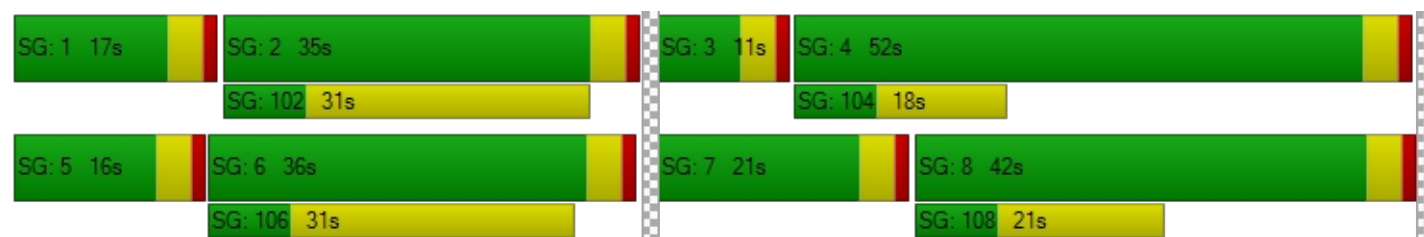
X, volume / capacity	0.57	0.11	0.99	0.95	0.09	0.55	0.98	0.98	0.95	0.47	0.47
d, Delay for Lane Group [s/veh]	59.42	31.71	79.18	93.90	26.34	59.18	59.12	69.21	85.36	24.30	25.29
Lane Group LOS	E	C	E	F	C	E	E	E	F	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.50	1.15	16.12	7.85	1.03	1.40	18.94	21.34	9.82	7.12	7.48
50th-Percentile Queue Length [ft]	37.39	28.76	403.03	196.36	25.86	35.00	473.56	533.57	245.56	177.89	187.11
95th-Percentile Queue Length [veh]	2.69	2.07	22.71	12.45	1.86	2.52	26.08	28.92	14.96	11.49	11.97
95th-Percentile Queue Length [ft]	67.30	51.77	567.65	311.27	46.56	63.00	652.01	722.98	374.05	287.25	299.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.42	31.71	79.18	93.90	26.34	26.34	59.18	62.38	69.21	85.36	24.60	25.29
Movement LOS	E	C	E	F	C	C	E	E	E	F	C	C
d_A, Approach Delay [s/veh]	72.45			79.01			62.48			36.02		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	55.73											
Intersection LOS	E											
Intersection V/C	0.971											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	82.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.247

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	280	3	230	0	1037	1242	320	1128	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	280	3	230	0	1037	1242	320	1128	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	70	1	58	0	259	311	80	282	0
Total Analysis Volume [veh/h]	0	0	0	280	3	230	0	1037	1242	320	1128	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	19	0	0	79	0	22	101	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		15	15	75	75	18	97
g / C, Green / Cycle		0.13	0.13	0.63	0.63	0.15	0.81
(v / s)_i Volume / Saturation Flow Rate		0.16	0.15	0.29	0.78	0.18	0.22
s, saturation flow rate [veh/h]		1774	1586	3547	1583	1774	5074
c, Capacity [veh/h]		222	199	2220	991	264	4101
d1, Uniform Delay [s]		52.48	52.48	11.86	22.44	51.06	2.84
k, delay calibration		0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		148.54	118.55	0.71	122.27	125.00	0.17
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

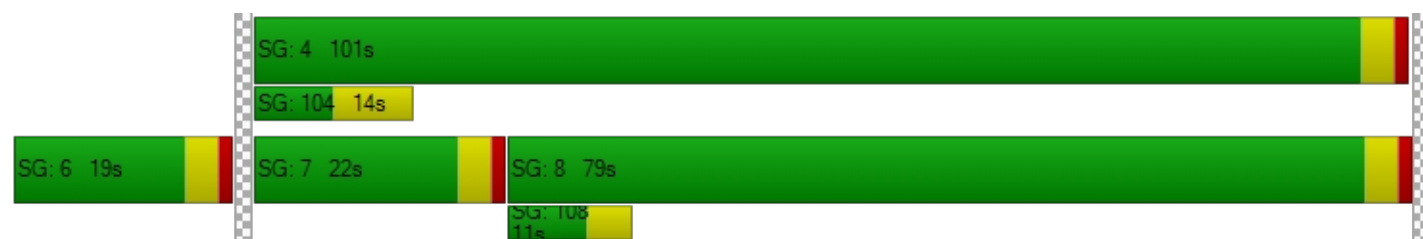
X, volume / capacity		1.26	1.17	0.47	1.25	1.21	0.28
d, Delay for Lane Group [s/veh]		201.02	171.03	12.57	144.71	176.06	3.00
Lane Group LOS		F	F	B	F	F	A
Critical Lane Group		Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		15.83	12.50	7.25	59.09	17.07	1.76
50th-Percentile Queue Length [ft]		395.71	312.51	181.26	1477.35	426.80	43.97
95th-Percentile Queue Length [veh]		24.54	19.55	11.67	85.29	25.97	3.17
95th-Percentile Queue Length [ft]		613.61	488.67	291.65	2132.16	649.36	79.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	201.02	171.03	171.03	0.00	12.57	144.71	176.06	3.00	0.00
Movement LOS				F	F	F		B	F	F	A	
d_A, Approach Delay [s/veh]	0.00			187.40			84.58			41.25		
Approach LOS	A			F			F			D		
d_I, Intersection Delay [s/veh]	82.22											
Intersection LOS	F											
Intersection V/C	1.247											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	486	3	343	0	0	0	348	941	0	0	950	377
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	3	343	0	0	0	348	941	0	0	950	377
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	1	86	0	0	0	87	235	0	0	238	94
Total Analysis Volume [veh/h]	486	3	343	0	0	0	348	941	0	0	950	377
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	53	0	0	0	0	22	37	0	0	15	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28		20	54	30	30
g / C, Green / Cycle	0.31	0.31		0.22	0.60	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.27	0.22		0.20	0.19	0.25	0.27
s, saturation flow rate [veh/h]	1774	1585		1774	5074	3547	1619
c, Capacity [veh/h]	548	490		393	3056	1193	545
d1, Uniform Delay [s]	29.63	27.52		33.94	8.74	26.41	27.28
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.07	1.89		6.77	0.26	4.18	12.44
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.71		0.89	0.31	0.74	0.81
d, Delay for Lane Group [s/veh]	34.70	29.40		40.71	9.00	30.59	39.72
Lane Group LOS	C	C		D	A	C	D
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	10.41	6.63		7.92	2.79	8.77	10.22
50th-Percentile Queue Length [ft]	260.35	165.80		198.00	69.78	219.18	255.54
95th-Percentile Queue Length [veh]	15.71	10.86		12.54	5.02	13.62	15.46
95th-Percentile Queue Length [ft]	392.65	271.38		313.39	125.61	340.57	386.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.70	29.40	29.40	0.00	0.00	0.00	40.71	9.00	0.00	0.00	31.22	39.72
Movement LOS	C	C	C				D	A			C	D
d_A, Approach Delay [s/veh]	32.50			0.00			17.56			33.63		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	27.35											
Intersection LOS	C											
Intersection V/C	0.858											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 53s

SG: 3 22s

SG: 4 15s

SG: 104 11s

SG: 8 37s

SG: 108 14s

Intersection Level Of Service Report
Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.551

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	18	761	241	52	601	122	145	87	18	305	111	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	761	241	52	601	122	145	87	18	305	111	65
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	190	60	13	150	31	36	22	5	76	28	16
Total Analysis Volume [veh/h]	18	761	241	52	601	122	145	87	18	305	111	65
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	27	0	11	27	0	0	52	0	0	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	45	45	5	47	47	28	28	28	28	28
g / C, Green / Cycle	0.03	0.49	0.49	0.06	0.52	0.52	0.32	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.15	0.03	0.20	0.20	0.12	0.05	0.01	0.23	0.10
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1755	1204	1863	1583	1305	1749
c, Capacity [veh/h]	50	1753	783	101	974	918	343	588	500	421	552
d1, Uniform Delay [s]	42.92	14.65	13.57	41.25	12.80	12.81	31.25	22.12	21.33	32.04	23.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.25	0.78	1.02	4.06	1.14	1.21	0.83	0.11	0.03	2.38	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

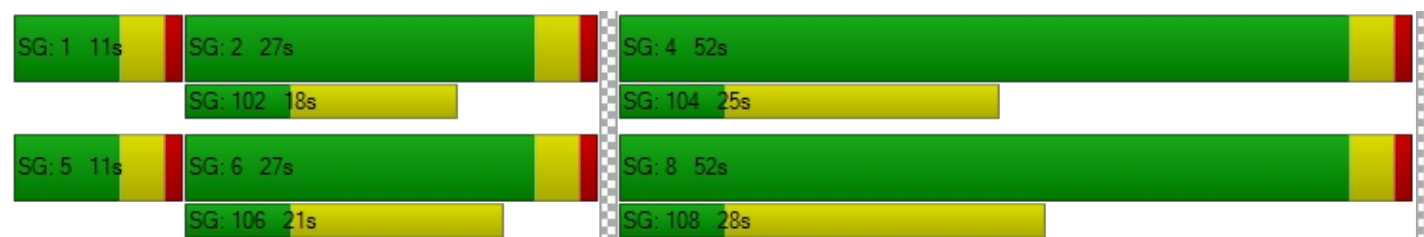
X, volume / capacity	0.36	0.43	0.31	0.52	0.38	0.38	0.42	0.15	0.04	0.72	0.32
d, Delay for Lane Group [s/veh]	47.17	15.43	14.59	45.31	13.94	14.02	32.08	22.23	21.35	34.42	23.77
Lane Group LOS	D	B	B	D	B	B	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.45	4.91	2.99	1.22	4.51	4.28	2.83	1.32	0.26	6.48	2.84
50th-Percentile Queue Length [ft]	11.22	122.84	74.82	30.56	112.65	106.92	70.64	32.95	6.58	162.08	70.90
95th-Percentile Queue Length [veh]	0.81	8.55	5.39	2.20	7.99	7.67	5.09	2.37	0.47	10.66	5.11
95th-Percentile Queue Length [ft]	20.19	213.72	134.67	55.00	199.69	191.70	127.15	59.30	11.84	266.48	127.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.17	15.43	14.59	45.31	13.97	14.02	32.08	22.23	21.35	34.42	23.77	23.77
Movement LOS	D	B	B	D	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	15.79			16.08			27.88			30.53		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	19.88											
Intersection LOS	B											
Intersection V/C	0.551											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	58.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.990

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	542	525	463	88	104	534
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	542	525	463	88	104	534
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	131	116	22	26	134
Total Analysis Volume [veh/h]	542	525	463	88	104	534
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	41	75	34	0	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	71	30	30	41	41
g / C, Green / Cycle	0.31	0.59	0.25	0.25	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.31	0.15	0.25	0.06	0.06	0.34
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	547	2101	467	397	605	540
d1, Uniform Delay [s]	41.33	11.70	44.79	35.64	27.67	39.30
k, delay calibration	0.45	0.50	0.50	0.50	0.11	0.45
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	34.58	0.29	39.48	1.29	0.13	34.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

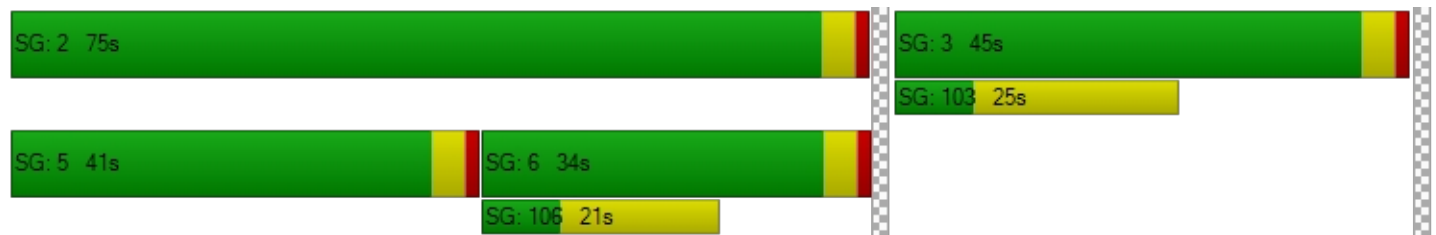
X, volume / capacity	0.99	0.25	0.99	0.22	0.17	0.99
d, Delay for Lane Group [s/veh]	75.90	11.98	84.27	36.92	27.80	73.63
Lane Group LOS	E	B	F	D	C	E
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	20.28	3.10	18.18	2.12	2.13	20.51
50th-Percentile Queue Length [ft]	507.03	77.59	454.43	52.90	53.22	512.75
95th-Percentile Queue Length [veh]	27.67	5.59	25.17	3.81	3.83	27.94
95th-Percentile Queue Length [ft]	691.67	139.67	629.23	95.22	95.79	698.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.90	11.98	84.27	36.92	27.80	73.63
Movement LOS	E	B	F	D	C	E
d_A, Approach Delay [s/veh]	44.45		76.71		66.16	
Approach LOS	D		E		E	
d_I, Intersection Delay [s/veh]	58.47					
Intersection LOS	E					
Intersection V/C	0.990					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	27	137	42	64	96	262	263	908	13	31	864	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	137	42	64	96	262	263	908	13	31	864	135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	34	11	16	24	66	66	227	3	8	216	34
Total Analysis Volume [veh/h]	27	137	42	64	96	262	263	908	13	31	864	135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	30	0	0	30	0	42	49	0	11	18	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	16	49	49	4	37	37
g / C, Green / Cycle	0.28	0.28	0.17	0.54	0.54	0.04	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.14	0.26	0.15	0.25	0.25	0.02	0.27	0.27
s, saturation flow rate [veh/h]	1503	1598	1774	1863	1853	1774	1863	1776
c, Capacity [veh/h]	468	495	307	1011	1006	77	769	733
d1, Uniform Delay [s]	26.29	31.42	36.17	12.52	12.52	41.96	21.39	21.39
k, delay calibration	0.11	0.38	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	13.33	6.92	1.49	1.50	3.42	4.51	4.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

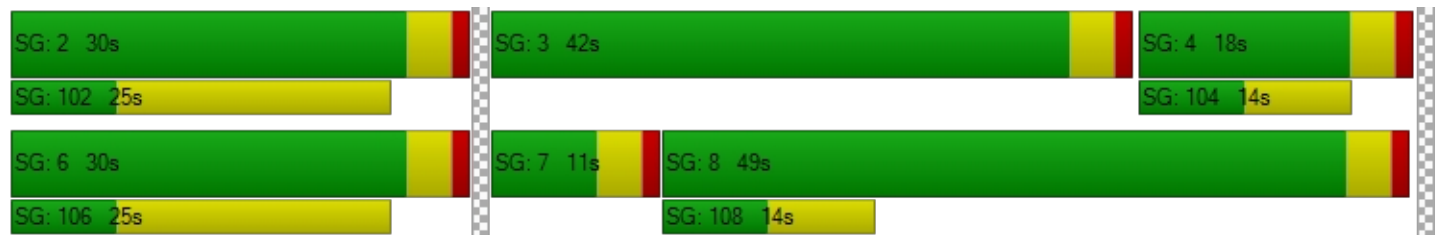
X, volume / capacity	0.44	0.85	0.86	0.46	0.46	0.41	0.66	0.66
d, Delay for Lane Group [s/veh]	26.94	44.75	43.09	14.01	14.02	45.38	25.90	26.11
Lane Group LOS	C	D	D	B	B	D	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.60	10.47	5.88	5.24	5.22	0.72	8.79	8.43
50th-Percentile Queue Length [ft]	89.93	261.69	146.92	131.00	130.44	17.89	219.86	210.76
95th-Percentile Queue Length [veh]	6.47	15.77	9.85	8.99	8.96	1.29	13.66	13.19
95th-Percentile Queue Length [ft]	161.87	394.34	246.31	224.85	224.10	32.20	341.44	329.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.94	26.94	26.94	44.75	44.75	44.75	43.09	14.02	14.02	45.38	25.98	26.11
Movement LOS	C	C	C	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	26.94			44.75			20.47			26.59		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	26.76											
Intersection LOS	C											
Intersection V/C	0.792											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	32	43	15	31	33	955	937	97	12	5	54	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	43	15	31	33	955	937	97	12	5	54	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	11	4	8	8	239	234	24	3	1	14	6
Total Analysis Volume [veh/h]	32	43	15	31	33	955	937	97	12	5	54	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	0	0	35	35	58	80	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	85	76	76	76	22	22	22
g / C, Green / Cycle	0.27	0.27	0.74	0.66	0.66	0.66	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.60	0.57	0.03	0.03	0.00	0.02	0.02
s, saturation flow rate [veh/h]	1539	1517	1583	1631	1863	1792	1279	1863	1679
c, Capacity [veh/h]	457	456	1173	1147	1231	1184	270	353	318
d1, Uniform Delay [s]	32.53	31.80	9.72	14.08	6.82	6.82	40.48	38.58	38.65
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.14	6.25	6.49	0.07	0.07	0.13	0.64	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.14	0.81	0.82	0.05	0.05	0.02	0.11	0.12
d, Delay for Lane Group [s/veh]	32.74	31.94	15.96	20.57	6.89	6.89	40.60	39.22	39.44
Lane Group LOS	C	C	B	C	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.01	1.38	14.98	17.85	0.48	0.46	0.13	0.99	0.98
50th-Percentile Queue Length [ft]	50.29	34.43	374.57	446.32	11.97	11.54	3.23	24.69	24.49
95th-Percentile Queue Length [veh]	3.62	2.48	21.33	24.78	0.86	0.83	0.23	1.78	1.76
95th-Percentile Queue Length [ft]	90.52	61.98	533.27	619.55	21.54	20.77	5.82	44.44	44.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.74	32.74	32.74	31.94	31.94	15.96	20.57	6.89	6.89	40.60	39.28	39.44
Movement LOS	C	C	C	C	C	B	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	32.74			16.97			19.15			39.40		
Approach LOS	C			B			B			D		
d_I, Intersection Delay [s/veh]	19.45											
Intersection LOS	B											
Intersection V/C	0.834											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	340.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.952

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	363	750	387	1944	1088	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	363	750	387	1944	1088	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	188	97	486	272	34
Total Analysis Volume [veh/h]	363	750	387	1944	1088	134
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	16	92	76	0	23	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	88	72	72	19	19
g / C, Green / Cycle	0.10	0.77	0.63	0.63	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.20	0.21	0.11	1.23	0.32	0.08
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	186	2713	2218	990	570	262
d1, Uniform Delay [s]	51.47	4.03	9.05	21.53	47.98	43.74
k, delay calibration	0.50	0.50	0.50	0.50	0.39	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	448.65	0.25	0.17	436.96	414.14	1.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.95	0.28	0.17	1.96	1.91	0.51
d, Delay for Lane Group [s/veh]	500.11	4.28	9.22	458.49	462.12	45.29
Lane Group LOS	F	A	A	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	28.48	2.29	2.02	144.19	40.90	3.59
50th-Percentile Queue Length [ft]	711.93	57.30	50.56	3604.84	1022.60	89.82
95th-Percentile Queue Length [veh]	45.01	4.13	3.64	235.18	64.17	6.47
95th-Percentile Queue Length [ft]	1125.18	103.14	91.01	5879.54	1604.35	161.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	500.11	4.28	9.22	458.49	462.12	45.29
Movement LOS	F	A	A	F	F	D
d_A, Approach Delay [s/veh]	165.99		383.90		416.41	
Approach LOS	F		F		F	
d_I, Intersection Delay [s/veh]	340.44					
Intersection LOS	F					
Intersection V/C	1.952					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 92s

SG: 3 23s

SG: 5 16s

SG: 6 76s

Intersection Level Of Service Report
Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	58.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	254	76	334	239	69	329
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	254	76	334	239	69	329
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	19	84	60	17	82
Total Analysis Volume [veh/h]	254	76	334	239	69	329
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.27	0.00	0.46	0.39
d_M, Delay for Movement [s/veh]	0.00	0.00	9.03	0.00	58.11	38.47
Movement LOS	A	A	A	A	F	E
95th-Percentile Queue Length [veh]	0.00	0.00	1.11	0.56	8.46	8.46
95th-Percentile Queue Length [ft]	0.00	0.00	27.80	13.90	211.62	211.62
d_A, Approach Delay [s/veh]	0.00		5.26		41.88	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	15.13					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 7.4
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	370	50	16	416	43	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	370	50	16	416	43	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	13	4	104	11	6
Total Analysis Volume [veh/h]	370	50	16	416	43	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	16		44		377	
Exiting Flow Rate [veh/h]	16		44		377	
Demand Flow Rate [veh/h]	370	50	16	416	43	23
Adjusted Demand Flow Rate [veh/h]	370	50	16	416	43	23

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	429		441		68	
Capacity of Entry and Bypass Lanes [veh/h]	1112		1082		775	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1090		1061		760	
X, volume / capacity	0.39		0.41		0.09	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	1.84	2.01	0.28
95th-Percentile Queue Length [ft]	46.01	50.28	7.11
Approach Delay [s/veh]	7.29	7.75	5.62
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.38		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 5.2
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	219	9	31	196	14	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	219	9	31	196	14	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	2	8	49	4	7
Total Analysis Volume [veh/h]	219	9	31	196	14	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	32		14		223	
Exiting Flow Rate [veh/h]	32		14		223	
Demand Flow Rate [veh/h]	219	9	31	196	14	28
Adjusted Demand Flow Rate [veh/h]	219	9	31	196	14	28

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	233		232		43	
Capacity of Entry and Bypass Lanes [veh/h]	1095		1114		904	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1074		1093		887	
X, volume / capacity	0.21		0.21		0.05	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.80	0.78	0.15
95th-Percentile Queue Length [ft]	20.08	19.54	3.73
Approach Delay [s/veh]	5.32	5.20	4.50
Approach LOS	A	A	A
Intersection Delay [s/veh]	5.19		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.416

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	209	13	19	226	237	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	13	19	226	237	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	3	5	57	59	48
Total Analysis Volume [veh/h]	209	13	19	226	237	193
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.42	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.41	14.80	8.25	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	2.16	2.16	0.37	0.18	0.00	0.00
95th-Percentile Queue Length [ft]	53.98	53.98	9.13	4.56	0.00	0.00
d_A, Approach Delay [s/veh]	17.26		0.64		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.45					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	19.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.082

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	562	23	3	678	22	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	562	23	3	678	22	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	6	1	170	6	1
Total Analysis Volume [veh/h]	562	23	3	678	22	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.08	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.66	0.00	19.54	10.13
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	1.55	0.78	0.26	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	38.83	19.42	6.61	0.21
d_A, Approach Delay [s/veh]	0.00		0.04		18.75	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	28.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	159	297	153	160	301	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	297	153	160	301	148
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	74	38	40	75	37
Total Analysis Volume [veh/h]	159	297	153	160	301	148
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	50	0	22	0	18	40
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	41	41	18	63
g / C, Green / Cycle	0.22	0.22	0.46	0.46	0.19	0.69
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.08	0.10	0.17	0.04
s, saturation flow rate [veh/h]	1774	1583	1863	1583	1774	3547
c, Capacity [veh/h]	385	343	848	721	346	2463
d1, Uniform Delay [s]	30.33	33.99	14.57	14.87	35.15	4.39
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	6.56	0.47	0.71	6.79	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

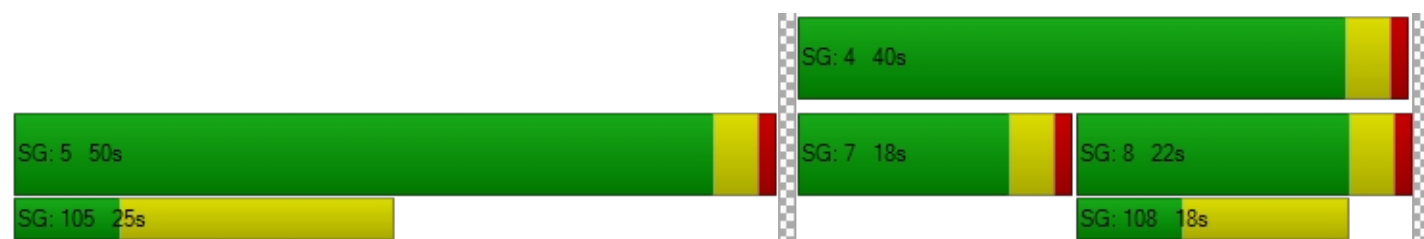
X, volume / capacity	0.41	0.87	0.18	0.22	0.87	0.06
d, Delay for Lane Group [s/veh]	31.04	40.55	15.03	15.58	41.95	4.44
Lane Group LOS	C	D	B	B	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	2.99	6.73	1.90	2.05	6.91	0.38
50th-Percentile Queue Length [ft]	74.83	168.30	47.48	51.32	172.69	9.58
95th-Percentile Queue Length [veh]	5.39	10.99	3.42	3.70	11.22	0.69
95th-Percentile Queue Length [ft]	134.70	274.67	85.47	92.38	280.44	17.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.04	40.55	15.03	15.58	41.95	4.44
Movement LOS	C	D	B	B	D	A
d_A, Approach Delay [s/veh]	37.23		15.31		29.58	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	28.78					
Intersection LOS	C					
Intersection V/C	0.529					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX F-II

**YEAR 2040 WITH ELSP PROJECT BUILDOUT
TRAFFIC CONDITIONS**

Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	162.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.342

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	431	1100	547	473	1857	529	315	396	472	585	445	347
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	431	1100	547	473	1857	529	315	396	472	585	445	347
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	275	137	118	464	132	79	99	118	146	111	87
Total Analysis Volume [veh/h]	431	1100	547	473	1857	529	315	396	472	585	445	347
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	24	41	0	26	43	0	0	21	21	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	37	37	22	39	39	17	17	41	28	28	28
g / C, Green / Cycle	0.17	0.31	0.31	0.18	0.33	0.33	0.14	0.14	0.34	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.24	0.31	0.35	0.27	0.44	0.49	0.18	0.21	0.30	0.17	0.13	0.22
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1672	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	297	1094	488	326	1152	543	251	264	542	803	826	369
d1, Uniform Delay [s]	50.05	41.58	41.58	49.06	40.60	40.60	51.61	51.61	37.04	42.61	40.45	45.30
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.40
l, Upstream Filtering 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
d2, Incremental Delay [s]	220.16	28.60	77.94	218.55	168.76	236.43	142.81	244.69	17.23	1.29	0.55	29.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.45	1.01	1.12	1.45	1.36	1.50	1.25	1.50	0.87	0.73	0.54	0.94
d, Delay for Lane Group [s/veh]	270.21	70.18	119.52	267.61	209.36	277.03	194.42	296.30	54.27	43.89	40.99	74.95
Lane Group LOS	F	F	F	F	F	F	F	F	D	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	27.08	20.31	24.82	29.56	43.74	51.44	17.50	25.83	15.42	8.15	5.84	13.13
50th-Percentile Queue Length [ft]	677.09	507.65	620.58	738.95	1093.62	1286.05	437.43	645.86	385.52	203.63	146.02	328.26
95th-Percentile Queue Length [veh]	41.63	27.80	35.43	45.24	65.11	78.44	26.83	39.97	21.86	12.83	9.80	19.07
95th-Percentile Queue Length [ft]	1040.77	695.03	885.64	1131.01	1627.74	1961.12	670.76	999.25	546.52	320.64	245.11	476.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	270.21	70.18	119.52	267.61	219.84	277.03	194.42	296.30	54.27	43.89	40.99	74.95
Movement LOS	F	F	F	F	F	F	F	F	D	D	D	E
d_A, Approach Delay [s/veh]	124.66			238.33			172.61			50.78		
Approach LOS	F			F			F			D		
d_I, Intersection Delay [s/veh]	162.00											
Intersection LOS	F											
Intersection V/C	1.342											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	314	56	252	380	0	151	1	79	0	0	0
Total Analysis Volume [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	32	0	36	68	0	0	22	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	31	31	29	64	18	18	18	
g / C, Green / Cycle	0.35	0.35	0.32	0.72	0.20	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.29	0.29	0.30	0.17	0.10	0.10	
s, saturation flow rate [veh/h]	3547	1724	3445	5074	3445	1586	1583	
c, Capacity [veh/h]	1238	602	1109	3629	675	311	310	
d1, Uniform Delay [s]	26.43	26.72	29.27	5.21	35.27	32.35	32.36	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.38	11.83	3.25	0.36	4.36	1.30	1.31	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

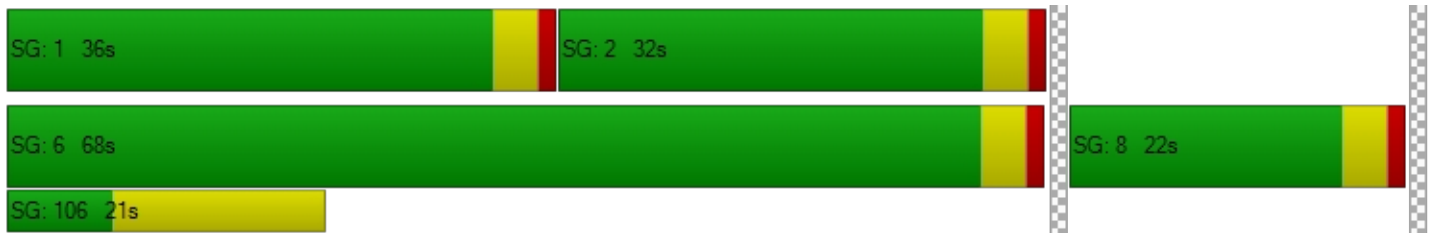
X, volume / capacity	0.80	0.82	0.91	0.42	0.89	0.51	0.51	
d, Delay for Lane Group [s/veh]	31.81	38.55	32.53	5.57	39.63	33.65	33.67	
Lane Group LOS	C	D	C	A	D	C	C	
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	10.07	11.22	10.53	3.18	6.69	3.16	3.16	
50th-Percentile Queue Length [ft]	251.65	280.49	263.29	79.47	167.30	78.94	78.93	
95th-Percentile Queue Length [veh]	15.27	16.71	15.85	5.72	10.93	5.68	5.68	
95th-Percentile Queue Length [ft]	381.73	417.82	396.34	143.04	273.36	142.09	142.07	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	33.25	38.55	32.53	5.57	0.00	39.63	33.65	33.66	0.00	0.00	0.00
Movement LOS		C	D	C	A		D	C	C			
d_A, Approach Delay [s/veh]	34.06			16.32			37.56			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	25.61											
Intersection LOS	C											
Intersection V/C	0.869											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	124.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.274

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	279	16	26	292	134	82	52	120	8	56	9
Total Analysis Volume [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	34	55	0	26	47	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	66	66	7	43	43	35	35	35	35	35	35
g / C, Green / Cycle	0.25	0.55	0.55	0.06	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.34	0.22	0.22	0.03	0.46	0.50	0.29	0.11	0.30	0.04	0.07	0.07
s, saturation flow rate [veh/h]	1774	3547	1812	3445	1863	1674	1117	1863	1583	750	1863	1774
c, Capacity [veh/h]	444	1954	998	197	667	600	306	543	462	60	543	517
d1, Uniform Delay [s]	44.96	15.50	15.51	54.94	38.49	38.49	49.37	33.89	42.48	59.96	32.36	32.41
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.46	0.11	0.49	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	179.43	0.61	1.20	2.14	143.26	188.67	70.35	0.45	52.61	7.13	0.23	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

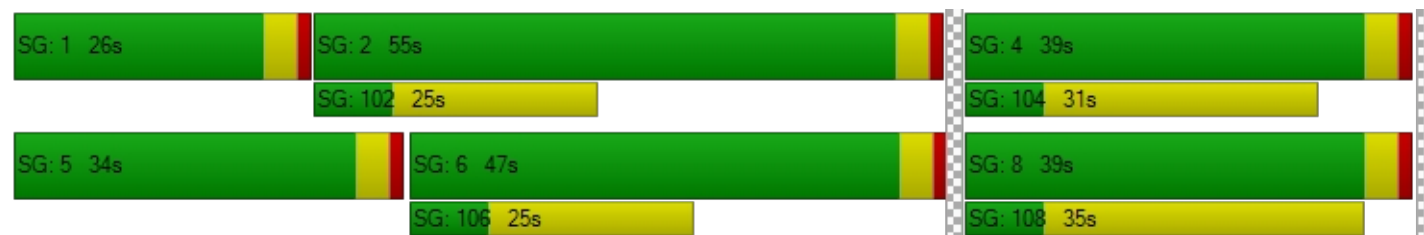
X, volume / capacity	1.37	0.40	0.40	0.52	1.29	1.40	1.07	0.38	1.04	0.53	0.24	0.25
d, Delay for Lane Group [s/veh]	224.40	16.11	16.70	57.08	181.75	227.16	119.72	34.34	95.09	67.10	32.58	32.66
Lane Group LOS	F	B	B	E	F	F	F	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	35.20	6.21	6.52	1.57	45.78	48.71	15.27	4.95	20.26	1.09	2.94	2.88
50th-Percentile Queue Length [ft]	880.03	155.25	162.94	39.35	1144.44	1217.81	381.87	123.63	506.42	27.33	73.61	71.97
95th-Percentile Queue Length [veh]	52.77	10.30	10.70	2.83	66.67	73.01	22.62	8.59	28.37	1.97	5.30	5.18
95th-Percentile Queue Length [ft]	1319.29	257.42	267.61	70.83	1666.81	1825.30	565.53	214.81	709.14	49.19	132.50	129.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	224.40	16.29	16.70	57.08	193.57	227.16	119.72	34.34	95.09	67.10	32.61	32.66
Movement LOS	F	B	B	E	F	F	F	C	F	E	C	C
d_A, Approach Delay [s/veh]	86.95			195.72			90.55			36.43		
Approach LOS	F			F			F			D		
d_I, Intersection Delay [s/veh]	124.75											
Intersection LOS	F											
Intersection V/C	1.274											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	324	434	718	130	225	839
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	324	434	718	130	225	839
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	109	180	33	56	210
Total Analysis Volume [veh/h]	324	434	718	130	225	839
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	57	0	22	0	11	33
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	37	37	14	54
g / C, Green / Cycle	0.31	0.31	0.41	0.41	0.15	0.60
(v / s)_i Volume / Saturation Flow Rate	0.18	0.27	0.16	0.16	0.13	0.17
s, saturation flow rate [veh/h]	1774	1583	3547	1723	1774	5074
c, Capacity [veh/h]	546	487	1449	704	267	3062
d1, Uniform Delay [s]	26.40	29.73	18.74	18.85	37.20	8.48
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.04	5.83	0.79	1.71	7.06	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.89	0.39	0.40	0.84	0.27
d, Delay for Lane Group [s/veh]	27.44	35.56	19.53	20.55	44.26	8.70
Lane Group LOS	C	D	B	C	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	5.88	9.42	3.93	4.13	5.08	2.19
50th-Percentile Queue Length [ft]	146.95	235.45	98.30	103.17	127.00	54.74
95th-Percentile Queue Length [veh]	9.85	14.45	7.08	7.43	8.78	3.94
95th-Percentile Queue Length [ft]	246.35	361.28	176.93	185.71	219.42	98.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.44	35.56	19.75	20.55	44.26	8.70
Movement LOS	C	D	B	C	D	A
d_A, Approach Delay [s/veh]	32.09		19.87		16.22	
Approach LOS	C		B		B	
d_I, Intersection Delay [s/veh]	21.89					
Intersection LOS	C					
Intersection V/C	0.652					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	237.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.543

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	136	11	163	104	192	154	66	17	32	63	187
Total Analysis Volume [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	16	43	0	26	38	0	27	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	35	35	12	41	41	22	46	46	10	35	35
g / C, Green / Cycle	0.05	0.29	0.29	0.10	0.34	0.34	0.18	0.39	0.39	0.09	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.19	0.22	0.49	0.35	0.06	0.06	0.07	0.05	0.47
s, saturation flow rate [veh/h]	1774	3547	1791	3445	1863	1583	1774	3547	1680	1774	5074	1583
c, Capacity [veh/h]	89	1039	525	345	639	543	325	1369	648	155	1472	459
d1, Uniform Delay [s]	55.96	33.70	33.75	54.00	33.37	39.42	49.01	24.15	24.17	53.82	31.83	42.60
k, delay calibration	0.11	0.50	0.50	0.35	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	7.52	1.03	2.07	407.01	5.12	197.66	414.67	0.06	0.12	9.98	0.05	291.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

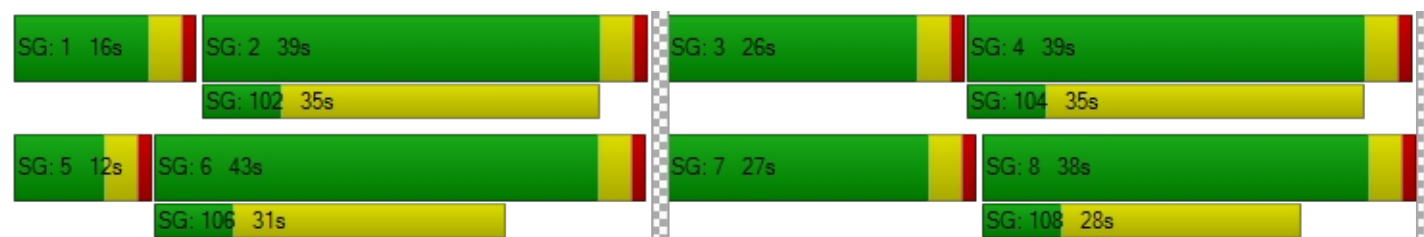
X, volume / capacity	0.64	0.37	0.38	1.89	0.65	1.42	1.90	0.16	0.16	0.82	0.17	1.63
d, Delay for Lane Group [s/veh]	63.48	34.73	35.83	461.01	38.49	237.08	463.68	24.20	24.28	63.80	31.88	334.14
Lane Group LOS	E	C	D	F	D	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.88	4.67	4.93	24.73	11.13	45.57	47.18	2.10	2.03	4.20	1.85	50.64
50th-Percentile Queue Length [ft]	47.03	116.64	123.16	618.32	278.34	1139.17	1179.48	52.51	50.67	104.95	46.25	1265.96
95th-Percentile Queue Length [veh]	3.39	8.21	8.57	39.38	16.61	68.84	73.62	3.78	3.65	7.56	3.33	78.56
95th-Percentile Queue Length [ft]	84.65	205.19	214.17	984.57	415.14	1721.00	1840.58	94.52	91.21	188.91	83.24	1964.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.48	35.04	35.83	461.01	38.49	237.08	463.68	24.21	24.28	63.80	31.88	334.14
Movement LOS	E	D	D	F	D	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	37.61			271.46			310.55			235.83		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	237.71											
Intersection LOS	F											
Intersection V/C	1.543											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	603	7	25	546	2	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	603	7	25	546	2	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	151	2	6	137	1	7
Total Analysis Volume [veh/h]	603	7	25	546	2	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.01	0.01	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.83	0.00	19.18	10.51
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.08	0.00	0.16	0.16
95th-Percentile Queue Length [ft]	0.00	0.00	1.99	0.00	3.91	3.91
d_A, Approach Delay [s/veh]	0.00		0.39		11.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	79.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	278	2	4	222	2	2	0	0	1	0	1
Total Analysis Volume [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.05	0.01	0.00	0.06	0.02	0.00	0.03	0.02	0.01
d_M, Delay for Movement [s/veh]	13.40	0.00	0.00	16.03	0.00	0.00	33.50	79.34	15.02	37.62	78.39	15.39
Movement LOS	B	A	A	C	A	A	D	F	C	E	F	C
95th-Percentile Queue Length [veh]	0.08	0.00	0.00	0.15	0.00	0.00	0.26	0.26	0.26	0.18	0.18	0.18
95th-Percentile Queue Length [ft]	1.92	0.00	0.00	3.66	0.00	0.00	6.40	6.40	6.40	4.39	4.39	4.39
d_A, Approach Delay [s/veh]	0.13			0.28			36.23			31.60		
Approach LOS	A			A			E			D		
d_I, Intersection Delay [s/veh]	0.49											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	103	8	3	43	3	5	2	0	7	5	21
Total Analysis Volume [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	29	11	38	0	12	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	63	63	2	64	71	3	6	6	3	6	6
g / C, Green / Cycle	0.00	0.70	0.70	0.02	0.71	0.79	0.03	0.07	0.07	0.04	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.12	0.01	0.05	0.01	0.01	0.00	0.00	0.01	0.01	0.05
s, saturation flow rate [veh/h]	1774	1863	1819	1774	3547	1583	1774	1863	1773	1774	1863	1583
c, Capacity [veh/h]	9	1297	1266	38	2528	1249	57	123	117	69	135	115
d1, Uniform Delay [s]	44.68	4.72	4.73	43.46	3.91	2.02	42.73	39.40	39.40	42.29	39.17	40.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.69	0.29	0.30	4.57	0.05	0.00	3.67	0.09	0.10	3.43	0.47	7.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.22	0.17	0.17	0.31	0.07	0.01	0.35	0.03	0.03	0.38	0.14	0.71
d, Delay for Lane Group [s/veh]	56.37	5.01	5.02	48.03	3.96	2.02	46.39	39.49	39.51	45.73	39.64	48.79
Lane Group LOS	E	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	1.28	1.26	0.31	0.41	0.03	0.49	0.08	0.08	0.62	0.41	2.01
50th-Percentile Queue Length [ft]	1.84	32.00	31.55	7.74	10.15	0.80	12.25	1.88	1.88	15.61	10.20	50.28
95th-Percentile Queue Length [veh]	0.13	2.30	2.27	0.56	0.73	0.06	0.88	0.14	0.14	1.12	0.73	3.62
95th-Percentile Queue Length [ft]	3.31	57.59	56.80	13.94	18.26	1.45	22.05	3.38	3.38	28.10	18.36	90.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.37	5.01	5.02	48.03	3.96	2.02	46.39	39.50	39.51	45.73	39.64	48.79
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.25			6.51			44.61			46.80		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	13.55											
Intersection LOS	B											
Intersection V/C	0.231											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	10.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.348

