APPENDIX E

Existing
Level of Service Calculations

Intersection Level Of Service Report
#1: I-215 Northbound Ramps (NS) / Fair Isle Drive-Box Springs Road (EW)

Control Type:	Signalized	Delay (sec / veh):	36.7
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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			60.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		no			yes			yes			yes	

Volumes

Name												
Base Volume Input [veh/h]	547	132	0	0	446	898	86	15	2	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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]	547	132	0	0	446	898	86	15	2	0	0	0
Peak Hour Factor	0.8720	0.8720	0.9200	0.9200	0.8720	0.8720	0.8720	0.8720	0.8720	0.9200	0.9200	0.9200
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	38	0	0	128	257	25	4	1	0	0	0
Total Analysis Volume [veh/h]	627	151	0	0	511	1030	99	17	2	0	0	0
Presence of On-Street Parking	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	

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Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	0	0	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	7	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	23	76	0	0	53	0	0	19	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	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

Lane Group Calculations

Lane Group	L	C	C	R	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]	19	70	47	47	17	17	
g / C, Green / Cycle	0.20	0.74	0.50	0.50	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.18	0.04	0.45	0.48	0.03	0.03	
s, saturation flow rate [veh/h]	3514	3618	1700	1615	1810	1827	
c, Capacity [veh/h]	693	2676	850	808	319	322	
d1, Uniform Delay [s]	37.25	3.36	21.70	22.69	33.33	33.32	
k, delay calibration	0.11	0.11	0.38	0.41	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.78	0.01	11.98	19.46	1.28	1.25	
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	0.06	0.91	0.95	0.18	0.18	
d, Delay for Lane Group [s/veh]	42.03	3.37	33.68	42.15	34.60	34.57	
Lane Group LOS	D	A	C	D	C	C	
Critical Lane Group	yes	no	no	yes	yes	no	
50th-Percentile Queue Length [veh]	7.19	0.27	16.41	18.56	1.18	1.18	
50th-Percentile Queue Length [ft]	179.64	6.63	410.19	464.08	29.40	29.49	
95th-Percentile Queue Length [veh]	11.58	0.48	23.05	25.63	2.12	2.12	
95th-Percentile Queue Length [ft]	289.55	11.94	576.27	640.73	52.93	53.09	

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Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.03	3.37	0.00	0.00	33.68	40.01	34.59	34.57	34.57	0.00	0.00	0.00
Movement LOS	D	A			C	D	C	C	C			
d_A, Approach Delay [s/veh]	34.52			37.91			34.59			0.00		
Approach LOS	C			D			C			A		
d_I, Intersection Delay [s/veh]	36.67											
Intersection LOS	D											
Intersection V/C	0.788											

Sequence

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

Intersection Level Of Service Report
#2: Sycamore Canyon Boulevard (NS) / Fair Isle Drive (EW)

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			no		

Volumes

Name												
Base Volume Input [veh/h]	36	92	107	117	62	358	112	1239	563	42	127	15
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	42	0	0	117	0	0	0
Total Hourly Volume [veh/h]	36	92	107	117	62	316	112	1239	446	42	127	15
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
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	24	28	31	16	83	30	327	118	11	33	4
Total Analysis Volume [veh/h]	38	97	113	123	65	333	118	1307	470	44	134	16
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		

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Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	3	8	0	7	4	0	5	2	0	1	6	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	19	0	22	24	0	15	23	0	11	19	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	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	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	15	15	7	18	18	6	33	33	4	31
g / C, Green / Cycle	0.05	0.20	0.20	0.09	0.24	0.24	0.09	0.44	0.44	0.06	0.41
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.07	0.07	0.02	0.21	0.07	0.36	0.29	0.01	0.08
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	3618	1615	3514	1865
c, Capacity [veh/h]	94	379	322	161	855	382	155	1599	714	198	769
d1, Uniform Delay [s]	34.42	25.32	25.84	33.41	22.27	27.55	33.53	18.28	16.46	33.82	14.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
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
d2, Incremental Delay [s]	2.77	0.35	0.65	7.39	0.04	6.29	7.41	4.76	4.71	0.56	0.57
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	0.26	0.35	0.77	0.08	0.87	0.76	0.82	0.66	0.22	0.19
d, Delay for Lane Group [s/veh]	37.20	25.68	26.49	40.79	22.31	33.85	40.94	23.03	21.18	34.38	14.64
Lane Group LOS	D	C	C	D	C	C	D	C	C	C	B
Critical Lane Group	yes	no	no	no	no	yes	no	yes	no	yes	no
50th-Percentile Queue Length [veh]	0.70	1.38	1.65	2.37	0.41	5.85	2.27	9.29	6.27	0.37	1.53
50th-Percentile Queue Length [ft]	17.53	34.44	41.28	59.14	10.32	146.14	56.86	232.23	156.71	9.35	38.33
95th-Percentile Queue Length [veh]	1.26	2.48	2.97	4.26	0.74	9.81	4.09	14.29	10.37	0.67	2.76
95th-Percentile Queue Length [ft]	31.55	61.98	74.31	106.45	18.58	245.27	102.35	357.19	259.37	16.83	69.00