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	98	1148	59	7	810	22	9	1	40	56	4	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	98	1148	59	7	810	22	9	1	40	56	4	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	287	15	2	203	6	2	0	10	14	1	2
Total Analysis Volume [veh/h]	98	1148	59	7	810	22	9	1	40	56	4	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	33	0	11	29	0	11	21	0	25	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	63	63	1	58	58	1	5	5	5	8	8
g / C, Green / Cycle	0.07	0.70	0.70	0.01	0.64	0.64	0.02	0.05	0.05	0.06	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	0.23	0.00	0.15	0.15	0.01	0.00	0.03	0.03	0.00	0.01
s, saturation flow rate [veh/h]	1774	3547	1816	1774	3547	1838	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	128	2474	1267	25	2267	1174	30	95	81	106	175	149
d1, Uniform Delay [s]	41.08	5.32	5.32	44.02	6.94	6.95	43.79	40.61	41.64	41.15	37.08	37.19
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	9.06	0.35	0.68	6.17	0.25	0.49	5.34	0.04	4.56	4.00	0.05	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

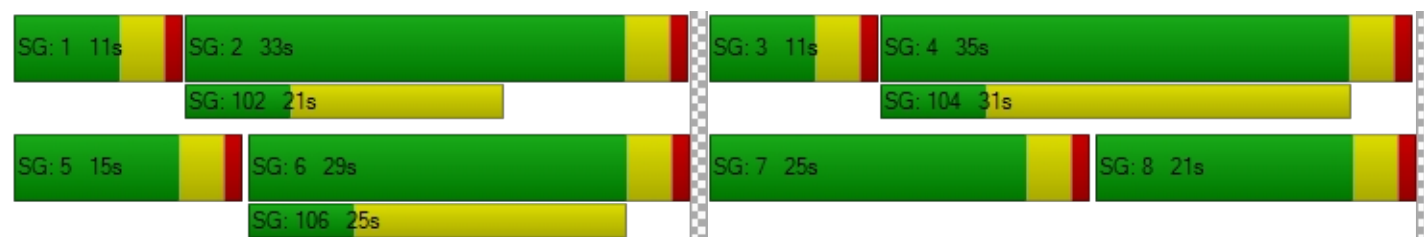
X, volume / capacity	0.76	0.32	0.32	0.28	0.24	0.24	0.30	0.01	0.49	0.53	0.02	0.05
d, Delay for Lane Group [s/veh]	50.14	5.67	6.00	50.19	7.20	7.44	49.13	40.65	46.20	45.15	37.13	37.34
Lane Group LOS	D	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.43	2.51	2.69	0.20	2.06	2.21	0.24	0.02	0.96	1.31	0.08	0.17
50th-Percentile Queue Length [ft]	60.83	62.71	67.15	4.89	51.40	55.34	6.04	0.55	23.99	32.82	2.05	4.13
95th-Percentile Queue Length [veh]	4.38	4.51	4.83	0.35	3.70	3.98	0.43	0.04	1.73	2.36	0.15	0.30
95th-Percentile Queue Length [ft]	109.50	112.87	120.87	8.79	92.52	99.61	10.87	0.99	43.18	59.07	3.69	7.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.14	5.77	6.00	50.19	7.27	7.44	49.13	40.65	46.20	45.15	37.13	37.34
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	9.11			7.64			46.62			43.76		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.44											
Intersection LOS	B											
Intersection V/C	0.348											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 11: Mission Trail at Olive Street

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 9.3
 Level Of Service: A
 Volume to Capacity (v/c): 0.436

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	4	1251	165	20	870	4	9	5	7	139	7	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	1251	165	20	870	4	9	5	7	139	7	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	313	41	5	218	1	2	1	2	35	2	13
Total Analysis Volume [veh/h]	4	1251	165	20	870	4	9	5	7	139	7	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	22	0	11	22	0	0	57	0	0	57	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	61	61	3	64	64	14	14	14	14
g / C, Green / Cycle	0.01	0.68	0.68	0.03	0.71	0.71	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.00	0.27	0.27	0.01	0.16	0.16	0.01	0.01	0.10	0.04
s, saturation flow rate [veh/h]	1774	3547	1754	1774	3547	1858	1337	1689	1397	1612
c, Capacity [veh/h]	14	2419	1196	55	2502	1311	209	259	252	248
d1, Uniform Delay [s]	44.41	6.20	6.20	42.75	4.66	4.66	36.99	32.47	38.42	33.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.29	0.48	0.97	4.01	0.21	0.41	0.08	0.07	1.88	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

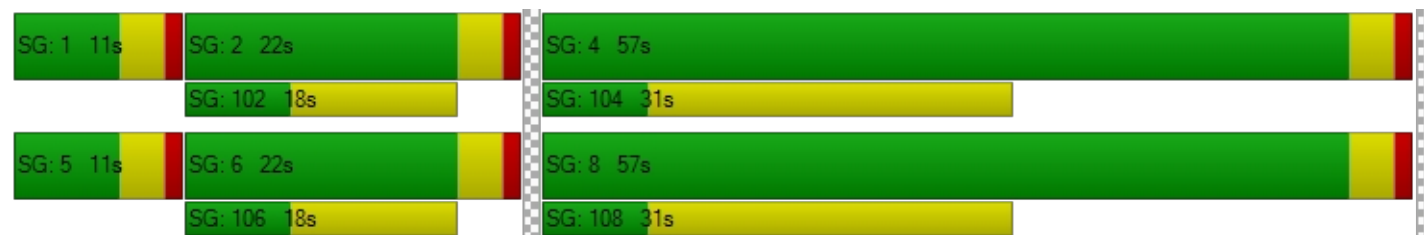
X, volume / capacity	0.29	0.39	0.39	0.36	0.23	0.23	0.04	0.05	0.55	0.24
d, Delay for Lane Group [s/veh]	55.70	6.68	7.17	46.76	4.87	5.07	37.07	32.55	40.30	33.99
Lane Group LOS	E	A	A	D	A	A	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.13	3.43	3.55	0.49	1.61	1.75	0.18	0.23	3.07	1.17
50th-Percentile Queue Length [ft]	3.27	85.76	88.87	12.32	40.15	43.86	4.59	5.65	76.75	29.34
95th-Percentile Queue Length [veh]	0.24	6.17	6.40	0.89	2.89	3.16	0.33	0.41	5.53	2.11
95th-Percentile Queue Length [ft]	5.89	154.37	159.96	22.18	72.27	78.95	8.25	10.18	138.15	52.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.70	6.80	7.17	46.76	4.94	5.07	37.07	32.55	32.55	40.30	33.99	33.99
Movement LOS	E	A	A	D	A	A	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	6.98			5.88			34.49			38.40		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	9.29											
Intersection LOS	A											
Intersection V/C	0.436											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	3.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.335

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	1	1383	64	13	979	2	3	4	2	18	2	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1383	64	13	979	2	3	4	2	18	2	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	346	16	3	245	1	1	1	1	5	1	2
Total Analysis Volume [veh/h]	1	1383	64	13	979	2	3	4	2	18	2	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	49	0	11	49	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	77	77	2	79	79	4	4
g / C, Green / Cycle	0.00	0.81	0.81	0.02	0.83	0.83	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.00	0.27	0.27	0.01	0.18	0.18	0.01	0.02
s, saturation flow rate [veh/h]	1774	3547	1821	1774	3547	1861	1798	1695
c, Capacity [veh/h]	6	2882	1479	40	2950	1548	120	129
d1, Uniform Delay [s]	47.24	2.29	2.29	45.73	1.64	1.64	44.13	44.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.61	0.31	0.60	4.60	0.17	0.32	0.26	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

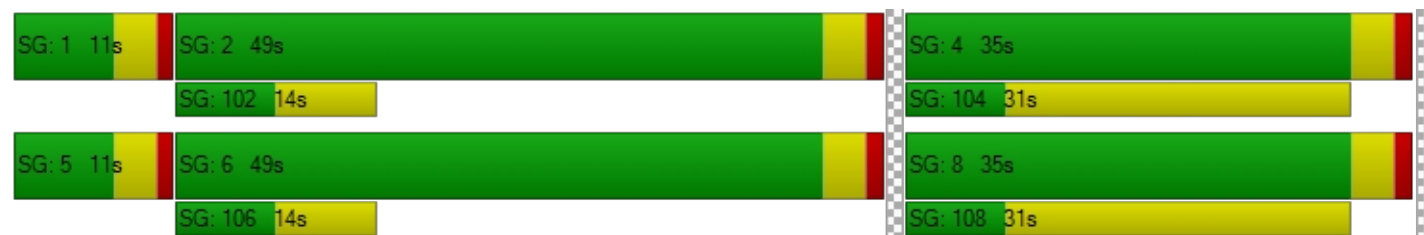
X, volume / capacity	0.18	0.33	0.33	0.32	0.22	0.22	0.07	0.21
d, Delay for Lane Group [s/veh]	61.85	2.60	2.89	50.32	1.81	1.96	44.39	45.36
Lane Group LOS	E	A	A	D	A	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.05	1.46	1.62	0.35	0.67	0.77	0.21	0.65
50th-Percentile Queue Length [ft]	1.15	36.41	40.39	8.79	16.70	19.18	5.31	16.13
95th-Percentile Queue Length [veh]	0.08	2.62	2.91	0.63	1.20	1.38	0.38	1.16
95th-Percentile Queue Length [ft]	2.08	65.53	72.71	15.81	30.05	34.52	9.55	29.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.85	2.69	2.89	50.32	1.86	1.96	44.39	44.39	44.39	45.36	45.36	45.36
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.74			2.50			44.39			45.36		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	3.26											
Intersection LOS	A											
Intersection V/C	0.335											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1311	205	106	867	118	108
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1311	205	106	867	118	108
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	328	51	27	217	30	27
Total Analysis Volume [veh/h]	1311	205	106	867	118	108
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	18	0	11	29	61	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	57	57	7	68	14
g / C, Green / Cycle	0.63	0.63	0.08	0.75	0.16
(v / s)_i Volume / Saturation Flow Rate	0.26	0.13	0.06	0.17	0.13
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1677
c, Capacity [veh/h]	3203	999	135	3815	267
d1, Uniform Delay [s]	8.26	7.03	40.87	3.35	36.77
k, delay calibration	0.50	0.50	0.18	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.46	15.50	0.14	7.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.21	0.79	0.23	0.85
d, Delay for Lane Group [s/veh]	8.64	7.50	56.37	3.48	43.97
Lane Group LOS	A	A	E	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	3.84	1.62	2.86	1.21	5.27
50th-Percentile Queue Length [ft]	96.02	40.44	71.55	30.15	131.83
95th-Percentile Queue Length [veh]	6.91	2.91	5.15	2.17	9.04
95th-Percentile Queue Length [ft]	172.84	72.80	128.79	54.26	225.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.64	7.50	56.37	3.48	43.97	43.97
Movement LOS	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	8.49		9.25		43.97	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.71					
Intersection LOS	B					
Intersection V/C	0.522					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	218	969	672	311	532	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	969	672	311	532	171
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	242	168	78	133	43
Total Analysis Volume [veh/h]	218	969	672	311	532	171
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	32	61	29	29	29	29
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	14	65	47	69	17	35
g / C, Green / Cycle	0.15	0.72	0.52	0.76	0.19	0.39
(v / s)_i Volume / Saturation Flow Rate	0.12	0.27	0.19	0.20	0.15	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	267	2550	1858	1204	663	1085
d1, Uniform Delay [s]	37.05	4.90	12.59	3.21	34.74	18.01
k, delay calibration	0.11	0.50	0.50	0.23	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.05	0.43	0.55	0.24	2.33	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.38	0.36	0.26	0.80	0.16
d, Delay for Lane Group [s/veh]	43.10	5.33	13.14	3.45	37.07	18.07
Lane Group LOS	D	A	B	A	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	5.01	2.91	3.88	1.28	5.66	1.14
50th-Percentile Queue Length [ft]	125.33	72.85	96.90	31.94	141.56	28.60
95th-Percentile Queue Length [veh]	8.69	5.25	6.98	2.30	9.57	2.06
95th-Percentile Queue Length [ft]	217.13	131.13	174.42	57.48	239.13	51.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.10	5.33	13.14	3.45	37.07	18.07
Movement LOS	D	A	B	A	D	B
d_A, Approach Delay [s/veh]	12.27		10.07		32.45	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	16.45					
Intersection LOS	B					
Intersection V/C	0.539					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.699

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	17	706	520	22	507	7	14	258	12	249	232	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	706	520	22	507	7	14	258	12	249	232	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	177	130	6	127	2	4	65	3	62	58	5
Total Analysis Volume [veh/h]	17	706	520	22	507	7	14	258	12	249	232	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	0	11	29	0	26	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	51	51	3	52	52	2	9	9	15	23	23
g / C, Green / Cycle	0.03	0.54	0.54	0.03	0.54	0.54	0.02	0.10	0.10	0.16	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.01	0.35	0.36	0.01	0.14	0.14	0.01	0.07	0.07	0.14	0.07	0.07
s, saturation flow rate [veh/h]	1774	1863	1605	1774	1863	1854	1774	1863	1834	1774	1863	1816
c, Capacity [veh/h]	50	1000	861	60	1010	1006	43	185	182	288	442	431
d1, Uniform Delay [s]	45.39	15.76	15.86	44.98	11.56	11.56	45.68	41.64	41.67	38.84	29.68	29.69
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.03	3.36	4.00	3.72	0.61	0.61	4.37	5.55	5.79	10.39	0.35	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

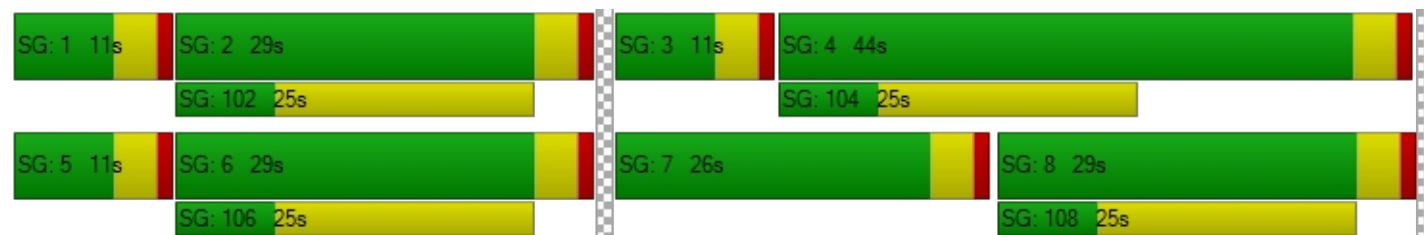
X, volume / capacity	0.34	0.66	0.66	0.37	0.25	0.26	0.33	0.73	0.74	0.86	0.29	0.29
d, Delay for Lane Group [s/veh]	49.42	19.12	19.86	48.69	12.17	12.17	50.05	47.19	47.46	49.22	30.03	30.06
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.44	9.66	8.60	0.55	2.70	2.70	0.38	3.34	3.33	6.41	2.38	2.34
50th-Percentile Queue Length [ft]	10.88	241.55	215.10	13.78	67.62	67.39	9.38	83.56	83.20	160.19	59.52	58.43
95th-Percentile Queue Length [veh]	0.78	14.76	13.41	0.99	4.87	4.85	0.68	6.02	5.99	10.56	4.29	4.21
95th-Percentile Queue Length [ft]	19.59	368.99	335.36	24.81	121.72	121.31	16.88	150.41	149.77	263.97	107.13	105.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.42	19.17	19.86	48.69	12.17	12.17	50.05	47.32	47.46	49.22	30.04	30.06
Movement LOS	D	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	19.87			13.67			47.46			39.61		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	25.48											
Intersection LOS	C											
Intersection V/C	0.699											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	100	468	196	442	259	62	129	528	141	145	290	535
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	468	196	442	259	62	129	528	141	145	290	535
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	117	49	111	65	16	32	132	35	36	73	134
Total Analysis Volume [veh/h]	100	468	196	442	259	62	129	528	141	145	290	535
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	35	32	0	18	15	0	13	32	0	13	32	32
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	7	36	36	14	43	43	9	20	20	9	21	39
g / C, Green / Cycle	0.07	0.37	0.37	0.15	0.45	0.45	0.09	0.21	0.21	0.10	0.22	0.41
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.19	0.13	0.09	0.09	0.07	0.19	0.19	0.08	0.08	0.34
s, saturation flow rate [veh/h]	1774	1863	1679	3445	1863	1740	1774	1863	1729	1774	3547	1583
c, Capacity [veh/h]	131	696	628	509	834	779	161	400	371	169	779	648
d1, Uniform Delay [s]	43.24	22.95	22.97	39.64	15.93	15.94	42.44	36.04	36.06	42.40	31.55	25.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.21	0.18	0.18	0.27	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.76	2.56	2.86	4.66	0.53	0.57	16.14	9.16	9.96	24.78	0.30	11.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.76	0.50	0.50	0.87	0.20	0.20	0.80	0.87	0.87	0.86	0.37	0.83
d, Delay for Lane Group [s/veh]	52.00	25.51	25.83	44.31	16.47	16.51	58.58	45.20	46.02	67.18	31.85	36.50
Lane Group LOS	D	C	C	D	B	B	E	D	D	E	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.61	6.34	5.80	5.31	2.25	2.12	3.66	8.62	8.11	4.48	2.83	12.34
50th-Percentile Queue Length [ft]	65.18	158.54	144.94	132.66	56.20	52.89	91.57	215.52	202.66	112.10	70.78	308.40
95th-Percentile Queue Length [veh]	4.69	10.47	9.75	9.08	4.05	3.81	6.59	13.44	12.78	7.96	5.10	18.10
95th-Percentile Queue Length [ft]	117.32	261.78	243.65	227.10	101.17	95.20	164.83	335.91	319.39	198.92	127.40	452.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.00	25.59	25.83	44.31	16.49	16.51	58.58	45.48	46.02	67.18	31.85	36.50
Movement LOS	D	C	C	D	B	B	E	D	D	E	C	D
d_A, Approach Delay [s/veh]	29.11			32.60			47.69			39.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	37.54											
Intersection LOS	D											
Intersection V/C	0.782											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	54.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.922

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	20	62	411	212	32	12	51	1165	38	365	972	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	62	411	212	32	12	51	1165	38	365	972	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	103	53	8	3	13	291	10	91	243	29
Total Analysis Volume [veh/h]	20	62	411	212	32	12	51	1165	38	365	972	117
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	42	0	21	46	0	12	35	0	32	55	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	36	36	17	49	6	33	33	29	56	56
g / C, Green / Cycle	0.03	0.27	0.27	0.13	0.38	0.05	0.25	0.25	0.22	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.26	0.12	0.02	0.03	0.22	0.22	0.21	0.21	0.21
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1777	1774	3547	1833	1774	3547	1762
c, Capacity [veh/h]	50	508	432	232	668	81	898	464	390	1516	753
d1, Uniform Delay [s]	62.10	35.54	46.41	55.76	25.97	60.96	46.68	46.68	49.83	26.82	26.82
k, delay calibration	0.11	0.11	0.38	0.36	0.11	0.11	0.50	0.50	0.36	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.13	0.11	27.30	31.90	0.04	7.81	12.24	20.93	25.76	1.09	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

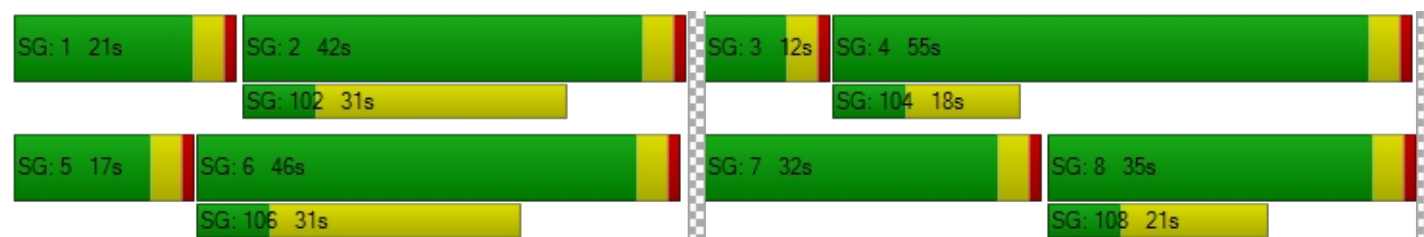
X, volume / capacity	0.40	0.12	0.95	0.91	0.07	0.63	0.88	0.88	0.94	0.48	0.48
d, Delay for Lane Group [s/veh]	67.23	35.65	73.71	87.66	26.01	68.77	58.92	67.62	75.59	27.91	29.00
Lane Group LOS	E	D	E	F	C	E	E	E	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.72	1.51	16.24	8.92	0.89	1.83	13.83	15.42	14.42	8.38	8.55
50th-Percentile Queue Length [ft]	18.07	37.82	406.07	223.03	22.34	45.86	345.70	385.45	360.39	209.39	213.79
95th-Percentile Queue Length [veh]	1.30	2.72	22.85	13.82	1.61	3.30	19.93	21.86	20.64	13.12	13.35
95th-Percentile Queue Length [ft]	32.53	68.08	571.31	345.49	40.21	82.54	498.16	546.44	516.05	328.05	333.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.23	35.65	73.71	87.66	26.01	26.01	68.77	61.70	67.62	75.59	28.18	29.00
Movement LOS	E	D	E	F	C	C	E	E	E	E	C	C
d_A, Approach Delay [s/veh]	68.66			77.06			62.16			40.15		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	54.93											
Intersection LOS	D											
Intersection V/C	0.922											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	70.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.177

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	59	0	90	0	251	199	145	278	0
Total Analysis Volume [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	27	0	0	55	0	38	93	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	51	51	34	89
g / C, Green / Cycle		0.19	0.19	0.43	0.43	0.28	0.74
(v / s)_i Volume / Saturation Flow Rate		0.13	0.23	0.28	0.50	0.33	0.22
s, saturation flow rate [veh/h]		1774	1584	3547	1583	1774	5074
c, Capacity [veh/h]		340	304	1511	674	501	3762
d1, Uniform Delay [s]		45.13	48.48	27.57	34.44	43.05	5.13
k, delay calibration		0.21	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.78	113.96	2.32	96.55	91.71	0.20
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

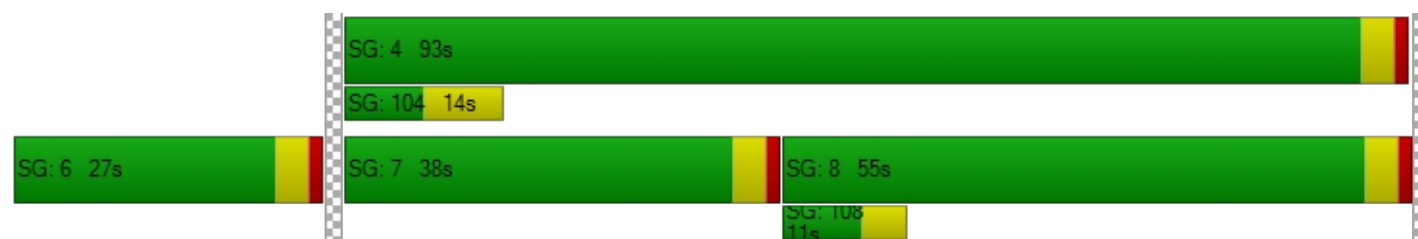
X, volume / capacity		0.69	1.19	0.66	1.18	1.16	0.30
d, Delay for Lane Group [s/veh]		49.91	162.43	29.88	130.99	134.76	5.33
Lane Group LOS		D	F	C	F	F	A
Critical Lane Group		No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		6.94	18.66	11.86	37.19	27.42	2.79
50th-Percentile Queue Length [ft]		173.39	466.57	296.46	929.72	685.48	69.73
95th-Percentile Queue Length [veh]		11.25	28.07	17.51	52.97	39.32	5.02
95th-Percentile Queue Length [ft]		281.36	701.80	437.64	1324.24	983.05	125.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	49.91	162.43	162.43	0.00	29.88	130.99	134.76	5.33	0.00
Movement LOS				D	F	F		C	F	F	A	
d_A, Approach Delay [s/veh]	0.00			118.25			74.65			49.70		
Approach LOS	A			F			E			D		
d_I, Intersection Delay [s/veh]	70.68											
Intersection LOS	E											
Intersection V/C	1.177											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	502	2	161	0	0	0	324	909	0	0	1181	301
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	502	2	161	0	0	0	324	909	0	0	1181	301
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	1	40	0	0	0	81	227	0	0	295	75
Total Analysis Volume [veh/h]	502	2	161	0	0	0	324	909	0	0	1181	301
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	64	0	0	0	0	11	26	0	0	15	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28		19	54	31	31
g / C, Green / Cycle	0.31	0.31		0.21	0.60	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.28	0.10		0.18	0.18	0.28	0.29
s, saturation flow rate [veh/h]	1774	1586		1774	5074	3547	1682
c, Capacity [veh/h]	556	497		369	3033	1226	581
d1, Uniform Delay [s]	29.61	23.66		34.57	8.87	26.72	27.30
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.76	0.38		6.81	0.25	5.73	14.44
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

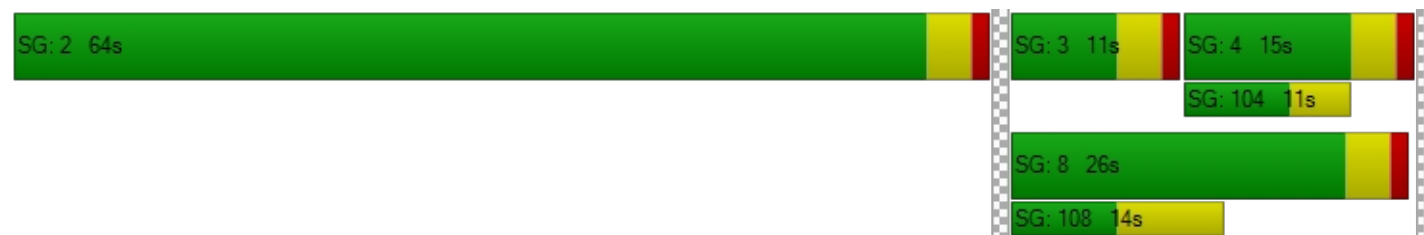
X, volume / capacity	0.90	0.33		0.88	0.30	0.81	0.85
d, Delay for Lane Group [s/veh]	35.37	24.04		41.38	9.13	32.45	41.74
Lane Group LOS	D	C		D	A	C	D
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	10.89	2.65		7.41	2.72	10.20	11.76
50th-Percentile Queue Length [ft]	272.35	66.22		185.20	67.95	255.02	293.89
95th-Percentile Queue Length [veh]	16.31	4.77		11.87	4.89	15.44	17.38
95th-Percentile Queue Length [ft]	407.67	119.19		296.80	122.31	385.97	434.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.37	24.04	24.04	0.00	0.00	0.00	41.38	9.13	0.00	0.00	33.97	41.74
Movement LOS	D	C	C				D	A			C	D
d_A, Approach Delay [s/veh]	32.59			0.00			17.60			35.55		
Approach LOS	C			A			B			D		
d_I, Intersection Delay [s/veh]	28.42											
Intersection LOS	C											
Intersection V/C	0.876											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.749

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	21	882	421	29	554	93	120	205	24	430	111	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	882	421	29	554	93	120	205	24	430	111	93
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	221	105	7	139	23	30	51	6	108	28	23
Total Analysis Volume [veh/h]	21	882	421	29	554	93	120	205	24	430	111	93
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	25	0	11	25	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	32	32	4	32	32	43	43	43	43	43
g / C, Green / Cycle	0.03	0.35	0.35	0.04	0.36	0.36	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.01	0.25	0.27	0.02	0.18	0.18	0.10	0.11	0.02	0.37	0.12
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1771	1173	1863	1583	1172	1724
c, Capacity [veh/h]	57	1252	559	71	673	640	531	882	750	537	816
d1, Uniform Delay [s]	42.69	25.07	25.66	42.15	22.32	22.34	18.98	14.02	12.67	26.44	14.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	3.34	9.08	3.69	2.56	2.71	0.21	0.13	0.02	5.41	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.70	0.75	0.41	0.49	0.49	0.23	0.23	0.03	0.80	0.25
d, Delay for Lane Group [s/veh]	46.70	28.41	34.74	45.84	24.87	25.05	19.20	14.15	12.69	31.85	14.31
Lane Group LOS	D	C	C	D	C	C	B	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.52	8.39	9.04	0.70	5.75	5.52	1.70	2.40	0.25	9.19	2.41
50th-Percentile Queue Length [ft]	12.90	209.80	226.04	17.39	143.74	138.04	42.50	59.91	6.34	229.79	60.26
95th-Percentile Queue Length [veh]	0.93	13.14	13.97	1.25	9.68	9.38	3.06	4.31	0.46	14.16	4.34
95th-Percentile Queue Length [ft]	23.23	328.57	349.33	31.30	242.05	234.38	76.50	107.84	11.41	354.09	108.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.70	28.41	34.74	45.84	24.95	25.05	19.20	14.15	12.69	31.85	14.31	14.31
Movement LOS	D	C	C	D	C	C	B	B	B	C	B	B
d_A, Approach Delay [s/veh]	30.71			25.86			15.79			26.21		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	26.91											
Intersection LOS	C											
Intersection V/C	0.749											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	76.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.091

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	555	661	508	124	163	628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	555	661	508	124	163	628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	165	127	31	41	157
Total Analysis Volume [veh/h]	555	661	508	124	163	628
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	38	72	34	0	48	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	68	30	30	44	44
g / C, Green / Cycle	0.28	0.57	0.25	0.25	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.31	0.19	0.27	0.08	0.09	0.40
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	503	2014	468	398	648	578
d1, Uniform Delay [s]	42.97	13.76	44.90	36.48	26.60	38.06
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	71.64	0.44	66.68	2.04	0.20	62.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

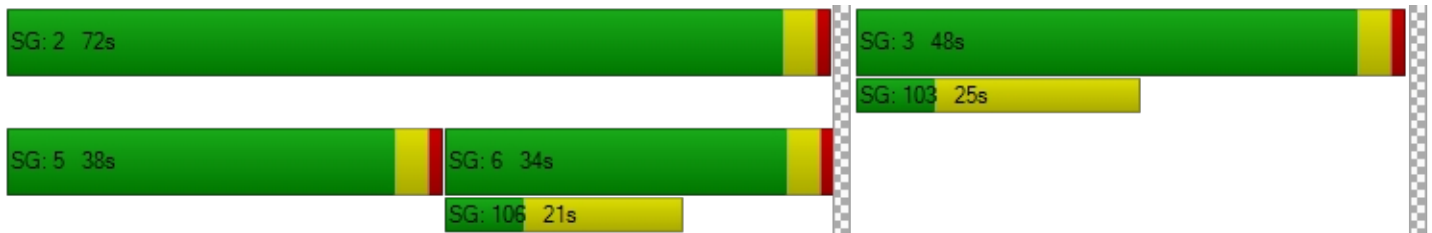
X, volume / capacity	1.10	0.33	1.09	0.31	0.25	1.09
d, Delay for Lane Group [s/veh]	114.61	14.19	111.58	38.51	26.80	100.81
Lane Group LOS	F	B	F	D	C	F
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	24.10	4.44	21.90	3.07	3.31	26.71
50th-Percentile Queue Length [ft]	602.39	110.96	547.60	76.86	82.77	667.79
95th-Percentile Queue Length [veh]	34.16	7.89	31.05	5.53	5.96	37.23
95th-Percentile Queue Length [ft]	854.07	197.33	776.34	138.35	148.98	930.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	114.61	14.19	111.58	38.51	26.80	100.81
Movement LOS	F	B	F	D	C	F
d_A, Approach Delay [s/veh]	60.03		97.24		85.56	
Approach LOS	E		F		F	
d_I, Intersection Delay [s/veh]	76.59					
Intersection LOS	E					
Intersection V/C	1.091					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	56.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.012

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	43	30	16	5	3	1	275	26	30	234	10
Total Analysis Volume [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	63	0	0	63	0	21	44	0	13	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	59	59	1	40	40	9	48	48
g / C, Green / Cycle	0.49	0.49	0.01	0.33	0.33	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.52	0.07	0.00	0.33	0.33	0.07	0.26	0.26
s, saturation flow rate [veh/h]	1487	1335	1774	1863	1807	1774	1863	1837
c, Capacity [veh/h]	779	706	10	619	600	135	751	740
d1, Uniform Delay [s]	31.94	16.53	59.44	39.76	39.79	54.93	29.02	29.03
k, delay calibration	0.50	0.11	0.11	0.50	0.50	0.30	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.36	0.08	16.39	32.53	33.45	37.17	4.39	4.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

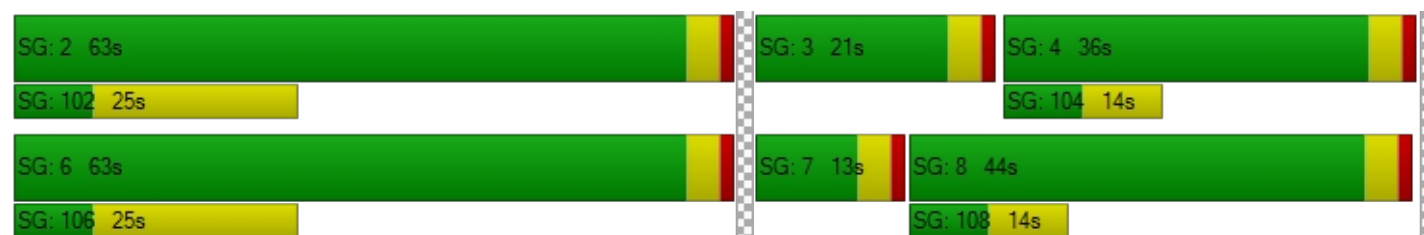
X, volume / capacity	0.98	0.13	0.30	0.98	0.99	0.89	0.65	0.65
d, Delay for Lane Group [s/veh]	60.30	16.61	75.82	72.29	73.24	92.10	33.42	33.48
Lane Group LOS	E	B	E	E	E	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	28.37	1.43	0.13	22.50	22.02	4.94	11.79	11.64
50th-Percentile Queue Length [ft]	709.26	35.72	3.34	562.43	550.51	123.40	294.71	291.08
95th-Percentile Queue Length [veh]	37.11	2.57	0.24	30.28	29.72	8.58	17.42	17.24
95th-Percentile Queue Length [ft]	927.64	64.30	6.02	756.90	742.90	214.50	435.48	430.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.30	60.30	60.30	16.61	16.61	16.61	75.82	72.71	73.24	92.10	33.45	33.48
Movement LOS	E	E	E	B	B	B	E	E	E	F	C	C
d_A, Approach Delay [s/veh]	60.30			16.61			72.77			39.93		
Approach LOS	E			B			E			D		
d_I, Intersection Delay [s/veh]	56.69											
Intersection LOS	E											
Intersection V/C	1.012											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	15	19	7	81	22	831	1078	351	17	5	216	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	19	7	81	22	831	1078	351	17	5	216	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	5	2	20	6	208	270	88	4	1	54	21
Total Analysis Volume [veh/h]	15	19	7	81	22	831	1078	351	17	5	216	84
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	29	0	0	29	29	69	91	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	90	87	87	87	22	22	22
g / C, Green / Cycle	0.21	0.21	0.75	0.72	0.72	0.72	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.52	0.68	0.10	0.10	0.00	0.08	0.09
s, saturation flow rate [veh/h]	892	1036	1583	1584	1863	1833	1010	1863	1691
c, Capacity [veh/h]	227	269	1192	1156	1350	1329	196	336	305
d1, Uniform Delay [s]	39.05	42.50	7.71	14.81	5.04	5.04	45.18	43.94	44.12
k, delay calibration	0.11	0.11	0.45	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.89	3.08	14.53	0.21	0.22	0.24	4.45	5.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.38	0.70	0.93	0.14	0.14	0.03	0.46	0.48
d, Delay for Lane Group [s/veh]	39.43	43.39	10.78	29.33	5.25	5.26	45.42	48.39	49.42
Lane Group LOS	D	D	B	C	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.01	2.82	10.34	21.93	1.37	1.36	0.14	4.52	4.36
50th-Percentile Queue Length [ft]	25.25	70.48	258.44	548.20	34.27	33.90	3.59	112.97	109.00
95th-Percentile Queue Length [veh]	1.82	5.07	15.61	29.61	2.47	2.44	0.26	8.01	7.78
95th-Percentile Queue Length [ft]	45.44	126.87	390.27	740.19	61.69	61.01	6.47	200.13	194.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.43	39.43	39.43	43.39	43.39	10.78	29.33	5.25	5.26	45.42	48.68	49.42
Movement LOS	D	D	D	D	D	B	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	39.43			14.38			23.21			48.83		
Approach LOS	D			B			C			D		
d_I, Intersection Delay [s/veh]	23.29											
Intersection LOS	C											
Intersection V/C	0.907											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	70.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.095

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	371	558	257	902	712	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	371	558	257	902	712	93
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	140	64	226	178	23
Total Analysis Volume [veh/h]	371	558	257	902	712	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	27	93	66	0	27	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	89	62	62	23	23
g / C, Green / Cycle	0.19	0.74	0.52	0.52	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.21	0.16	0.07	0.57	0.21	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	340	2630	1831	817	661	304
d1, Uniform Delay [s]	48.48	4.76	15.13	29.01	48.48	41.62
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	75.10	0.18	0.16	63.70	41.63	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.09	0.21	0.14	1.10	1.08	0.31
d, Delay for Lane Group [s/veh]	123.58	4.94	15.29	92.71	90.11	42.18
Lane Group LOS	F	A	B	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	17.23	1.96	1.87	36.82	13.66	2.42
50th-Percentile Queue Length [ft]	430.73	49.10	46.84	920.60	341.43	60.60
95th-Percentile Queue Length [veh]	25.15	3.54	3.37	50.51	20.48	4.36
95th-Percentile Queue Length [ft]	628.75	88.38	84.32	1262.84	512.11	109.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.58	4.94	15.29	92.71	90.11	42.18
Movement LOS	F	A	B	F	F	D
d_A, Approach Delay [s/veh]	52.32		75.54		84.57	
Approach LOS	D		E		F	
d_I, Intersection Delay [s/veh]	70.60					
Intersection LOS	E					
Intersection V/C	1.095					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 93s

SG: 3 27s

SG: 5 27s

SG: 6 66s

Intersection Level Of Service Report

Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	242	11	2	88	11	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	242	11	2	88	11	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	3	1	22	3	1
Total Analysis Volume [veh/h]	242	11	2	88	11	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.75	0.00	10.47	9.10
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.05	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	2.67	1.33	1.42	1.42
d_A, Approach Delay [s/veh]	0.00		0.17		10.26	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 3.6
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	37	7	13	35	3	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	7	13	35	3	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	2	3	9	1	3
Total Analysis Volume [veh/h]	37	7	13	35	3	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	13		3		38	
Exiting Flow Rate [veh/h]	13		3		38	
Demand Flow Rate [veh/h]	37	7	13	35	3	11
Adjusted Demand Flow Rate [veh/h]	37	7	13	35	3	11

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	45		49		15	
Capacity of Entry and Bypass Lanes [veh/h]	1116		1127		1089	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1094		1105		1067	
X, volume / capacity	0.04		0.04		0.01	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.14	0.04
95th-Percentile Queue Length [ft]	3.14	3.40	1.00
Approach Delay [s/veh]	3.63	3.62	3.49
Approach LOS	A	A	A
Intersection Delay [s/veh]	3.61		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 3.4
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	21	7	3	16	3	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	7	3	16	3	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	2	1	4	1	1
Total Analysis Volume [veh/h]	21	7	3	16	3	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	3		3		21	
Exiting Flow Rate [veh/h]	3		3		21	
Demand Flow Rate [veh/h]	21	7	3	16	3	2
Adjusted Demand Flow Rate [veh/h]	21	7	3	16	3	2

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	29		20		6	
Capacity of Entry and Bypass Lanes [veh/h]	1127		1127		1107	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1105		1105		1085	
X, volume / capacity	0.03		0.02		0.00	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.05	0.01
95th-Percentile Queue Length [ft]	1.95	1.31	0.35
Approach Delay [s/veh]	3.47	3.40	3.36
Approach LOS	A	A	A
Intersection Delay [s/veh]	3.44		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	12	7	12	288	250	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	7	12	288	250	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	3	72	63	4
Total Analysis Volume [veh/h]	12	7	12	288	250	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.70	9.21	7.81	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.39	0.20	0.00	0.00
95th-Percentile Queue Length [ft]	2.29	2.29	9.80	4.90	0.00	0.00
d_A, Approach Delay [s/veh]	10.79		0.31		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	20.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	762	19	5	400	15	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	762	19	5	400	15	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	191	5	1	100	4	2
Total Analysis Volume [veh/h]	762	19	5	400	15	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.06	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	9.35	0.00	20.67	10.98
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.95	0.48	0.19	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	23.83	11.91	4.86	0.75
d_A, Approach Delay [s/veh]	0.00		0.12		17.90	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	23.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	146	260	254	93	119	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	260	254	93	119	179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	65	64	23	30	45
Total Analysis Volume [veh/h]	146	260	254	93	119	179
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	57	0	22	0	11	33
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	53	53	8	65
g / C, Green / Cycle	0.19	0.19	0.59	0.59	0.09	0.72
(v / s)_i Volume / Saturation Flow Rate	0.08	0.16	0.09	0.10	0.07	0.05
s, saturation flow rate [veh/h]	1774	1583	1863	1702	1774	3547
c, Capacity [veh/h]	343	306	1093	999	154	2547
d1, Uniform Delay [s]	31.95	35.08	8.48	8.56	40.24	3.77
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	6.59	0.31	0.38	7.92	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.85	0.16	0.17	0.77	0.07
d, Delay for Lane Group [s/veh]	32.79	41.67	8.79	8.94	48.16	3.82
Lane Group LOS	C	D	A	A	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	2.83	5.94	1.52	1.54	2.89	0.41
50th-Percentile Queue Length [ft]	70.80	148.53	37.92	38.54	72.13	10.28
95th-Percentile Queue Length [veh]	5.10	9.94	2.73	2.78	5.19	0.74
95th-Percentile Queue Length [ft]	127.45	248.47	68.26	69.38	129.83	18.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.79	41.67	8.84	8.94	48.16	3.82
Movement LOS	C	D	A	A	D	A
d_A, Approach Delay [s/veh]	38.48		8.86		21.53	
Approach LOS	D		A		C	
d_I, Intersection Delay [s/veh]	23.89					
Intersection LOS	C					
Intersection V/C	0.384					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	271.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.767