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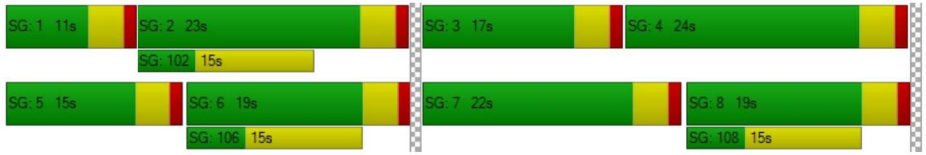
Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.20	25.68	26.49	40.79	22.31	33.85	40.94	23.03	21.18	34.38	14.64	14.64
Movement LOS	D	C	C	D	C	C	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	27.81			34.05			23.69			19.12		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	25.62											
Intersection LOS	C											
Intersection V/C	0.764											

Sequence

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



Intersection Level Of Service Report
#3: Sycamore Canyon Boulevard (NS) / I-215 Southbound Ramps (EW)

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name						
Approach	Southwestbound		Northwestbound		Southeastbound	
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		no	

Volumes

Name						
Base Volume Input [veh/h]	347	133	1688	30	139	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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	69	0	0	0	0
Total Hourly Volume [veh/h]	347	64	1688	30	139	239
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	17	443	8	36	63
Total Analysis Volume [veh/h]	364	67	1771	31	146	251
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	

Generated with PTV VISTRO
Version 3.00-01
Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	8	0	2	0	1	6
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]	21	0	33	0	11	44
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
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

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Lane Group Calculations

Lane Group	C	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]	15	15	31	31	6	42
g / C, Green / Cycle	0.24	0.24	0.48	0.48	0.10	0.64
(v / s)_i Volume / Saturation Flow Rate	0.20	0.04	0.33	0.32	0.04	0.13
s, saturation flow rate [veh/h]	1810	1615	3618	1883	3514	1900
c, Capacity [veh/h]	429	383	1730	900	351	1216
d1, Uniform Delay [s]	23.68	19.73	13.25	12.99	27.47	4.86
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	0.22	2.32	3.90	0.78	0.08
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	0.85	0.17	0.69	0.67	0.42	0.21
d, Delay for Lane Group [s/veh]	28.42	19.95	15.57	16.89	28.25	4.94
Lane Group LOS	C	B	B	B	C	A
Critical Lane Group	yes	no	yes	no	yes	no
50th-Percentile Queue Length [veh]	5.22	0.74	5.82	6.14	1.00	0.88
50th-Percentile Queue Length [ft]	130.43	18.41	145.59	153.51	25.11	21.95
95th-Percentile Queue Length [veh]	8.96	1.33	9.78	10.20	1.81	1.58
95th-Percentile Queue Length [ft]	224.07	33.14	244.54	255.11	45.20	39.50

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.42	19.95	16.00	16.89	28.25	4.94
Movement LOS	C	B	B	B	C	A
d_A, Approach Delay [s/veh]	27.10		16.01		13.51	
Approach LOS	C		B		B	
d_I, Intersection Delay [s/veh]	17.45					
Intersection LOS	B					
Intersection V/C	0.705					

Sequence

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

Intersection Level Of Service Report
#4: Sycamore Canyon Boulevard (NS) / Dan Kipper Drive (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name						
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	no		no		no	

Volumes

Name						
Base Volume Input [veh/h]	9	1767	531	39	0	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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]	9	1767	531	39	0	2
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9200	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	484	146	11	0	1
Total Analysis Volume [veh/h]	10	1938	582	43	0	2
Pedestrian Volume [ped/h]	0		0		0	

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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	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.77	0.00	0.00	0.00	0.00	12.20
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh]	128.42	128.42	0.00	0.00	0.00	0.01
95th-Percentile Queue Length [ft]	3210.47	3210.47	0.00	0.00	0.00	0.30
d_A, Approach Delay [s/veh]	0.04		0.00		12.20	
Approach LOS	F		A		B	
d_I, Intersection Delay [s/veh]	0.04					
Intersection LOS	B					

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Intersection Level Of Service Report
#5: Sycamore Canyon Boulevard (NS) / Box Spring Boulevard (EW)