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	537	1803	653	457	1269	293	608	687	566	499	568	628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	1803	653	457	1269	293	608	687	566	499	568	628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	451	163	114	317	73	152	172	142	125	142	157
Total Analysis Volume [veh/h]	537	1803	653	457	1269	293	608	687	566	499	568	628
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	38	0	21	34	0	0	29	29	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	34	34	17	30	30	25	25	50	28	28	28
g / C, Green / Cycle	0.18	0.28	0.28	0.14	0.25	0.25	0.21	0.21	0.42	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.30	0.51	0.41	0.26	0.30	0.30	0.34	0.37	0.36	0.14	0.16	0.40
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1691	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	311	1006	449	253	889	424	368	387	659	803	827	369
d1, Uniform Delay [s]	49.53	43.02	43.02	51.51	45.01	45.01	47.60	47.60	31.86	41.29	42.05	46.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	339.80	360.39	216.32	379.55	94.47	111.04	305.05	360.05	13.67	0.79	1.02	326.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.73	1.79	1.45	1.81	1.18	1.20	1.65	1.78	0.86	0.62	0.69	1.70
d, Delay for Lane Group [s/veh]	389.33	403.42	259.34	431.06	139.48	156.05	352.64	407.65	45.53	42.08	43.07	372.77
Lane Group LOS	F	F	F	F	F	F	F	F	D	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	38.66	65.12	40.16	34.20	24.78	25.58	42.13	50.14	17.11	6.71	7.79	44.44
50th-Percentile Queue Length [ft]	966.58	1627.94	1004.11	855.12	619.57	639.56	1053.26	1253.59	427.70	167.68	194.73	1110.96
95th-Percentile Queue Length [veh]	60.12	101.42	61.24	53.53	36.22	37.50	65.12	77.67	23.89	10.95	12.37	69.37
95th-Percentile Queue Length [ft]	1502.97	2535.57	1530.93	1338.20	905.49	937.44	1627.98	1941.68	597.29	273.86	309.15	1734.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	389.33	403.42	259.34	431.06	142.30	156.05	352.64	407.65	45.53	42.08	43.07	372.77
Movement LOS	F	F	F	F	F	F	F	F	D	D	D	F
d_A, Approach Delay [s/veh]	369.46			209.66			279.54			164.94		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	271.81											
Intersection LOS	F											
Intersection V/C	1.767											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.925

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	448	62	150	461	0	229	0	78	0	0	0
Total Analysis Volume [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	51	0	26	77	0	0	38	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	48	48	22	74	33	33	33	
g / C, Green / Cycle	0.42	0.42	0.19	0.65	0.29	0.29	0.29	
(v / s)_i Volume / Saturation Flow Rate	0.38	0.39	0.17	0.36	0.27	0.10	0.10	
s, saturation flow rate [veh/h]	3547	1751	3445	5074	3445	1583	1583	
c, Capacity [veh/h]	1495	738	650	3273	983	452	452	
d1, Uniform Delay [s]	31.19	31.45	45.78	11.36	39.99	32.56	32.56	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	9.77	18.71	5.97	0.71	4.70	0.45	0.45	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.91	0.92	0.92	0.56	0.93	0.34	0.34	
d, Delay for Lane Group [s/veh]	40.96	50.16	51.75	12.07	44.70	33.01	33.01	
Lane Group LOS	D	D	D	B	D	C	C	
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	19.23	21.18	8.89	8.36	13.08	3.49	3.49	
50th-Percentile Queue Length [ft]	480.72	529.41	222.14	209.04	327.02	87.37	87.37	
95th-Percentile Queue Length [veh]	26.42	28.72	13.77	13.10	19.01	6.29	6.29	
95th-Percentile Queue Length [ft]	660.51	718.08	344.35	327.59	475.31	157.26	157.26	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	43.18	50.16	51.75	12.07	0.00	44.70	33.01	33.01	0.00	0.00	0.00
Movement LOS		D	D	D	B		D	C	C			
d_A, Approach Delay [s/veh]	44.03			21.81			41.73			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	34.03											
Intersection LOS	C											
Intersection V/C	0.925											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	209.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.546

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	362	19	44	378	117	107	91	168	36	72	35
Total Analysis Volume [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	21	43	0	11	33	0	0	41	0	0	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	39	39	7	29	29	37	37	37	37	37	37
g / C, Green / Cycle	0.18	0.41	0.41	0.07	0.31	0.31	0.39	0.39	0.39	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.33	0.28	0.28	0.05	0.53	0.57	0.45	0.20	0.42	0.27	0.12	0.12
s, saturation flow rate [veh/h]	1774	3547	1816	3445	1863	1720	956	1863	1583	542	1863	1660
c, Capacity [veh/h]	319	1455	745	258	569	525	343	724	615	76	724	645
d1, Uniform Delay [s]	38.98	23.06	23.10	42.85	33.02	33.02	37.17	22.10	29.06	47.53	20.20	20.25
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.50	0.22	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	384.04	2.71	5.27	3.07	339.16	404.13	133.54	0.55	63.42	425.94	0.24	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

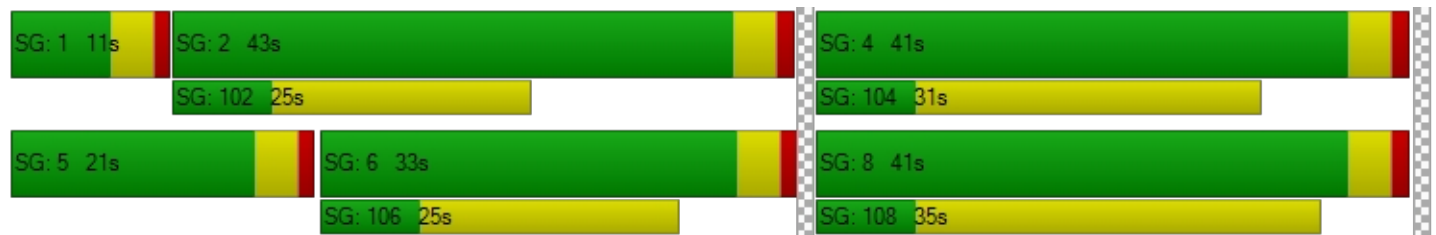
X, volume / capacity	1.83	0.69	0.69	0.68	1.74	1.88	1.25	0.50	1.09	1.90	0.31	0.32
d, Delay for Lane Group [s/veh]	423.01	25.76	28.38	45.92	372.18	437.15	170.71	22.64	92.48	473.47	20.44	20.53
Lane Group LOS	F	C	C	D	F	F	F	C	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh]	41.36	9.43	10.25	2.09	66.22	70.61	20.79	6.12	24.16	10.75	3.43	3.12
50th-Percentile Queue Length [ft]	1033.90	235.73	256.23	52.14	1655.55	1765.18	519.74	153.04	604.12	268.84	85.65	78.11
95th-Percentile Queue Length [veh]	64.72	14.47	15.50	3.75	102.89	111.11	32.29	10.18	34.21	19.36	6.17	5.62
95th-Percentile Queue Length [ft]	1617.96	361.63	387.49	93.86	2572.34	2777.78	807.15	254.48	855.22	483.91	154.18	140.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	423.01	26.56	28.38	45.92	394.64	437.15	170.71	22.64	92.48	473.47	20.46	20.53
Movement LOS	F	C	C	D	F	F	F	C	F	F	C	C
d_A, Approach Delay [s/veh]	136.43			375.63			97.94			134.52		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	209.05											
Intersection LOS	F											
Intersection V/C	1.546											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.969

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	282	306	1324	518	532	1020
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	282	306	1324	518	532	1020
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	71	77	331	130	133	255
Total Analysis Volume [veh/h]	282	306	1324	518	532	1020
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	35	0	50	0	35	85
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	46	46	36	86
g / C, Green / Cycle	0.21	0.21	0.38	0.38	0.30	0.72
(v / s)_i Volume / Saturation Flow Rate	0.16	0.19	0.35	0.38	0.30	0.20
s, saturation flow rate [veh/h]	1774	1583	3547	1621	1774	5074
c, Capacity [veh/h]	378	337	1359	621	539	3655
d1, Uniform Delay [s]	44.17	46.04	34.90	36.72	41.51	5.87
k, delay calibration	0.17	0.27	0.50	0.50	0.45	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.56	19.14	10.08	33.37	33.66	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

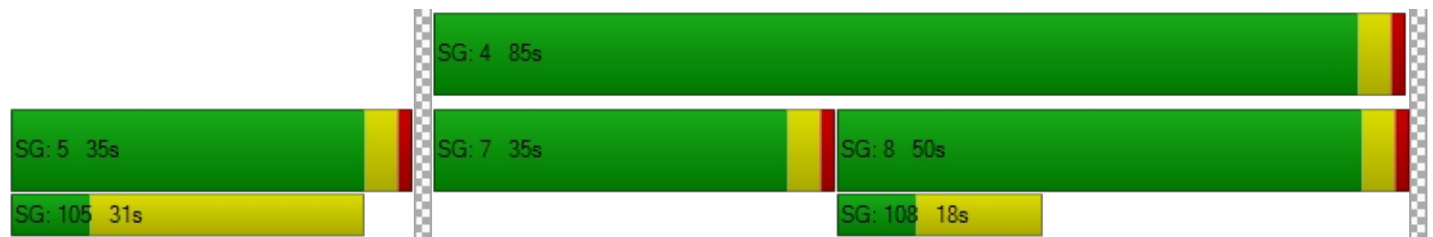
X, volume / capacity	0.75	0.91	0.90	0.99	0.99	0.28
d, Delay for Lane Group [s/veh]	48.72	65.18	44.98	70.09	75.17	6.06
Lane Group LOS	D	E	D	E	E	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	8.30	10.64	17.86	22.55	19.96	2.52
50th-Percentile Queue Length [ft]	207.59	266.12	446.59	563.84	498.95	62.88
95th-Percentile Queue Length [veh]	13.03	16.00	24.79	30.34	27.28	4.53
95th-Percentile Queue Length [ft]	325.73	399.89	619.87	758.55	682.12	113.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.72	65.18	46.80	70.09	75.17	6.06
Movement LOS	D	E	D	E	E	A
d_A, Approach Delay [s/veh]	57.29		53.35		29.75	
Approach LOS	E		D		C	
d_I, Intersection Delay [s/veh]	44.73					
Intersection LOS	D					
Intersection V/C	0.969					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	308.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.658

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	193	15	233	193	179	198	119	21	35	103	169
Total Analysis Volume [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	17	45	0	25	32	0	32	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	13	41	41	21	45	45	11	35	35
g / C, Green / Cycle	0.06	0.29	0.29	0.11	0.34	0.34	0.18	0.37	0.37	0.09	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.10	0.16	0.16	0.27	0.40	0.47	0.45	0.11	0.11	0.08	0.08	0.43
s, saturation flow rate [veh/h]	1774	3547	1795	3445	1863	1592	1774	3547	1725	1774	5074	1583
c, Capacity [veh/h]	104	1039	526	374	639	546	311	1315	639	167	1471	459
d1, Uniform Delay [s]	56.49	35.51	35.53	53.50	39.43	39.43	49.51	26.59	26.59	53.37	32.92	42.61
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	323.92	1.94	3.82	677.88	90.08	174.41	706.73	0.12	0.24	9.69	0.10	225.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.63	0.53	0.53	2.49	1.16	1.36	2.55	0.29	0.29	0.82	0.28	1.47
d, Delay for Lane Group [s/veh]	380.41	37.45	39.36	731.38	129.52	213.85	756.24	26.71	26.84	63.06	33.02	267.79
Lane Group LOS	F	D	D	F	F	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	12.52	7.03	7.42	40.85	34.50	42.27	70.25	3.82	3.74	4.54	3.10	42.14
50th-Percentile Queue Length [ft]	313.04	175.85	185.60	1021.29	862.47	1056.76	1756.31	95.55	93.52	113.44	77.52	1053.43
95th-Percentile Queue Length [veh]	20.71	11.38	11.89	63.92	48.70	63.26	109.50	6.88	6.73	8.03	5.58	64.39
95th-Percentile Queue Length [ft]	517.63	284.59	297.32	1597.97	1217.57	1581.51	2737.53	171.99	168.34	200.77	139.53	1609.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	380.41	37.99	39.36	731.38	132.42	213.85	756.24	26.74	26.84	63.06	33.02	267.79
Movement LOS	F	D	D	F	F	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	96.23			387.18			454.40			166.15		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	308.58											
Intersection LOS	F											
Intersection V/C	1.658											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	37.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.075

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	894	19	38	898	9	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	894	19	38	898	9	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	224	5	10	225	2	15
Total Analysis Volume [veh/h]	894	19	38	898	9	60
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.05	0.01	0.08	0.11
d_M, Delay for Movement [s/veh]	0.00	0.00	10.11	0.00	37.33	13.69
Movement LOS	A	A	B	A	E	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.16	0.00	0.67	0.67
95th-Percentile Queue Length [ft]	0.00	0.00	4.04	0.00	16.66	16.66
d_A, Approach Delay [s/veh]	0.00		0.41		16.78	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	E					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	210.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.174

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	270	3	9	340	6	5	1	4	1	0	2
Total Analysis Volume [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.10	0.01	0.00	0.33	0.17	0.05	0.06	0.04	0.02
d_M, Delay for Movement [s/veh]	19.69	0.00	0.00	16.26	0.00	0.00	110.34	210.06	64.28	60.43	167.77	18.07
Movement LOS	C	A	A	C	A	A	F	F	F	F	F	C
95th-Percentile Queue Length [veh]	0.11	0.00	0.00	0.32	0.00	0.00	2.40	2.40	2.40	0.41	0.41	0.41
95th-Percentile Queue Length [ft]	2.75	0.00	0.00	7.91	0.00	0.00	59.96	59.96	59.96	10.15	10.15	10.15
d_A, Approach Delay [s/veh]	0.16			0.39			101.19			40.87		
Approach LOS	A			A			F			E		
d_I, Intersection Delay [s/veh]	2.16											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.277

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	69	13	35	130	17	2	12	1	15	2	22
Total Analysis Volume [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	29	0	20	35	35	11	33	0	13	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	59	59	9	68	74	2	5	5	6	9	9
g / C, Green / Cycle	0.00	0.62	0.62	0.10	0.72	0.78	0.02	0.05	0.05	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.09	0.08	0.15	0.04	0.01	0.01	0.01	0.03	0.00	0.06
s, saturation flow rate [veh/h]	1774	1863	1765	1774	3547	1583	1774	1863	1836	1774	1863	1583
c, Capacity [veh/h]	6	1157	1096	174	2538	1226	30	101	99	105	179	152
d1, Uniform Delay [s]	47.31	7.50	7.52	42.01	4.51	2.53	46.22	43.12	43.13	43.56	39.06	41.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	14.47	0.26	0.28	8.21	0.18	0.02	5.48	1.20	1.24	4.53	0.11	3.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

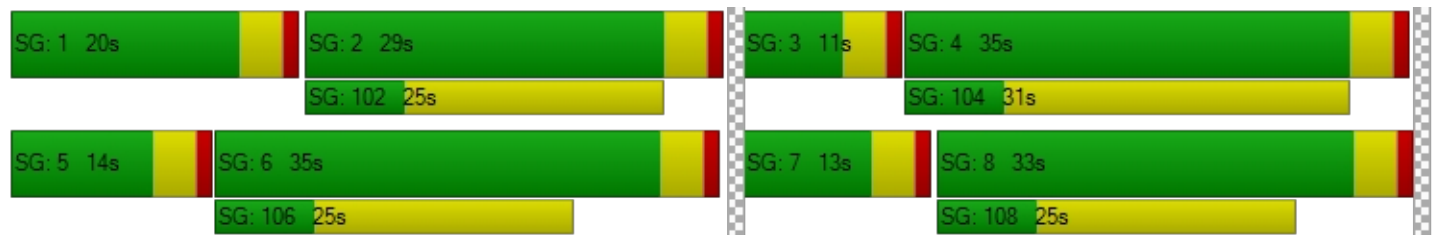
X, volume / capacity	0.18	0.14	0.15	0.80	0.20	0.06	0.30	0.24	0.24	0.55	0.05	0.58
d, Delay for Lane Group [s/veh]	61.78	7.76	7.80	50.22	4.69	2.55	51.70	44.32	44.37	48.10	39.17	44.70
Lane Group LOS	E	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.05	1.36	1.33	3.56	1.46	0.22	0.25	0.57	0.57	1.45	0.20	2.13
50th-Percentile Queue Length [ft]	1.15	34.03	33.21	88.92	36.52	5.56	6.36	14.29	14.29	36.25	4.89	53.23
95th-Percentile Queue Length [veh]	0.08	2.45	2.39	6.40	2.63	0.40	0.46	1.03	1.03	2.61	0.35	3.83
95th-Percentile Queue Length [ft]	2.07	61.26	59.78	160.05	65.73	10.02	11.45	25.73	25.72	65.25	8.80	95.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.78	7.78	7.80	50.22	4.69	2.55	51.70	44.34	44.37	48.10	39.17	44.70
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	7.94			13.20			45.51			45.65		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	17.30											
Intersection LOS	B											
Intersection V/C	0.277											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	152	1066	68	26	1451	18	59	5	139	93	11	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	1066	68	26	1451	18	59	5	139	93	11	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	267	17	7	363	5	15	1	35	23	3	6
Total Analysis Volume [veh/h]	152	1066	68	26	1451	18	59	5	139	93	11	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	37	0	12	29	0	11	34	0	12	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	59	59	4	52	52	6	10	10	6	11	11
g / C, Green / Cycle	0.11	0.62	0.62	0.04	0.55	0.55	0.06	0.11	0.11	0.07	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.09	0.21	0.21	0.01	0.27	0.27	0.03	0.00	0.09	0.05	0.01	0.02
s, saturation flow rate [veh/h]	1774	3547	1806	1774	3547	1851	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	188	2187	1114	67	1946	1016	105	203	172	121	220	187
d1, Uniform Delay [s]	41.62	8.87	8.88	44.70	13.31	13.31	43.55	37.88	41.41	43.57	37.23	37.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.10	0.43	0.84	3.60	0.91	1.73	4.61	0.05	8.53	9.61	0.09	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.81	0.34	0.34	0.39	0.50	0.50	0.56	0.02	0.81	0.77	0.05	0.13
d, Delay for Lane Group [s/veh]	49.72	9.30	9.72	48.30	14.22	15.04	48.16	37.93	49.94	53.18	37.32	37.89
Lane Group LOS	D	A	A	D	B	B	D	D	D	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.87	3.56	3.76	0.66	6.21	6.71	1.48	0.11	3.56	2.46	0.23	0.51
50th-Percentile Queue Length [ft]	96.78	89.07	93.97	16.55	155.24	167.86	36.89	2.66	88.93	61.43	5.79	12.84
95th-Percentile Queue Length [veh]	6.97	6.41	6.77	1.19	10.30	10.96	2.66	0.19	6.40	4.42	0.42	0.92
95th-Percentile Queue Length [ft]	174.21	160.33	169.14	29.79	257.41	274.10	66.41	4.78	160.07	110.57	10.42	23.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.72	9.43	9.72	48.30	14.49	15.04	48.16	37.93	49.94	53.18	37.32	37.89
Movement LOS	D	A	A	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	14.20			15.09			49.13			48.95		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	18.34											
Intersection LOS	B											
Intersection V/C	0.599											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report Intersection 11: Mission Trail at Olive Street

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	7	1190	205	120	1517	10	9	6	8	152	12	91
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1190	205	120	1517	10	9	6	8	152	12	91
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	298	51	30	379	3	2	2	2	38	3	23
Total Analysis Volume [veh/h]	7	1190	205	120	1517	10	9	6	8	152	12	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	22	0	33	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	55	55	8	62	62	15	15	15	15
g / C, Green / Cycle	0.01	0.61	0.61	0.09	0.69	0.69	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.26	0.26	0.07	0.28	0.28	0.01	0.01	0.11	0.06
s, saturation flow rate [veh/h]	1774	3547	1726	1774	3547	1857	1286	1692	1394	1611
c, Capacity [veh/h]	23	2180	1061	154	2442	1278	188	280	267	266
d1, Uniform Delay [s]	44.03	9.08	9.08	40.27	6.08	6.08	38.06	31.62	37.89	33.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.44	0.62	1.28	8.31	0.51	0.98	0.10	0.07	1.92	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

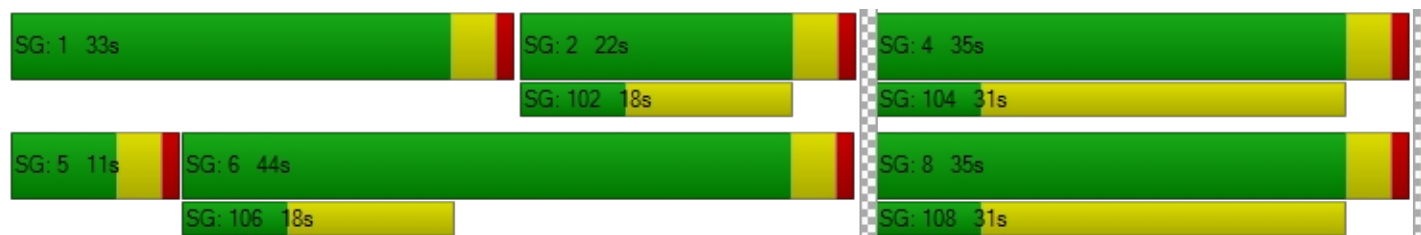
X, volume / capacity	0.31	0.43	0.43	0.78	0.41	0.41	0.05	0.05	0.57	0.39
d, Delay for Lane Group [s/veh]	51.47	9.70	10.36	48.58	6.60	7.06	38.16	31.69	39.81	34.42
Lane Group LOS	D	A	B	D	A	A	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.20	4.49	4.56	2.92	3.59	3.93	0.19	0.26	3.34	2.05
50th-Percentile Queue Length [ft]	5.00	112.28	114.11	73.08	89.87	98.22	4.67	6.49	83.60	51.17
95th-Percentile Queue Length [veh]	0.36	7.97	8.07	5.26	6.47	7.07	0.34	0.47	6.02	3.68
95th-Percentile Queue Length [ft]	9.01	199.16	201.71	131.54	161.77	176.79	8.41	11.68	150.49	92.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.47	9.84	10.36	48.58	6.75	7.06	38.16	31.69	31.69	39.81	34.42	34.42
Movement LOS	D	A	B	D	A	A	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	10.12			9.80			34.22			37.63		
Approach LOS	B			A			C			D		
d_I, Intersection Delay [s/veh]	12.24											
Intersection LOS	B											
Intersection V/C	0.509											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	3.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.380

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	1	1343	16	16	1653	2	2	3	2	21	8	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1343	16	16	1653	2	2	3	2	21	8	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	336	4	4	413	1	1	1	1	5	2	5
Total Analysis Volume [veh/h]	1	1343	16	16	1653	2	2	3	2	21	8	20
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	59	0	11	59	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	85	85	3	87	87	5	5
g / C, Green / Cycle	0.00	0.81	0.81	0.03	0.83	0.83	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.00	0.25	0.25	0.01	0.31	0.31	0.00	0.03
s, saturation flow rate [veh/h]	1774	3547	1852	1774	3547	1862	1783	1652
c, Capacity [veh/h]	4	2870	1498	45	2951	1549	135	133
d1, Uniform Delay [s]	52.27	2.55	2.55	50.32	2.13	2.13	47.45	48.60
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.51	0.28	0.54	4.69	0.35	0.67	0.16	1.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.31	0.31	0.36	0.37	0.37	0.05	0.37
d, Delay for Lane Group [s/veh]	76.78	2.84	3.10	55.02	2.49	2.81	47.61	50.28
Lane Group LOS	E	A	A	E	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	0.06	1.70	1.89	0.47	1.71	1.93	0.18	1.31
50th-Percentile Queue Length [ft]	1.40	42.60	47.17	11.78	42.70	48.26	4.50	32.79
95th-Percentile Queue Length [veh]	0.10	3.07	3.40	0.85	3.07	3.48	0.32	2.36
95th-Percentile Queue Length [ft]	2.52	76.68	84.90	21.20	76.85	86.88	8.11	59.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	76.78	2.92	3.10	55.02	2.60	2.81	47.61	47.61	47.61	50.28	50.28	50.28
Movement LOS	E	A	A	E	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.98			3.10			47.61			50.28		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	3.90											
Intersection LOS	A											
Intersection V/C	0.380											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	11.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1226	184	135	1530	130	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1226	184	135	1530	130	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	307	46	34	383	33	30
Total Analysis Volume [veh/h]	1226	184	135	1530	130	121
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	18	0	21	39	51	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	54	54	9	66	16
g / C, Green / Cycle	0.60	0.60	0.10	0.74	0.17
(v / s)_i Volume / Saturation Flow Rate	0.24	0.12	0.08	0.30	0.15
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1677
c, Capacity [veh/h]	3025	944	170	3737	293
d1, Uniform Delay [s]	9.68	8.31	39.84	4.48	36.07
k, delay calibration	0.50	0.50	0.11	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	0.46	8.10	0.33	7.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

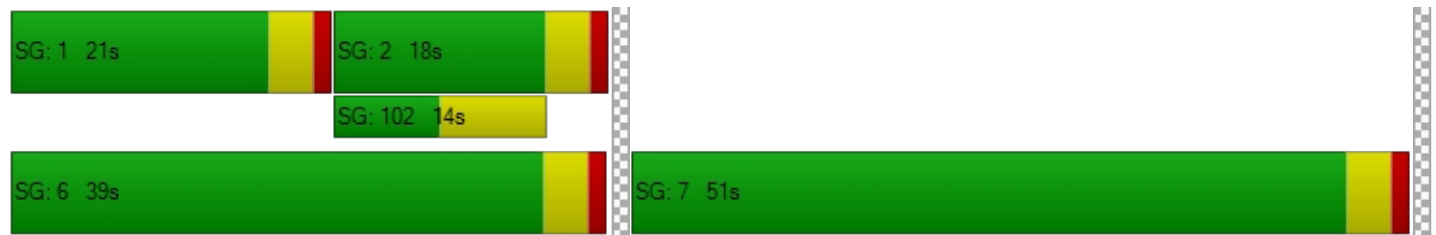
X, volume / capacity	0.41	0.19	0.79	0.41	0.86
d, Delay for Lane Group [s/veh]	10.09	8.77	47.94	4.81	43.22
Lane Group LOS	B	A	D	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	3.99	1.62	3.27	2.82	5.82
50th-Percentile Queue Length [ft]	99.84	40.50	81.66	70.45	145.62
95th-Percentile Queue Length [veh]	7.19	2.92	5.88	5.07	9.78
95th-Percentile Queue Length [ft]	179.70	72.90	146.99	126.82	244.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.09	8.77	47.94	4.81	43.22	43.22
Movement LOS	B	A	D	A	D	D
d_A, Approach Delay [s/veh]	9.91		8.31		43.22	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.62					
Intersection LOS	B					
Intersection V/C	0.539					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	187	961	1068	574	452	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	961	1068	574	452	221
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	240	267	144	113	55
Total Analysis Volume [veh/h]	187	961	1068	574	452	221
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	32	61	29	29	29	29
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	12	66	50	70	16	32
g / C, Green / Cycle	0.13	0.73	0.55	0.78	0.18	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.27	0.30	0.36	0.13	0.08
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	237	2591	1959	1231	622	1005
d1, Uniform Delay [s]	37.77	4.49	12.90	3.49	34.78	20.10
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.80	0.41	1.09	1.27	1.64	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.37	0.55	0.47	0.73	0.22
d, Delay for Lane Group [s/veh]	43.57	4.89	13.99	4.76	36.41	20.21
Lane Group LOS	D	A	B	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	4.31	2.68	6.63	2.84	4.73	1.60
50th-Percentile Queue Length [ft]	107.70	66.88	165.66	71.05	118.13	39.89
95th-Percentile Queue Length [veh]	7.71	4.82	10.85	5.12	8.29	2.87
95th-Percentile Queue Length [ft]	192.79	120.39	271.20	127.88	207.25	71.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.57	4.89	13.99	4.76	36.41	20.21
Movement LOS	D	A	B	A	D	C
d_A, Approach Delay [s/veh]	11.19		10.77		31.09	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	14.86					
Intersection LOS	B					
Intersection V/C	0.620					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 61s

SG: 3 29s

SG: 103 25s

SG: 5 32s

SG: 6 29s

SG: 8 29s

SG: 106 25s

Intersection Level Of Service Report
Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	43.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	19	611	447	27	786	4	6	480	86	471	366	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	611	447	27	786	4	6	480	86	471	366	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	153	112	7	197	1	2	120	22	118	92	6
Total Analysis Volume [veh/h]	19	611	447	27	786	4	6	480	86	471	366	23
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	0	11	29	0	46	64	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	41	41	4	42	42	1	21	21	33	52	52
g / C, Green / Cycle	0.03	0.36	0.36	0.04	0.37	0.37	0.01	0.18	0.18	0.28	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.01	0.30	0.31	0.02	0.21	0.21	0.00	0.16	0.16	0.27	0.11	0.11
s, saturation flow rate [veh/h]	1774	1863	1604	1774	1863	1859	1774	1863	1766	1774	1863	1824
c, Capacity [veh/h]	51	670	577	64	683	682	21	337	319	505	845	828
d1, Uniform Delay [s]	54.87	33.97	33.99	54.28	29.28	29.28	56.40	45.73	45.81	40.08	19.19	19.19
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.26	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.48	12.68	14.52	4.34	3.55	3.55	7.54	6.43	7.12	16.58	0.14	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

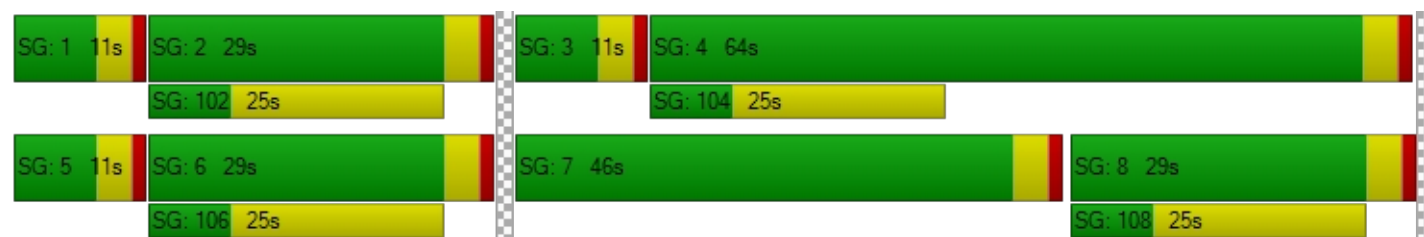
X, volume / capacity	0.37	0.85	0.85	0.42	0.58	0.58	0.29	0.86	0.87	0.93	0.23	0.23
d, Delay for Lane Group [s/veh]	59.36	46.65	48.51	58.62	32.83	32.83	63.95	52.16	52.93	56.66	19.33	19.34
Lane Group LOS	E	D	D	E	C	C	E	D	D	E	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.59	16.15	14.23	0.82	9.02	9.01	0.22	8.58	8.28	15.14	3.23	3.17
50th-Percentile Queue Length [ft]	14.78	403.75	355.83	20.61	225.60	225.24	5.40	214.56	206.95	378.45	80.83	79.20
95th-Percentile Queue Length [veh]	1.06	22.74	20.42	1.48	13.95	13.93	0.39	13.39	13.00	21.52	5.82	5.70
95th-Percentile Queue Length [ft]	26.61	568.52	510.51	37.10	348.76	348.30	9.73	334.68	324.91	537.97	145.49	142.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.36	46.78	48.51	58.62	32.83	32.83	63.95	52.46	52.93	56.66	19.34	19.34
Movement LOS	E	D	D	E	C	C	E	D	D	E	B	B
d_A, Approach Delay [s/veh]	47.72			33.68			52.65			39.78		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	43.07											
Intersection LOS	D											
Intersection V/C	0.863											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	47.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	181	289	196	658	304	138	143	609	201	268	509	613
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	289	196	658	304	138	143	609	201	268	509	613
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	72	49	165	76	35	36	152	50	67	127	153
Total Analysis Volume [veh/h]	181	289	196	658	304	138	143	609	201	268	509	613
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	40	32	0	29	21	0	22	35	0	24	37	37
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	30	30	25	40	40	12	29	29	20	38	67
g / C, Green / Cycle	0.12	0.25	0.25	0.21	0.34	0.34	0.10	0.24	0.24	0.17	0.31	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.14	0.19	0.13	0.13	0.08	0.23	0.23	0.15	0.14	0.39
s, saturation flow rate [veh/h]	1774	1863	1616	3445	1863	1668	1774	1863	1706	1774	3547	1583
c, Capacity [veh/h]	214	463	402	718	628	562	173	454	416	295	1107	877
d1, Uniform Delay [s]	51.75	39.34	39.43	46.52	30.19	30.20	53.23	44.46	44.46	49.21	33.17	19.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.36	0.36	0.36	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.96	4.77	5.63	5.21	1.68	1.88	9.67	22.71	24.15	26.93	0.30	4.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.85	0.56	0.56	0.92	0.37	0.37	0.83	0.93	0.93	0.91	0.46	0.70
d, Delay for Lane Group [s/veh]	60.71	44.11	45.06	51.72	31.87	32.08	62.90	67.17	68.60	76.14	33.47	24.10
Lane Group LOS	E	D	D	D	C	C	E	E	E	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	5.87	7.26	6.48	10.08	5.41	4.89	4.70	15.07	13.97	10.08	6.00	13.10
50th-Percentile Queue Length [ft]	146.65	181.41	162.07	252.07	135.31	122.20	117.50	376.78	349.33	251.91	149.95	327.39
95th-Percentile Queue Length [veh]	9.84	11.67	10.66	15.29	9.23	8.51	8.26	21.44	20.10	15.28	10.01	19.03
95th-Percentile Queue Length [ft]	245.95	291.85	266.47	382.26	230.69	212.85	206.39	535.95	502.59	382.06	250.36	475.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.71	44.21	45.06	51.72	31.92	32.08	62.90	67.61	68.60	76.14	33.47	24.10
Movement LOS	E	D	D	D	C	C	E	E	E	E	C	C
d_A, Approach Delay [s/veh]	48.95			43.79			67.11			37.56		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	47.93											
Intersection LOS	D											
Intersection V/C	0.821											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	50.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.923

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	65	62	389	236	44	34	42	1415	48	265	1270	184
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	62	389	236	44	34	42	1415	48	265	1270	184
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	16	97	59	11	9	11	354	12	66	318	46
Total Analysis Volume [veh/h]	65	62	389	236	44	34	42	1415	48	265	1270	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	39	0	21	35	0	22	38	0	22	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	31	31	17	42	5	36	36	20	50	50
g / C, Green / Cycle	0.05	0.26	0.26	0.14	0.35	0.04	0.30	0.30	0.16	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.25	0.13	0.05	0.02	0.27	0.27	0.15	0.27	0.28
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1730	1774	3547	1832	1774	3547	1745
c, Capacity [veh/h]	93	487	414	252	607	79	1058	546	292	1484	730
d1, Uniform Delay [s]	55.95	33.85	43.39	50.97	26.46	56.10	40.61	40.61	49.23	28.00	28.03
k, delay calibration	0.11	0.11	0.34	0.38	0.11	0.11	0.50	0.50	0.31	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.08	0.12	24.32	35.38	0.09	5.35	13.22	21.96	23.86	2.29	4.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

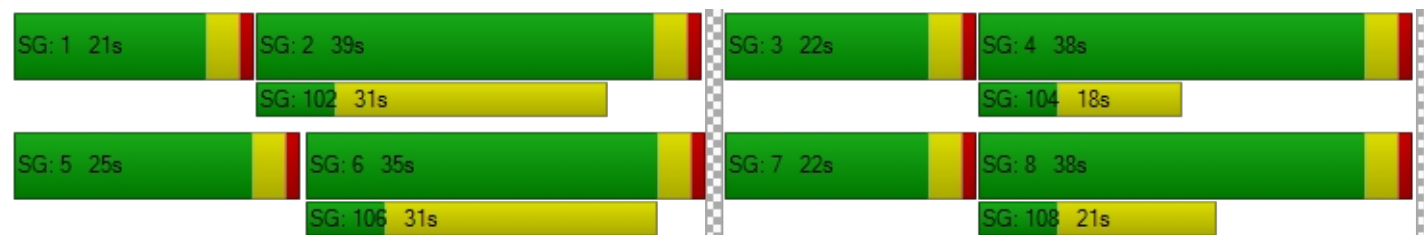
X, volume / capacity	0.70	0.13	0.94	0.94	0.13	0.53	0.91	0.91	0.91	0.66	0.66
d, Delay for Lane Group [s/veh]	65.03	33.97	67.71	86.35	26.56	61.45	53.82	62.56	73.09	30.29	32.63
Lane Group LOS	E	C	E	F	C	E	D	E	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.17	1.41	14.00	9.48	1.55	1.36	15.53	17.37	9.72	11.55	11.86
50th-Percentile Queue Length [ft]	54.31	35.23	350.11	236.99	38.66	34.12	388.26	434.20	242.92	288.64	296.50
95th-Percentile Queue Length [veh]	3.91	2.54	20.14	14.53	2.78	2.46	21.99	24.20	14.83	17.12	17.51
95th-Percentile Queue Length [ft]	97.77	63.42	503.54	363.22	69.58	61.41	549.84	605.07	370.72	427.96	437.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.03	33.97	67.71	86.35	26.56	26.56	61.45	56.60	62.56	73.09	30.84	32.63
Movement LOS	E	C	E	F	C	C	E	E	E	E	C	C
d_A, Approach Delay [s/veh]	63.32			71.50			56.93			37.54		
Approach LOS	E			E			E			D		
d_I, Intersection Delay [s/veh]	50.65											
Intersection LOS	D											
Intersection V/C	0.923											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	43.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.051

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	73	1	76	0	302	215	93	364	0
Total Analysis Volume [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	26	0	0	66	0	28	94	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		22	22	62	62	24	90
g / C, Green / Cycle		0.18	0.18	0.52	0.52	0.20	0.75
(v / s)_i Volume / Saturation Flow Rate		0.17	0.19	0.34	0.54	0.21	0.29
s, saturation flow rate [veh/h]		1774	1585	3547	1583	1774	5074
c, Capacity [veh/h]		326	291	1835	819	353	3805
d1, Uniform Delay [s]		47.90	48.97	21.16	28.94	48.05	5.26
k, delay calibration		0.36	0.47	0.50	0.50	0.48	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		23.68	65.63	1.86	45.26	61.56	0.29
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

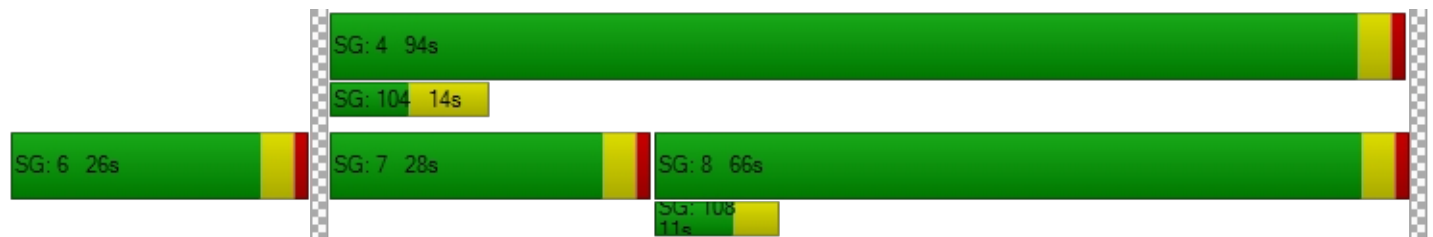
X, volume / capacity		0.90	1.05	0.66	1.05	1.05	0.38
d, Delay for Lane Group [s/veh]		71.58	114.61	23.02	74.21	109.61	5.56
Lane Group LOS		E	F	C	F	F	A
Critical Lane Group		No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		10.68	13.97	12.54	32.73	16.52	3.81
50th-Percentile Queue Length [ft]		267.02	349.25	313.56	818.26	413.10	95.25
95th-Percentile Queue Length [veh]		16.04	20.63	18.35	43.79	23.86	6.86
95th-Percentile Queue Length [ft]		401.01	515.83	458.76	1094.86	596.50	171.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	71.58	114.61	114.61	0.00	23.02	74.21	109.61	5.56	0.00
Movement LOS				E	F	F		C	F	F	A	
d_A, Approach Delay [s/veh]	0.00			93.56			44.33			26.74		
Approach LOS	A			F			D			C		
d_I, Intersection Delay [s/veh]	43.74											
Intersection LOS	D											
Intersection V/C	1.051											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	627	4	542	0	0	0	276	1237	0	0	1189	255
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	627	4	542	0	0	0	276	1237	0	0	1189	255
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	1	136	0	0	0	69	309	0	0	297	64
Total Analysis Volume [veh/h]	627	4	542	0	0	0	276	1237	0	0	1189	255
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	70	0	0	0	0	12	30	0	0	18	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39		18	53	31	31
g / C, Green / Cycle	0.39	0.39		0.18	0.53	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.35	0.34		0.16	0.24	0.27	0.28
s, saturation flow rate [veh/h]	1774	1585		1774	5074	3547	1703
c, Capacity [veh/h]	692	618		315	2689	1108	532
d1, Uniform Delay [s]	28.77	28.37		40.06	14.61	32.45	32.95
k, delay calibration	0.12	0.11		0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.48	4.58		7.71	0.57	9.29	21.37
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.88		0.88	0.46	0.87	0.90
d, Delay for Lane Group [s/veh]	34.25	32.95		47.77	15.18	41.74	54.32
Lane Group LOS	C	C		D	B	D	D
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	14.69	12.49		7.20	5.69	12.14	14.04
50th-Percentile Queue Length [ft]	367.13	312.35		180.00	142.26	303.57	350.97
95th-Percentile Queue Length [veh]	20.97	18.29		11.60	9.60	17.86	20.18
95th-Percentile Queue Length [ft]	524.25	457.27		290.01	240.06	446.44	504.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.25	32.95	32.95	0.00	0.00	0.00	47.77	15.18	0.00	0.00	44.13	54.32
Movement LOS	C	C	C				D	B			D	D
d_A, Approach Delay [s/veh]	33.65			0.00			21.13			45.93		
Approach LOS	C			A			C			D		
d_I, Intersection Delay [s/veh]	33.36											
Intersection LOS	C											
Intersection V/C	0.900											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 70s