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			yes			yes			yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1514	34	142	361	0	0	0	0	20	0	245
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	142
Total Hourly Volume [veh/h]	0	1514	34	142	361	0	0	0	0	20	0	103
Peak Hour Factor	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030	0.9030
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	419	9	39	100	0	0	0	0	6	0	29
Total Analysis Volume [veh/h]	0	1677	38	157	400	0	0	0	0	22	0	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]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	36	0	15	40	0	0	19	0	0	19	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	C	L	C	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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
g_i, Effective Green Time [s]	0	44	44	8	51	51	7	7	7	7
g / C, Green / Cycle	0.00	0.63	0.63	0.11	0.73	0.73	0.09	0.09	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.45	0.45	0.09	0.11	0.11	0.00	0.02	0.00	0.07
s, saturation flow rate [veh/h]	1810	1900	1885	1810	1900	1900	1900	1440	1900	1615
c, Capacity [veh/h]	1	1188	1179	198	1394	1394	230	202	178	152
d1, Uniform Delay [s]	0.00	8.96	8.99	30.41	2.77	2.77	0.00	30.84	0.00	30.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, 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]	0.00	3.83	3.92	7.05	0.22	0.22	0.00	0.24	0.00	7.31
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
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	0.00	0.72	0.73	0.79	0.14	0.14	0.00	0.11	0.00	0.75
d, Delay for Lane Group [s/veh]	0.00	12.79	12.91	37.46	2.98	2.98	0.00	31.07	0.00	38.23
Lane Group LOS	A	B	B	D	A	A	A	C	A	D
Critical Lane Group	no	no	yes	yes	no	no	no	no	no	yes
50th-Percentile Queue Length [veh]	0.00	7.07	7.10	2.75	0.44	0.44	0.00	0.34	0.00	2.03
50th-Percentile Queue Length [ft]	0.00	176.85	177.41	68.81	10.98	10.98	0.00	8.46	0.00	50.82
95th-Percentile Queue Length [veh]	0.00	11.44	11.46	4.95	0.79	0.79	0.00	0.61	0.00	3.66
95th-Percentile Queue Length [ft]	0.00	285.89	286.62	123.85	19.77	19.77	0.00	15.23	0.00	91.48

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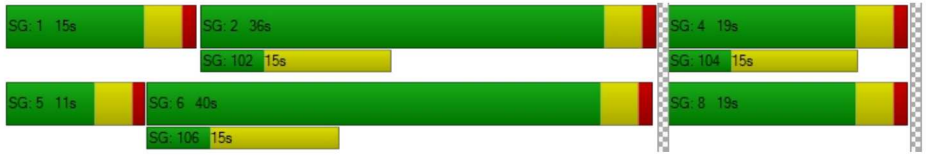
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.85	12.91	37.46	2.98	2.98	0.00	0.00	0.00	31.07	0.00	38.23
Movement LOS	A	B	B	D	A	A	A	A	A	C	A	D
d_A, Approach Delay [s/veh]	12.85			12.70			0.00			37.07		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	14.19											
Intersection LOS	B											
Intersection V/C	0.738											

Sequence

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



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Intersection Level Of Service Report
#6: Sycamore Canyon Boulevard (NS) / Sierra Ridge Drive (EW)

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name						
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		no		yes	

Volumes

Name						
Base Volume Input [veh/h]	151	1604	332	70	30	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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	151
Total Hourly Volume [veh/h]	151	1604	332	70	30	0
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	456	94	20	9	0
Total Analysis Volume [veh/h]	172	1823	377	80	34	0
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	

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Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
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]	29	101	72	0	19	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	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

Lane Group Calculations

Lane Group	L	C	C	C	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]	25	97	68	68	15	15
g / C, Green / Cycle	0.21	0.81	0.57	0.57	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.10	0.50	0.12	0.13	0.02	0.00
s, saturation flow rate [veh/h]	1810	3618	1900	1789	1810	1615
c, Capacity [veh/h]	377	2924	1077	1014	226	202
d1, Uniform Delay [s]	41.55	4.44	12.81	12.92	46.82	0.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.94	1.01	0.45	0.52	1.40	0.00
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	0.46	0.62	0.21	0.23	0.15	0.00
d, Delay for Lane Group [s/veh]	45.50	5.46	13.26	13.43	48.22	0.00
Lane Group LOS	D	A	B	B	D	A
Critical Lane Group	no	yes	no	no	yes	no
50th-Percentile Queue Length [veh]	4.75	5.60	2.96	3.00	0.98	0.00
50th-Percentile Queue Length [ft]	118.77	140.00	74.01	74.88	24.38	0.00
95th-Percentile Queue Length [veh]	8.33	9.48	5.33	5.39	1.76	0.00
95th-Percentile Queue Length [ft]	208.14	237.02	133.21	134.78	43.89	0.00

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.50	5.46	13.33	13.43	48.22	0.00
Movement LOS	D	A	B	B	D	A
d_A, Approach Delay [s/veh]	8.91		13.34		48.22	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	10.26					
Intersection LOS	B					
Intersection V/C	0.581					

Sequence

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

Intersection Level Of Service Report
#7: Sycamore Canyon Boulevard (NS) / Eastridge Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.616

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			no		

Volumes

Name												
Base Volume Input [veh/h]	155	1125	137	77	123	44	60	94	30	136	182	556
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	68	0	0	30	0	0	30	0	0	38
Total Hourly Volume [veh/h]	155	1125	69	77	123	14	60	94	0	136	182	518
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
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	313	19	21	34	4	17	26	0	38	51	144
Total Analysis Volume [veh/h]	172	1250	77	86	137	16	67	104	0	151	202	576
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		

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Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups			2,7			3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	19	23	23	15	19	19	11	19	0	18	26	26
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	5	5
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	10
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	no	no	no	no	no	no	no	no		no	no	no
Maximum Recall	no	no	no	no	no	no	no	no		no	no	no
Pedestrian Recall	no	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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	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	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	7	29	39	11	33	42	6	13	13	7	14	29
g / C, Green / Cycle	0.09	0.38	0.53	0.15	0.44	0.57	0.08	0.17	0.17	0.09	0.18	0.38
(v / s)_i Volume / Saturation Flow Rate	0.05	0.35	0.05	0.02	0.04	0.01	0.02	0.02	0.00	0.04	0.06	0.36
s, saturation flow rate [veh/h]	3514	3618	1615	3514	3618	1615	3514	5176	1615	3514	3618	1615
c, Capacity [veh/h]	325	1374	851	515	1570	912	271	860	268	330	662	619
d1, Uniform Delay [s]	32.48	22.04	8.80	27.99	12.48	7.19	32.57	26.61	0.00	32.16	26.50	22.18
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	0.50
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
d2, Incremental Delay [s]	1.34	10.48	0.21	0.15	0.11	0.01	0.47	0.06	0.00	0.99	0.26	22.68
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	0.53	0.91	0.09	0.17	0.09	0.02	0.25	0.12	0.00	0.46	0.30	0.93
d, Delay for Lane Group [s/veh]	33.82	32.52	9.01	28.14	12.59	7.19	33.04	26.67	0.00	33.15	26.76	44.86
Lane Group LOS	C	C	A	C	B	A	C	C	A	C	C	D
Critical Lane Group	no	yes	no	no	no	no	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	1.45	10.93	0.56	0.64	0.61	0.09	0.55	0.49	0.00	1.25	1.46	12.21
50th-Percentile Queue Length [ft]	36.23	273.26	13.97	15.93	15.20	2.27	13.82	12.32	0.00	31.36	36.57	305.33
95th-Percentile Queue Length [veh]	2.61	16.35	1.01	1.15	1.09	0.16	0.99	0.89	0.00	2.26	2.63	17.94
95th-Percentile Queue Length [ft]	65.22	408.81	25.15	28.68	27.36	4.08	24.87	22.18	0.00	56.44	65.83	448.61

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d_M, Delay for Movement [s/veh]	33.82	32.52	9.01	28.14	12.59	7.19	33.04	26.67	0.00	33.15	26.76	44.86
Movement LOS	C	C	A	C	B	A	C	C	A	C	C	D
d_A, Approach Delay [s/veh]	31.46			17.83			29.17			39.02		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	32.65											
Intersection LOS	C											
Intersection V/C	0.616											

Sequence

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

Intersection Level Of Service Report
#8: Box Springs Boulevard (NS) / Eastridge Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name												
Base Volume Input [veh/h]	11	11	7	40	5	6	62	272	9	52	817	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	52	0	0	0	0	0	11	0	0	0
Total Hourly Volume [veh/h]	11	11	0	40	5	6	62	272	0	52	817	377
Peak Hour Factor	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220	0.9220
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	3	0	11	1	2	17	74	0	14	222	102
Total Analysis Volume [veh/h]	12	12	0	43	5	7	67	295	0	56	886	409
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		