SG: 3 12s

SG: 4 18s

SG: 104 11s

SG: 8 30s

SG: 108 14s

Intersection Level Of Service Report

Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.744

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	9	686	450	62	850	172	197	104	17	418	170	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	686	450	62	850	172	197	104	17	418	170	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	172	113	16	213	43	49	26	4	105	43	28
Total Analysis Volume [veh/h]	9	686	450	62	850	172	197	104	17	418	170	113
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	27	0	11	27	0	0	52	0	0	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	36	36	6	40	40	37	37	37	37	37
g / C, Green / Cycle	0.02	0.40	0.40	0.06	0.44	0.44	0.41	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.28	0.03	0.28	0.28	0.18	0.06	0.01	0.33	0.16
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1755	1092	1863	1583	1285	1740
c, Capacity [veh/h]	28	1410	629	109	825	778	380	759	645	535	709
d1, Uniform Delay [s]	43.80	20.25	22.82	41.07	19.45	19.46	28.86	16.73	15.97	27.83	18.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.18	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.24	1.20	6.81	4.57	3.75	3.98	1.09	0.08	0.02	4.04	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

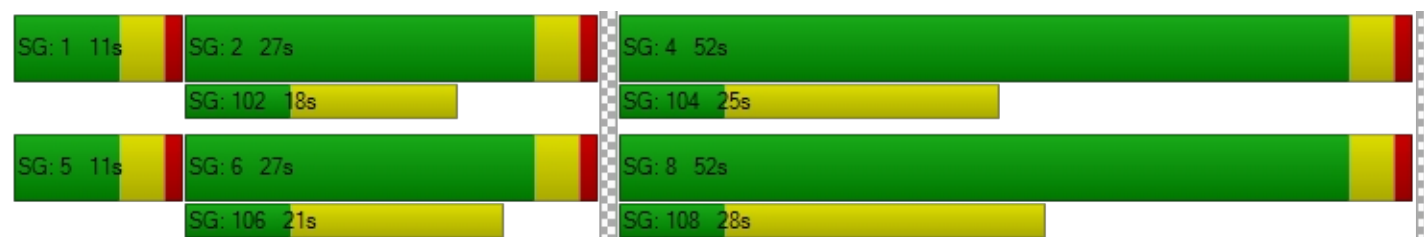
X, volume / capacity	0.32	0.49	0.71	0.57	0.64	0.64	0.52	0.14	0.03	0.78	0.40
d, Delay for Lane Group [s/veh]	50.04	21.46	29.63	45.64	23.19	23.43	29.96	16.81	15.98	31.87	19.23
Lane Group LOS	D	C	C	D	C	C	C	B	B	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.25	5.40	8.83	1.46	8.93	8.48	3.78	1.33	0.21	8.83	4.11
50th-Percentile Queue Length [ft]	6.14	135.12	220.82	36.52	223.32	211.89	94.60	33.33	5.21	220.76	102.73
95th-Percentile Queue Length [veh]	0.44	9.22	13.71	2.63	13.83	13.25	6.81	2.40	0.37	13.70	7.40
95th-Percentile Queue Length [ft]	11.06	230.44	342.67	65.74	345.86	331.25	170.28	59.99	9.37	342.60	184.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.04	21.46	29.63	45.64	23.29	23.43	29.96	16.81	15.98	31.87	19.23	19.23
Movement LOS	D	C	C	D	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	24.89			24.59			24.91			26.77		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.20											
Intersection LOS	C											
Intersection V/C	0.744											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	108.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.196

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	690	576	667	136	83	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	690	576	667	136	83	521
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	144	167	34	21	130
Total Analysis Volume [veh/h]	690	576	667	136	83	521
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	43	83	40	0	37	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	79	36	36	33	33
g / C, Green / Cycle	0.32	0.66	0.30	0.30	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.39	0.16	0.36	0.09	0.05	0.33
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	576	2335	559	475	488	436
d1, Uniform Delay [s]	40.50	8.36	41.96	32.12	33.06	43.47
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	105.14	0.25	103.41	1.51	0.16	108.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

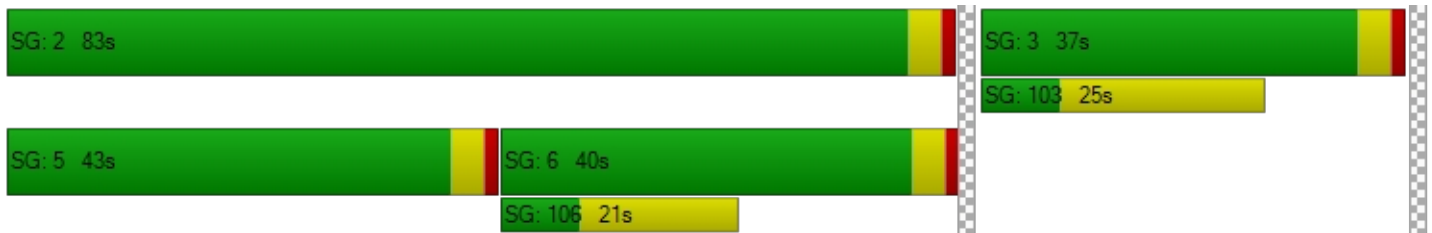
X, volume / capacity	1.20	0.25	1.19	0.29	0.17	1.20
d, Delay for Lane Group [s/veh]	145.63	8.61	145.37	33.63	33.22	152.25
Lane Group LOS	F	A	F	C	C	F
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	32.77	2.69	31.67	3.11	1.87	25.94
50th-Percentile Queue Length [ft]	819.34	67.33	791.81	77.63	46.86	648.52
95th-Percentile Queue Length [veh]	47.16	4.85	45.50	5.59	3.37	38.01
95th-Percentile Queue Length [ft]	1178.97	121.19	1137.56	139.73	84.36	950.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	145.63	8.61	145.37	33.63	33.22	152.25
Movement LOS	F	A	F	C	C	F
d_A, Approach Delay [s/veh]	83.29		126.45		135.89	
Approach LOS	F		F		F	
d_I, Intersection Delay [s/veh]	108.14					
Intersection LOS	F					
Intersection V/C	1.196					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	44.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	18	37	9	52	24	18	227	116	48	344	4
Total Analysis Volume [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	41	0	0	41	0	20	48	0	16	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	6	44	44	12	50	50
g / C, Green / Cycle	0.35	0.35	0.06	0.42	0.42	0.12	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.37	0.20	0.04	0.38	0.39	0.11	0.37	0.37
s, saturation flow rate [veh/h]	1025	1680	1774	1863	1656	1774	1863	1855
c, Capacity [veh/h]	410	630	104	778	692	206	884	881
d1, Uniform Delay [s]	37.39	27.32	48.45	28.94	29.42	46.02	23.14	23.16
k, delay calibration	0.50	0.15	0.11	0.50	0.50	0.35	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	31.02	0.98	7.60	17.97	23.23	38.12	7.04	7.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

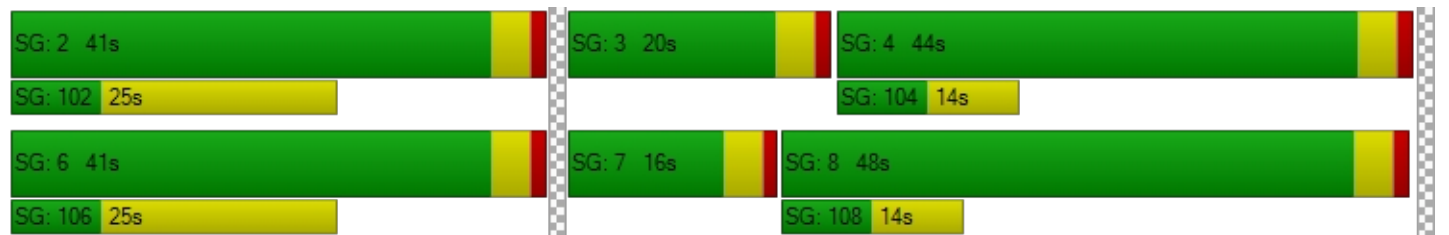
X, volume / capacity	0.94	0.54	0.68	0.92	0.95	0.93	0.79	0.79
d, Delay for Lane Group [s/veh]	68.41	28.30	56.05	46.91	52.65	84.13	30.18	30.28
Lane Group LOS	E	C	E	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	13.45	6.96	1.99	19.50	18.95	6.96	14.81	14.80
50th-Percentile Queue Length [ft]	336.22	174.06	49.68	487.47	473.87	174.12	370.31	370.09
95th-Percentile Queue Length [veh]	19.46	11.29	3.58	26.74	26.09	11.29	21.12	21.11
95th-Percentile Queue Length [ft]	486.58	282.24	89.42	668.52	652.37	282.32	528.11	527.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.41	68.41	68.41	28.30	28.30	28.30	56.05	48.12	52.65	84.13	30.23	30.28
Movement LOS	E	E	E	C	C	C	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	68.41			28.30			49.96			36.76		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	44.30											
Intersection LOS	D											
Intersection V/C	0.878											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	29.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	16	36	5	49	32	1116	937	276	14	8	309	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	36	5	49	32	1116	937	276	14	8	309	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	9	1	12	8	279	234	69	4	2	77	15
Total Analysis Volume [veh/h]	16	36	5	49	32	1116	937	276	14	8	309	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	37	0	0	37	37	61	83	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	92	79	79	79	20	20	20
g / C, Green / Cycle	0.28	0.28	0.77	0.66	0.66	0.66	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.06	0.70	0.60	0.08	0.08	0.01	0.10	0.10
s, saturation flow rate [veh/h]	1505	1362	1583	1560	1863	1831	1085	1863	1763
c, Capacity [veh/h]	452	423	1211	1022	1226	1205	194	314	297
d1, Uniform Delay [s]	32.58	33.71	11.23	18.30	7.60	7.60	46.42	46.09	46.20
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.22	12.80	14.13	0.20	0.20	0.40	8.08	8.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.19	0.92	0.92	0.12	0.12	0.04	0.60	0.61
d, Delay for Lane Group [s/veh]	32.71	33.92	24.02	32.43	7.80	7.80	46.82	54.18	55.14
Lane Group LOS	C	C	C	C	A	A	D	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.27	1.89	22.94	20.90	1.42	1.40	0.23	5.86	5.73
50th-Percentile Queue Length [ft]	31.68	47.13	573.58	522.39	35.40	34.88	5.85	146.49	143.20
95th-Percentile Queue Length [veh]	2.28	3.39	30.80	28.39	2.55	2.51	0.42	9.83	9.65
95th-Percentile Queue Length [ft]	57.02	84.83	769.97	709.81	63.73	62.78	10.52	245.74	241.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.71	32.71	32.71	33.92	33.92	24.02	32.43	7.80	7.80	46.82	54.56	55.14
Movement LOS	C	C	C	C	C	C	C	A	A	D	D	E
d_A, Approach Delay [s/veh]	32.71			24.69			26.61			54.48		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.59											
Intersection LOS	C											
Intersection V/C	0.935											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	73.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.130

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	248	718	496	897	1069	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	718	496	897	1069	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	180	124	224	267	48
Total Analysis Volume [veh/h]	248	718	496	897	1069	191
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	19	83	64	0	37	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	79	60	60	33	33
g / C, Green / Cycle	0.13	0.66	0.50	0.50	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.14	0.20	0.14	0.57	0.31	0.12
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	223	2335	1771	791	948	436
d1, Uniform Delay [s]	52.44	8.78	17.48	30.02	43.47	35.84
k, delay calibration	0.49	0.50	0.50	0.50	0.13	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	93.41	0.34	0.39	75.89	61.77	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.11	0.31	0.28	1.13	1.13	0.44
d, Delay for Lane Group [s/veh]	145.84	9.12	17.87	105.91	105.24	36.53
Lane Group LOS	F	A	B	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	12.47	3.94	4.07	38.44	22.04	4.70
50th-Percentile Queue Length [ft]	311.76	98.46	101.82	960.97	550.88	117.62
95th-Percentile Queue Length [veh]	19.12	7.09	7.33	53.48	31.93	8.26
95th-Percentile Queue Length [ft]	478.07	177.23	183.28	1337.05	798.27	206.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	145.84	9.12	17.87	105.91	105.24	36.53
Movement LOS	F	A	B	F	F	D
d_A, Approach Delay [s/veh]	44.22		74.56		94.83	
Approach LOS	D		E		F	
d_I, Intersection Delay [s/veh]	73.52					
Intersection LOS	E					
Intersection V/C	1.130					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.086

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	178	21	65	380	40	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	21	65	380	40	39
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	16	95	10	10
Total Analysis Volume [veh/h]	178	21	65	380	40	39
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.05	0.00	0.09	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.76	0.00	13.54	9.69
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.58	0.29	0.43	0.43
95th-Percentile Queue Length [ft]	0.00	0.00	14.48	7.24	10.86	10.86
d_A, Approach Delay [s/veh]	0.00		1.13		11.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.97					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 3.9
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	61	7	16	73	9	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	7	16	73	9	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	2	4	18	2	4
Total Analysis Volume [veh/h]	61	7	16	73	9	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	16		9		62	
Exiting Flow Rate [veh/h]	16		9		62	
Demand Flow Rate [veh/h]	61	7	16	73	9	17
Adjusted Demand Flow Rate [veh/h]	61	7	16	73	9	17

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	70		91		27	
Capacity of Entry and Bypass Lanes [veh/h]	1112		1120		1062	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1090		1098		1042	
X, volume / capacity	0.06		0.08		0.02	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.20	0.26	0.08
95th-Percentile Queue Length [ft]	4.98	6.60	1.92
Approach Delay [s/veh]	3.83	3.97	3.67
Approach LOS	A	A	A
Intersection Delay [s/veh]	3.88		
Intersection LOS	A		

Intersection Level Of Service Report

Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 3.5
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	37	5	3	33	6	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	5	3	33	6	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	1	1	8	2	1
Total Analysis Volume [veh/h]	37	5	3	33	6	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	3		6		38	
Exiting Flow Rate [veh/h]	3		6		38	
Demand Flow Rate [veh/h]	37	5	3	33	6	5
Adjusted Demand Flow Rate [veh/h]	37	5	3	33	6	5

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	43		37		12	
Capacity of Entry and Bypass Lanes [veh/h]	1127		1124		1089	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1105		1102		1067	
X, volume / capacity	0.04		0.03		0.01	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.12	0.10	0.03
95th-Percentile Queue Length [ft]	2.96	2.53	0.78
Approach Delay [s/veh]	3.58	3.54	3.46
Approach LOS	A	A	A
Intersection Delay [s/veh]	3.55		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.072

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	27	12	16	575	358	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	12	16	575	358	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	3	4	144	90	6
Total Analysis Volume [veh/h]	27	12	16	575	358	25
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.42	10.17	8.11	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.28	0.28	1.00	0.50	0.00	0.00
95th-Percentile Queue Length [ft]	7.11	7.11	25.05	12.53	0.00	0.00
d_A, Approach Delay [s/veh]	13.80		0.22		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	31.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.227

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	594	34	12	1117	40	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	594	34	12	1117	40	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	149	9	3	279	10	3
Total Analysis Volume [veh/h]	594	34	12	1117	40	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.23	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.84	0.00	31.34	10.37
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	4.05	2.03	0.84	0.05
95th-Percentile Queue Length [ft]	0.00	0.00	101.32	50.66	20.99	1.23
d_A, Approach Delay [s/veh]	0.00		0.09		26.81	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.82					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	130	213	369	208	295	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	213	369	208	295	315
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	53	92	52	74	79
Total Analysis Volume [veh/h]	130	213	369	208	295	315
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	29	0	22	0	39	61
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	46	46	17	68
g / C, Green / Cycle	0.16	0.16	0.51	0.51	0.19	0.75
(v / s)_i Volume / Saturation Flow Rate	0.07	0.13	0.15	0.17	0.17	0.09
s, saturation flow rate [veh/h]	1774	1583	1863	1652	1774	3547
c, Capacity [veh/h]	285	255	958	850	340	2661
d1, Uniform Delay [s]	34.21	36.63	12.56	12.86	35.30	3.08
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.14	7.12	0.81	1.08	6.77	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.84	0.30	0.34	0.87	0.12
d, Delay for Lane Group [s/veh]	35.35	43.76	13.37	13.95	42.07	3.17
Lane Group LOS	D	D	B	B	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	2.63	4.96	3.37	3.49	6.77	0.61
50th-Percentile Queue Length [ft]	65.75	124.00	84.31	87.22	169.34	15.33
95th-Percentile Queue Length [veh]	4.73	8.61	6.07	6.28	11.04	1.10
95th-Percentile Queue Length [ft]	118.35	215.31	151.76	157.00	276.04	27.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.35	43.76	13.50	13.95	42.07	3.17
Movement LOS	D	D	B	B	D	A
d_A, Approach Delay [s/veh]	40.57		13.66		21.98	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	23.01					
Intersection LOS	C					
Intersection V/C	0.549					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	383.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.585

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	432	1483	1737	791	1843	267	262	598	511	790	502	597
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	432	1483	1737	791	1843	267	262	598	511	790	502	597
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	371	434	198	461	67	66	150	128	198	126	149
Total Analysis Volume [veh/h]	432	1483	1737	791	1843	267	262	598	511	790	502	597
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	8	0	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	7	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	30	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	23	49	0	22	48	0	0	17	17	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No	No		No	
Maximum Recall	No	No		No	No			No	No		No	
Pedestrian Recall	No	No		No	No			No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	45	45	18	44	44	13	13	36	28	28	28
g / C, Green / Cycle	0.16	0.37	0.37	0.15	0.37	0.37	0.11	0.11	0.30	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.24	0.42	1.10	0.45	0.39	0.41	0.15	0.32	0.32	0.23	0.14	0.38
s, saturation flow rate [veh/h]	1774	3547	1583	1774	3547	1749	1774	1863	1583	3445	3547	1583
c, Capacity [veh/h]	283	1326	592	268	1297	640	193	203	477	803	827	369
d1, Uniform Delay [s]	50.54	37.65	37.65	51.03	38.14	38.14	53.59	53.59	42.00	45.88	41.19	46.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	254.50	64.01	875.17	886.63	45.09	78.90	190.93	891.55	61.37	11.42	0.72	290.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.53	1.12	2.93	2.95	1.07	1.13	1.36	2.95	1.07	0.98	0.61	1.62
d, Delay for Lane Group [s/veh]	305.04	101.66	912.82	937.66	83.24	117.04	244.51	945.13	103.37	57.31	41.92	336.22
Lane Group LOS	F	F	F	F	F	F	F	F	F	E	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	28.47	30.83	160.89	74.13	26.79	32.43	16.05	56.28	22.11	12.91	6.72	40.67
50th-Percentile Queue Length [ft]	711.72	770.73	4022.35	1853.28	669.71	810.73	401.22	1406.96	552.81	322.73	168.02	1016.73
95th-Percentile Queue Length [veh]	44.05	43.11	258.67	114.52	36.91	45.49	25.28	86.48	31.15	18.80	10.97	63.18
95th-Percentile Queue Length [ft]	1101.25	1077.86	6466.77	2863.10	922.86	1137.17	632.04	2161.97	778.69	470.05	274.31	1579.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	305.04	101.66	912.82	937.66	91.65	117.04	244.51	945.13	103.37	57.31	41.92	336.22
Movement LOS	F	F	F	F	F	F	F	F	F	E	D	F
d_A, Approach Delay [s/veh]	511.53			324.66			497.50			141.36		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	383.07											
Intersection LOS	F											
Intersection V/C	2.585											

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	87.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.204

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	699	106	175	575	0	170	1	200	0	0	0
Total Analysis Volume [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	60	0	23	83	0	0	27	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	14	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	56	56	19	79	23	23	23	
g / C, Green / Cycle	0.51	0.51	0.17	0.72	0.21	0.21	0.21	
(v / s)_i Volume / Saturation Flow Rate	0.60	0.62	0.20	0.45	0.20	0.25	0.25	
s, saturation flow rate [veh/h]	3547	1741	3445	5074	3445	1586	1583	
c, Capacity [veh/h]	1803	885	597	3642	721	332	332	
d1, Uniform Delay [s]	27.04	27.04	45.46	8.01	42.80	43.47	43.47	
k, delay calibration	0.50	0.50	0.13	0.50	0.11	0.50	0.50	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	91.35	105.83	83.84	0.84	6.85	118.75	119.67	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	1.19	1.21	1.18	0.63	0.94	1.21	1.21	
d, Delay for Lane Group [s/veh]	118.38	132.87	129.30	8.85	49.66	162.22	163.14	
Lane Group LOS	F	F	F	A	D	F	F	
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	
50th-Percentile Queue Length [veh]	45.10	47.85	15.02	8.32	9.68	19.90	19.94	
50th-Percentile Queue Length [ft]	1127.57	1196.21	375.56	208.01	242.06	497.38	498.56	
95th-Percentile Queue Length [veh]	63.82	68.13	23.06	13.05	14.79	29.95	30.03	
95th-Percentile Queue Length [ft]	1595.60	1703.19	576.46	326.27	369.63	748.69	750.86	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	121.75	132.87	129.30	8.85	0.00	49.66	162.22	162.68	0.00	0.00	0.00
Movement LOS		F	F	F	A		D	F	F			
d_A, Approach Delay [s/veh]	123.21			36.99			110.90			0.00		
Approach LOS	F			D			F			A		
d_I, Intersection Delay [s/veh]	87.24											
Intersection LOS	F											
Intersection V/C	1.204											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	213.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.686

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	148	654	38	91	558	103	111	102	146	23	56	34
Total Analysis Volume [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	27	66	0	15	54	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	62	62	11	50	50	35	35	35	35	35	35
g / C, Green / Cycle	0.19	0.52	0.52	0.09	0.42	0.42	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.33	0.51	0.53	0.11	0.71	0.75	0.44	0.22	0.37	0.16	0.10	0.10
s, saturation flow rate [veh/h]	1774	3547	1812	3445	1863	1766	1020	1863	1583	566	1863	1635
c, Capacity [veh/h]	341	1830	935	318	775	735	256	543	462	60	543	477
d1, Uniform Delay [s]	48.45	28.75	29.03	54.43	35.00	35.00	51.12	38.55	42.48	59.96	33.44	33.58
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.27	0.50	0.13	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	342.80	19.03	34.29	70.89	321.87	363.77	346.53	5.28	133.67	260.14	0.37	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

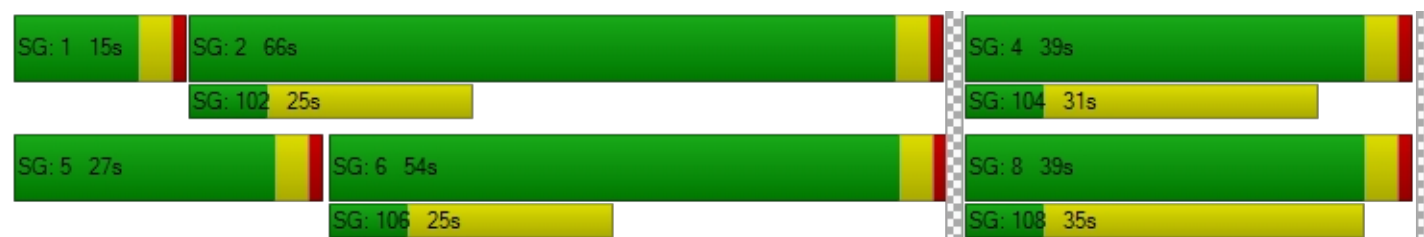
X, volume / capacity	1.74	0.99	1.02	1.14	1.70	1.80	1.73	0.75	1.26	1.53	0.34	0.36
d, Delay for Lane Group [s/veh]	391.25	47.78	63.32	125.32	356.87	398.77	397.65	43.83	176.14	320.10	33.82	34.03
Lane Group LOS	F	D	F	F	F	F	F	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh]	42.57	29.39	34.46	7.93	91.33	95.14	32.50	11.66	30.65	6.17	4.36	3.99
50th-Percentile Queue Length [ft]	1064.32	734.85	861.49	198.23	2283.16	2378.48	812.43	291.38	766.37	154.14	109.02	99.84
95th-Percentile Queue Length [veh]	66.12	38.29	44.78	13.14	141.88	149.49	53.10	17.25	45.33	11.10	7.79	7.19
95th-Percentile Queue Length [ft]	1652.97	957.14	1119.60	328.38	3547.10	3737.15	1327.62	431.36	1133.30	277.45	194.64	179.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	391.25	52.54	63.32	125.32	373.97	398.77	397.65	43.83	176.14	320.10	33.85	34.03
Movement LOS	F	D	E	F	F	F	F	D	F	F	C	C
d_A, Approach Delay [s/veh]	112.66			347.38			207.10			92.56		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	213.50											
Intersection LOS	F											
Intersection V/C	1.686											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Lucerne Street at Lakeshore Drive

Control Type:	Signalized	Delay (sec / veh):	52.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.019

Intersection Setup

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Lucerne Street		Lakeshore Drive		Lakeshore Drive	
Base Volume Input [veh/h]	159	611	961	479	405	1322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	611	961	479	405	1322
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	153	240	120	101	331
Total Analysis Volume [veh/h]	159	611	961	479	405	1322
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	49	0	40	0	31	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	24	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	45	45	36	36	27	67
g / C, Green / Cycle	0.37	0.37	0.30	0.30	0.23	0.56
(v / s)_i Volume / Saturation Flow Rate	0.09	0.39	0.27	0.30	0.23	0.26
s, saturation flow rate [veh/h]	1774	1583	3547	1584	1774	5074
c, Capacity [veh/h]	665	593	1059	473	402	2834
d1, Uniform Delay [s]	25.76	37.51	40.48	42.08	46.40	15.81
k, delay calibration	0.11	0.49	0.50	0.50	0.46	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	44.31	12.68	45.24	44.63	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	1.03	0.91	1.02	1.01	0.47
d, Delay for Lane Group [s/veh]	25.94	81.82	53.16	87.33	91.03	16.37
Lane Group LOS	C	F	D	F	F	B
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	3.17	24.34	14.89	19.29	16.55	6.79
50th-Percentile Queue Length [ft]	79.23	608.58	372.33	482.16	413.66	169.80
95th-Percentile Queue Length [veh]	5.70	33.12	21.22	26.75	23.32	11.07
95th-Percentile Queue Length [ft]	142.62	827.98	530.56	668.74	582.89	276.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.94	81.82	53.19	87.33	91.03	16.37
Movement LOS	C	F	D	F	F	B
d_A, Approach Delay [s/veh]	70.28		64.55		33.88	
Approach LOS	E		E		C	
d_I, Intersection Delay [s/veh]	52.21					
Intersection LOS	D					
Intersection V/C	1.019					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	440.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.286

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	224	1456	145	921	1349	774	878	340	115	241	277	1135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1456	145	921	1349	774	878	340	115	241	277	1135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	364	36	230	337	194	220	85	29	60	69	284
Total Analysis Volume [veh/h]	224	1456	145	921	1349	774	878	340	115	241	277	1135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	16	44	0	26	32	0	33	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	12	40	40	22	39	39	18	35	35
g / C, Green / Cycle	0.06	0.29	0.29	0.10	0.33	0.33	0.18	0.32	0.32	0.15	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.13	0.30	0.30	0.27	0.57	0.64	0.49	0.09	0.09	0.14	0.05	0.72
s, saturation flow rate [veh/h]	1774	3547	1778	3445	1863	1650	1774	3547	1632	1774	5074	1583
c, Capacity [veh/h]	104	1038	520	345	623	552	325	1136	523	272	1473	460
d1, Uniform Delay [s]	56.49	42.44	42.44	54.00	39.95	39.95	49.01	30.40	30.40	49.78	31.98	42.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.13	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	548.59	34.76	47.07	758.03	323.83	422.36	772.93	0.13	0.28	10.87	0.06	667.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

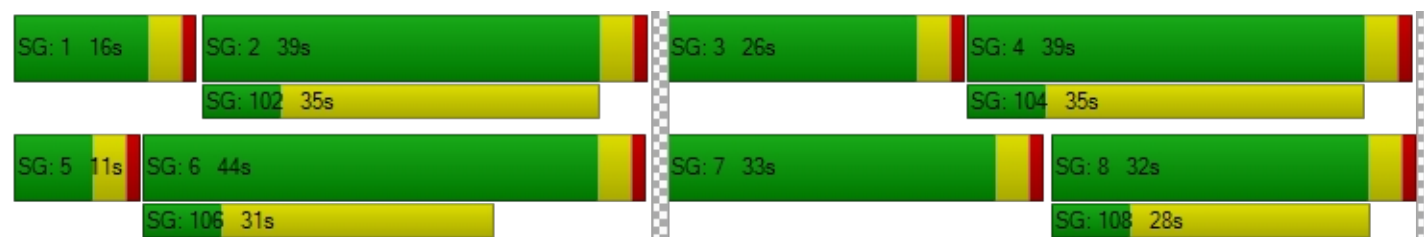
X, volume / capacity	2.15	1.03	1.03	2.67	1.70	1.92	2.70	0.27	0.27	0.89	0.19	2.47
d, Delay for Lane Group [s/veh]	605.09	77.20	89.52	812.02	363.78	462.31	821.94	30.53	30.68	60.66	32.04	710.49
Lane Group LOS	F	F	F	F	F	F	F	C	C	E	C	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	19.02	20.22	22.05	41.57	74.10	80.76	79.56	3.39	3.15	7.89	2.04	98.70
50th-Percentile Queue Length [ft]	475.50	505.38	551.17	1039.34	1852.50	2018.88	1989.02	84.83	78.70	197.25	50.89	2467.52
95th-Percentile Queue Length [veh]	30.70	28.05	30.31	64.82	114.56	127.49	123.87	6.11	5.67	12.50	3.66	157.01
95th-Percentile Queue Length [ft]	767.62	701.28	757.67	1620.56	2863.92	3187.37	3096.83	152.70	141.66	312.41	91.60	3925.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	605.09	80.51	89.52	812.02	384.78	462.31	821.94	30.54	30.68	60.66	32.04	710.49
Movement LOS	F	F	F	F	F	F	F	C	C	E	C	F
d_A, Approach Delay [s/veh]	145.61			533.76			551.82			502.06		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	439.97											
Intersection LOS	F											
Intersection V/C	2.286											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	3,343.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	6.800

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	2075	34	38	1613	64	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2075	34	38	1613	64	65
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	519	9	10	403	16	16
Total Analysis Volume [veh/h]	2075	34	38	1613	64	65
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.15	0.02	6.80	0.29
d_M, Delay for Movement [s/veh]	0.00	0.00	21.47	0.00	3342.99	2976.70
Movement LOS	A	A	C	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.51	0.00	16.74	16.74
95th-Percentile Queue Length [ft]	0.00	0.00	12.81	0.00	418.53	418.53
d_A, Approach Delay [s/veh]	0.00		0.49		3158.43	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	104.98					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	455.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.281

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	32	1550	16	34	1243	23	21	3	20	7	1	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	1550	16	34	1243	23	21	3	20	7	1	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	388	4	9	311	6	5	1	5	2	0	2
Total Analysis Volume [veh/h]	32	1550	16	34	1243	23	21	3	20	7	1	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.02	0.00	0.16	0.01	0.00	0.46	0.28	0.06	0.24	0.09	0.02
d_M, Delay for Movement [s/veh]	18.92	0.00	0.00	25.82	0.00	0.00	196.79	455.40	128.12	171.36	386.30	59.75
Movement LOS	C	A	A	D	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh]	0.37	0.00	0.00	0.58	0.00	0.00	3.41	3.41	3.41	1.23	1.23	1.23
95th-Percentile Queue Length [ft]	9.18	0.00	0.00	14.39	0.00	0.00	85.34	85.34	85.34	30.78	30.78	30.78
d_A, Approach Delay [s/veh]	0.38			0.68			183.21			133.60		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	3.91											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	194.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.909

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	9	349	38	1047	436	25	27	20	4	72	24	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	349	38	1047	436	25	27	20	4	72	24	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	87	10	262	109	6	7	5	1	18	6	30
Total Analysis Volume [veh/h]	9	349	38	1047	436	25	27	20	4	72	24	121
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	45	63	63	11	29	0	17	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	18	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	48	48	41	87	95	4	9	9	6	11	11
g / C, Green / Cycle	0.02	0.40	0.40	0.34	0.72	0.79	0.03	0.08	0.08	0.05	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.11	0.59	0.12	0.02	0.02	0.01	0.01	0.04	0.01	0.08
s, saturation flow rate [veh/h]	1774	1863	1800	1774	3547	1583	1774	1863	1759	1774	1863	1583
c, Capacity [veh/h]	28	739	714	605	2561	1252	62	141	133	95	175	149
d1, Uniform Delay [s]	58.45	24.42	24.46	39.54	5.28	2.67	56.74	51.63	51.65	56.05	49.92	53.36
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	6.63	0.88	0.92	335.17	0.14	0.01	4.70	0.26	0.29	11.69	0.35	10.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

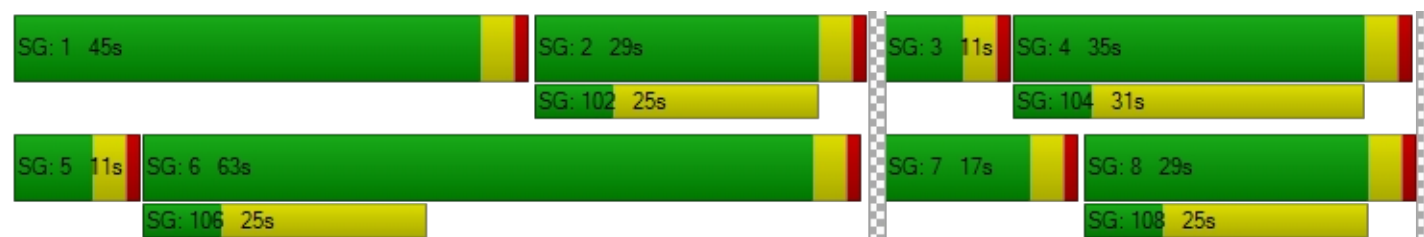
X, volume / capacity	0.33	0.26	0.27	1.73	0.17	0.02	0.43	0.09	0.09	0.76	0.14	0.81
d, Delay for Lane Group [s/veh]	65.08	25.30	25.38	374.71	5.43	2.68	61.45	51.89	51.94	67.74	50.28	63.59
Lane Group LOS	E	C	C	F	A	A	E	D	D	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.32	3.95	3.87	73.89	1.63	0.11	0.88	0.35	0.35	2.46	0.68	4.00
50th-Percentile Queue Length [ft]	8.04	98.67	96.78	1847.21	40.80	2.65	22.11	8.72	8.68	61.50	17.04	100.06
95th-Percentile Queue Length [veh]	0.58	7.10	6.97	114.86	2.94	0.19	1.59	0.63	0.63	4.43	1.23	7.20
95th-Percentile Queue Length [ft]	14.48	177.61	174.21	2871.57	73.43	4.77	39.80	15.69	15.63	110.70	30.67	180.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.08	25.33	25.38	374.71	5.43	2.68	61.45	51.91	51.94	67.74	50.28	63.59
Movement LOS	E	C	C	F	A	A	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	26.24			261.77			56.96			63.49		
Approach LOS	C			F			E			E		
d_I, Intersection Delay [s/veh]	194.21											
Intersection LOS	F											
Intersection V/C	0.909											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	79.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.074

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	217	1194	75	50	1403	45	356	14	767	98	43	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	217	1194	75	50	1403	45	356	14	767	98	43	52
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	299	19	13	351	11	89	4	192	25	11	13
Total Analysis Volume [veh/h]	217	1194	75	50	1403	45	356	14	767	98	43	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	31	0	21	34	0	33	57	0	11	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	38	38	6	30	30	26	53	53	7	34	34
g / C, Green / Cycle	0.12	0.32	0.32	0.05	0.25	0.25	0.22	0.44	0.44	0.06	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.12	0.24	0.24	0.03	0.27	0.27	0.20	0.01	0.48	0.06	0.02	0.03
s, saturation flow rate [veh/h]	1774	3547	1807	1774	3547	1833	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	207	1137	579	84	891	460	383	820	697	103	527	448
d1, Uniform Delay [s]	53.00	36.31	36.31	56.04	44.93	44.93	46.12	18.93	33.57	56.31	31.60	31.92
k, delay calibration	0.44	0.50	0.50	0.11	0.50	0.50	0.33	0.11	0.50	0.29	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	71.65	4.33	8.24	6.59	51.20	62.39	23.06	0.01	64.65	55.09	0.07	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

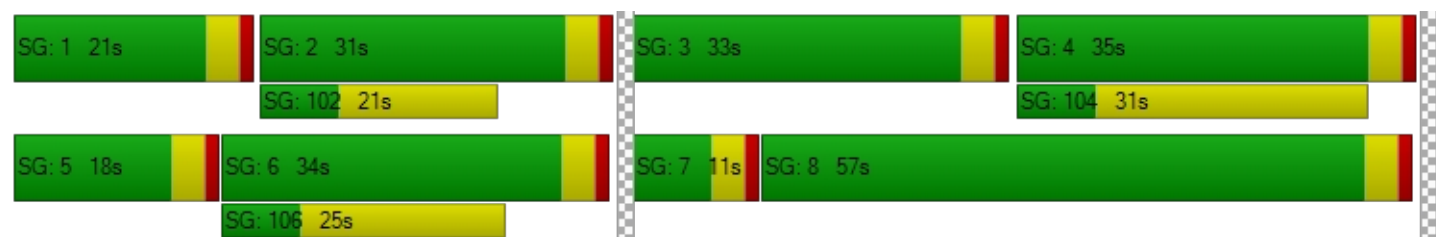
X, volume / capacity	1.05	0.74	0.74	0.60	1.07	1.07	0.93	0.02	1.10	0.95	0.08	0.12
d, Delay for Lane Group [s/veh]	124.65	40.64	44.55	62.62	96.13	107.32	69.18	18.93	98.22	111.40	31.67	32.04
Lane Group LOS	F	D	D	E	F	F	E	B	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	10.34	11.58	12.43	1.64	19.48	21.57	12.81	0.22	32.15	4.54	0.93	1.14
50th-Percentile Queue Length [ft]	258.56	289.61	310.82	40.98	486.99	539.22	320.23	5.60	803.82	113.51	23.36	28.59
95th-Percentile Queue Length [veh]	15.93	17.17	18.22	2.95	27.83	30.42	18.68	0.40	44.45	8.04	1.68	2.06
95th-Percentile Queue Length [ft]	398.36	429.15	455.38	73.76	695.72	760.38	466.96	10.08	1111.29	200.88	42.04	51.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	124.65	41.80	44.55	62.62	99.71	107.32	69.18	18.93	98.22	111.40	31.67	32.04
Movement LOS	F	D	D	E	F	F	E	B	F	F	C	C
d_A, Approach Delay [s/veh]	54.03			98.70			88.16			72.26		
Approach LOS	D			F			F			E		
d_I, Intersection Delay [s/veh]	79.35											
Intersection LOS	E											
Intersection V/C	1.074											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 11: Mission Trail at Olive Street

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 12.3
 Level Of Service: B
 Volume to Capacity (v/c): 0.522

Intersection Setup

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Olive Street			Olive Street		
Base Volume Input [veh/h]	7	1322	203	95	1782	12	15	7	8	153	11	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1322	203	95	1782	12	15	7	8	153	11	140
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	331	51	24	446	3	4	2	2	38	3	35
Total Analysis Volume [veh/h]	7	1322	203	95	1782	12	15	7	8	153	11	140
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	43	0	12	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	57	57	6	62	62	15	15	15	15
g / C, Green / Cycle	0.01	0.63	0.63	0.07	0.69	0.69	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.29	0.29	0.05	0.33	0.33	0.01	0.01	0.11	0.09
s, saturation flow rate [veh/h]	1774	3547	1739	1774	3547	1856	1231	1703	1393	1601
c, Capacity [veh/h]	23	2227	1092	126	2432	1273	150	286	270	269
d1, Uniform Delay [s]	44.03	8.76	8.76	41.06	6.65	6.65	40.55	31.43	37.72	34.40
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.44	0.69	1.39	8.89	0.69	1.32	0.29	0.08	1.87	1.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