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Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	19	0	11	19	0	11	39	0	11	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	R	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]	2	22	22	4	25	25	5	32	32	5	32	32
g / C, Green / Cycle	0.02	0.28	0.28	0.05	0.31	0.31	0.07	0.40	0.40	0.06	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.00	0.02	0.00	0.00	0.04	0.08	0.00	0.03	0.36	0.36
s, saturation flow rate [veh/h]	1810	1900	1615	1810	1900	1615	1810	3618	1615	1810	1900	1701
c, Capacity [veh/h]	39	531	452	98	594	505	123	1459	651	113	756	677
d1, Uniform Delay [s]	38.55	20.89	0.00	36.64	18.96	18.99	36.08	15.50	0.00	36.26	22.54	22.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.30	0.31
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
d2, Incremental Delay [s]	4.38	0.08	0.00	3.03	0.03	0.05	3.70	0.07	0.00	3.30	10.09	12.69
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	0.31	0.02	0.00	0.44	0.01	0.01	0.54	0.20	0.00	0.49	0.90	0.91
d, Delay for Lane Group [s/veh]	42.93	20.97	0.00	39.67	18.99	19.04	39.78	15.57	0.00	39.56	32.64	35.43
Lane Group LOS	D	C	A	D	B	B	D	B	A	D	C	D
Critical Lane Group	no	yes	no	yes	no	no	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	0.27	0.16	0.00	0.85	0.06	0.09	1.32	1.57	0.00	1.10	12.47	11.88
50th-Percentile Queue Length [ft]	6.68	4.04	0.00	21.29	1.57	2.23	32.99	39.25	0.00	27.54	311.67	297.06
95th-Percentile Queue Length [veh]	0.48	0.29	0.00	1.53	0.11	0.16	2.38	2.83	0.00	1.98	18.26	17.54
95th-Percentile Queue Length [ft]	12.02	7.28	0.00	38.33	2.83	4.02	59.39	70.65	0.00	49.58	456.43	438.39

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Scenario 1: 1: E-AM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.93	20.97	0.00	39.67	18.99	19.04	39.78	15.57	0.00	39.56	33.29	35.43
Movement LOS	D	C	A	D	B	B	D	B	A	D	C	D
d_A, Approach Delay [s/veh]	31.95			35.17			20.05			34.20		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	31.34											
Intersection LOS	C											
Intersection V/C	0.537											

Sequence

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

Intersection Level Of Service Report

#9: I-215 Ramps (NS) / Eastridge Avenue-Eucalyptus Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name												
Base Volume Input [veh/h]	472	0	205	160	0	304	134	108	90	311	493	280
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	155	0	0	134	0	0	90	0	0	280
Total Hourly Volume [veh/h]	472	0	50	160	0	170	134	108	0	311	493	0
Peak Hour Factor	0.9300	0.9200	0.9300	0.9300	0.9200	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	127	0	13	43	0	46	36	29	0	84	133	0
Total Analysis Volume [veh/h]	508	0	54	172	0	183	144	116	0	334	530	0
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		

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Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	3	0	0	7	0	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	0	0	7	0	0	7	7	0	7	7	0
Maximum Green [s]	30	0	0	30	0	0	30	30	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	0	0	22	0	0	16	15	0	23	22	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	10	0	0	10	0	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	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

Lane Group Calculations

Lane Group	L	R	L	R	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
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	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]	15	15	15	15	6	10	10	8	11	11
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.11	0.16	0.16	0.14	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.18	0.02	0.06	0.11	0.08	0.03	0.00	0.10	0.15	0.00
s, saturation flow rate [veh/h]	2796	2859	2796	1615	1810	3618	1615	3514	3618	1615
c, Capacity [veh/h]	723	718	723	406	193	574	256	487	690	308
d1, Uniform Delay [s]	22.56	17.14	19.67	18.96	26.02	21.93	0.00	24.60	23.01	0.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, 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]	1.26	0.04	0.17	0.78	5.69	0.17	0.00	1.72	1.83	0.00
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	0.70	0.08	0.24	0.45	0.75	0.20	0.00	0.69	0.77	0.00
d, Delay for Lane Group [s/veh]	23.82	17.18	19.84	19.75	31.72	22.11	0.00	26.33	24.84	0.00
Lane Group LOS	C	B	B	B	C	C	A	C	C	A
Critical Lane Group	yes	no	no	no	yes	no	no	no	yes	no
50th-Percentile Queue Length [veh]	3.07	0.25	0.89	1.93	2.08	0.64	0.00	2.11	3.26	0.00
50th-Percentile Queue Length [ft]	76.84	6.23	22.17	48.13	51.93	16.01	0.00	52.72	81.40	0.00
95th-Percentile Queue Length [veh]	5.53	0.45	1.60	3.47	3.74	1.15	0.00	3.80	5.86	0.00
95th-Percentile Queue Length [ft]	138.32	11.22	39.91	86.63	93.48	28.81	0.00	94.89	146.52	0.00

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Sycamore Canyon Industrial Buildings
Scenario 1: 1: E-AM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.82	0.00	17.18	19.84	0.00	19.75	31.72	22.11	0.00	26.33	24.84	0.00
Movement LOS	C		B	B		B	C	C	A	C	C	A
d_A, Approach Delay [s/veh]	23.18			19.79			27.43			25.42		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	24.08											
Intersection LOS	C											
Intersection V/C	0.556											

Sequence

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

Intersection Level Of Service Report

#1: I-215 Northbound Ramps (NS) / Fair Isle Drive-Box Springs Road (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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			60.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			yes			yes			yes		

Volumes

Name												
Base Volume Input [veh/h]	431	659	0	0	171	284	83	6	3	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	659	0	0	171	284	83	6	3	0	0	0
Peak Hour Factor	0.9650	0.9650	0.9200	0.9200	0.9650	0.9650	0.9650	0.9650	0.9650	0.9200	0.9200	0.9200
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]	112	171	0	0	44	74	22	2	1	0	0	0
Total Analysis Volume [veh/h]	447	683	0	0	177	294	86	6	3	0	0	0
Presence of On-Street Parking	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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	0	0	2	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	7	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	19	41	0	0	22	0	0	19	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	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

Lane Group Calculations

Lane Group	L	C	C	R	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]	10	25	11	11	27	27	
g / C, Green / Cycle	0.17	0.42	0.19	0.19	0.44	0.44	
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.14	0.15	0.03	0.03	
s, saturation flow rate [veh/h]	3514	3618	1711	1615	1810	1807	
c, Capacity [veh/h]	590	1536	325	307	800	799	
d1, Uniform Delay [s]	23.80	12.24	22.81	23.03	9.59	9.59	
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.03	0.20	3.05	4.01	0.14	0.14	
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	0.76	0.44	0.72	0.77	0.06	0.06	
d, Delay for Lane Group [s/veh]	25.83	12.45	25.87	27.04	9.73	9.73	
Lane Group LOS	C	B	C	C	A	A	
Critical Lane Group	yes	no	no	yes	no	yes	
50th-Percentile Queue Length [veh]	2.81	2.59	2.99	3.08	0.28	0.28	
50th-Percentile Queue Length [ft]	70.20	64.73	74.79	77.09	6.92	6.92	
95th-Percentile Queue Length [veh]	5.05	4.66	5.38	5.55	0.50	0.50	
95th-Percentile Queue Length [ft]	126.36	116.52	134.62	138.77	12.46	12.45	

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Sycamore Canyon Industrial Buildings
Scenario 2: 2: E-PM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.83	12.45	0.00	0.00	25.87	25.81	9.73	9.73	9.73	0.00	0.00	0.00
Movement LOS	C	B			C	C	A	A	A			
d_A, Approach Delay [s/veh]	17.74			26.46			9.73			0.00		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	19.71											
Intersection LOS	B											
Intersection V/C	0.374											

Sequence

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

Intersection Level Of Service Report
#2: Sycamore Canyon Boulevard (NS) / Fair Isle Drive (EW)

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name												
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			no		

Volumes

Name												
Base Volume Input [veh/h]	22	85	95	104	80	71	214	204	649	323	341	35
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	161	0	0	104	0	0	0
Total Hourly Volume [veh/h]	22	85	95	104	80	0	214	204	545	323	341	35
Peak Hour Factor	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330	0.9330
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	23	25	28	21	0	57	55	146	87	91	9
Total Analysis Volume [veh/h]	24	91	102	111	86	0	229	219	584	346	365	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]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	3	8	0	7	4	0	5	2	0	1	6	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	19	0	11	15	0	21	27	0	13	19	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	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	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]	3	7	7	6	10	10	11	32	32	9	30
g / C, Green / Cycle	0.04	0.10	0.10	0.09	0.15	0.15	0.15	0.46	0.46	0.12	0.43
(v / s)_i Volume / Saturation Flow Rate	0.01	0.05	0.06	0.06	0.02	0.00	0.13	0.06	0.36	0.10	0.22
s, saturation flow rate [veh/h]	1810	1900	1615	1810	3618	1615	1810	3618	1615	3514	1869
c, Capacity [veh/h]	71	189	161	160	539	241	278	1659	741	438	803
d1, Uniform Delay [s]	32.75	29.81	30.30	30.97	25.97	0.00	28.69	10.92	16.06	29.75	14.53
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
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
d2, Incremental Delay [s]	2.78	1.90	4.11	5.25	0.14	0.00	6.02	0.16	8.32	3.23	2.24
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	0.34	0.48	0.63	0.69	0.16	0.00	0.82	0.13	0.79	0.79	0.50
d, Delay for Lane Group [s/veh]	35.53	31.71	34.40	36.22	26.10	0.00	34.71	11.08	24.38	32.98	16.76
Lane Group LOS	D	C	C	D	C	A	C	B	C	C	B
Critical Lane Group	no	no	yes	yes	no	no	no	no	yes	yes	no
50th-Percentile Queue Length [veh]	0.42	1.43	1.70	1.91	0.58	0.00	3.85	0.85	8.06	2.78	4.35
50th-Percentile Queue Length [ft]	10.57	35.85	42.59	47.71	14.55	0.00	96.15	21.17	201.53	69.47	108.85
95th-Percentile Queue Length [veh]	0.76	2.58	3.07	3.43	1.05	0.00	6.92	1.52	12.72	5.00	7.78
95th-Percentile Queue Length [ft]	19.03	64.53	76.66	85.87	26.20	0.00	173.07	38.11	317.94	125.05	194.41