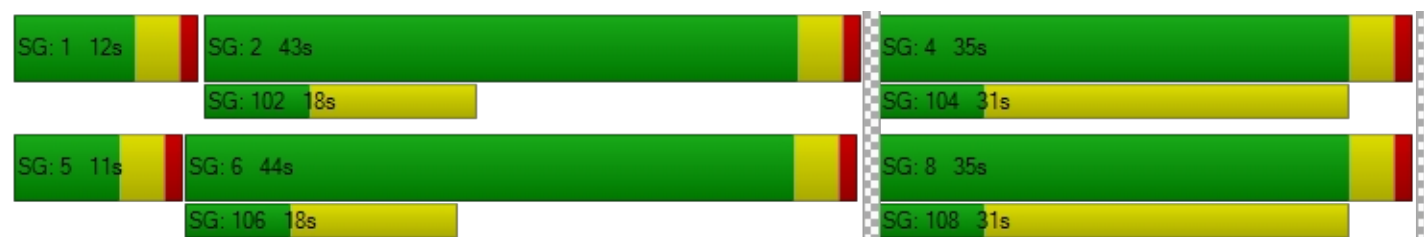
X, volume / capacity	0.31	0.46	0.46	0.76	0.48	0.48	0.10	0.05	0.57	0.56
d, Delay for Lane Group [s/veh]	51.47	9.45	10.16	49.94	7.34	7.97	40.84	31.50	39.59	36.23
Lane Group LOS	D	A	B	D	A	A	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.20	4.83	4.95	2.35	4.61	5.05	0.33	0.28	3.36	3.12
50th-Percentile Queue Length [ft]	5.00	120.66	123.69	58.82	115.26	126.26	8.16	6.93	83.92	78.11
95th-Percentile Queue Length [veh]	0.36	8.43	8.60	4.23	8.13	8.74	0.59	0.50	6.04	5.62
95th-Percentile Queue Length [ft]	9.01	210.73	214.89	105.87	203.29	218.39	14.69	12.47	151.05	140.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.47	9.61	10.16	49.94	7.56	7.97	40.84	31.50	31.50	39.59	36.23	36.23
Movement LOS	D	A	B	D	A	A	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	9.87			9.69			36.17			37.92		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	12.26											
Intersection LOS	B											
Intersection V/C	0.522											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 12: Mission Trail at Victorian Lane

Control Type:	Signalized	Delay (sec / veh):	4.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Victoria Lane			Victoria Lane		
Base Volume Input [veh/h]	2	1478	8	18	1928	1	3	3	3	23	8	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1478	8	18	1928	1	3	3	3	23	8	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	370	2	5	482	0	1	1	1	6	2	4
Total Analysis Volume [veh/h]	2	1478	8	18	1928	1	3	3	3	23	8	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	74	0	11	74	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	99	99	3	102	102	6	6
g / C, Green / Cycle	0.00	0.83	0.83	0.03	0.85	0.85	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.00	0.27	0.27	0.01	0.36	0.36	0.01	0.03
s, saturation flow rate [veh/h]	1774	3547	1858	1774	3547	1862	1746	1657
c, Capacity [veh/h]	8	2931	1535	47	3010	1581	122	122
d1, Uniform Delay [s]	59.54	2.50	2.50	57.40	2.13	2.13	54.77	55.98
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.81	0.31	0.58	4.94	0.43	0.82	0.25	2.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.33	0.33	0.38	0.42	0.42	0.07	0.39
d, Delay for Lane Group [s/veh]	77.35	2.80	3.08	62.34	2.56	2.95	55.02	58.02
Lane Group LOS	E	A	A	E	A	A	E	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	0.10	2.07	2.29	0.60	2.28	2.57	0.27	1.49
50th-Percentile Queue Length [ft]	2.45	51.71	57.13	15.06	57.11	64.26	6.75	37.36
95th-Percentile Queue Length [veh]	0.18	3.72	4.11	1.08	4.11	4.63	0.49	2.69
95th-Percentile Queue Length [ft]	4.40	93.08	102.84	27.11	102.80	115.67	12.15	67.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.35	2.90	3.08	62.34	2.70	2.95	55.02	55.02	55.02	58.02	58.02	58.02
Movement LOS	E	A	A	E	A	A	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	3.00			3.25			55.02			58.02		
Approach LOS	A			A			E			E		
d_I, Intersection Delay [s/veh]	4.03											
Intersection LOS	A											
Intersection V/C	0.430											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 13: Mission Trail at Lemon Street

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name	Mission Trail		Mission Trail		Lemon Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Lemon Street	
Base Volume Input [veh/h]	1307	172	127	1788	134	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1307	172	127	1788	134	148
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	327	43	32	447	34	37
Total Analysis Volume [veh/h]	1307	172	127	1788	134	148
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Split	Split
Signal group	2	0	1	6	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	7	0	7	7	7	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	27	0	15	42	48	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	7	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	52	52	8	65	17
g / C, Green / Cycle	0.58	0.58	0.09	0.72	0.19
(v / s)_i Volume / Saturation Flow Rate	0.26	0.11	0.07	0.35	0.17
s, saturation flow rate [veh/h]	5074	1583	1774	5074	1669
c, Capacity [veh/h]	2955	922	160	3637	324
d1, Uniform Delay [s]	10.57	8.81	40.16	5.57	35.17
k, delay calibration	0.50	0.50	0.11	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	0.45	8.68	0.48	7.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.19	0.80	0.49	0.87
d, Delay for Lane Group [s/veh]	11.05	9.25	48.84	6.05	42.31
Lane Group LOS	B	A	D	A	D
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	4.56	1.57	3.10	4.02	6.50
50th-Percentile Queue Length [ft]	113.96	39.25	77.61	100.48	162.58
95th-Percentile Queue Length [veh]	8.06	2.83	5.59	7.23	10.69
95th-Percentile Queue Length [ft]	201.50	70.65	139.70	180.86	267.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.05	9.25	48.84	6.05	42.31	42.31
Movement LOS	B	A	D	A	D	D
d_A, Approach Delay [s/veh]	10.84		8.89		42.31	
Approach LOS	B		A		D	
d_I, Intersection Delay [s/veh]	12.24					
Intersection LOS	B					
Intersection V/C	0.602					

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 14: Mission Trail at Corydon Road

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	Mission Trail		Mission Trail		Corydon Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Mission Trail		Mission Trail		Corydon Road	
Base Volume Input [veh/h]	145	823	1411	544	629	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	823	1411	544	629	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	206	353	136	157	41
Total Analysis Volume [veh/h]	145	823	1411	544	629	165
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Version 4.00-07

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Overlap	Permissive	Overlap
Signal group	5	2	6	6	3	8
Auxiliary Signal Groups				3,6		5,8
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	21	50	29	29	40	40
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	18	18	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	0.00	2.00	0.00
g_i, Effective Green Time [s]	9	61	48	73	21	35
g / C, Green / Cycle	0.10	0.68	0.53	0.81	0.23	0.38
(v / s)_i Volume / Saturation Flow Rate	0.08	0.23	0.40	0.34	0.18	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	2803
c, Capacity [veh/h]	186	2400	1870	1276	807	1076
d1, Uniform Delay [s]	39.27	6.12	16.71	2.58	32.29	18.16
k, delay calibration	0.11	0.50	0.50	0.35	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.84	0.39	2.88	0.74	1.67	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

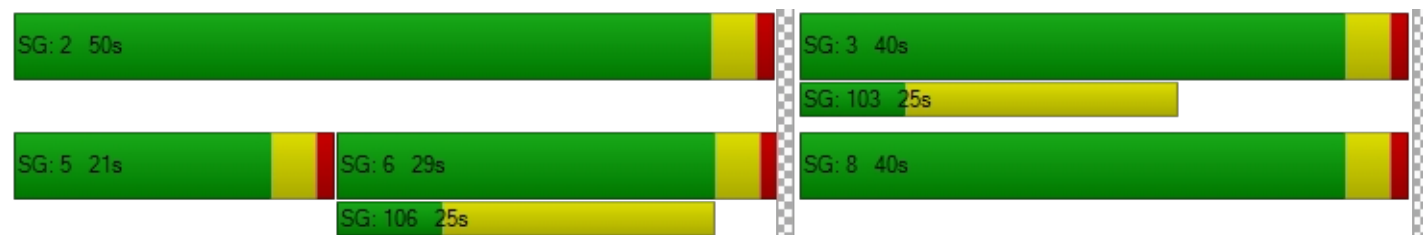
X, volume / capacity	0.78	0.34	0.75	0.43	0.78	0.15
d, Delay for Lane Group [s/veh]	46.11	6.52	19.59	3.32	33.96	18.23
Lane Group LOS	D	A	B	A	C	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	3.43	2.91	11.20	1.88	6.45	1.11
50th-Percentile Queue Length [ft]	85.85	72.84	280.11	47.10	161.14	27.72
95th-Percentile Queue Length [veh]	6.18	5.24	16.69	3.39	10.61	2.00
95th-Percentile Queue Length [ft]	154.53	131.12	417.35	84.78	265.23	49.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.11	6.52	19.59	3.32	33.96	18.23
Movement LOS	D	A	B	A	C	B
d_A, Approach Delay [s/veh]	12.45		15.06		30.69	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	17.72					
Intersection LOS	B					
Intersection V/C	0.764					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 15: Corydon Road at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	32.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Cereal Street			Bundy Canyon Road		
Base Volume Input [veh/h]	44	698	296	37	605	7	17	300	82	343	295	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	698	296	37	605	7	17	300	82	343	295	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	175	74	9	151	2	4	75	21	86	74	11
Total Analysis Volume [veh/h]	44	698	296	37	605	7	17	300	82	343	295	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	11	29	0	11	29	0	36	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	48	48	5	48	48	3	14	14	22	34	34
g / C, Green / Cycle	0.05	0.46	0.46	0.04	0.45	0.45	0.03	0.13	0.13	0.21	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.02	0.28	0.28	0.02	0.16	0.16	0.01	0.11	0.11	0.19	0.09	0.09
s, saturation flow rate [veh/h]	1774	1863	1677	1774	1863	1855	1774	1863	1728	1774	1863	1779
c, Capacity [veh/h]	87	849	764	80	841	838	48	247	229	380	596	569
d1, Uniform Delay [s]	48.72	21.64	21.65	48.95	18.92	18.92	50.22	44.18	44.32	40.23	26.82	26.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.18	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.43	3.34	3.70	4.11	1.22	1.23	4.32	5.66	6.80	12.57	0.27	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.50	0.62	0.62	0.46	0.36	0.36	0.35	0.79	0.81	0.90	0.29	0.29
d, Delay for Lane Group [s/veh]	53.15	24.98	25.35	53.06	20.14	20.15	54.54	49.84	51.12	52.79	27.08	27.11
Lane Group LOS	D	C	C	D	C	C	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.20	9.72	8.83	1.01	4.84	4.82	0.50	5.30	5.12	9.86	3.28	3.15
50th-Percentile Queue Length [ft]	29.98	242.97	220.79	25.26	120.93	120.54	12.40	132.38	127.95	246.38	82.05	78.78
95th-Percentile Queue Length [veh]	2.16	14.83	13.71	1.82	8.44	8.42	0.89	9.07	8.83	15.00	5.91	5.67
95th-Percentile Queue Length [ft]	53.96	370.79	342.63	45.46	211.11	210.57	22.32	226.73	220.70	375.09	147.69	141.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.15	25.07	25.35	53.06	20.14	20.15	54.54	50.28	51.12	52.79	27.09	27.11
Movement LOS	D	C	C	D	C	C	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	26.34			22.02			50.64			40.02		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	32.20											
Intersection LOS	C											
Intersection V/C	0.711											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mission Trail at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	43.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Mission Trail			Mission Trail			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	114	291	176	1113	297	86	95	370	106	174	357	522
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	291	176	1113	297	86	95	370	106	174	357	522
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	73	44	278	74	22	24	93	27	44	89	131
Total Analysis Volume [veh/h]	114	291	176	1113	297	86	95	370	106	174	357	522
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	40	32	0	45	37	0	11	22	0	21	32	32
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	10	32	32	41	63	63	7	18	18	14	25	69
g / C, Green / Cycle	0.08	0.26	0.26	0.34	0.52	0.52	0.06	0.15	0.15	0.11	0.21	0.58
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.14	0.32	0.11	0.11	0.05	0.13	0.13	0.10	0.10	0.33
s, saturation flow rate [veh/h]	1774	1863	1633	3445	1863	1722	1774	1863	1723	1774	3547	1583
c, Capacity [veh/h]	144	490	430	1165	969	896	106	281	260	203	730	914
d1, Uniform Delay [s]	54.21	37.59	37.71	38.86	15.46	15.50	56.10	49.88	49.98	52.20	42.13	16.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.28	0.25	0.26	0.20	0.11	0.44
l, Upstream Filtering 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
d2, Incremental Delay [s]	9.42	3.66	4.33	5.58	0.47	0.53	42.40	17.27	20.06	16.87	0.51	2.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

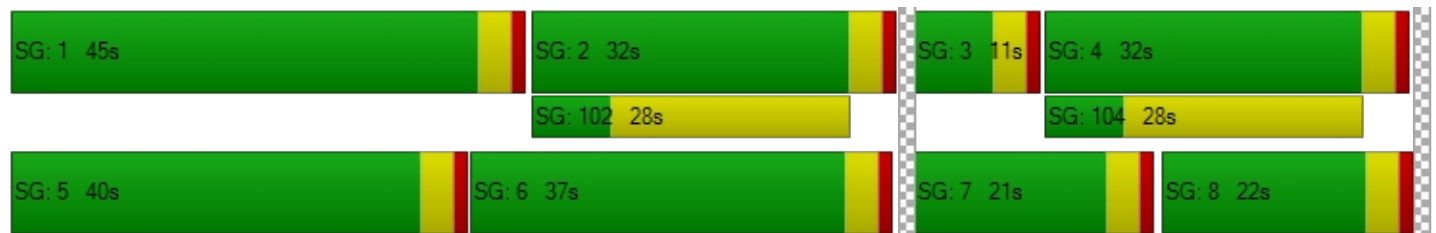
X, volume / capacity	0.79	0.50	0.51	0.96	0.20	0.21	0.90	0.87	0.89	0.86	0.49	0.57
d, Delay for Lane Group [s/veh]	63.63	41.25	42.05	44.45	15.93	16.03	98.50	67.15	70.04	69.07	42.63	18.28
Lane Group LOS	E	D	D	D	B	B	F	E	E	E	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.76	6.66	6.05	16.67	3.01	2.86	4.11	8.55	8.21	6.10	4.73	9.29
50th-Percentile Queue Length [ft]	94.02	166.57	151.21	416.78	75.27	71.58	102.73	213.64	205.13	152.40	118.31	232.19
95th-Percentile Queue Length [veh]	6.77	10.90	10.08	23.37	5.42	5.15	7.40	13.34	12.90	10.14	8.30	14.29
95th-Percentile Queue Length [ft]	169.24	272.40	252.05	584.18	135.48	128.85	184.92	333.50	322.57	253.62	207.50	357.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.63	41.37	42.05	44.45	15.96	16.03	98.50	68.12	70.04	69.07	42.63	18.28
Movement LOS	E	D	D	D	B	B	F	E	E	E	D	B
d_A, Approach Delay [s/veh]	45.94			37.16			73.53			34.93		
Approach LOS	D			D			E			C		
d_I, Intersection Delay [s/veh]	43.52											
Intersection LOS	D											
Intersection V/C	0.836											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Orange Street at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	52.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Orange Street			Orange Street			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	45	55	410	192	34	20	43	1580	41	251	962	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	55	410	192	34	20	43	1580	41	251	962	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	14	103	48	9	5	11	395	10	63	241	15
Total Analysis Volume [veh/h]	45	55	410	192	34	20	43	1580	41	251	962	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	40	0	18	35	0	34	41	0	21	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	14	0	0	11	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	33	33	14	41	5	38	38	19	52	52
g / C, Green / Cycle	0.05	0.27	0.27	0.12	0.35	0.04	0.32	0.32	0.16	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.26	0.11	0.03	0.02	0.30	0.30	0.14	0.19	0.19
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1748	1774	3547	1839	1774	3547	1808
c, Capacity [veh/h]	81	510	434	207	604	80	1131	587	278	1528	779
d1, Uniform Delay [s]	56.07	32.59	42.68	52.48	26.55	56.11	39.81	39.82	49.71	24.01	24.02
k, delay calibration	0.11	0.11	0.36	0.35	0.11	0.11	0.50	0.50	0.32	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.80	0.09	25.27	36.49	0.06	5.60	16.21	25.58	24.39	0.93	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

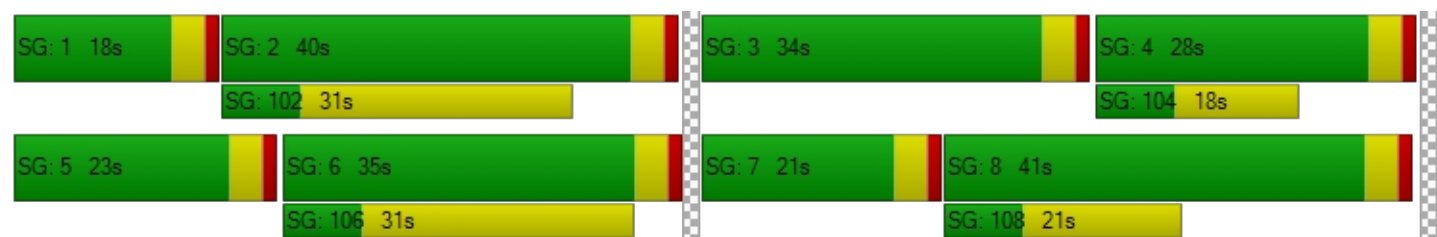
X, volume / capacity	0.55	0.11	0.94	0.93	0.09	0.54	0.94	0.94	0.90	0.44	0.44
d, Delay for Lane Group [s/veh]	61.87	32.69	67.96	88.98	26.62	61.71	56.02	65.40	74.10	24.94	25.84
Lane Group LOS	E	C	E	F	C	E	E	E	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	1.47	1.22	14.83	7.82	1.07	1.40	17.68	19.87	9.26	6.92	7.25
50th-Percentile Queue Length [ft]	36.67	30.51	370.84	195.52	26.64	35.00	442.02	496.65	231.54	172.95	181.27
95th-Percentile Queue Length [veh]	2.64	2.20	21.15	12.41	1.92	2.52	24.58	27.18	14.25	11.23	11.67
95th-Percentile Queue Length [ft]	66.00	54.92	528.75	310.18	47.94	63.01	614.42	679.39	356.31	280.79	291.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.87	32.69	67.96	88.98	26.62	26.62	61.71	59.06	65.40	74.10	25.21	25.84
Movement LOS	E	C	E	F	C	C	E	E	E	E	C	C
d_A, Approach Delay [s/veh]	63.62			75.29			59.29			34.89		
Approach LOS	E			E			E			C		
d_I, Intersection Delay [s/veh]	52.54											
Intersection LOS	D											
Intersection V/C	0.934											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	72.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.211

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	73	1	56	0	247	295	78	268	0
Total Analysis Volume [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	20	0	0	74	0	21	95	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	4	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	C	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		16	16	70	70	17	91
g / C, Green / Cycle		0.14	0.14	0.61	0.61	0.15	0.79
(v / s)_i Volume / Saturation Flow Rate		0.16	0.14	0.28	0.75	0.18	0.21
s, saturation flow rate [veh/h]		1774	1587	3547	1583	1774	5074
c, Capacity [veh/h]		247	221	2164	966	259	4014
d1, Uniform Delay [s]		49.47	49.47	12.09	22.40	49.10	3.18
k, delay calibration		0.50	0.43	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		113.48	60.40	0.69	108.92	121.49	0.16
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

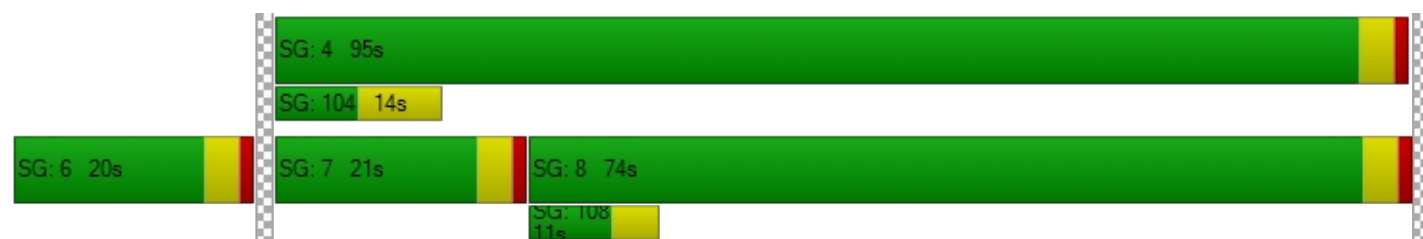
X, volume / capacity		1.18	1.02	0.46	1.22	1.20	0.27
d, Delay for Lane Group [s/veh]		162.96	109.88	12.79	131.32	170.58	3.35
Lane Group LOS		F	F	B	F	F	A
Critical Lane Group		Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]		14.87	10.03	6.75	53.00	16.12	1.77
50th-Percentile Queue Length [ft]		371.68	250.87	168.84	1325.06	403.11	44.35
95th-Percentile Queue Length [veh]		22.75	15.35	11.02	75.81	24.63	3.19
95th-Percentile Queue Length [ft]		568.77	383.76	275.39	1895.35	615.64	79.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	162.96	109.88	109.88	0.00	12.79	131.32	170.58	3.35	0.00
Movement LOS				F	F	F		B	F	F	A	
d_A, Approach Delay [s/veh]	0.00			139.81			77.36			40.98		
Approach LOS	A			F			E			D		
d_I, Intersection Delay [s/veh]	72.92											
Intersection LOS	E											
Intersection V/C	1.211											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-15 NB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 NB Ramps			I-15 NB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	450	3	338	0	0	0	333	916	0	0	921	382
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	450	3	338	0	0	0	333	916	0	0	921	382
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	1	85	0	0	0	83	229	0	0	230	96
Total Analysis Volume [veh/h]	450	3	338	0	0	0	333	916	0	0	921	382
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	47	0	0	0	0	28	43	0	0	15	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	4	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C		L	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26		19	56	33	33
g / C, Green / Cycle	0.29	0.29		0.21	0.62	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.25	0.22		0.19	0.18	0.24	0.27
s, saturation flow rate [veh/h]	1774	1585		1774	5074	3547	1612
c, Capacity [veh/h]	511	456		378	3162	1297	590
d1, Uniform Delay [s]	30.59	29.09		34.32	7.80	23.99	24.79
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.40	2.46		6.76	0.23	2.76	7.99
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.75		0.88	0.29	0.67	0.74
d, Delay for Lane Group [s/veh]	35.99	31.55		41.08	8.03	26.75	32.78
Lane Group LOS	D	C		D	A	C	C
Critical Lane Group	Yes	No		Yes	No	No	Yes
50th-Percentile Queue Length [veh]	9.77	6.80		7.60	2.50	7.96	9.02
50th-Percentile Queue Length [ft]	244.16	169.93		189.90	62.56	198.94	225.46
95th-Percentile Queue Length [veh]	14.89	11.07		12.12	4.50	12.58	13.94
95th-Percentile Queue Length [ft]	372.29	276.82		302.90	112.61	314.59	348.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.99	31.55	31.55	0.00	0.00	0.00	41.08	8.03	0.00	0.00	27.09	32.78
Movement LOS	D	C	C				D	A			C	C
d_A, Approach Delay [s/veh]	34.08			0.00			16.84			28.76		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	25.57											
Intersection LOS	C											
Intersection V/C	0.820											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 47s

SG: 3 28s

SG: 4 15s

SG: 104 11s

SG: 8 43s

SG: 108 14s

Intersection Level Of Service Report

Intersection 20: Corydon Road at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	20.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Corydon Road			Corydon Road			Palomar Street			Palomar Street		
Base Volume Input [veh/h]	23	780	233	55	619	122	145	96	19	286	138	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	780	233	55	619	122	145	96	19	286	138	67
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	195	58	14	155	31	36	24	5	72	35	17
Total Analysis Volume [veh/h]	23	780	233	55	619	122	145	96	19	286	138	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	27	0	11	27	0	0	52	0	0	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	21	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	45	45	5	47	47	28	28	28	28	28
g / C, Green / Cycle	0.03	0.50	0.50	0.06	0.53	0.53	0.31	0.31	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.01	0.22	0.15	0.03	0.20	0.20	0.12	0.05	0.01	0.22	0.12
s, saturation flow rate [veh/h]	1774	3547	1583	1774	1863	1758	1172	1863	1583	1294	1761
c, Capacity [veh/h]	61	1775	793	103	977	922	310	573	487	403	542
d1, Uniform Delay [s]	42.53	14.39	13.16	41.19	12.78	12.79	33.16	22.73	21.82	32.52	24.40
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.87	0.79	0.94	4.20	1.17	1.24	1.09	0.14	0.03	2.31	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

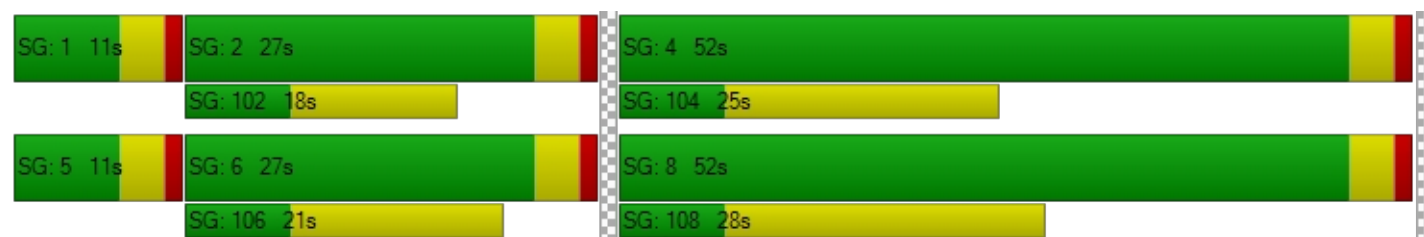
X, volume / capacity	0.38	0.44	0.29	0.53	0.39	0.39	0.47	0.17	0.04	0.71	0.38
d, Delay for Lane Group [s/veh]	46.40	15.18	14.10	45.38	13.95	14.03	34.26	22.87	21.85	34.83	24.84
Lane Group LOS	D	B	B	D	B	B	C	C	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.56	4.99	2.83	1.29	4.62	4.39	2.94	1.48	0.28	6.09	3.41
50th-Percentile Queue Length [ft]	14.02	124.71	70.67	32.33	115.50	109.69	73.59	37.07	7.05	152.28	85.36
95th-Percentile Queue Length [veh]	1.01	8.65	5.09	2.33	8.14	7.82	5.30	2.67	0.51	10.14	6.15
95th-Percentile Queue Length [ft]	25.23	216.28	127.20	58.20	203.62	195.57	132.46	66.72	12.69	253.46	153.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.40	15.18	14.10	45.38	13.98	14.03	34.26	22.87	21.85	34.83	24.84	24.84
Movement LOS	D	B	B	D	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	15.63			16.16			29.15			30.66		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.01											
Intersection LOS	C											
Intersection V/C	0.544											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	35.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.837

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	245	203	411	387	424	561
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	203	411	387	424	561
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	51	103	97	106	140
Total Analysis Volume [veh/h]	245	203	411	387	424	561
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	23	48	25	0	52	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	7	0
Pedestrian Clearance [s]	0	0	14	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	54	34	34	38	38
g / C, Green / Cycle	0.16	0.54	0.34	0.34	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.14	0.06	0.22	0.24	0.24	0.35
s, saturation flow rate [veh/h]	1774	3547	1863	1583	1774	1583
c, Capacity [veh/h]	279	1903	633	538	680	607
d1, Uniform Delay [s]	41.23	11.39	27.98	28.86	24.98	29.44
k, delay calibration	0.23	0.50	0.50	0.50	0.11	0.27
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.71	0.11	5.11	8.08	0.94	13.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

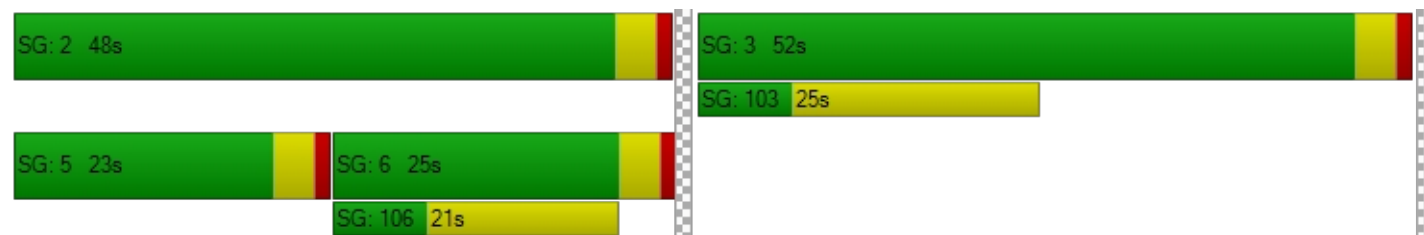
X, volume / capacity	0.88	0.11	0.65	0.72	0.62	0.92
d, Delay for Lane Group [s/veh]	57.94	11.50	33.10	36.94	25.92	43.38
Lane Group LOS	E	B	C	D	C	D
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	6.87	1.01	8.57	8.66	8.11	14.73
50th-Percentile Queue Length [ft]	171.80	25.18	214.28	216.47	202.86	368.15
95th-Percentile Queue Length [veh]	11.17	1.81	13.37	13.48	12.79	21.02
95th-Percentile Queue Length [ft]	279.28	45.33	334.31	337.12	319.65	525.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.94	11.50	33.10	36.94	25.92	43.38
Movement LOS	E	B	C	D	C	D
d_A, Approach Delay [s/veh]	36.90		34.96		35.86	
Approach LOS	D		C		D	
d_I, Intersection Delay [s/veh]	35.75					
Intersection LOS	D					
Intersection V/C	0.837					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	32	11	17	22	63	63	232	3	7	218	36
Total Analysis Volume [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	43	50	0	11	18	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	7	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	15	50	50	4	38	38
g / C, Green / Cycle	0.28	0.28	0.17	0.55	0.55	0.04	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.13	0.26	0.14	0.25	0.25	0.02	0.28	0.28
s, saturation flow rate [veh/h]	1533	1584	1774	1863	1855	1774	1863	1773
c, Capacity [veh/h]	467	483	293	1025	1021	73	794	755
d1, Uniform Delay [s]	26.54	31.71	36.51	12.18	12.18	42.07	20.56	20.56
k, delay calibration	0.11	0.39	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.60	13.72	6.93	1.48	1.48	3.44	4.17	4.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

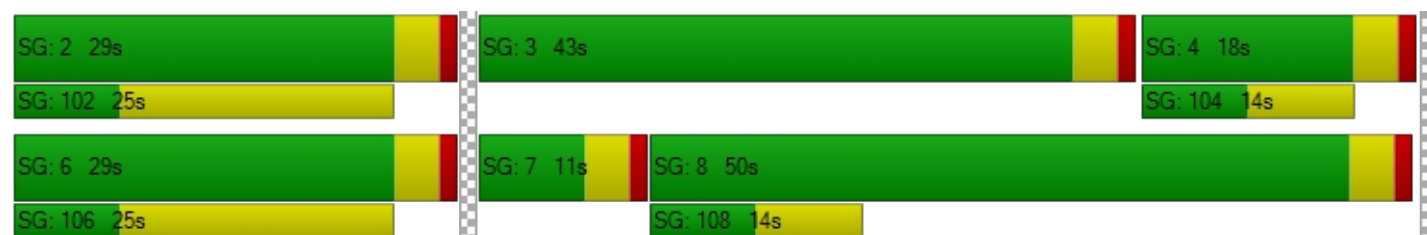
X, volume / capacity	0.42	0.85	0.85	0.46	0.46	0.40	0.65	0.65
d, Delay for Lane Group [s/veh]	27.14	45.43	43.44	13.66	13.67	45.51	24.73	24.94
Lane Group LOS	C	D	D	B	B	D	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.43	10.25	5.60	5.23	5.22	0.67	8.68	8.30
50th-Percentile Queue Length [ft]	85.77	256.31	140.06	130.85	130.38	16.80	216.92	207.61
95th-Percentile Queue Length [veh]	6.18	15.50	9.48	8.99	8.96	1.21	13.51	13.03
95th-Percentile Queue Length [ft]	154.38	387.59	237.10	224.65	224.02	30.25	337.69	325.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.14	27.14	27.14	45.43	45.43	45.43	43.44	13.66	13.67	45.51	24.82	24.94
Movement LOS	C	C	C	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	27.14			45.43			19.93			25.41		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	26.13											
Intersection LOS	C											
Intersection V/C	0.783											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Corydon Road at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	Corydon Road			Corydon Road			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	32	43	15	31	32	958	940	97	12	5	54	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	43	15	31	32	958	940	97	12	5	54	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	11	4	8	8	240	235	24	3	1	14	6
Total Analysis Volume [veh/h]	32	43	15	31	32	958	940	97	12	5	54	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	6	3	8	0	0	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	7	7	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	0	0	35	35	58	80	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	18	18	0	0	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No	No	No	No			No	
Maximum Recall		No			No	No	No	No			No	
Pedestrian Recall		No			No	No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	85	76	76	76	22	22	22
g / C, Green / Cycle	0.27	0.27	0.74	0.66	0.66	0.66	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.61	0.58	0.03	0.03	0.00	0.02	0.02
s, saturation flow rate [veh/h]	1541	1512	1583	1632	1863	1792	1279	1863	1679
c, Capacity [veh/h]	458	454	1176	1148	1231	1184	268	350	315
d1, Uniform Delay [s]	32.53	31.78	9.63	14.14	6.82	6.82	40.64	38.74	38.82
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.14	6.26	6.56	0.07	0.07	0.13	0.65	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.14	0.81	0.82	0.05	0.05	0.02	0.11	0.12
d, Delay for Lane Group [s/veh]	32.73	31.92	15.89	20.70	6.89	6.89	40.77	39.40	39.62
Lane Group LOS	C	C	B	C	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.01	1.36	14.96	17.99	0.48	0.46	0.13	0.99	0.98
50th-Percentile Queue Length [ft]	50.27	33.89	373.97	449.63	11.97	11.54	3.24	24.76	24.56
95th-Percentile Queue Length [veh]	3.62	2.44	21.30	24.94	0.86	0.83	0.23	1.78	1.77
95th-Percentile Queue Length [ft]	90.48	61.00	532.54	623.51	21.54	20.77	5.83	44.57	44.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.73	32.73	32.73	31.92	31.92	15.89	20.70	6.89	6.89	40.77	39.46	39.62
Movement LOS	C	C	C	C	C	B	C	A	A	D	D	D
d_A, Approach Delay [s/veh]	32.73			16.88			19.26			39.58		
Approach LOS	C			B			B			D		
d_I, Intersection Delay [s/veh]	19.47											
Intersection LOS	B											
Intersection V/C	0.836											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	341.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.948

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	366	747	375	1945	1097	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	366	747	375	1945	1097	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	187	94	486	274	33
Total Analysis Volume [veh/h]	366	747	375	1945	1097	133
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	17	96	79	0	24	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	92	75	75	20	20
g / C, Green / Cycle	0.11	0.77	0.62	0.62	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.11	1.23	0.32	0.08
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	193	2718	2215	989	575	264
d1, Uniform Delay [s]	53.47	4.15	9.46	22.53	49.97	45.45
k, delay calibration	0.50	0.50	0.50	0.50	0.40	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	423.39	0.25	0.17	438.91	413.78	1.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.90	0.27	0.17	1.97	1.91	0.50
d, Delay for Lane Group [s/veh]	476.86	4.40	9.63	461.44	463.76	46.93
Lane Group LOS	F	A	A	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	28.47	2.41	2.07	145.88	41.63	3.72
50th-Percentile Queue Length [ft]	711.71	60.28	51.72	3646.98	1040.70	93.05
95th-Percentile Queue Length [veh]	44.93	4.34	3.72	237.88	65.25	6.70
95th-Percentile Queue Length [ft]	1123.24	108.51	93.09	5947.02	1631.25	167.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	476.86	4.40	9.63	461.44	463.76	46.93
Movement LOS	F	A	A	F	F	D
d_A, Approach Delay [s/veh]	159.76		388.41		418.68	
Approach LOS	F		F		F	
d_I, Intersection Delay [s/veh]	341.82					
Intersection LOS	F					
Intersection V/C	1.948					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: Diamond Drive at Olive Street

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

Intersection Setup

Name	Diamond Drive		Diamond Drive		Olive Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Olive Street	
Base Volume Input [veh/h]	221	37	72	221	31	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	221	37	72	221	31	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	9	18	55	8	16
Total Analysis Volume [veh/h]	221	37	72	221	31	63
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.06	0.00	0.07	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	7.92	0.00	13.40	9.83
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.38	0.19	0.47	0.47
95th-Percentile Queue Length [ft]	0.00	0.00	9.47	4.73	11.69	11.69
d_A, Approach Delay [s/veh]	0.00		1.95		11.00	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.49					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 26: "A" Street at Olive Street

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 4.0
 Level Of Service: A

Intersection Setup

Name	"A" Street		Olive Street		Olive Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Olive Street		Olive Street	
Base Volume Input [veh/h]	73	13	16	94	10	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	13	16	94	10	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	3	4	24	3	5
Total Analysis Volume [veh/h]	73	13	16	94	10	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	16		10		74	
Exiting Flow Rate [veh/h]	16		10		74	
Demand Flow Rate [veh/h]	73	13	16	94	10	19
Adjusted Demand Flow Rate [veh/h]	73	13	16	94	10	19

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	88		113		30	
Capacity of Entry and Bypass Lanes [veh/h]	1112		1119		1049	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1090		1097		1029	
X, volume / capacity	0.08		0.10		0.03	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.33	0.09
95th-Percentile Queue Length [ft]	6.41	8.34	2.17
Approach Delay [s/veh]	3.98	4.15	3.74
Approach LOS	A	A	A
Intersection Delay [s/veh]	4.03		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 27: "A" Street at Victorian Lane

Control Type: Roundabout
 Analysis Method: HCM
 Analysis Period: 15 minutes

Delay (sec / veh): 3.6
 Level Of Service: A

Intersection Setup

Name	"A" Street		"A" Street		Victorian Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		"A" Street		Victorian Lane	
Base Volume Input [veh/h]	46	4	6	33	7	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	4	6	33	7	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	1	2	8	2	1
Total Analysis Volume [veh/h]	46	4	6	33	7	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	6		7		47	
Exiting Flow Rate [veh/h]	6		7		47	
Demand Flow Rate [veh/h]	46	4	6	33	7	5
Adjusted Demand Flow Rate [veh/h]	46	4	6	33	7	5

Lanes

Overwrite Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Overwrite Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1130.00		1130.00		1130.00	
B (coefficient)	0.00100		0.00100		0.00100	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	51		40		13	
Capacity of Entry and Bypass Lanes [veh/h]	1124		1122		1079	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1102		1100		1058	
X, volume / capacity	0.05		0.04		0.01	

Movement, Approach, & Intersection Results

Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.11	0.03
95th-Percentile Queue Length [ft]	3.56	2.75	0.86
Approach Delay [s/veh]	3.65	3.57	3.50
Approach LOS	A	A	A
Intersection Delay [s/veh]	3.60		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 28: "A" Street at Cereal Street

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	"A" Street		Cereal Street		Cereal Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	"A" Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	32	9	16	288	279	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	9	16	288	279	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	4	72	70	8
Total Analysis Volume [veh/h]	32	9	16	288	279	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.50	9.67	7.93	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.23	0.23	0.42	0.21	0.00	0.00
95th-Percentile Queue Length [ft]	5.86	5.86	10.39	5.19	0.00	0.00
d_A, Approach Delay [s/veh]	11.88		0.42		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.94					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 29: Lucerne Street at Sylvester Street

Control Type:	Two-way stop	Delay (sec / veh):	36.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.243

Intersection Setup

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Lucerne Street		Lucerne Street		Sylvester Street	
Base Volume Input [veh/h]	801	40	11	892	37	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	801	40	11	892	37	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	200	10	3	223	9	3
Total Analysis Volume [veh/h]	801	40	11	892	37	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.24	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	9.62	0.00	36.00	11.30
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh]	0.00	0.00	3.68	1.84	0.90	0.05
95th-Percentile Queue Length [ft]	0.00	0.00	92.01	46.00	22.61	1.31
d_A, Approach Delay [s/veh]	0.00		0.12		30.75	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.87					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 30: Stoneman Street at Cereal Street

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name	Stoneman Street		Cereal Street		Cereal Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Stoneman Street		Cereal Street		Cereal Street	
Base Volume Input [veh/h]	181	248	229	184	252	223
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	248	229	184	252	223
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	62	57	46	63	56
Total Analysis Volume [veh/h]	181	248	229	184	252	223
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	22	0	15	37
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	18	0	11	0	0	0
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	46	46	15	65
g / C, Green / Cycle	0.19	0.19	0.51	0.51	0.17	0.73
(v / s)_i Volume / Saturation Flow Rate	0.10	0.16	0.11	0.13	0.14	0.06
s, saturation flow rate [veh/h]	1774	1583	1863	1610	1774	3547
c, Capacity [veh/h]	330	295	957	827	296	2571
d1, Uniform Delay [s]	33.21	35.36	11.97	12.21	36.43	3.63
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.42	6.41	0.52	0.72	6.83	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

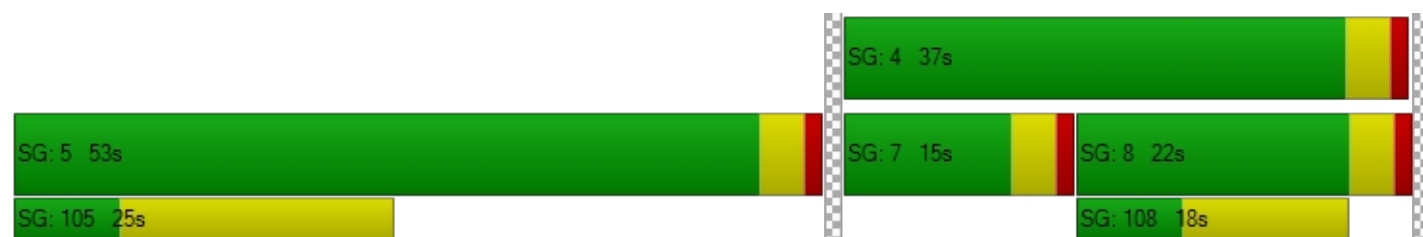
X, volume / capacity	0.55	0.84	0.22	0.25	0.85	0.09
d, Delay for Lane Group [s/veh]	34.62	41.77	12.49	12.94	43.26	3.70
Lane Group LOS	C	D	B	B	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	3.65	5.66	2.29	2.36	5.84	0.50
50th-Percentile Queue Length [ft]	91.29	141.56	57.24	59.03	145.90	12.46
95th-Percentile Queue Length [veh]	6.57	9.57	4.12	4.25	9.80	0.90
95th-Percentile Queue Length [ft]	164.32	239.13	103.03	106.26	244.95	22.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.62	41.77	12.54	12.94	43.26	3.70
Movement LOS	C	D	B	B	D	A
d_A, Approach Delay [s/veh]	38.75		12.71		24.69	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	25.52					
Intersection LOS	C					
Intersection V/C	0.493					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX F-III

**YEAR 2040 WITH ELSP PROJECT BUILDOUT
WITH MITIGATION TRAFFIC CONDITIONS**

Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	109.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.278

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	431	1100	547	473	1857	529	315	396	472	585	445	347
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	431	1100	547	473	1857	529	315	396	472	585	445	347
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	275	0	118	464	132	79	99	118	146	111	87
Total Analysis Volume [veh/h]	431	1100	0	473	1857	529	315	396	472	585	445	347
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	8	7	4	4
Auxiliary Signal Groups									5,8			1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	26	38	0	18	30	0	20	40	40	19	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No	No	No	No	No
Maximum Recall	No	No		No	No		No	No	No	No	No	No
Pedestrian Recall	No	No		No	No		No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	22	51	51	14	43	43	16	19	45	15	18	36
g / C, Green / Cycle	0.19	0.44	0.44	0.12	0.37	0.37	0.14	0.16	0.39	0.13	0.16	0.31
(v / s)_i Volume / Saturation Flow Rate	0.24	0.22	0.00	0.14	0.44	0.49	0.18	0.11	0.30	0.17	0.13	0.22
s, saturation flow rate [veh/h]	1774	5074	1583	3445	3547	1672	1774	3547	1583	3445	3547	1583
c, Capacity [veh/h]	340	2250	702	421	1327	625	247	584	619	451	553	495
d1, Uniform Delay [s]	46.53	22.76	0.00	50.51	36.01	36.01	49.51	45.21	30.43	50.01	46.88	34.79
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.50	0.17	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	142.34	0.76	0.00	63.01	90.23	149.02	150.44	1.39	8.66	139.52	2.81	8.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.27	0.49	0.00	1.12	1.18	1.31	1.27	0.68	0.76	1.30	0.80	0.70
d, Delay for Lane Group [s/veh]	188.87	23.53	0.00	113.52	126.25	185.03	199.95	46.60	39.09	189.53	49.69	42.81
Lane Group LOS	F	C	A	F	F	F	F	D	D	F	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	23.07	7.13	0.00	9.72	34.76	42.98	17.42	5.42	12.65	15.19	6.35	9.59
50th-Percentile Queue Length [ft]	576.77	178.18	0.00	243.02	868.91	1074.38	435.58	135.55	316.15	379.81	158.66	239.66
95th-Percentile Queue Length [veh]	34.71	11.51	0.00	15.55	49.62	63.34	26.85	9.24	18.48	23.94	10.48	14.66
95th-Percentile Queue Length [ft]	867.67	287.64	0.00	388.81	1240.59	1583.41	671.29	231.02	461.95	598.43	261.95	366.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	188.87	23.53	0.00	113.52	135.35	185.03	199.95	46.60	39.09	189.53	49.69	42.81
Movement LOS	F	C	A	F	F	F	F	D	D	F	D	D
d_A, Approach Delay [s/veh]	70.07			140.93			84.44			107.37		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	109.06											
Intersection LOS	F											
Intersection V/C	1.278											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	314	56	252	380	0	151	1	79	0	0	0
Total Analysis Volume [veh/h]	0	1255	224	1008	1519	0	602	2	316	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	11	0	59	70	0	0	25	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	18	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	32	32	32	68	19	19	19	
g / C, Green / Cycle	0.34	0.34	0.33	0.72	0.20	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.25	0.14	0.29	0.30	0.17	0.07	0.07	
s, saturation flow rate [veh/h]	5074	1583	3445	5074	3445	1587	2803	
c, Capacity [veh/h]	1723	538	1148	3627	692	319	563	
d1, Uniform Delay [s]	27.54	24.14	29.86	5.51	36.76	32.70	32.71	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.74	2.37	2.34	0.36	3.53	0.68	0.39	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

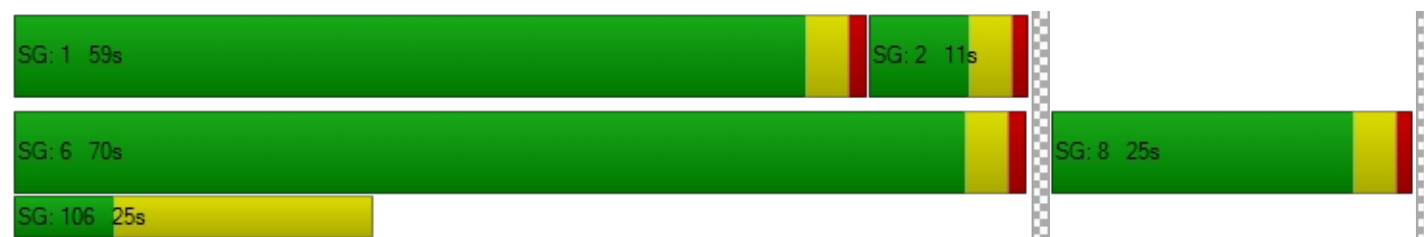
X, volume / capacity	0.73	0.42	0.88	0.42	0.87	0.36	0.36	
d, Delay for Lane Group [s/veh]	30.28	26.51	32.19	5.87	40.30	33.39	33.10	
Lane Group LOS	C	C	C	A	D	C	C	
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	8.52	4.15	10.86	3.47	6.98	2.31	2.02	
50th-Percentile Queue Length [ft]	213.01	103.71	271.39	86.78	174.53	57.87	50.62	
95th-Percentile Queue Length [veh]	13.31	7.47	16.26	6.25	11.31	4.17	3.64	
95th-Percentile Queue Length [ft]	332.69	186.68	406.48	156.21	282.86	104.17	91.11	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	30.28	26.51	32.19	5.87	0.00	40.30	33.39	33.20	0.00	0.00	0.00
Movement LOS		C	C	C	A		D	C	C			
d_A, Approach Delay [s/veh]	29.71			16.37			37.84			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	24.39											
Intersection LOS	C											
Intersection V/C	0.818											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr**

Control Type:	Signalized	Delay (sec / veh):	124.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.274

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	279	16	26	292	134	82	52	120	8	56	9
Total Analysis Volume [veh/h]	607	1117	64	103	1167	534	328	209	481	32	222	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	34	55	0	26	47	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	66	66	7	43	43	35	35	35	35	35	35
g / C, Green / Cycle	0.25	0.55	0.55	0.06	0.36	0.36	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.34	0.22	0.22	0.03	0.46	0.50	0.29	0.11	0.30	0.04	0.07	0.07
s, saturation flow rate [veh/h]	1774	3547	1812	3445	1863	1674	1117	1863	1583	750	1863	1774
c, Capacity [veh/h]	444	1954	998	197	667	600	306	543	462	60	543	517
d1, Uniform Delay [s]	44.96	15.50	15.51	54.94	38.49	38.49	49.37	33.89	42.48	59.96	32.36	32.41
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.46	0.11	0.49	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	179.43	0.61	1.20	2.14	143.26	188.67	70.35	0.45	52.61	7.13	0.23	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

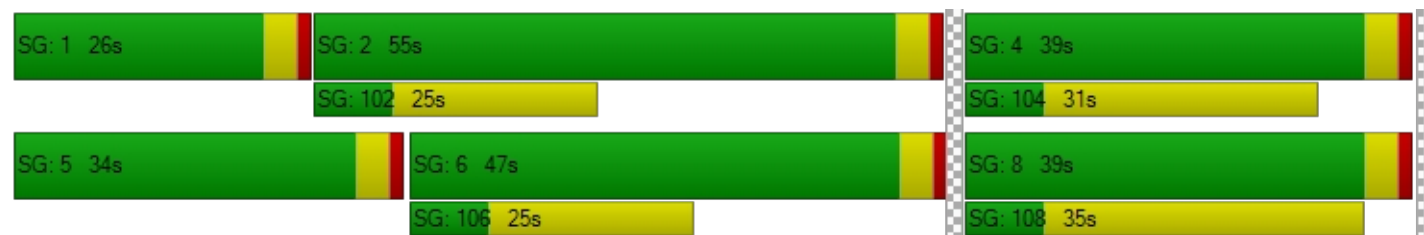
X, volume / capacity	1.37	0.40	0.40	0.52	1.29	1.40	1.07	0.38	1.04	0.53	0.24	0.25
d, Delay for Lane Group [s/veh]	224.40	16.11	16.70	57.08	181.75	227.16	119.72	34.34	95.09	67.10	32.58	32.66
Lane Group LOS	F	B	B	E	F	F	F	C	F	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	35.20	6.21	6.52	1.57	45.78	48.71	15.27	4.95	20.26	1.09	2.94	2.88
50th-Percentile Queue Length [ft]	880.03	155.25	162.94	39.35	1144.44	1217.81	381.87	123.63	506.42	27.33	73.61	71.97
95th-Percentile Queue Length [veh]	52.77	10.30	10.70	2.83	66.67	73.01	22.62	8.59	28.37	1.97	5.30	5.18
95th-Percentile Queue Length [ft]	1319.29	257.42	267.61	70.83	1666.81	1825.30	565.53	214.81	709.14	49.19	132.50	129.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	224.40	16.29	16.70	57.08	193.57	227.16	119.72	34.34	95.09	67.10	32.61	32.66
Movement LOS	F	B	B	E	F	F	F	C	F	E	C	C
d_A, Approach Delay [s/veh]	86.95			195.72			90.55			36.43		
Approach LOS	F			F			F			D		
d_I, Intersection Delay [s/veh]	124.75											
Intersection LOS	F											
Intersection V/C	1.274											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	206.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.224

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	136	11	163	104	192	154	66	17	32	63	187
Total Analysis Volume [veh/h]	57	542	45	652	417	769	617	264	66	127	253	747
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	11	39	0	16	44	0	26	32	0	33	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	51	51	12	57	57	22	31	31	11	19	35
g / C, Green / Cycle	0.05	0.42	0.42	0.10	0.47	0.47	0.18	0.26	0.26	0.09	0.16	0.29
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.19	0.22	0.49	0.35	0.06	0.06	0.07	0.05	0.47
s, saturation flow rate [veh/h]	1774	3547	1791	3445	1863	1583	1774	3547	1680	1774	5074	1583
c, Capacity [veh/h]	88	1496	755	345	879	747	325	912	432	156	819	467
d1, Uniform Delay [s]	55.98	22.54	22.57	54.00	21.55	31.68	49.00	35.34	35.37	53.79	44.41	42.31
k, delay calibration	0.11	0.50	0.50	0.35	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	7.63	0.42	0.85	408.14	1.83	40.53	414.87	0.14	0.30	9.88	0.21	279.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.64	0.26	0.26	1.89	0.47	1.03	1.90	0.24	0.25	0.82	0.31	1.60
d, Delay for Lane Group [s/veh]	63.61	22.96	23.42	462.14	23.38	72.21	463.87	35.48	35.67	63.67	44.62	322.10
Lane Group LOS	E	C	C	F	C	F	F	D	D	E	D	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	1.88	3.66	3.83	24.75	8.34	29.21	47.19	2.62	2.54	4.19	2.24	49.96
50th-Percentile Queue Length [ft]	47.08	91.45	95.84	618.83	208.53	730.28	1179.63	65.60	63.42	104.82	56.07	1249.07
95th-Percentile Queue Length [veh]	3.39	6.58	6.90	39.42	13.08	38.94	73.63	4.72	4.57	7.55	4.04	77.31
95th-Percentile Queue Length [ft]	84.74	164.62	172.51	985.43	326.94	973.53	1840.84	118.08	114.16	188.68	100.93	1932.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.61	23.09	23.42	462.14	23.38	72.21	463.87	35.51	35.67	63.67	44.62	322.10
Movement LOS	E	C	C	F	C	F	F	D	D	E	D	F
d_A, Approach Delay [s/veh]	26.70			199.45			314.61			230.69		
Approach LOS	C			F			F			F		
d_I, Intersection Delay [s/veh]	206.70											
Intersection LOS	F											
Intersection V/C	1.224											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Signalized	Delay (sec / veh):	2.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.256

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	278	2	4	222	2	2	0	0	1	0	1
Total Analysis Volume [veh/h]	11	1112	8	16	886	9	8	1	1	3	1	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	44	0	11	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	74	74	2	75	75	2	2
g / C, Green / Cycle	0.02	0.82	0.82	0.03	0.83	0.83	0.02	0.02
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.21	0.01	0.17	0.17	0.01	0.00
s, saturation flow rate [veh/h]	1774	3547	1856	1774	3547	1853	1816	1826
c, Capacity [veh/h]	35	2913	1524	48	2938	1535	106	89
d1, Uniform Delay [s]	43.51	1.81	1.81	43.02	1.59	1.59	43.61	43.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.86	0.21	0.40	4.05	0.15	0.29	0.39	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

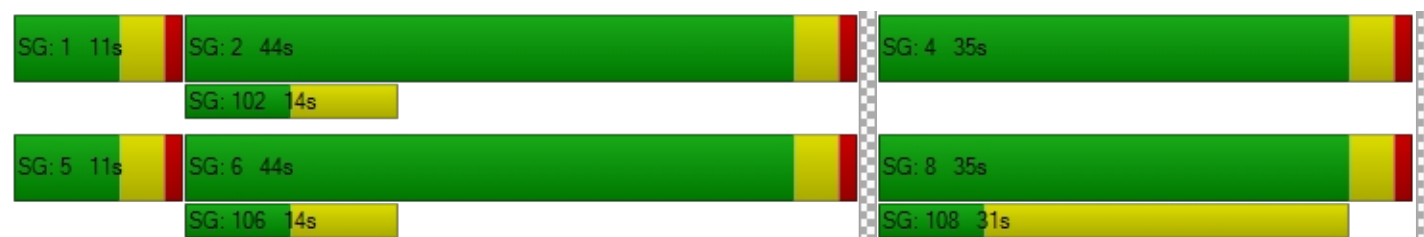
X, volume / capacity	0.31	0.25	0.25	0.34	0.20	0.20	0.09	0.09
d, Delay for Lane Group [s/veh]	48.37	2.02	2.21	47.07	1.74	1.88	43.99	44.00
Lane Group LOS	D	A	A	D	A	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.28	0.49	0.59	0.39	0.31	0.38	0.23	0.18
50th-Percentile Queue Length [ft]	7.00	12.21	14.80	9.73	7.71	9.56	5.73	4.62
95th-Percentile Queue Length [veh]	0.50	0.88	1.07	0.70	0.56	0.69	0.41	0.33
95th-Percentile Queue Length [ft]	12.59	21.99	26.63	17.52	13.88	17.20	10.32	8.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.37	2.09	2.21	47.07	1.79	1.88	43.99	43.99	43.99	44.00	44.00	44.00
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	2.54			2.59			43.99			44.00		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	2.92											
Intersection LOS	A											
Intersection V/C	0.256											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.220

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TLO			TLO			TLO			TLO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	103	8	3	43	3	5	2	0	7	5	21
Total Analysis Volume [veh/h]	2	410	30	12	173	13	20	6	1	26	19	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	32	0	11	32	32	11	34	0	13	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	21	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	63	63	2	64	71	3	6	6	3	6	6
g / C, Green / Cycle	0.00	0.70	0.70	0.02	0.71	0.79	0.03	0.07	0.07	0.04	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.12	0.00	0.05	0.01	0.01	0.00	0.00	0.01	0.01	0.05
s, saturation flow rate [veh/h]	1774	1863	1819	3445	3547	1583	3445	1863	1773	1774	1863	1583
c, Capacity [veh/h]	9	1297	1266	74	2528	1249	110	123	117	69	135	115
d1, Uniform Delay [s]	44.68	4.72	4.73	43.32	3.91	2.02	42.49	39.40	39.40	42.29	39.17	40.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.69	0.29	0.30	1.00	0.05	0.00	0.78	0.09	0.10	3.43	0.47	7.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

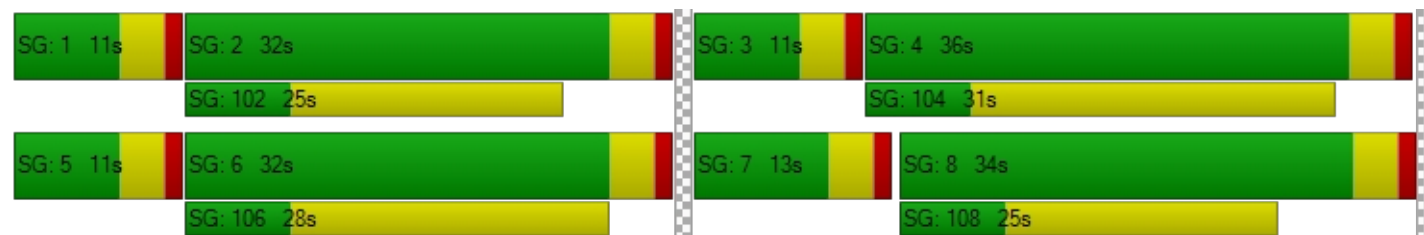
X, volume / capacity	0.22	0.17	0.17	0.16	0.07	0.01	0.18	0.03	0.03	0.38	0.14	0.71
d, Delay for Lane Group [s/veh]	56.37	5.01	5.02	44.32	3.96	2.02	43.27	39.49	39.51	45.73	39.64	48.79
Lane Group LOS	E	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	1.28	1.26	0.14	0.41	0.03	0.23	0.08	0.08	0.62	0.41	2.01
50th-Percentile Queue Length [ft]	1.84	32.00	31.55	3.51	10.15	0.80	5.67	1.88	1.88	15.61	10.20	50.28
95th-Percentile Queue Length [veh]	0.13	2.30	2.27	0.25	0.73	0.06	0.41	0.14	0.14	1.12	0.73	3.62
95th-Percentile Queue Length [ft]	3.31	57.59	56.80	6.32	18.26	1.45	10.20	3.38	3.38	28.10	18.36	90.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.37	5.01	5.02	44.32	3.96	2.02	43.27	39.50	39.51	45.73	39.64	48.79
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.25			6.28			42.29			46.80		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	13.41											
Intersection LOS	B											
Intersection V/C	0.220											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	59	0	90	0	251	199	145	278	0
Total Analysis Volume [veh/h]	0	0	0	234	1	361	0	1003	797	580	1112	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	25	0	0	18	0	47	65	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		15	15	15	32	32	32	32	67
g / C, Green / Cycle		0.16	0.16	0.16	0.35	0.35	0.35	0.35	0.75
(v / s)_i Volume / Saturation Flow Rate		0.13	0.11	0.11	0.25	0.28	0.28	0.33	0.22
s, saturation flow rate [veh/h]		1774	1585	1583	3547	1583	1583	1774	5074
c, Capacity [veh/h]		288	257	257	1246	556	556	627	3801
d1, Uniform Delay [s]		36.41	35.69	35.69	25.39	26.47	26.47	27.97	3.63
k, delay calibration		0.12	0.11	0.11	0.50	0.50	0.50	0.17	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		6.16	3.53	3.53	3.65	12.02	12.02	9.23	0.20
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

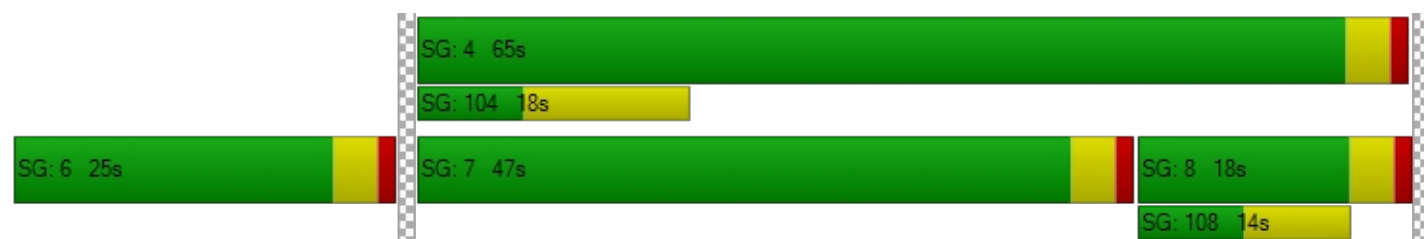
X, volume / capacity		0.81	0.71	0.71	0.72	0.81	0.81	0.93	0.29
d, Delay for Lane Group [s/veh]		42.58	39.22	39.22	29.04	38.49	38.49	37.21	3.83
Lane Group LOS		D	D	D	C	D	D	D	A
Critical Lane Group		Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		5.36	3.95	3.94	8.67	10.24	10.24	13.06	1.68
50th-Percentile Queue Length [ft]		134.11	98.67	98.59	216.72	255.91	255.91	326.52	41.89
95th-Percentile Queue Length [veh]		9.16	7.10	7.10	13.50	15.48	15.48	18.99	3.02
95th-Percentile Queue Length [ft]		229.08	177.60	177.47	337.44	387.09	387.09	474.69	75.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	42.58	39.22	39.22	0.00	29.04	38.49	37.21	3.83	0.00
Movement LOS				D	D	D		C	D	D	A	
d_A, Approach Delay [s/veh]	0.00			40.54			33.76			15.27		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	27.10											
Intersection LOS	C											
Intersection V/C	0.857											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	555	661	508	124	163	628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	555	661	508	124	163	628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	165	127	31	41	157
Total Analysis Volume [veh/h]	555	661	508	124	163	628
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Overlap
Signal group	5	2	6	0	3	3
Auxiliary Signal Groups						3,5
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	7
Maximum Green [s]	30	30	30	0	30	30
Amber [s]	3.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	1.0	0.0	1.0	1.0
Split [s]	35	85	50	0	35	35
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	0	7	0	7	7
Pedestrian Clearance [s]	0	0	18	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No	No		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	31	81	46	46	31	66
g / C, Green / Cycle	0.26	0.67	0.38	0.38	0.26	0.55
(v / s)_i Volume / Saturation Flow Rate	0.16	0.19	0.27	0.08	0.09	0.40
s, saturation flow rate [veh/h]	3445	3547	1863	1583	1774	1583
c, Capacity [veh/h]	890	2393	714	606	459	871
d1, Uniform Delay [s]	39.31	7.79	31.38	24.76	36.31	20.10
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.72	0.29	5.96	0.76	0.47	5.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

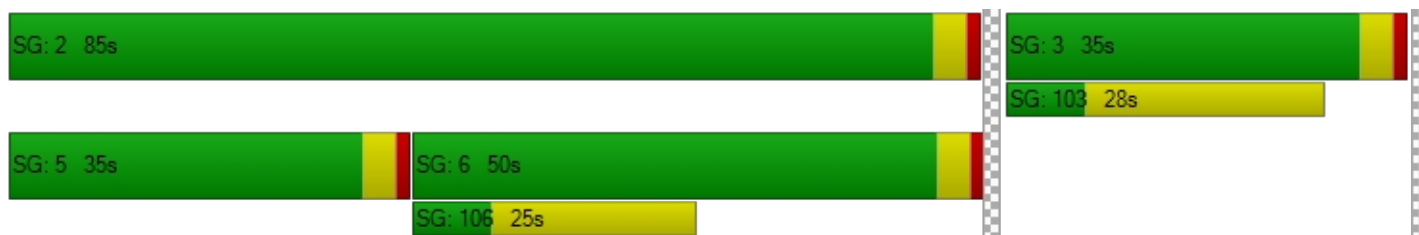
X, volume / capacity	0.62	0.28	0.71	0.20	0.36	0.72
d, Delay for Lane Group [s/veh]	40.03	8.08	37.35	25.53	36.78	25.23
Lane Group LOS	D	A	D	C	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	7.01	2.95	12.89	2.38	3.98	13.84
50th-Percentile Queue Length [ft]	175.23	73.87	322.24	59.58	99.44	346.04
95th-Percentile Queue Length [veh]	11.35	5.32	18.78	4.29	7.16	19.94
95th-Percentile Queue Length [ft]	283.78	132.97	469.44	107.25	178.99	498.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.03	8.08	37.35	25.53	36.78	25.23
Movement LOS	D	A	D	C	D	C
d_A, Approach Delay [s/veh]	22.66		35.03		27.61	
Approach LOS	C		D		C	
d_I, Intersection Delay [s/veh]	27.10					
Intersection LOS	C					
Intersection V/C	0.802					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	52.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	43	30	16	5	3	1	275	26	30	234	10
Total Analysis Volume [veh/h]	478	170	118	63	21	10	3	1098	103	121	936	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	60	0	0	60	0	20	43	0	12	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	11	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	56	56	56	1	39	39	8	46	46
g / C, Green / Cycle	0.49	0.49	0.49	0.01	0.34	0.34	0.07	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.35	0.17	0.10	0.00	0.33	0.33	0.07	0.26	0.26
s, saturation flow rate [veh/h]	1373	1737	969	1774	1863	1807	1774	1863	1837
c, Capacity [veh/h]	484	846	524	10	630	611	126	751	741
d1, Uniform Delay [s]	41.93	18.15	21.88	56.96	37.44	37.47	53.28	27.79	27.79
k, delay calibration	0.26	0.11	0.11	0.11	0.50	0.50	0.33	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	26.42	0.24	0.16	16.35	28.66	29.51	56.12	4.38	4.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

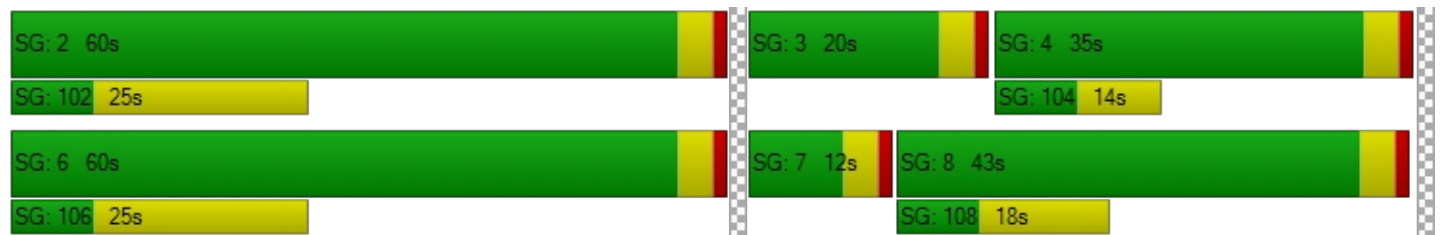
X, volume / capacity	0.99	0.34	0.18	0.30	0.97	0.97	0.96	0.65	0.65
d, Delay for Lane Group [s/veh]	68.34	18.39	22.05	73.31	66.10	66.98	109.40	32.17	32.23
Lane Group LOS	E	B	C	E	E	E	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	17.44	4.72	1.75	0.13	20.91	20.47	5.35	11.23	11.09
50th-Percentile Queue Length [ft]	436.10	117.98	43.68	3.24	522.77	511.76	133.80	280.69	277.24
95th-Percentile Queue Length [veh]	24.29	8.28	3.14	0.23	28.41	27.89	9.15	16.72	16.55
95th-Percentile Queue Length [ft]	607.34	207.04	78.62	5.83	710.25	697.27	228.65	418.07	413.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.34	18.39	18.39	22.05	22.05	22.05	73.31	66.49	66.98	109.40	32.20	32.23
Movement LOS	E	B	B	C	C	C	E	E	E	F	C	C
d_A, Approach Delay [s/veh]	49.56			22.05			66.55			40.73		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	52.16											
Intersection LOS	D											
Intersection V/C	0.831											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	371	558	257	902	712	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	371	558	257	902	712	93
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	140	64	0	178	23
Total Analysis Volume [veh/h]	371	558	257	0	712	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	51	62	11	0	28	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	61	36	36	21	21
g / C, Green / Cycle	0.23	0.68	0.40	0.40	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.21	0.16	0.07	0.00	0.21	0.06
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	417	2399	1408	629	809	372
d1, Uniform Delay [s]	33.32	5.59	17.64	0.00	33.24	28.01
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.67	0.23	0.29	0.00	3.34	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

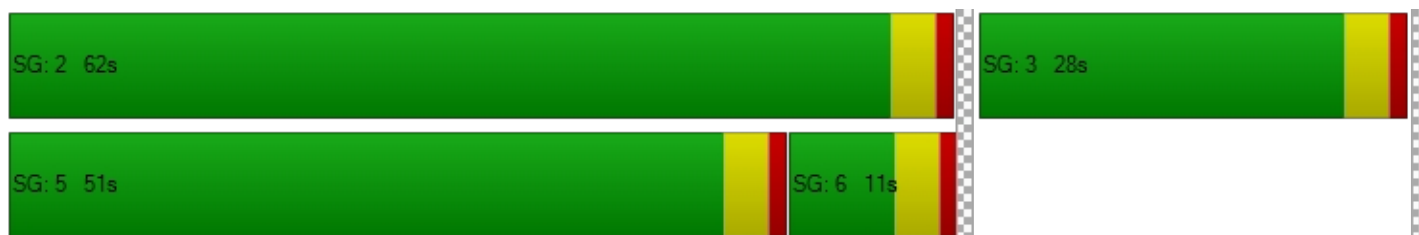
X, volume / capacity	0.89	0.23	0.18	0.00	0.88	0.25
d, Delay for Lane Group [s/veh]	39.99	5.82	17.93	0.00	36.58	28.36
Lane Group LOS	D	A	B	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	8.40	1.80	1.74	0.00	7.67	1.64
50th-Percentile Queue Length [ft]	209.90	44.96	43.59	0.00	191.75	41.06
95th-Percentile Queue Length [veh]	13.15	3.24	3.14	0.00	12.21	2.96
95th-Percentile Queue Length [ft]	328.70	80.92	78.47	0.00	305.30	73.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.99	5.82	17.93	0.00	36.58	28.36
Movement LOS	D	A	B	A	D	C
d_A, Approach Delay [s/veh]	19.47		17.93		35.63	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	25.80					
Intersection LOS	C					
Intersection V/C	0.563					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	115.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.358

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	537	1803	653	457	1269	293	608	687	566	499	568	628
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	1803	653	457	1269	293	608	687	566	499	568	628
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	451	0	114	317	73	152	172	142	125	142	157
Total Analysis Volume [veh/h]	537	1803	0	457	1269	293	608	687	566	499	568	628
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	8	7	4	4
Auxiliary Signal Groups									5,8			1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	26	33	0	19	26	0	29	44	44	24	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No	No	No	No	No
Maximum Recall	No	No		No	No		No	No	No	No	No	No
Pedestrian Recall	No	No		No	No		No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	22	40	40	15	33	33	25	29	55	19	24	43
g / C, Green / Cycle	0.18	0.34	0.34	0.13	0.28	0.28	0.21	0.24	0.46	0.16	0.20	0.36
(v / s)_i Volume / Saturation Flow Rate	0.30	0.36	0.00	0.13	0.30	0.30	0.34	0.19	0.36	0.14	0.16	0.40
s, saturation flow rate [veh/h]	1774	5074	1583	3445	3547	1691	1774	3547	1583	3445	3547	1583
c, Capacity [veh/h]	326	1700	531	434	983	469	370	868	731	555	700	565
d1, Uniform Delay [s]	49.03	39.94	0.00	52.50	43.41	43.41	47.54	42.49	27.09	49.42	46.06	38.64
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	305.08	39.90	0.00	36.11	49.68	66.68	301.82	1.67	7.84	5.55	2.32	72.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.65	1.06	0.00	1.05	1.07	1.09	1.64	0.79	0.77	0.90	0.81	1.11
d, Delay for Lane Group [s/veh]	354.12	79.83	0.00	88.61	93.09	110.09	349.37	44.16	34.92	54.97	48.38	111.16
Lane Group LOS	F	F	A	F	F	F	F	D	C	D	D	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	37.33	22.70	0.00	8.69	21.20	22.43	41.99	9.71	14.88	7.75	8.31	27.70
50th-Percentile Queue Length [ft]	933.25	567.39	0.00	217.31	530.11	560.82	1049.72	242.66	371.91	193.80	207.68	692.50
95th-Percentile Queue Length [veh]	57.82	31.73	0.00	13.83	30.00	31.76	64.86	14.82	21.20	12.32	13.03	39.01
95th-Percentile Queue Length [ft]	1445.51	793.21	0.00	345.78	749.96	794.11	1621.53	370.40	530.04	307.95	325.85	975.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	354.12	79.83	0.00	88.61	95.99	110.09	349.37	44.16	34.92	54.97	48.38	111.16
Movement LOS	F	F	A	F	F	F	F	D	C	D	D	F
d_A, Approach Delay [s/veh]	142.78			96.36			141.06			73.58		
Approach LOS	F			F			F			E		
d_I, Intersection Delay [s/veh]	115.72											
Intersection LOS	F											
Intersection V/C	1.358											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	448	62	150	461	0	229	0	78	0	0	0
Total Analysis Volume [veh/h]	0	1793	247	599	1842	0	916	0	311	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	35	0	32	67	0	0	48	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	18	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	46	46	23	72	35	35	35	
g / C, Green / Cycle	0.40	0.40	0.20	0.63	0.30	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.35	0.16	0.17	0.36	0.27	0.07	0.07	
s, saturation flow rate [veh/h]	5074	1583	3445	5074	3445	1583	2803	
c, Capacity [veh/h]	2026	632	676	3198	1034	475	841	
d1, Uniform Delay [s]	32.07	24.57	44.95	12.33	38.36	30.13	30.41	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.11	1.81	4.14	0.76	2.78	0.23	0.15	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

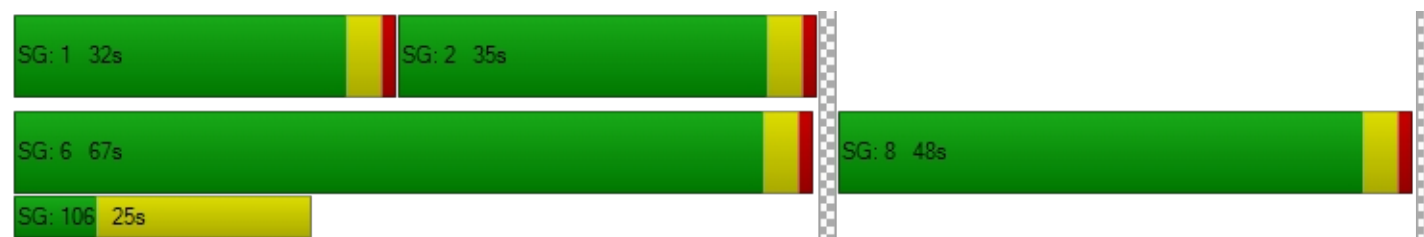
X, volume / capacity	0.88	0.39	0.89	0.58	0.89	0.22	0.25	
d, Delay for Lane Group [s/veh]	38.17	26.38	49.09	13.09	41.13	30.36	30.56	
Lane Group LOS	D	C	D	B	D	C	C	
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	16.22	5.09	8.65	8.83	12.54	2.19	2.20	
50th-Percentile Queue Length [ft]	405.41	127.26	216.23	220.72	313.57	54.74	54.92	
95th-Percentile Queue Length [veh]	22.82	8.79	13.47	13.70	18.35	3.94	3.95	
95th-Percentile Queue Length [ft]	570.51	219.76	336.80	342.55	458.78	98.53	98.86	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	38.17	26.38	49.09	13.09	0.00	41.13	30.36	30.49	0.00	0.00	0.00
Movement LOS		D	C	D	B		D	C	C			
d_A, Approach Delay [s/veh]	36.74			21.92			38.44			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	30.77											
Intersection LOS	C											
Intersection V/C	0.886											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	209.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.546

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	362	19	44	378	117	107	91	168	36	72	35
Total Analysis Volume [veh/h]	583	1446	76	174	1510	466	428	365	671	144	287	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	21	43	0	11	33	0	0	41	0	0	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	39	39	7	29	29	37	37	37	37	37	37
g / C, Green / Cycle	0.18	0.41	0.41	0.07	0.31	0.31	0.39	0.39	0.39	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.33	0.28	0.28	0.05	0.53	0.57	0.45	0.20	0.42	0.27	0.12	0.12
s, saturation flow rate [veh/h]	1774	3547	1816	3445	1863	1720	956	1863	1583	542	1863	1660
c, Capacity [veh/h]	319	1455	745	258	569	525	343	724	615	76	724	645
d1, Uniform Delay [s]	38.98	23.06	23.10	42.85	33.02	33.02	37.17	22.10	29.06	47.53	20.20	20.25
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.50	0.22	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	384.04	2.71	5.27	3.07	339.16	404.13	133.54	0.55	63.42	425.94	0.24	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

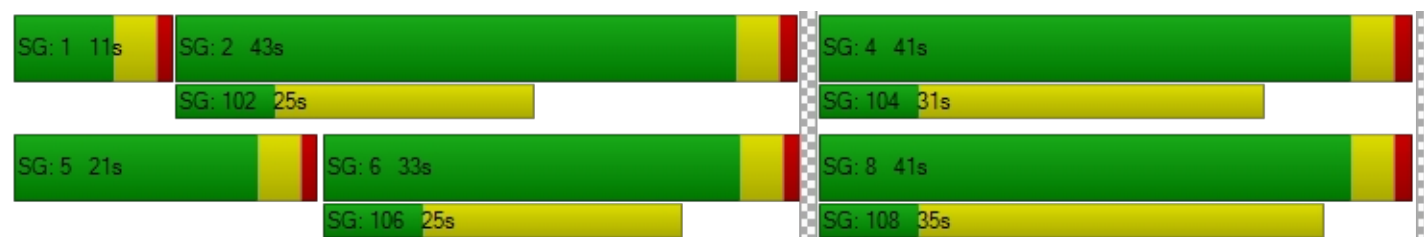
X, volume / capacity	1.83	0.69	0.69	0.68	1.74	1.88	1.25	0.50	1.09	1.90	0.31	0.32
d, Delay for Lane Group [s/veh]	423.01	25.76	28.38	45.92	372.18	437.15	170.71	22.64	92.48	473.47	20.44	20.53
Lane Group LOS	F	C	C	D	F	F	F	C	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh]	41.36	9.43	10.25	2.09	66.22	70.61	20.79	6.12	24.16	10.75	3.43	3.12
50th-Percentile Queue Length [ft]	1033.90	235.73	256.23	52.14	1655.55	1765.18	519.74	153.04	604.12	268.84	85.65	78.11
95th-Percentile Queue Length [veh]	64.72	14.47	15.50	3.75	102.89	111.11	32.29	10.18	34.21	19.36	6.17	5.62
95th-Percentile Queue Length [ft]	1617.96	361.63	387.49	93.86	2572.34	2777.78	807.15	254.48	855.22	483.91	154.18	140.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	423.01	26.56	28.38	45.92	394.64	437.15	170.71	22.64	92.48	473.47	20.46	20.53
Movement LOS	F	C	C	D	F	F	F	C	F	F	C	C
d_A, Approach Delay [s/veh]	136.43			375.63			97.94			134.52		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	209.05											
Intersection LOS	F											
Intersection V/C	1.546											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	271.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.400

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	193	15	233	193	179	198	119	21	35	103	169
Total Analysis Volume [veh/h]	170	771	60	931	770	717	792	476	83	138	410	677
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	14	39	0	17	42	0	25	32	0	32	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	10	50	50	13	53	53	21	30	30	11	20	37
g / C, Green / Cycle	0.08	0.41	0.41	0.11	0.44	0.44	0.18	0.25	0.25	0.09	0.17	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.16	0.16	0.27	0.40	0.47	0.45	0.11	0.11	0.08	0.08	0.43
s, saturation flow rate [veh/h]	1774	3547	1795	3445	1863	1592	1774	3547	1725	1774	5074	1583
c, Capacity [veh/h]	148	1463	740	374	815	696	311	892	434	167	866	495
d1, Uniform Delay [s]	55.00	24.52	24.54	53.50	31.61	33.76	49.50	37.61	37.61	53.38	44.90	41.26
k, delay calibration	0.47	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	116.77	0.74	1.47	679.17	16.29	53.63	707.06	0.32	0.65	9.76	0.40	178.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.15	0.38	0.38	2.49	0.91	1.07	2.55	0.42	0.42	0.83	0.47	1.37
d, Delay for Lane Group [s/veh]	171.77	25.27	26.01	732.67	47.89	87.39	756.56	37.93	38.26	63.14	45.30	219.55
Lane Group LOS	F	C	C	F	D	F	F	D	D	E	D	F
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	9.28	5.59	5.83	40.87	23.30	29.99	70.26	4.68	4.60	4.54	3.72	38.94
50th-Percentile Queue Length [ft]	231.89	139.81	145.84	1021.77	582.40	749.75	1756.50	117.11	114.96	113.51	92.91	973.43
95th-Percentile Queue Length [veh]	14.98	9.47	9.79	63.95	31.21	40.93	109.51	8.23	8.12	8.03	6.69	58.51
95th-Percentile Queue Length [ft]	374.43	236.77	244.87	1598.70	780.29	1023.15	2737.81	205.85	202.88	200.87	167.24	1462.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	171.77	25.48	26.01	732.67	49.25	87.39	756.56	38.00	38.26	63.14	45.30	219.55
Movement LOS	F	C	C	F	D	F	F	D	D	E	D	F
d_A, Approach Delay [s/veh]	50.36			323.70			459.26			143.61		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	271.81											
Intersection LOS	F											
Intersection V/C	1.400											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Signalized	Delay (sec / veh):	4.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.331