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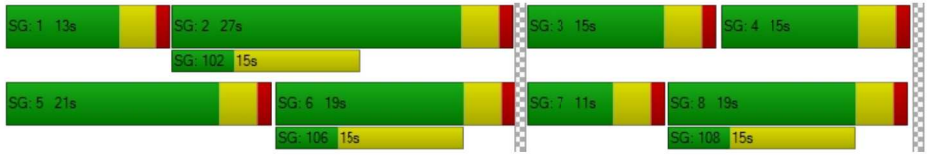
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.53	31.71	34.40	36.22	26.10	0.00	34.71	11.08	24.38	32.98	16.76	16.76
Movement LOS	D	C	C	D	C	A	C	B	C	C	B	B
d_A, Approach Delay [s/veh]	33.40			31.81			23.85			24.26		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.65											
Intersection LOS	C											
Intersection V/C	0.758											

Sequence

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



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Intersection Level Of Service Report
#3: Sycamore Canyon Boulevard (NS) / I-215 Southbound Ramps (EW)

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.425

Intersection Setup

Name						
Approach	Southwestbound		Northwestbound		Southeastbound	
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		no	

Volumes

Name						
Base Volume Input [veh/h]	151	236	777	146	158	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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	69	0	0	0	0
Total Hourly Volume [veh/h]	151	167	777	146	158	380
Peak Hour Factor	0.9250	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	45	210	39	43	103
Total Analysis Volume [veh/h]	163	181	840	158	171	411
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	

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Scenario 2: 2: E-PM

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	8	0	2	0	1	6
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]	30	0	19	0	11	30
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
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

Lane Group Calculations

Lane Group	C	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]	9	9	33	33	7	43
g / C, Green / Cycle	0.14	0.14	0.55	0.55	0.11	0.72
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.18	0.19	0.05	0.22
s, saturation flow rate [veh/h]	1789	1615	3618	1753	3514	1900
c, Capacity [veh/h]	257	232	1977	958	386	1374
d1, Uniform Delay [s]	24.47	24.50	7.56	7.61	24.98	2.93
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.48	3.94	0.46	1.00	0.80	0.12
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	0.70	0.71	0.34	0.35	0.44	0.30
d, Delay for Lane Group [s/veh]	27.95	28.44	8.02	8.61	25.78	3.05
Lane Group LOS	C	C	A	A	C	A
Critical Lane Group	no	yes	no	yes	yes	no
50th-Percentile Queue Length [veh]	2.39	2.21	1.75	1.90	1.06	0.59
50th-Percentile Queue Length [ft]	59.84	55.20	43.80	47.55	26.39	14.84
95th-Percentile Queue Length [veh]	4.31	3.97	3.15	3.42	1.90	1.07
95th-Percentile Queue Length [ft]	107.72	99.35	78.84	85.59	47.50	26.71

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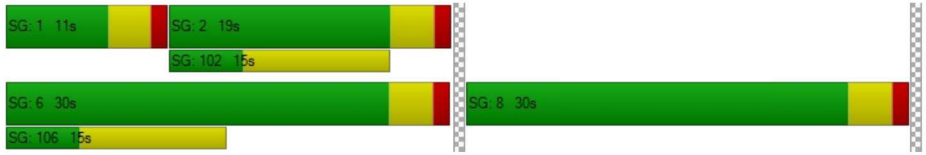
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.95	28.41	8.14	8.61	25.78	3.05
Movement LOS	C	C	A	A	C	A
d_A, Approach Delay [s/veh]	28.18		8.21		9.73	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	12.24					
Intersection LOS	B					
Intersection V/C	0.425					

Sequence

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



Intersection Level Of Service Report
#4: Sycamore Canyon Boulevard (NS) / Dan Kipper Drive (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name						
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	no		no		no	

Volumes

Name						
Base Volume Input [veh/h]	1	899	486	3	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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]	1	899	486	3	0	1
Peak Hour Factor	0.8340	0.8340	0.8340	0.8340	0.9200	0.8340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	269	146	1	0	0
Total Analysis Volume [veh/h]	1	1078	583	4	0	1
Pedestrian Volume [ped/h]	0		0		0	