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	270	3	9	340	6	5	1	4	1	0	2
Total Analysis Volume [veh/h]	9	1081	10	34	1360	25	21	4	17	4	1	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	44	0	11	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	69	69	4	72	72	5	5
g / C, Green / Cycle	0.02	0.77	0.77	0.05	0.80	0.80	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.20	0.02	0.26	0.26	0.03	0.01
s, saturation flow rate [veh/h]	1774	3547	1854	1774	3547	1846	1671	1722
c, Capacity [veh/h]	30	2728	1426	81	2830	1473	146	141
d1, Uniform Delay [s]	43.73	3.00	3.00	41.80	2.47	2.47	41.45	40.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.43	0.23	0.45	3.41	0.30	0.58	1.06	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

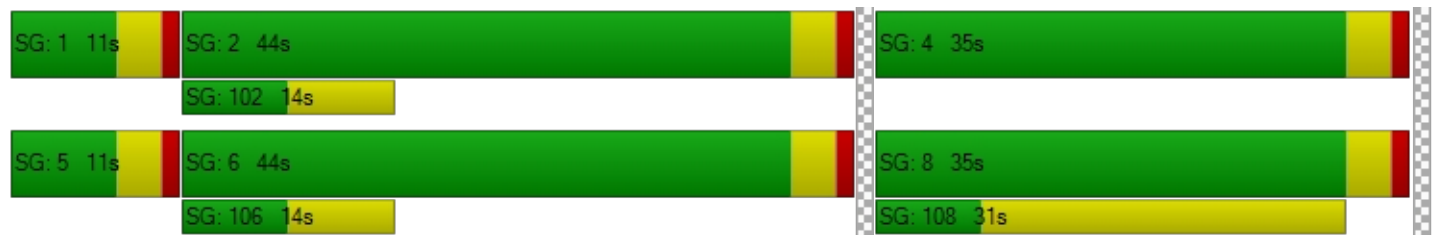
X, volume / capacity	0.30	0.26	0.26	0.42	0.32	0.32	0.29	0.10
d, Delay for Lane Group [s/veh]	49.16	3.24	3.45	45.21	2.77	3.05	42.52	41.13
Lane Group LOS	D	A	A	D	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.24	1.07	1.20	0.78	1.01	1.17	0.94	0.31
50th-Percentile Queue Length [ft]	5.89	26.65	29.99	19.53	25.27	29.13	23.49	7.66
95th-Percentile Queue Length [veh]	0.42	1.92	2.16	1.41	1.82	2.10	1.69	0.55
95th-Percentile Queue Length [ft]	10.60	47.97	53.98	35.15	45.48	52.44	42.27	13.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.16	3.31	3.45	45.21	2.86	3.05	42.52	42.52	42.52	41.13	41.13	41.13
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	3.69			3.88			42.52			41.13		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	4.63											
Intersection LOS	A											
Intersection V/C	0.331											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.250

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TLO			TLO			TLO			TLO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	69	13	35	130	17	2	12	1	15	2	22
Total Analysis Volume [veh/h]	1	274	50	139	520	68	9	46	2	58	9	89
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	15	33	33	11	33	0	13	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	21	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	57	57	7	63	69	1	5	5	5	9	9
g / C, Green / Cycle	0.00	0.63	0.63	0.08	0.70	0.77	0.02	0.06	0.06	0.06	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.09	0.04	0.15	0.04	0.00	0.01	0.01	0.03	0.00	0.06
s, saturation flow rate [veh/h]	1774	1863	1765	3445	3547	1583	3445	1863	1836	1774	1863	1583
c, Capacity [veh/h]	6	1173	1112	263	2493	1210	59	104	102	108	185	157
d1, Uniform Delay [s]	44.82	6.78	6.80	40.09	4.67	2.62	43.68	40.73	40.74	41.11	36.74	38.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	13.79	0.25	0.27	1.65	0.19	0.02	1.19	1.13	1.16	4.11	0.11	3.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

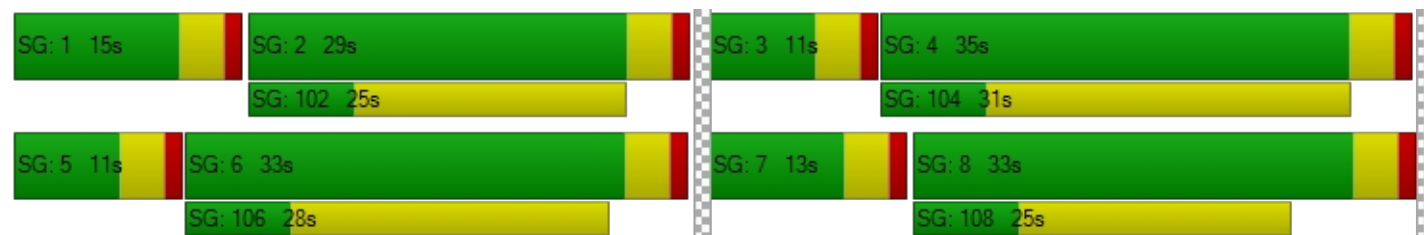
X, volume / capacity	0.17	0.14	0.14	0.53	0.21	0.06	0.15	0.23	0.23	0.54	0.05	0.57
d, Delay for Lane Group [s/veh]	58.61	7.03	7.07	41.73	4.86	2.64	44.87	41.86	41.90	45.22	36.85	41.90
Lane Group LOS	E	A	A	D	A	A	D	D	D	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.04	1.23	1.20	1.53	1.44	0.22	0.11	0.54	0.54	1.36	0.18	1.99
50th-Percentile Queue Length [ft]	1.10	30.64	29.91	38.15	35.99	5.47	2.69	13.44	13.44	34.01	4.58	49.82
95th-Percentile Queue Length [veh]	0.08	2.21	2.15	2.75	2.59	0.39	0.19	0.97	0.97	2.45	0.33	3.59
95th-Percentile Queue Length [ft]	1.98	55.15	53.83	68.67	64.79	9.84	4.85	24.20	24.19	61.21	8.25	89.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.61	7.05	7.07	41.73	4.86	2.64	44.87	41.88	41.90	45.22	36.85	41.90
Movement LOS	E	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	7.21			11.70			42.35			42.84		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	15.77											
Intersection LOS	B											
Intersection V/C	0.250											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	73	1	76	0	302	215	93	364	0
Total Analysis Volume [veh/h]	0	0	0	293	2	304	0	1206	860	372	1455	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	32	0	0	25	0	33	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		18	18	18	39	39	39	21	64
g / C, Green / Cycle		0.20	0.20	0.20	0.44	0.44	0.44	0.23	0.72
(v / s)_i Volume / Saturation Flow Rate		0.17	0.10	0.10	0.29	0.33	0.33	0.21	0.29
s, saturation flow rate [veh/h]		1774	1586	1583	3547	1583	1583	1774	5074
c, Capacity [veh/h]		348	311	311	1544	689	689	417	3628
d1, Uniform Delay [s]		34.84	32.19	32.19	20.25	21.30	21.30	33.33	5.13
k, delay calibration		0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.51	1.20	1.21	2.32	7.33	7.33	6.75	0.33
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

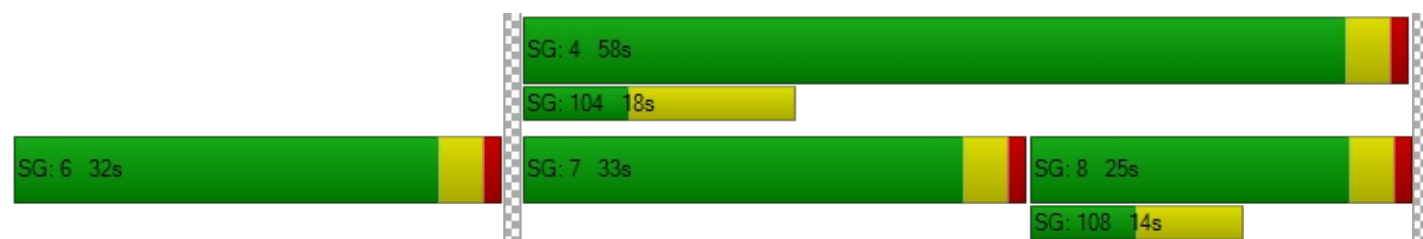
X, volume / capacity		0.84	0.49	0.49	0.67	0.75	0.75	0.89	0.40
d, Delay for Lane Group [s/veh]		40.35	33.40	33.40	22.57	28.63	28.63	40.09	5.46
Lane Group LOS		D	C	C	C	C	C	D	A
Critical Lane Group		Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		6.58	3.02	3.02	8.68	10.01	10.01	8.43	2.99
50th-Percentile Queue Length [ft]		164.41	75.57	75.44	216.97	250.22	250.22	210.76	74.87
95th-Percentile Queue Length [veh]		10.78	5.44	5.43	13.51	15.20	15.20	13.19	5.39
95th-Percentile Queue Length [ft]		269.55	136.03	135.79	337.76	379.92	379.92	329.80	134.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	40.35	33.40	33.40	0.00	22.57	28.63	40.09	5.46	0.00
Movement LOS				D	C	C		C	C	D	A	
d_A, Approach Delay [s/veh]	0.00			36.80			25.60			12.51		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	21.77											
Intersection LOS	C											
Intersection V/C	0.809											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.892

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	690	576	667	136	83	521
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	690	576	667	136	83	521
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	144	167	34	21	130
Total Analysis Volume [veh/h]	690	576	667	136	83	521
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Overlap
Signal group	5	2	6	0	3	3
Auxiliary Signal Groups						3,5
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	7
Maximum Green [s]	30	30	30	0	30	30
Amber [s]	3.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	1.0	0.0	1.0	1.0
Split [s]	33	88	55	0	32	32
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	0	7	0	7	7
Pedestrian Clearance [s]	0	0	18	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No	No		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	29	84	51	51	28	61
g / C, Green / Cycle	0.24	0.70	0.42	0.42	0.23	0.51
(v / s)_i Volume / Saturation Flow Rate	0.20	0.16	0.36	0.09	0.05	0.33
s, saturation flow rate [veh/h]	3445	3547	1863	1583	1774	1583
c, Capacity [veh/h]	833	2482	791	673	414	805
d1, Uniform Delay [s]	43.11	6.45	30.91	21.70	36.97	21.59
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.19	0.22	10.61	0.68	0.24	4.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.23	0.84	0.20	0.20	0.65
d, Delay for Lane Group [s/veh]	45.31	6.67	41.52	22.38	37.20	25.59
Lane Group LOS	D	A	D	C	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	9.52	2.21	18.31	2.41	2.00	11.38
50th-Percentile Queue Length [ft]	237.97	55.24	457.63	60.34	50.01	284.38
95th-Percentile Queue Length [veh]	14.58	3.98	25.32	4.34	3.60	16.91
95th-Percentile Queue Length [ft]	364.47	99.43	633.05	108.61	90.02	422.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.31	6.67	41.52	22.38	37.20	25.59
Movement LOS	D	A	D	C	D	C
d_A, Approach Delay [s/veh]	27.73		38.28		27.18	
Approach LOS	C		D		C	
d_I, Intersection Delay [s/veh]	30.77					
Intersection LOS	C					
Intersection V/C	0.892					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 2 88s

SG: 3 32s

SG: 103 28s

SG: 5 33s

SG: 6 55s

SG: 106 25s

Intersection Level Of Service Report
Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	37.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	18	37	9	52	24	18	227	116	48	344	4
Total Analysis Volume [veh/h]	165	73	146	37	208	97	71	909	462	192	1375	17
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	41	0	0	41	0	22	56	0	18	52	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	11	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	6	52	52	14	60	60
g / C, Green / Cycle	0.32	0.32	0.32	0.06	0.45	0.45	0.12	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.15	0.13	0.21	0.04	0.38	0.39	0.11	0.37	0.37
s, saturation flow rate [veh/h]	1070	1667	1623	1774	1863	1656	1774	1863	1855
c, Capacity [veh/h]	185	535	556	100	840	746	220	965	961
d1, Uniform Delay [s]	52.55	30.48	33.41	53.31	28.18	28.65	49.47	21.30	21.32
k, delay calibration	0.11	0.11	0.20	0.11	0.50	0.50	0.32	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.37	0.50	2.08	9.05	10.76	13.71	25.14	4.67	4.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

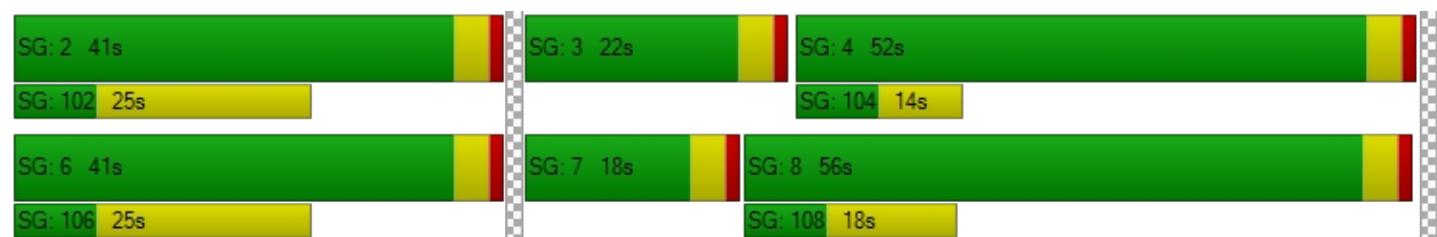
X, volume / capacity	0.89	0.41	0.62	0.71	0.85	0.88	0.87	0.72	0.72
d, Delay for Lane Group [s/veh]	65.92	30.98	35.48	62.36	38.94	42.36	74.61	25.97	26.03
Lane Group LOS	E	C	D	E	D	D	E	C	C
Critical Lane Group	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	5.48	4.81	8.52	2.22	18.78	17.94	6.79	14.39	14.38
50th-Percentile Queue Length [ft]	137.03	120.26	213.06	55.44	469.52	448.59	169.84	359.74	359.39
95th-Percentile Queue Length [veh]	9.32	8.41	13.31	3.99	25.89	24.89	11.07	20.61	20.59
95th-Percentile Queue Length [ft]	233.02	210.18	332.76	99.79	647.20	622.27	276.70	515.27	514.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.92	30.98	30.98	35.48	35.48	35.48	62.36	39.66	42.36	74.61	26.00	26.03
Movement LOS	E	C	C	D	D	D	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	46.00			35.48			41.65			31.89		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	37.41											
Intersection LOS	D											
Intersection V/C	0.797											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	248	718	496	897	1069	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	718	496	897	1069	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	180	124	0	267	48
Total Analysis Volume [veh/h]	248	718	496	0	1069	191
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	28	39	11	0	51	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	50	31	31	32	32
g / C, Green / Cycle	0.16	0.55	0.35	0.35	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.14	0.20	0.14	0.00	0.31	0.12
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	289	1963	1228	548	1232	566
d1, Uniform Delay [s]	36.67	11.25	22.37	0.00	26.94	21.13
k, delay calibration	0.11	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.30	0.53	0.99	0.00	2.00	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

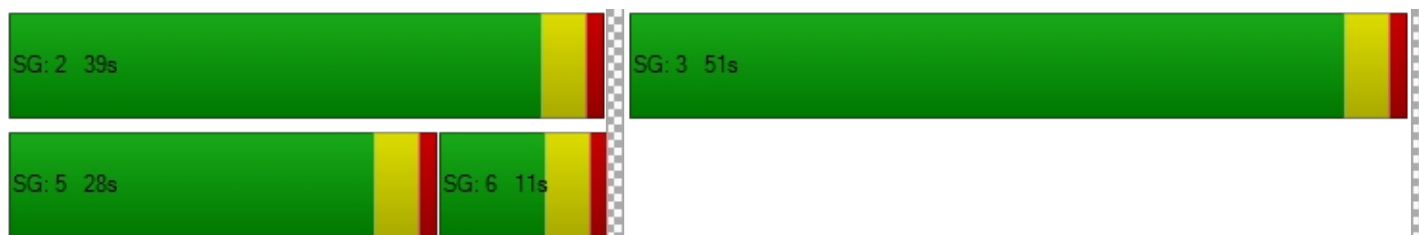
X, volume / capacity	0.86	0.37	0.40	0.00	0.87	0.34
d, Delay for Lane Group [s/veh]	43.97	11.78	23.36	0.00	28.95	21.48
Lane Group LOS	D	B	C	A	C	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	5.79	3.87	4.05	0.00	10.56	2.92
50th-Percentile Queue Length [ft]	144.77	96.73	101.21	0.00	264.01	72.97
95th-Percentile Queue Length [veh]	9.74	6.96	7.29	0.00	15.89	5.25
95th-Percentile Queue Length [ft]	243.44	174.11	182.17	0.00	397.25	131.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.97	11.78	23.36	0.00	28.95	21.48
Movement LOS	D	B	C	A	C	C
d_A, Approach Delay [s/veh]	20.04		23.36		27.81	
Approach LOS	C		C		C	
d_I, Intersection Delay [s/veh]	24.24					
Intersection LOS	C					
Intersection V/C	0.681					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 1: Railroad Canyon Road at Summerhill Rd/Grape St**

Control Type:	Signalized	Delay (sec / veh):	116.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.289

Intersection Setup

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Railroad Canyon Road			Railroad Canyon Road			Summerhill Road			Grape Street		
Base Volume Input [veh/h]	432	1483	1737	791	1843	267	262	598	511	790	502	597
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	432	1483	1737	791	1843	267	262	598	511	790	502	597
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	371	0	198	461	67	66	150	128	198	126	149
Total Analysis Volume [veh/h]	432	1483	0	791	1843	267	262	598	511	790	502	597
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	8	7	4	4
Auxiliary Signal Groups									5,8			1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	26	34	0	29	37	0	18	32	32	25	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	7	7
Pedestrian Clearance [s]	0	21	0	0	0	0	0	0	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No	No	No	No	No
Maximum Recall	No	No		No	No		No	No	No	No	No	No
Pedestrian Recall	No	No		No	No		No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	22	34	34	25	37	37	14	24	50	21	31	60
g / C, Green / Cycle	0.18	0.29	0.29	0.21	0.31	0.31	0.12	0.20	0.41	0.18	0.25	0.50
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.00	0.23	0.39	0.41	0.15	0.17	0.32	0.23	0.14	0.38
s, saturation flow rate [veh/h]	1774	5074	1583	3445	3547	1749	1774	3547	1583	3445	3547	1583
c, Capacity [veh/h]	326	1455	454	718	1105	545	209	696	654	604	901	785
d1, Uniform Delay [s]	49.03	42.84	0.00	47.54	41.35	41.35	53.00	46.68	30.54	49.53	38.94	24.52
k, delay calibration	0.50	0.50	0.50	0.12	0.50	0.50	0.50	0.11	0.50	0.19	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	166.44	28.50	0.00	51.31	121.24	161.56	148.12	3.25	9.00	142.84	0.54	6.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	1.33	1.02	0.00	1.10	1.25	1.33	1.26	0.86	0.78	1.31	0.56	0.76
d, Delay for Lane Group [s/veh]	215.47	71.33	0.00	98.85	162.59	202.91	201.12	49.93	39.55	192.36	39.48	31.37
Lane Group LOS	F	F	A	F	F	F	F	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	24.78	18.05	0.00	15.78	34.71	40.34	14.86	8.92	14.23	21.01	6.50	14.84
50th-Percentile Queue Length [ft]	619.54	451.28	0.00	394.62	867.80	1008.59	371.54	222.96	355.77	525.27	162.41	371.00
95th-Percentile Queue Length [veh]	37.53	25.32	0.00	23.47	50.71	59.76	23.17	13.82	20.42	32.20	10.68	21.16
95th-Percentile Queue Length [ft]	938.19	633.05	0.00	586.70	1267.67	1494.01	579.16	345.40	510.44	804.92	266.92	528.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	215.47	71.33	0.00	98.85	172.63	202.91	201.12	49.93	39.55	192.36	39.48	31.37
Movement LOS	F	F	A	F	F	F	F	D	D	F	D	C
d_A, Approach Delay [s/veh]	103.85			155.30			74.95			100.85		
Approach LOS	F			F			E			F		
d_I, Intersection Delay [s/veh]	116.72											
Intersection LOS	F											
Intersection V/C	1.289											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Diamond Drive at I-15 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	49.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.057

Intersection Setup

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Diamond Drive			Diamond Drive			I-15 SB Ramps			I-15 SB Ramps		
Base Volume Input [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	699	106	175	575	0	170	1	200	0	0	0
Total Analysis Volume [veh/h]	0	2794	424	701	2300	0	679	5	798	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	0	0	7	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	66	0	27	93	0	0	27	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	18	0	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	62	62	23	89	23	23	23	
g / C, Green / Cycle	0.52	0.52	0.19	0.74	0.19	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.55	0.27	0.20	0.45	0.20	0.18	0.18	
s, saturation flow rate [veh/h]	5074	1583	3445	5074	3445	1587	2803	
c, Capacity [veh/h]	2620	817	661	3762	661	305	538	
d1, Uniform Delay [s]	29.01	19.17	48.48	7.33	48.48	47.93	47.96	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.40	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	38.49	2.35	35.26	0.75	23.77	35.64	10.14	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	1.07	0.52	1.06	0.61	1.03	0.95	0.95	
d, Delay for Lane Group [s/veh]	67.51	21.51	83.73	8.08	72.24	83.57	58.09	
Lane Group LOS	F	C	F	A	F	F	E	
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	
50th-Percentile Queue Length [veh]	33.22	8.19	13.07	8.29	12.02	11.55	8.31	
50th-Percentile Queue Length [ft]	830.59	204.86	326.80	207.36	300.42	288.64	207.78	
95th-Percentile Queue Length [veh]	44.92	12.89	19.59	13.02	17.95	17.12	13.04	
95th-Percentile Queue Length [ft]	1123.12	322.23	489.66	325.44	448.82	427.96	325.97	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	67.51	21.51	83.73	8.08	0.00	72.24	83.57	67.18	0.00	0.00	0.00
Movement LOS		F	C	F	A		F	F	E			
d_A, Approach Delay [s/veh]	61.45			25.75			69.56			0.00		
Approach LOS	E			C			E			A		
d_I, Intersection Delay [s/veh]	49.10											
Intersection LOS	D											
Intersection V/C	1.057											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Diamond Drive at Auto Center Dr/Casino Dr

Control Type:	Signalized	Delay (sec / veh):	213.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.686

Intersection Setup

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Auto Center Drive			Casino Drive		
Base Volume Input [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	148	654	38	91	558	103	111	102	146	23	56	34
Total Analysis Volume [veh/h]	591	2614	152	362	2231	410	445	409	582	92	223	134
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	27	66	0	15	54	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	28	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	62	62	11	50	50	35	35	35	35	35	35
g / C, Green / Cycle	0.19	0.52	0.52	0.09	0.42	0.42	0.29	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.33	0.51	0.53	0.11	0.71	0.75	0.44	0.22	0.37	0.16	0.10	0.10
s, saturation flow rate [veh/h]	1774	3547	1812	3445	1863	1766	1020	1863	1583	566	1863	1635
c, Capacity [veh/h]	341	1830	935	318	775	735	256	543	462	60	543	477
d1, Uniform Delay [s]	48.45	28.75	29.03	54.43	35.00	35.00	51.12	38.55	42.48	59.96	33.44	33.58
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.50	0.27	0.50	0.13	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	342.80	19.03	34.29	70.89	321.87	363.77	346.53	5.28	133.67	260.14	0.37	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

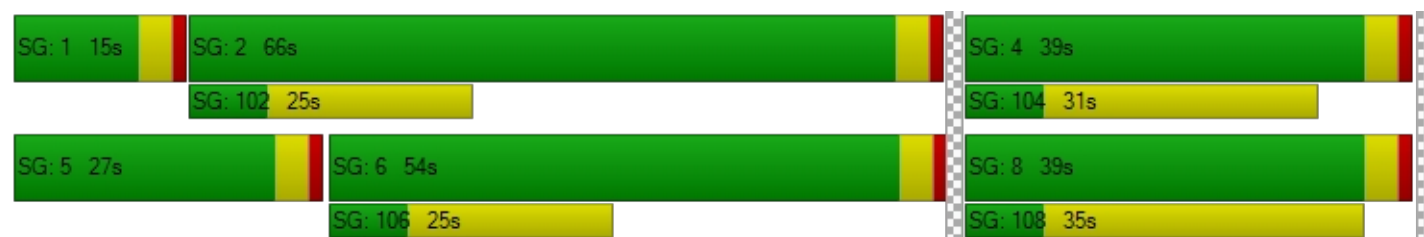
X, volume / capacity	1.74	0.99	1.02	1.14	1.70	1.80	1.73	0.75	1.26	1.53	0.34	0.36
d, Delay for Lane Group [s/veh]	391.25	47.78	63.32	125.32	356.87	398.77	397.65	43.83	176.14	320.10	33.82	34.03
Lane Group LOS	F	D	F	F	F	F	F	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh]	42.57	29.39	34.46	7.93	91.33	95.14	32.50	11.66	30.65	6.17	4.36	3.99
50th-Percentile Queue Length [ft]	1064.32	734.85	861.49	198.23	2283.16	2378.48	812.43	291.38	766.37	154.14	109.02	99.84
95th-Percentile Queue Length [veh]	66.12	38.29	44.78	13.14	141.88	149.49	53.10	17.25	45.33	11.10	7.79	7.19
95th-Percentile Queue Length [ft]	1652.97	957.14	1119.60	328.38	3547.10	3737.15	1327.62	431.36	1133.30	277.45	194.64	179.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	391.25	52.54	63.32	125.32	373.97	398.77	397.65	43.83	176.14	320.10	33.85	34.03
Movement LOS	F	D	E	F	F	F	F	D	F	F	C	C
d_A, Approach Delay [s/veh]	112.66			347.38			207.10			92.56		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	213.50											
Intersection LOS	F											
Intersection V/C	1.686											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 6: Diamond Drive at Lakeshore Drive/Mission Trail**

Control Type:	Signalized	Delay (sec / veh):	372.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.496

Intersection Setup

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Lakeshore Drive			Mission Trail		
Base Volume Input [veh/h]	224	1456	145	921	1349	774	878	340	115	241	277	1135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	38	-38	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1456	145	959	1311	774	878	340	115	241	277	1135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	364	36	240	328	194	220	85	29	60	69	284
Total Analysis Volume [veh/h]	224	1456	145	959	1311	774	878	340	115	241	277	1135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	39	0	16	43	0	26	47	0	18	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	28	0	0	24	0	0	21	0	0	28	28
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	48	48	12	52	52	22	30	30	14	22	38
g / C, Green / Cycle	0.07	0.40	0.40	0.10	0.43	0.43	0.18	0.25	0.25	0.12	0.18	0.32
(v / s)_i Volume / Saturation Flow Rate	0.13	0.30	0.30	0.28	0.56	0.63	0.49	0.09	0.09	0.14	0.05	0.72
s, saturation flow rate [veh/h]	1774	3547	1778	3445	1863	1647	1774	3547	1632	1774	5074	1583
c, Capacity [veh/h]	119	1419	711	345	807	714	325	886	408	207	930	501
d1, Uniform Delay [s]	56.00	30.88	30.92	54.00	34.01	34.01	49.00	37.03	37.03	53.00	42.35	41.01
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.50	0.11	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	430.12	3.71	7.25	809.01	140.49	215.12	773.21	0.24	0.52	113.53	0.18	575.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

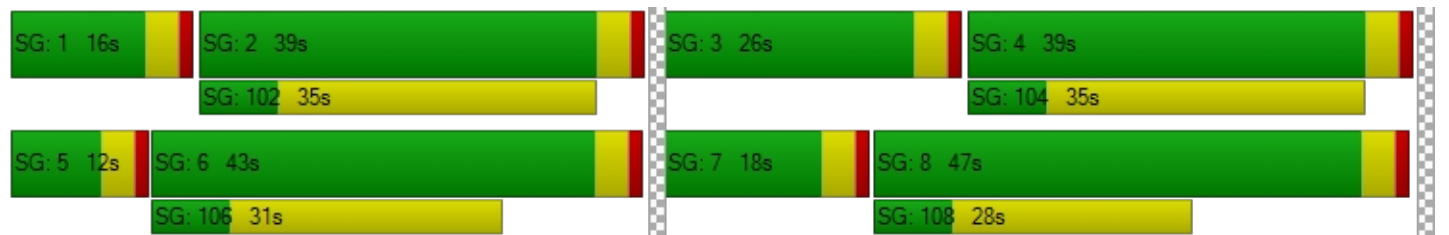
X, volume / capacity	1.89	0.75	0.75	2.78	1.29	1.46	2.70	0.35	0.35	1.16	0.30	2.26
d, Delay for Lane Group [s/veh]	486.12	34.59	38.17	863.01	174.49	249.13	822.21	37.26	37.55	166.53	42.52	616.07
Lane Group LOS	F	C	D	F	F	F	F	D	D	F	D	F
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	17.75	13.75	14.54	43.96	54.26	62.77	79.57	3.81	3.54	12.76	2.39	94.70
50th-Percentile Queue Length [ft]	443.83	343.73	363.44	1099.01	1356.58	1569.30	1989.17	95.25	88.53	319.09	59.86	2367.52
95th-Percentile Queue Length [veh]	28.74	19.83	20.79	68.33	78.65	95.15	123.88	6.86	6.37	19.81	4.31	150.92
95th-Percentile Queue Length [ft]	718.60	495.75	519.77	1708.36	1966.14	2378.87	3097.06	171.45	159.36	495.13	107.76	3772.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	486.12	35.55	38.17	863.01	189.78	249.13	822.21	37.29	37.55	166.53	42.52	616.07
Movement LOS	F	D	D	F	F	F	F	D	D	F	D	F
d_A, Approach Delay [s/veh]	91.06			416.97			554.31			454.42		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	372.44											
Intersection LOS	F											
Intersection V/C	1.496											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Diamond Drive at Campbell Street

Control Type:	Two-way stop	Delay (sec / veh):	299.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Diamond Drive		Diamond Drive		Campbell Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Diamond Drive		Diamond Drive		Campbell Street	
Base Volume Input [veh/h]	2075	34	38	1613	64	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-38	0	-64	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2075	34	0	1613	0	65
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	519	9	0	403	0	16
Total Analysis Volume [veh/h]	2075	34	0	1613	0	65
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.29
d_M, Delay for Movement [s/veh]	0.00	0.00	19.04	0.00	299.68	27.78
Movement LOS	A	A	C	A	F	D
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	1.17	1.17
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	29.29	29.29
d_A, Approach Delay [s/veh]	0.00		0.00		27.78	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 8: Mission Trail at Campbell Street

Control Type:	Signalized	Delay (sec / veh):	6.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Campbell Street			Campbell Street		
Base Volume Input [veh/h]	32	1550	16	34	1243	23	21	3	20	7	1	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	-22	0	0	38	0	0	0	0	42	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	1550	16	72	1243	23	21	3	62	7	1	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	388	4	18	311	6	5	1	16	2	0	2
Total Analysis Volume [veh/h]	10	1550	16	72	1243	23	21	3	62	7	1	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	44	0	11	44	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	24	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	66	66	6	70	70	6	6
g / C, Green / Cycle	0.02	0.73	0.73	0.07	0.78	0.78	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.01	0.29	0.29	0.04	0.23	0.23	0.05	0.01
s, saturation flow rate [veh/h]	1774	3547	1853	1774	3547	1845	1616	1485
c, Capacity [veh/h]	33	2592	1354	117	2761	1437	163	162
d1, Uniform Delay [s]	43.62	4.59	4.59	40.94	2.89	2.89	41.07	39.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	0.46	0.87	5.15	0.28	0.54	2.66	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

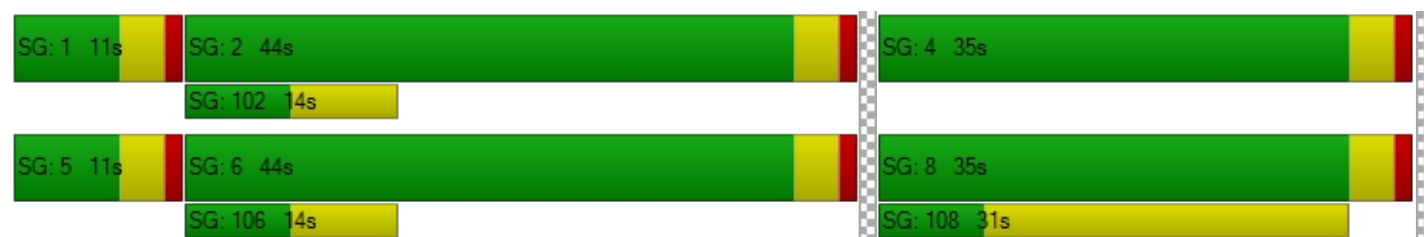
X, volume / capacity	0.30	0.40	0.40	0.61	0.30	0.30	0.53	0.09
d, Delay for Lane Group [s/veh]	48.74	5.05	5.46	46.08	3.17	3.43	43.72	39.55
Lane Group LOS	D	A	A	D	A	A	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.26	2.44	2.70	1.65	1.17	1.32	1.97	0.32
50th-Percentile Queue Length [ft]	6.44	60.92	67.57	41.34	29.17	32.94	49.24	7.99
95th-Percentile Queue Length [veh]	0.46	4.39	4.86	2.98	2.10	2.37	3.55	0.58
95th-Percentile Queue Length [ft]	11.60	109.66	121.62	74.41	52.51	59.30	88.63	14.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.74	5.19	5.46	46.08	3.25	3.43	43.72	43.72	43.72	39.55	39.55	39.55
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.47			5.56			43.72			39.55		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	6.77											
Intersection LOS	A											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 9: Diamond Drive at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

Intersection Setup

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Diamond Drive			Diamond Drive			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	9	349	38	1047	436	25	27	20	4	72	24	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	-42	0	0	0	0	42	0	-22
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	349	38	1047	394	25	27	20	4	114	24	99
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	87	10	262	99	6	7	5	1	29	6	25
Total Analysis Volume [veh/h]	9	349	38	1047	394	25	27	20	4	114	24	99
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	7	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	45	63	63	11	29	0	17	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	21	0	18	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	51	51	39	88	97	4	4	4	9	9	9
g / C, Green / Cycle	0.02	0.43	0.43	0.32	0.74	0.81	0.03	0.04	0.04	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.11	0.30	0.11	0.02	0.01	0.01	0.01	0.06	0.01	0.06
s, saturation flow rate [veh/h]	1774	1863	1800	3445	3547	1583	3445	1863	1759	1774	1863	1583
c, Capacity [veh/h]	28	798	771	1116	2613	1275	121	66	62	140	148	126
d1, Uniform Delay [s]	58.45	21.90	21.93	39.42	4.68	2.32	56.32	56.20	56.22	54.41	51.54	54.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.12	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	6.63	0.73	0.77	4.57	0.12	0.01	0.92	1.31	1.48	11.76	0.51	10.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

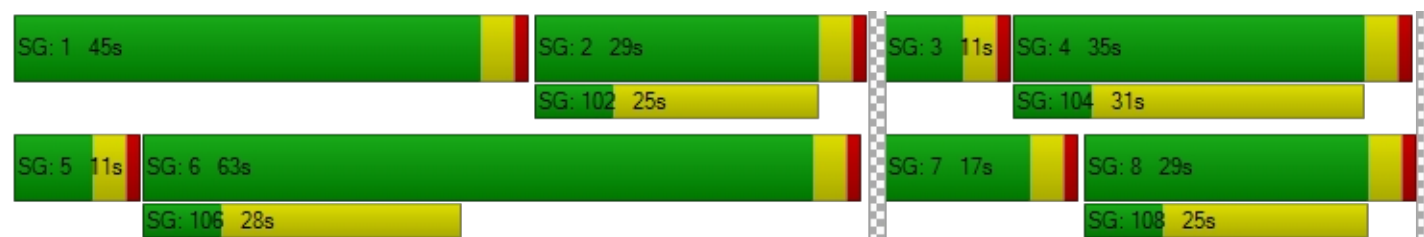
X, volume / capacity	0.33	0.25	0.25	0.94	0.15	0.02	0.22	0.18	0.19	0.81	0.16	0.79
d, Delay for Lane Group [s/veh]	65.08	22.63	22.70	43.99	4.80	2.32	57.24	57.51	57.70	66.17	52.05	64.69
Lane Group LOS	E	C	C	D	A	A	E	E	E	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.32	3.69	3.62	15.49	1.35	0.09	0.41	0.38	0.38	3.85	0.70	3.30
50th-Percentile Queue Length [ft]	8.04	92.35	90.58	387.31	33.65	2.34	10.35	9.47	9.46	96.19	17.43	82.51
95th-Percentile Queue Length [veh]	0.58	6.65	6.52	21.95	2.42	0.17	0.75	0.68	0.68	6.93	1.25	5.94
95th-Percentile Queue Length [ft]	14.48	166.23	163.04	548.69	60.57	4.21	18.63	17.04	17.02	173.14	31.37	148.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.08	22.66	22.70	43.99	4.80	2.32	57.24	57.59	57.70	66.17	52.05	64.69
Movement LOS	E	C	C	D	A	A	E	E	E	E	D	E
d_A, Approach Delay [s/veh]	23.63			32.74			57.41			64.12		
Approach LOS	C			C			E			E		
d_I, Intersection Delay [s/veh]	35.11											
Intersection LOS	D											
Intersection V/C	0.555											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 10: Mission Trail at Malaga Road

Control Type:	Signalized	Delay (sec / veh):	79.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.077

Intersection Setup

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Mission Trail			Mission Trail			Malaga Road			Malaga Road		
Base Volume Input [veh/h]	217	1194	75	50	1403	45	356	14	767	98	43	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	22	-22	0	0	0	42	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	239	1172	75	50	1403	87	356	14	767	98	43	52
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9600	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	293	19	13	351	22	89	4	184	25	11	13
Total Analysis Volume [veh/h]	239	1172	75	50	1403	87	356	14	736	98	43	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	19	30	0	24	35	0	31	55	55	11	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	18	0	0	0	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	40	40	6	31	31	26	51	51	7	32	32
g / C, Green / Cycle	0.13	0.34	0.34	0.05	0.26	0.26	0.21	0.42	0.42	0.06	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.23	0.03	0.28	0.28	0.20	0.01	0.46	0.06	0.02	0.03
s, saturation flow rate [veh/h]	1774	3547	1806	1774	3547	1808	1774	1863	1583	1774	1863	1583
c, Capacity [veh/h]	222	1196	609	84	920	469	381	790	671	103	498	423
d1, Uniform Delay [s]	52.50	34.38	34.38	56.04	44.44	44.44	46.26	20.06	34.56	56.31	32.97	33.31
k, delay calibration	0.46	0.50	0.50	0.11	0.50	0.50	0.37	0.11	0.50	0.29	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	80.26	3.29	6.33	6.59	51.19	62.46	26.01	0.01	64.08	55.09	0.07	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

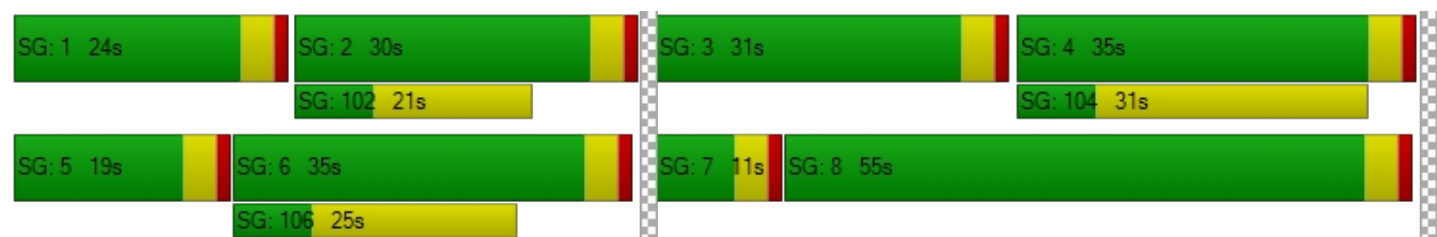
X, volume / capacity	1.08	0.69	0.69	0.60	1.07	1.07	0.93	0.02	1.10	0.95	0.09	0.12
d, Delay for Lane Group [s/veh]	132.76	37.67	40.70	62.62	95.63	106.89	72.27	20.07	98.65	111.40	33.05	33.43
Lane Group LOS	F	D	D	E	F	F	E	C	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	11.61	10.90	11.62	1.64	20.09	21.95	13.13	0.23	30.94	4.54	0.96	1.17
50th-Percentile Queue Length [ft]	290.13	272.61	290.47	40.98	502.36	548.74	328.14	5.80	773.51	113.51	23.94	29.31
95th-Percentile Queue Length [veh]	17.76	16.32	17.21	2.95	28.62	30.92	19.07	0.42	42.83	8.04	1.72	2.11
95th-Percentile Queue Length [ft]	444.01	408.00	430.22	73.76	715.57	773.01	476.68	10.43	1070.72	200.88	43.09	52.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	132.76	38.56	40.70	62.62	98.97	106.89	72.27	20.07	98.65	111.40	33.05	33.43
Movement LOS	F	D	D	E	F	F	E	C	F	F	C	C
d_A, Approach Delay [s/veh]	53.82			98.24			89.16			72.94		
Approach LOS	D			F			F			E		
d_I, Intersection Delay [s/veh]	79.53											
Intersection LOS	E											
Intersection V/C	1.077											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-15 SB Ramps at Bundy Canyon Road

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				↵↵↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	I-15 SB Ramps			I-15 SB Ramps			Bundy Canyon Road			Bundy Canyon Road		
Base Volume Input [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	73	1	56	0	247	295	78	268	0
Total Analysis Volume [veh/h]	0	0	0	291	3	222	0	986	1180	311	1071	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	0	6	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	0	7	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	32	0	0	33	0	25	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	7	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall					No			No		No	No	
Maximum Recall					No			No		No	No	
Pedestrian Recall					No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		17	17	17	43	43	43	18	65
g / C, Green / Cycle		0.19	0.19	0.19	0.47	0.47	0.47	0.20	0.72
(v / s)_i Volume / Saturation Flow Rate		0.16	0.07	0.07	0.28	0.37	0.37	0.18	0.21
s, saturation flow rate [veh/h]		1774	1590	1583	3547	1583	1583	1774	5074
c, Capacity [veh/h]		343	307	306	1680	750	750	354	3643
d1, Uniform Delay [s]		35.06	31.54	31.54	17.27	19.87	19.87	34.96	4.54
k, delay calibration		0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.88	0.73	0.74	1.51	8.15	8.15	6.98	0.21
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

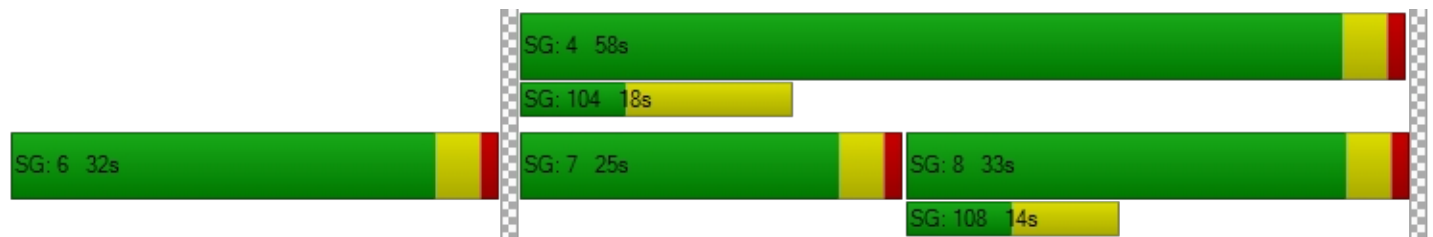
X, volume / capacity		0.85	0.37	0.37	0.59	0.79	0.79	0.88	0.29
d, Delay for Lane Group [s/veh]		40.93	32.28	32.28	18.78	28.02	28.02	41.94	4.75
Lane Group LOS		D	C	C	B	C	C	D	A
Critical Lane Group		Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		6.58	2.16	2.15	7.36	11.35	11.35	7.15	1.95
50th-Percentile Queue Length [ft]		164.50	54.03	53.82	184.05	283.81	283.81	178.69	48.84
95th-Percentile Queue Length [veh]		10.79	3.89	3.87	11.81	16.88	16.88	11.53	3.52
95th-Percentile Queue Length [ft]		269.68	97.25	96.87	295.30	421.95	421.95	288.31	87.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	40.93	32.28	32.28	0.00	18.78	28.02	41.94	4.75	0.00
Movement LOS				D	C	C		B	C	D	A	
d_A, Approach Delay [s/veh]	0.00			37.16			23.81			13.12		
Approach LOS	A			D			C			B		
d_I, Intersection Delay [s/veh]	21.87											
Intersection LOS	C											
Intersection V/C	0.821											

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 21: Mission Trail at Palomar Street

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name	Palomar Street		Mission Trail		Palomar Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Palomar Street		Mission Trail		Palomar Street	
Base Volume Input [veh/h]	245	203	411	387	424	561
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	203	411	387	424	561
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	51	103	97	106	140
Total Analysis Volume [veh/h]	245	203	411	387	424	561
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Overlap
Signal group	5	2	6	0	3	3
Auxiliary Signal Groups						3,5
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	7
Maximum Green [s]	30	30	30	0	30	30
Amber [s]	3.0	3.0	3.0	0.0	3.0	3.0
All red [s]	1.0	1.0	1.0	0.0	1.0	1.0
Split [s]	14	50	36	0	40	40
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	3.0
Walk [s]	0	0	7	0	7	7
Pedestrian Clearance [s]	0	0	18	0	21	21
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
Minimum Recall	No	No	No		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	10	52	38	38	30	44
g / C, Green / Cycle	0.11	0.58	0.43	0.43	0.33	0.48
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.22	0.24	0.24	0.35
s, saturation flow rate [veh/h]	3445	3547	1863	1583	1774	1583
c, Capacity [veh/h]	388	2069	794	675	582	768
d1, Uniform Delay [s]	38.18	8.30	19.03	19.63	26.74	18.50
k, delay calibration	0.11	0.50	0.50	0.50	0.16	0.37
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.69	0.09	2.41	3.52	2.61	4.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

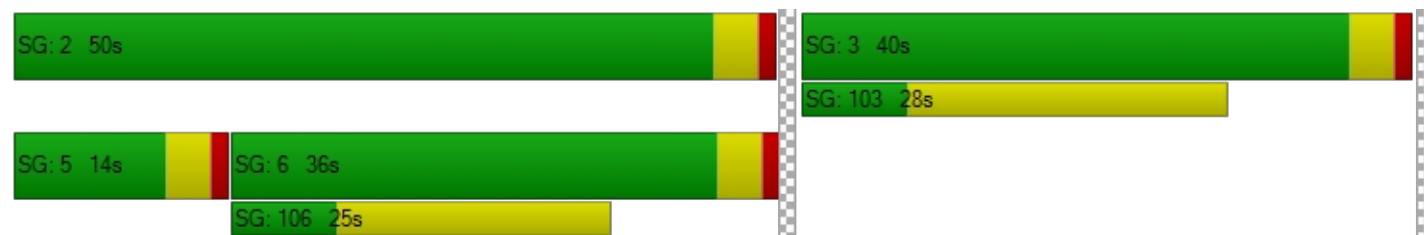
X, volume / capacity	0.63	0.10	0.52	0.57	0.73	0.73
d, Delay for Lane Group [s/veh]	39.87	8.39	21.44	23.16	29.35	23.09
Lane Group LOS	D	A	C	C	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	2.52	0.74	6.10	6.07	8.17	9.67
50th-Percentile Queue Length [ft]	63.02	18.56	152.43	151.67	204.35	241.73
95th-Percentile Queue Length [veh]	4.54	1.34	10.15	10.11	12.86	14.77
95th-Percentile Queue Length [ft]	113.43	33.42	253.67	252.65	321.57	369.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.87	8.39	21.44	23.16	29.35	23.09
Movement LOS	D	A	C	C	C	C
d_A, Approach Delay [s/veh]	25.61		22.27		25.78	
Approach LOS	C		C		C	
d_I, Intersection Delay [s/veh]	24.49					
Intersection LOS	C					
Intersection V/C	0.718					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 22: Stoneman Street at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stoneman Street			Stoneman Street			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	32	11	17	22	63	63	232	3	7	218	36
Total Analysis Volume [veh/h]	25	129	42	69	88	253	250	926	11	29	871	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	40	47	0	11	18	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	11	0	0	7	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	15	46	46	4	35	35
g / C, Green / Cycle	0.31	0.31	0.31	0.17	0.51	0.51	0.04	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.02	0.10	0.28	0.14	0.25	0.25	0.02	0.28	0.28
s, saturation flow rate [veh/h]	1035	1785	1455	1774	1863	1855	1774	1863	1773
c, Capacity [veh/h]	94	555	499	293	958	954	73	728	692
d1, Uniform Delay [s]	44.70	23.64	30.14	36.52	14.19	14.19	42.07	23.18	23.18
k, delay calibration	0.11	0.11	0.38	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.51	0.31	11.05	6.96	1.79	1.80	3.43	5.89	6.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.31	0.82	0.85	0.49	0.49	0.40	0.71	0.71
d, Delay for Lane Group [s/veh]	46.21	23.95	41.19	43.48	15.98	15.99	45.49	29.07	29.36
Lane Group LOS	D	C	D	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.59	2.76	9.80	5.61	5.85	5.83	0.67	9.59	9.18
50th-Percentile Queue Length [ft]	14.81	69.02	244.89	140.14	146.28	145.76	16.80	239.66	229.56
95th-Percentile Queue Length [veh]	1.07	4.97	14.93	9.49	9.82	9.79	1.21	14.66	14.15
95th-Percentile Queue Length [ft]	26.65	124.24	373.21	237.21	245.45	244.76	30.24	366.61	353.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.21	23.95	23.95	41.19	41.19	41.19	43.48	15.98	15.99	45.49	29.18	29.36
Movement LOS	D	C	C	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	26.79			41.19			21.78			29.66		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	27.83											
Intersection LOS	C											
Intersection V/C	0.809											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 24: Grape Street at I-15 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Grape Street		Grape Street		I-15 NB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Grape Street		Grape Street		I-15 NB Ramps	
Base Volume Input [veh/h]	366	747	375	1945	1097	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	366	747	375	1945	1097	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	187	94	0	274	33
Total Analysis Volume [veh/h]	366	747	375	0	1097	133
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	0	7	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	37	48	11	0	42	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	50	25	25	32	32
g / C, Green / Cycle	0.23	0.55	0.28	0.28	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.11	0.00	0.32	0.08
s, saturation flow rate [veh/h]	1774	3547	3547	1583	3445	1583
c, Capacity [veh/h]	410	1966	989	442	1229	565
d1, Uniform Delay [s]	33.55	11.33	26.17	0.00	27.33	20.33
k, delay calibration	0.13	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.30	0.56	1.11	0.00	2.49	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.38	0.38	0.00	0.89	0.24
d, Delay for Lane Group [s/veh]	41.85	11.89	27.28	0.00	29.82	20.55
Lane Group LOS	D	B	C	A	C	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	8.48	4.06	3.33	0.00	11.05	1.95
50th-Percentile Queue Length [ft]	212.12	101.49	83.15	0.00	276.28	48.76
95th-Percentile Queue Length [veh]	13.26	7.31	5.99	0.00	16.50	3.51
95th-Percentile Queue Length [ft]	331.54	182.69	149.67	0.00	412.58	87.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.85	11.89	27.28	0.00	29.82	20.55
Movement LOS	D	B	C	A	C	C
d_A, Approach Delay [s/veh]	21.74		27.28		28.82	
Approach LOS	C		C		C	
d_I, Intersection Delay [s/veh]	25.71					
Intersection LOS	C					
Intersection V/C	0.727					

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX G

**INTERSECTION TRAFFIC SIGNAL WARRANT
ANALYSIS WORKSHEETS**

APPENDIX G-1

**EXISTING WITH ELSP PROJECT BUILDOUT
TRAFFIC CONDITIONS**

Signal Warrants Report For Intersection 5: Lucerne Street at Lakeshore Drive

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	273	458	533
2	262	440	512
3	257	431	501
4	218	366	426
5	207	348	405
6	186	311	362
7	172	289	336
8	164	275	320
9	131	220	256
10	123	206	240
11	123	206	240
12	117	197	229
13	106	179	208
14	98	165	192
15	98	165	192
16	96	160	187
17	55	92	107
18	30	50	59
19	27	46	53
20	11	18	21
21	8	14	16
22	8	14	16
23	5	9	11
24	5	9	11

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	731	1	533	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
2	3	702	1	512	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
3	3	688	1	501	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
4	3	584	1	426	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
5	3	555	1	405	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
6	3	497	1	362	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes
7	3	461	1	336	No	No	Yes	Yes	No	No	No	No	Yes	Yes
8	3	439	1	320	No	No	Yes	Yes	No	No	No	No	Yes	Yes
9	3	351	1	256	No	No	No	Yes	No	No	No	No	Yes	No
10	3	329	1	240	No	No	No	No	No	No	No	No	No	No
11	3	329	1	240	No	No	No	No	No	No	No	No	No	No
12	3	314	1	229	No	No	No	No	No	No	No	No	No	No
13	3	285	1	208	No	No	No	No	No	No	No	No	No	No
14	3	263	1	192	No	No	No	No	No	No	No	No	No	No
15	3	263	1	192	No	No	No	No	No	No	No	No	No	No
16	3	256	1	187	No	No	No	No	No	No	No	No	No	No
17	3	147	1	107	No	No	No	No	No	No	No	No	No	No
18	3	80	1	59	No	No	No	No	No	No	No	No	No	No
19	3	73	1	53	No	No	No	No	No	No	No	No	No	No
20	3	29	1	21	No	No	No	No	No	No	No	No	No	No
21	3	22	1	16	No	No	No	No	No	No	No	No	No	No
22	3	22	1	16	No	No	No	No	No	No	No	No	No	No
23	3	14	1	11	No	No	No	No	No	No	No	No	No	No
24	3	14	1	11	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	0	1	3	5	9	8

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	374
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	55:22
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	533
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1264
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 5: Lucerne Street at Lakeshore Drive

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	583	796	241
2	560	764	231
3	548	748	227
4	466	637	193
5	443	605	183
6	396	541	164
7	367	501	152
8	350	478	145
9	280	382	116
10	262	358	108
11	262	358	108
12	251	342	104
13	227	310	94
14	210	287	87
15	210	287	87
16	204	279	84
17	117	159	48
18	64	88	27
19	58	80	24
20	23	32	10
21	17	24	7
22	17	24	7
23	12	16	5
24	12	16	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	1379	1	241	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	3	1324	1	231	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	3	1296	1	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	3	1103	1	193	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	3	1048	1	183	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	3	937	1	164	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	3	868	1	152	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
8	3	828	1	145	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
9	3	662	1	116	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No
10	3	620	1	108	No	No	Yes	Yes	No	No	No	Yes	No	No
11	3	620	1	108	No	No	Yes	Yes	No	No	No	Yes	No	No
12	3	593	1	104	No	No	No	Yes	No	No	No	Yes	No	No
13	3	537	1	94	No	No	No	Yes	No	No	No	Yes	No	No
14	3	497	1	87	No	No	No	Yes	No	No	No	No	No	No
15	3	497	1	87	No	No	No	Yes	No	No	No	No	No	No
16	3	483	1	84	No	No	No	Yes	No	No	No	No	No	No
17	3	276	1	48	No	No	No	No	No	No	No	No	No	No
18	3	152	1	27	No	No	No	No	No	No	No	No	No	No
19	3	138	1	24	No	No	No	No	No	No	No	No	No	No
20	3	55	1	10	No	No	No	No	No	No	No	No	No	No
21	3	41	1	7	No	No	No	No	No	No	No	No	No	No
22	3	41	1	7	No	No	No	No	No	No	No	No	No	No
23	3	28	1	5	No	No	No	No	No	No	No	No	No	No
24	3	28	1	5	No	No	No	No	No	No	No	No	No	No
Hours Met					7	8	11	16	6	8	9	13	9	7

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	373.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	24:59
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	241
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1620
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 5: Lucerne Street at Lakeshore Drive

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	678	787	416
2	651	756	399
3	637	740	391
4	542	630	333
5	515	598	316
6	461	535	283
7	427	496	262
8	407	472	250
9	325	378	200
10	305	354	187
11	305	354	187
12	292	338	179
13	264	307	162
14	244	283	150
15	244	283	150
16	237	275	146
17	136	157	83
18	75	87	46
19	68	79	42
20	27	31	17
21	20	24	12
22	20	24	12
23	14	16	8
24	14	16	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	1465	1	416	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	3	1407	1	399	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	3	1377	1	391	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	3	1172	1	333	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	3	1113	1	316	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	3	996	1	283	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	3	923	1	262	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	3	879	1	250	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
9	3	703	1	200	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
10	3	659	1	187	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
11	3	659	1	187	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
12	3	630	1	179	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
13	3	571	1	162	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No
14	3	527	1	150	No	Yes	Yes	Yes	No	No	No	Yes	No	No
15	3	527	1	150	No	Yes	Yes	Yes	No	No	No	Yes	No	No
16	3	512	1	146	No	Yes	Yes	Yes	No	No	No	Yes	No	No
17	3	293	1	83	No	No	No	No	No	No	No	No	No	No
18	3	162	1	46	No	No	No	No	No	No	No	No	No	No
19	3	147	1	42	No	No	No	No	No	No	No	No	No	No
20	3	58	1	17	No	No	No	No	No	No	No	No	No	No
21	3	44	1	12	No	No	No	No	No	No	No	No	No	No
22	3	44	1	12	No	No	No	No	No	No	No	No	No	No
23	3	30	1	8	No	No	No	No	No	No	No	No	No	No
24	3	30	1	8	No	No	No	No	No	No	No	No	No	No
Hours Met					12	16	16	16	7	8	12	16	13	8

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	725.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	83:48
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	416
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1881
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

APPENDIX G-II

**YEAR 2022 WITH ELSP PROJECT PHASE I
TRAFFIC CONDITIONS**

Signal Warrants Report For Intersection 22: Stoneman Street at Grand Avenue

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	783	797	208	9
2	752	765	200	9
3	736	749	196	8
4	626	638	166	7
5	595	606	158	7
6	532	542	141	6
7	493	502	131	6
8	470	478	125	5
9	376	383	100	4
10	352	359	94	4
11	352	359	94	4
12	337	343	89	4
13	305	311	81	4
14	282	287	75	3
15	282	287	75	3
16	274	279	73	3
17	157	159	42	2
18	86	88	23	1
19	78	80	21	1
20	31	32	8	0
21	23	24	6	0
22	23	24	6	0
23	16	16	4	0
24	16	16	4	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	1580	2	217	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	5	1517	2	209	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	5	1485	2	204	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	5	1264	2	173	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	5	1201	2	165	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	5	1074	2	147	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	5	995	2	137	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	5	948	2	130	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9	5	759	2	104	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
10	5	711	2	98	No	No	No	Yes	No	No	Yes	Yes	No	No
11	5	711	2	98	No	No	No	Yes	No	No	Yes	Yes	No	No
12	5	680	2	93	No	No	No	Yes	No	No	Yes	Yes	No	No
13	5	616	2	85	No	No	No	No	No	No	No	Yes	No	No
14	5	569	2	78	No	No	No	No	No	No	No	Yes	No	No
15	5	569	2	78	No	No	No	No	No	No	No	Yes	No	No
16	5	553	2	76	No	No	No	No	No	No	No	Yes	No	No
17	5	316	2	44	No	No	No	No	No	No	No	No	No	No
18	5	174	2	24	No	No	No	No	No	No	No	No	No	No
19	5	158	2	22	No	No	No	No	No	No	No	No	No	No
20	5	63	2	8	No	No	No	No	No	No	No	No	No	No
21	5	47	2	6	No	No	No	No	No	No	No	No	No	No
22	5	47	2	6	No	No	No	No	No	No	No	No	No	No
23	5	32	2	4	No	No	No	No	No	No	No	No	No	No
24	5	32	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					5	8	8	12	8	9	12	16	9	7

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	442	38
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	25:32	0:05
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	208	9
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	1797	1797
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 22: Stoneman Street at Grand Avenue

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	1081	905	107	6
2	1038	869	103	6
3	1016	851	101	6
4	865	724	86	5
5	822	688	81	5
6	735	615	73	4
7	681	570	67	4
8	649	543	64	4
9	519	434	51	3
10	486	407	48	3
11	486	407	48	3
12	465	389	46	3
13	422	353	42	2
14	389	326	39	2
15	389	326	39	2
16	378	317	37	2
17	216	181	21	1
18	119	100	12	1
19	108	91	11	1
20	43	36	4	0
21	32	27	3	0
22	32	27	3	0
23	22	18	2	0
24	22	18	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	1986	2	113	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
2	5	1907	2	109	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No
3	5	1867	2	107	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No
4	5	1589	2	91	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
5	5	1510	2	86	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes
6	5	1350	2	77	No	No	No	No	No	Yes	Yes	Yes	No	No
7	5	1251	2	71	No	No	No	No	No	Yes	Yes	Yes	No	No
8	5	1192	2	68	No	No	No	No	No	Yes	Yes	Yes	No	No
9	5	953	2	54	No	No	No	No	No	No	No	Yes	No	No
10	5	893	2	51	No	No	No	No	No	No	No	Yes	No	No
11	5	893	2	51	No	No	No	No	No	No	No	Yes	No	No
12	5	854	2	49	No	No	No	No	No	No	No	Yes	No	No
13	5	775	2	44	No	No	No	No	No	No	No	Yes	No	No
14	5	715	2	41	No	No	No	No	No	No	No	No	No	No
15	5	715	2	41	No	No	No	No	No	No	No	No	No	No
16	5	695	2	39	No	No	No	No	No	No	No	No	No	No
17	5	397	2	22	No	No	No	No	No	No	No	No	No	No
18	5	219	2	13	No	No	No	No	No	No	No	No	No	No
19	5	199	2	12	No	No	No	No	No	No	No	No	No	No
20	5	79	2	4	No	No	No	No	No	No	No	No	No	No
21	5	59	2	3	No	No	No	No	No	No	No	No	No	No
22	5	59	2	3	No	No	No	No	No	No	No	No	No	No
23	5	40	2	2	No	No	No	No	No	No	No	No	No	No
24	5	40	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	1	4	5	8	8	13	0	2

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	664.7	94.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	19:45	0:09
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	107	6
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	2099	2099
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 22: Stoneman Street at Grand Avenue

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	722	732	59	17
2	693	703	57	16
3	679	688	55	16
4	578	586	47	14
5	549	556	45	13
6	491	498	40	12
7	455	461	37	11
8	433	439	35	10
9	347	351	28	8
10	325	329	27	8
11	325	329	27	8
12	310	315	25	7
13	282	285	23	7
14	260	264	21	6
15	260	264	21	6
16	253	256	21	6
17	144	146	12	3
18	79	81	6	2
19	72	73	6	2
20	29	29	2	1
21	22	22	2	1
22	22	22	2	1
23	14	15	1	0
24	14	15	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	1454	2	76	No	No	No	No	No	No	Yes	Yes	No	No
2	5	1396	2	73	No	No	No	No	No	No	Yes	Yes	No	No
3	5	1367	2	71	No	No	No	No	No	No	Yes	Yes	No	No
4	5	1164	2	61	No	No	No	No	No	No	No	Yes	No	No
5	5	1105	2	58	No	No	No	No	No	No	No	Yes	No	No
6	5	989	2	52	No	No	No	No	No	No	No	No	No	No
7	5	916	2	48	No	No	No	No	No	No	No	No	No	No
8	5	872	2	45	No	No	No	No	No	No	No	No	No	No
9	5	698	2	36	No	No	No	No	No	No	No	No	No	No
10	5	654	2	35	No	No	No	No	No	No	No	No	No	No
11	5	654	2	35	No	No	No	No	No	No	No	No	No	No
12	5	625	2	32	No	No	No	No	No	No	No	No	No	No
13	5	567	2	30	No	No	No	No	No	No	No	No	No	No
14	5	524	2	27	No	No	No	No	No	No	No	No	No	No
15	5	524	2	27	No	No	No	No	No	No	No	No	No	No
16	5	509	2	27	No	No	No	No	No	No	No	No	No	No
17	5	290	2	15	No	No	No	No	No	No	No	No	No	No
18	5	160	2	8	No	No	No	No	No	No	No	No	No	No
19	5	145	2	8	No	No	No	No	No	No	No	No	No	No
20	5	58	2	3	No	No	No	No	No	No	No	No	No	No
21	5	44	2	3	No	No	No	No	No	No	No	No	No	No
22	5	44	2	3	No	No	No	No	No	No	No	No	No	No
23	5	29	2	1	No	No	No	No	No	No	No	No	No	No
24	5	29	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	3	5	0	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	23.2	35
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:22	0:09
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	59	17
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1530	1530
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

APPENDIX G-III

**YEAR 2040 WITH ELSP PROJECT BUILDOUT
TRAFFIC CONDITIONS**

Signal Warrants Report For Intersection 8: Mission Trail at Campbell Street

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1131	911	8	10
2	1086	875	8	10
3	1063	856	8	9
4	905	729	6	8
5	860	692	6	8
6	769	619	5	7
7	713	574	5	6
8	679	547	5	6
9	543	437	4	5
10	509	410	4	5
11	509	410	4	5
12	486	392	3	4
13	441	355	3	4
14	407	328	3	4
15	407	328	3	4
16	396	319	3	4
17	226	182	2	2
18	124	100	1	1
19	113	91	1	1
20	45	36	0	0
21	34	27	0	0
22	34	27	0	0
23	23	18	0	0
24	23	18	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	8	2042	2	18	No	No	No	No	No	No	No	No	No	No
2	8	1961	2	18	No	No	No	No	No	No	No	No	No	No
3	8	1919	2	17	No	No	No	No	No	No	No	No	No	No
4	8	1634	2	14	No	No	No	No	No	No	No	No	No	No
5	8	1552	2	14	No	No	No	No	No	No	No	No	No	No
6	8	1388	2	12	No	No	No	No	No	No	No	No	No	No
7	8	1287	2	11	No	No	No	No	No	No	No	No	No	No
8	8	1226	2	11	No	No	No	No	No	No	No	No	No	No
9	8	980	2	9	No	No	No	No	No	No	No	No	No	No
10	8	919	2	9	No	No	No	No	No	No	No	No	No	No
11	8	919	2	9	No	No	No	No	No	No	No	No	No	No
12	8	878	2	7	No	No	No	No	No	No	No	No	No	No
13	8	796	2	7	No	No	No	No	No	No	No	No	No	No
14	8	735	2	7	No	No	No	No	No	No	No	No	No	No
15	8	735	2	7	No	No	No	No	No	No	No	No	No	No
16	8	715	2	7	No	No	No	No	No	No	No	No	No	No
17	8	408	2	4	No	No	No	No	No	No	No	No	No	No
18	8	224	2	2	No	No	No	No	No	No	No	No	No	No
19	8	204	2	2	No	No	No	No	No	No	No	No	No	No
20	8	81	2	0	No	No	No	No	No	No	No	No	No	No
21	8	61	2	0	No	No	No	No	No	No	No	No	No	No
22	8	61	2	0	No	No	No	No	No	No	No	No	No	No
23	8	41	2	0	No	No	No	No	No	No	No	No	No	No
24	8	41	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	31.6	36.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04	0:06
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	8	10
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	2060	2060
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 8: Mission Trail at Campbell Street

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1100	1419	14	42
2	1056	1362	13	40
3	1034	1334	13	39
4	880	1135	11	34
5	836	1078	11	32
6	748	965	10	29
7	693	894	9	26
8	660	851	8	25
9	528	681	7	20
10	495	639	6	19
11	495	639	6	19
12	473	610	6	18
13	429	553	5	16
14	396	511	5	15
15	396	511	5	15
16	385	497	5	15
17	220	284	3	8
18	121	156	2	5
19	110	142	1	4
20	44	57	1	2
21	33	43	0	1
22	33	43	0	1
23	22	28	0	1
24	22	28	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	8	2519	2	56	No	No	No	No	No	No	No	Yes	No	No
2	8	2418	2	53	No	No	No	No	No	No	No	No	No	No
3	8	2368	2	52	No	No	No	No	No	No	No	No	No	No
4	8	2015	2	45	No	No	No	No	No	No	No	No	No	No
5	8	1914	2	43	No	No	No	No	No	No	No	No	No	No
6	8	1713	2	39	No	No	No	No	No	No	No	No	No	No
7	8	1587	2	35	No	No	No	No	No	No	No	No	No	No
8	8	1511	2	33	No	No	No	No	No	No	No	No	No	No
9	8	1209	2	27	No	No	No	No	No	No	No	No	No	No
10	8	1134	2	25	No	No	No	No	No	No	No	No	No	No
11	8	1134	2	25	No	No	No	No	No	No	No	No	No	No
12	8	1083	2	24	No	No	No	No	No	No	No	No	No	No
13	8	982	2	21	No	No	No	No	No	No	No	No	No	No
14	8	907	2	20	No	No	No	No	No	No	No	No	No	No
15	8	907	2	20	No	No	No	No	No	No	No	No	No	No
16	8	882	2	20	No	No	No	No	No	No	No	No	No	No
17	8	504	2	11	No	No	No	No	No	No	No	No	No	No
18	8	277	2	7	No	No	No	No	No	No	No	No	No	No
19	8	252	2	5	No	No	No	No	No	No	No	No	No	No
20	8	101	2	3	No	No	No	No	No	No	No	No	No	No
21	8	76	2	1	No	No	No	No	No	No	No	No	No	No
22	8	76	2	1	No	No	No	No	No	No	No	No	No	No
23	8	50	2	1	No	No	No	No	No	No	No	No	No	No
24	8	50	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	1	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	40.9	101.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09	1:10
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	14	42
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	2575	2575
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 8: Mission Trail at Campbell Street

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1598	1300	15	44
2	1534	1248	14	42
3	1502	1222	14	41
4	1278	1040	12	35
5	1214	988	11	33
6	1087	884	10	30
7	1007	819	9	28
8	959	780	9	26
9	767	624	7	21
10	719	585	7	20
11	719	585	7	20
12	687	559	6	19
13	623	507	6	17
14	575	468	5	16
15	575	468	5	16
16	559	455	5	15
17	320	260	3	9
18	176	143	2	5
19	160	130	2	4
20	64	52	1	2
21	48	39	0	1
22	48	39	0	1
23	32	26	0	1
24	32	26	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	8	2898	2	59	No	No	No	No	No	No	No	Yes	No	No
2	8	2782	2	56	No	No	No	No	No	No	No	Yes	No	No
3	8	2724	2	55	No	No	No	No	No	No	No	No	No	No
4	8	2318	2	47	No	No	No	No	No	No	No	No	No	No
5	8	2202	2	44	No	No	No	No	No	No	No	No	No	No
6	8	1971	2	40	No	No	No	No	No	No	No	No	No	No
7	8	1826	2	37	No	No	No	No	No	No	No	No	No	No
8	8	1739	2	35	No	No	No	No	No	No	No	No	No	No
9	8	1391	2	28	No	No	No	No	No	No	No	No	No	No
10	8	1304	2	27	No	No	No	No	No	No	No	No	No	No
11	8	1304	2	27	No	No	No	No	No	No	No	No	No	No
12	8	1246	2	25	No	No	No	No	No	No	No	No	No	No
13	8	1130	2	23	No	No	No	No	No	No	No	No	No	No
14	8	1043	2	21	No	No	No	No	No	No	No	No	No	No
15	8	1043	2	21	No	No	No	No	No	No	No	No	No	No
16	8	1014	2	20	No	No	No	No	No	No	No	No	No	No
17	8	580	2	12	No	No	No	No	No	No	No	No	No	No
18	8	319	2	7	No	No	No	No	No	No	No	No	No	No
19	8	290	2	6	No	No	No	No	No	No	No	No	No	No
20	8	116	2	3	No	No	No	No	No	No	No	No	No	No
21	8	87	2	1	No	No	No	No	No	No	No	No	No	No
22	8	87	2	1	No	No	No	No	No	No	No	No	No	No
23	8	58	2	1	No	No	No	No	No	No	No	No	No	No
24	8	58	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	2	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	133.6	183.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:33	2:14
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	15	44
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	2957	2957
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

APPENDIX H

EXISTING TRAFFIC CONDITIONS BASIC FREEWAY SEGMENTS LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX H-1

EXISTING TRAFFIC CONDITIONS

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	2983	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f _{LW} mph f _{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u> $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ 1057 pc/h/ln S 65.0 mph $D = v_p / S$ 16.3 pc/mi/ln LOS B			<u>Design (N)</u> Design LOS $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ pc/h/ln S mph $D = v_p / S$ pc/mi/ln Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service DDHV - Directional design hour volume			S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow speed E _R - Exhibits 11-10, 11-12 E _T - Exhibits 11-10, 11-11, 11-13 f _p - Page 11-18 LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow speed			f _{LW} - Exhibit 11-8 f _{LC} - Exhibit 11-9 TRD - Page 11-11		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/17/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper. (LOS) ☐ Des. (N) ☐ Planning Data					
Flow Inputs					
Volume, V	3121	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
				mph	
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S	65.0	mph	v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S	17.0	pc/mi/ln	S		
LOS	B		D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Northbound		
Agency or Company	LLG		From/To North of Railroad Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year Existing		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4092	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph				
			f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
			mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1450			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV})		
S 65.0			x f _p)		
D = v _p / S 22.3			S		
LOS C			D = v _p / S		
			pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
S - Speed			f _{LW} - Exhibit 11-8		
V - Hourly volume			E _T - Exhibits 11-10, 11-11, 11-13		
D - Density			f _{LC} - Exhibit 11-9		
v _p - Flow rate			f _p - Page 11-18		
FFS - Free-flow speed			TRD - Page 11-11		
LOS - Level of service			LOS, S, FFS, v _p - Exhibits 11-2,		
BFFS - Base free-flow speed			11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Southbound		
Agency or Company	LLG		From/To North of Railroad Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year Existing		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5079	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
f _{LW}			mph		
f _{LC}			mph		
TRD Adjustment			mph		
FFS			65.0 mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1800			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV})		
S 62.7 mph			x f _p)		
D = v _p / S 28.7 pc/mi/ln			S		
LOS D			D = v _p / S		
			pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			S - Speed		
V - Hourly volume			D - Density		
v _p - Flow rate			FFS - Free-flow speed		
LOS - Level of service			BFFS - Base free-flow speed		
DDHV - Directional design hour volume			E _R - Exhibits 11-10, 11-12		
			f _{LW} - Exhibit 11-8		
			E _T - Exhibits 11-10, 11-11, 11-13		
			f _{LC} - Exhibit 11-9		
			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5028	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
f _{LW}			mph		
f _{LC}			mph		
TRD Adjustment			mph		
FFS			65.0 mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
1782	pc/h/ln		v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			pc/h/ln		
S	62.9	mph	S		
D = v _p / S	28.3	pc/mi/ln	D = v _p / S		
LOS	D		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5492	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
f _{LW}			mph		
f _{LC}			mph		
TRD Adjustment			mph		
FFS			65.0 mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1946 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
S 60.8 mph			x f _p)		
D = v _p / S 32.0 pc/mi/ln			S mph		
LOS D			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
S - Speed			f _{LW} - Exhibit 11-8		
V - Hourly volume			E _T - Exhibits 11-10, 11-11, 11-13		
D - Density			f _{LC} - Exhibit 11-9		
v _p - Flow rate			f _p - Page 11-18		
FFS - Free-flow speed			TRD - Page 11-11		
LOS - Level of service			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
BFFS - Base free-flow speed					
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4517	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0 mph	
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
1601	pc/h/ln		v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			pc/h/ln		
S	64.4	mph	S		
D = v _p / S	24.8	pc/mi/ln	D = v _p / S		
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	3984	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft			
Number of Lanes, N	3				
Total Ramp Density, TRD		ramps/mi			
FFS (measured)	65.0	mph			
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1412 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV})		
S 65.0 mph			x f _p)		
D = v _p / S 21.7 pc/mi/ln			S		
LOS C			D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>North of Railroad Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4155	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f _{LW} mph f _{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S			v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S			S		
LOS			D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Railroad Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5164	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f _{LW} mph f _{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1830 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV})		
S 62.4 mph			x f _p)		
D = v _p / S 29.3 pc/mi/ln			S mph		
LOS D			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
S - Speed			f _{LW} - Exhibit 11-8		
V - Hourly volume			E _T - Exhibits 11-10, 11-11, 11-13		
D - Density			f _{LC} - Exhibit 11-9		
FFS - Free-flow speed			f _p - Page 11-18		
BFFS - Base free-flow speed			TRD - Page 11-11		
DDHV - Directional design hour volume			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4423	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
			mph		
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
1567	pc/h/ln		v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			pc/h/ln		
S	64.6	mph	x f _p)		
D = v _p / S	24.3	pc/mi/ln	S		
LOS	C		D = v _p / S		
			pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4279	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
				mph	
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S	64.8	mph	v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S	23.4	pc/mi/ln	S		
LOS	C		D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
			TRD - Page 11-11		

APPENDIX H-II

**EXISTING WITH ELSP PROJECT BUILDOUT
TRAFFIC CONDITIONS**

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	2997	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft			
Number of Lanes, N	3				
Total Ramp Density, TRD		ramps/mi			
FFS (measured)	65.0	mph			
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S			v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S			S		
LOS			D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			E _T - Exhibits 11-10, 11-11, 11-13		
v _p - Flow rate			f _p - Page 11-18		
LOS - Level of service			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume			f _{LW} - Exhibit 11-8		
			f _{LC} - Exhibit 11-9		
			TRD - Page 11-11		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Northbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/17/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	3089		veh/h	Peak-Hour Factor, PHF	0.95
AADT			veh/day	%Trucks and Buses, P _T	2
Peak-Hr Prop. of AADT, K				%RVs, P _R	0
Peak-Hr Direction Prop, D				General Terrain:	Level
DDHV = AADT x K x D			veh/h	Grade % Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R 1.2		
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f _{LW} mph f _{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1095 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
S 65.0 mph			x f _p)		
D = v _p / S 16.8 pc/mi/ln			S mph		
LOS B			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
S - Speed			f _{LW} - Exhibit 11-8		
V - Hourly volume			E _T - Exhibits 11-10, 11-11, 11-13		
D - Density			f _{LC} - Exhibit 11-9		
v _p - Flow rate			f _p - Page 11-18		
FFS - Free-flow speed			TRD - Page 11-11		
LOS - Level of service			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
BFFS - Base free-flow speed					
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Northbound		
Agency or Company	LLG		From/To North of Railroad Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year Existing + Project (Buildout)		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	4115	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)]	0.990	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f _{LW}	mph	
Number of Lanes, N	3		f _{LC}	mph	
Total Ramp Density, TRD		ramps/mi	TRD Adjustment	mph	
FFS (measured)	65.0	mph	FFS	65.0	mph
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
v _p	1458	pc/h/ln	v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			x f _p)		
S	65.0	mph	S		
D = v _p / S	22.4	pc/mi/ln	D = v _p / S		
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12	f _{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E _T - Exhibits 11-10, 11-11, 11-13	f _{LC} - Exhibit 11-9	
v _p - Flow rate	FFS - Free-flow speed		f _p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Railroad Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5061	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f_{LW} mph f_{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$			$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S	62.8	mph	S		
D = v _p / S	28.6	pc/mi/ln	D = v _p / S		
LOS	D		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		E _T - Exhibits 11-10, 11-11, 11-13		
v _p - Flow rate	FFS - Free-flow speed		f _{LW} - Exhibit 11-8		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	5004	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f_{LW} mph f_{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1773 pc/h/ln			Design LOS		
S 63.0 mph			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
D = v _p / S 28.1 pc/mi/ln			S mph		
LOS D			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>South of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday AM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	5589	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f_{LW} mph f_{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1981 pc/h/ln			Design LOS		
S 60.2 mph			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
D = v _p / S 32.9 pc/mi/ln			S mph		
LOS D			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Northbound		
Agency or Company	LLG		From/To South of Bundy Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year Existing + Project (Buildout)		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4569	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f_{LW} mph f_{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S			v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S			S		
LOS			D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Northbound		
Agency or Company	LLG		From/To North of Bundy Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year Existing + Project (Buildout)		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper. (LOS) ☐ Des. (N) ☐ Planning Data					
Flow Inputs					
Volume, V	3910	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	% Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			% RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
f _{LW}			mph		
f _{LC}			mph		
TRD Adjustment			mph		
FFS			65.0 mph		
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1386 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
S 65.0 mph			x f _p)		
D = v _p / S 21.3 pc/mi/ln			S mph		
LOS C			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Northbound		
Agency or Company	LLG		From/To North of Railroad Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year Existing + Project (Buildout)		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	4011	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	% Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			% RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)]	0.990	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f _{LW}	mph	
Number of Lanes, N	3		f _{LC}	mph	
Total Ramp Density, TRD		ramps/mi	TRD Adjustment	mph	
FFS (measured)	65.0	mph	FFS	65.0	mph
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
	1421	pc/h/ln	v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			x f _p)		
S	65.0	mph	S		
D = v _p / S	21.9	pc/mi/ln	D = v _p / S		
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12	f _{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E _T - Exhibits 11-10, 11-11, 11-13	f _{LC} - Exhibit 11-9	
v _p - Flow rate	FFS - Free-flow speed		f _p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Railroad Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	5190	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f_{LW} mph f_{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1839 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
S 62.3 mph			x f _p)		
D = v _p / S 29.5 pc/mi/ln			S mph		
LOS D			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel <i>I-15 Southbound</i>		
Agency or Company	LLG		From/To <i>North of Bundy Canyon Road</i>		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year <i>Existing + Project (Buildout)</i>		
Project Description <i>2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore</i>					
☒ Oper. (LOS) ☐ Des. (N) ☐ Planning Data					
Flow Inputs					
Volume, V	4291	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	% Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			% RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
f _{LW}			mph		
f _{LC}			mph		
TRD Adjustment			mph		
FFS			65.0 mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
1521	pc/h/ln		v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			pc/h/ln		
S	64.8	mph	S		
D = v _p / S	23.5	pc/mi/ln	D = v _p / S		
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JT		Highway/Direction of Travel I-15 Southbound		
Agency or Company	LLG		From/To South of Bundy Canyon Road		
Date Performed	1/12/17		Jurisdiction		
Analysis Time Period	Weekday PM Peak Hour		Analysis Year Existing + Project (Buildout)		
Project Description 2-14-3544 - East Lake Specific Plan EIR, Lake Elsinore					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	4181	veh/h	Peak-Hour Factor, PHF	0.95	
AADT		veh/day	%Trucks and Buses, P _T	2	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Level	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
				Up/Down %	
Calculate Flow Adjustments					
f _p	1.00		E _R	1.2	
E _T	1.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.990		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft		f _{LW} mph f _{LC} mph TRD Adjustment mph FFS 65.0 mph		
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	3				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph				
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u> $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ 1482 pc/h/ln S 64.9 mph D = v _p / S 22.8 pc/mi/ln LOS C			<u>Design (N)</u> Design LOS $v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$ S mph D = v _p / S pc/mi/ln Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes V - Hourly volume v _p - Flow rate LOS - Level of service DDHV - Directional design hour volume			S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow speed E _R - Exhibits 11-10, 11-12 E _T - Exhibits 11-10, 11-11, 11-13 f _p - Page 11-18 LOS, S, FFS, v _p - Exhibits 11-2, 11-3		
S - Speed D - Density FFS - Free-flow speed BFFS - Base free-flow speed			f _{LW} - Exhibit 11-8 f _{LC} - Exhibit 11-9 TRD - Page 11-11		

APPENDIX H-III

**EXISTING WITH ELSP PROJECT BUILDOUT
WITH MITIGATION TRAFFIC CONDITIONS**

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