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Scenario 2: 2: E-PM

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	0.00	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	0.00	0.00	12.01
Movement LOS	A	A	A	A		B
95th-Percentile Queue Length [veh]	25.81	25.81	0.00	0.00	0.00	0.01
95th-Percentile Queue Length [ft]	645.21	645.21	0.00	0.00	0.00	0.15
d_A, Approach Delay [s/veh]	0.01		0.00		12.01	
Approach LOS	F		A		B	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	B					

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Intersection Level Of Service Report
#5: Sycamore Canyon Boulevard (NS) / Box Spring Boulevard (EW)

Control Type:	Signalized	Delay (sec / veh):	12.1
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			yes			yes			yes		

Volumes

Name												
Base Volume Input [veh/h]	1	572	7	54	437	0	45	1	17	17	0	247
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	54
Total Hourly Volume [veh/h]	1	572	7	54	437	0	45	1	17	17	0	193
Peak Hour Factor	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450	0.8450
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	169	2	16	129	0	13	0	5	5	0	57
Total Analysis Volume [veh/h]	1	677	8	64	517	0	53	1	20	20	0	228
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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	21	0	11	21	0	0	28	0	0	28	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	C	L	C	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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
g_i, Effective Green Time [s]	0	33	33	5	37	37	11	11	11	11
g / C, Green / Cycle	0.00	0.55	0.55	0.08	0.62	0.62	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.00	0.18	0.18	0.04	0.14	0.14	0.05	0.01	0.00	0.14
s, saturation flow rate [veh/h]	1810	1900	1892	1810	1900	1900	1398	1413	1900	1615
c, Capacity [veh/h]	7	1039	1035	140	1178	1178	349	271	334	284
d1, Uniform Delay [s]	29.79	7.52	7.52	26.49	5.01	5.01	21.76	24.29	0.00	23.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, 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]	9.82	0.85	0.86	2.34	0.43	0.43	0.30	0.11	0.00	5.23
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
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	0.15	0.33	0.33	0.46	0.22	0.22	0.21	0.07	0.00	0.80
d, Delay for Lane Group [s/veh]	39.62	8.37	8.38	28.82	5.44	5.44	22.06	24.40	0.00	28.95
Lane Group LOS	D	A	A	C	A	A	C	C	A	C
Critical Lane Group	no	no	yes	yes	no	no	no	no	no	yes
50th-Percentile Queue Length [veh]	0.03	1.91	1.90	0.87	0.96	0.96	0.84	0.24	0.00	3.12
50th-Percentile Queue Length [ft]	0.79	47.72	47.57	21.87	23.98	23.98	20.89	5.96	0.00	77.89
95th-Percentile Queue Length [veh]	0.06	3.44	3.43	1.57	1.73	1.73	1.50	0.43	0.00	5.61
95th-Percentile Queue Length [ft]	1.41	85.90	85.63	39.37	43.17	43.17	37.60	10.74	0.00	140.20

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.62	8.37	8.38	28.82	5.44	5.44	22.06	22.06	22.06	24.40	0.00	28.95
Movement LOS	D	A	A	C	A	A	C	C	C	C	A	C
d_A, Approach Delay [s/veh]	8.42			8.01			22.06			28.58		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	12.05											
Intersection LOS	B											
Intersection V/C	0.447											

Sequence

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

Intersection Level Of Service Report
#6: Sycamore Canyon Boulevard (NS) / Sierra Ridge Drive (EW)

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.295

Intersection Setup

Name						
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]	45.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		no		yes	

Volumes

Name						
Base Volume Input [veh/h]	78	532	461	29	70	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
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	78
Total Hourly Volume [veh/h]	78	532	461	29	70	18
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	147	127	8	19	5
Total Analysis Volume [veh/h]	86	588	510	32	77	20
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	

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Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
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]	12	41	29	0	19	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	5	5	0	5	0
Pedestrian Clearance [s]	0	10	10	0	10	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

Lane Group Calculations

Lane Group	L	C	C	C	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]	8	37	25	25	15	15
g / C, Green / Cycle	0.13	0.62	0.42	0.42	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.14	0.15	0.04	0.01
s, saturation flow rate [veh/h]	1810	3618	1900	1861	1810	1615
c, Capacity [veh/h]	241	2231	792	776	452	404
d1, Uniform Delay [s]	23.66	5.26	11.91	11.95	17.62	17.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.07	0.29	1.18	1.24	0.81	0.23
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	0.36	0.26	0.34	0.35	0.17	0.05
d, Delay for Lane Group [s/veh]	27.73	5.55	13.09	13.19	18.44	17.32
Lane Group LOS	C	A	B	B	B	B
Critical Lane Group	yes	no	no	yes	yes	no
50th-Percentile Queue Length [veh]	1.26	1.08	2.21	2.22	0.82	0.21
50th-Percentile Queue Length [ft]	31.39	27.02	55.13	55.51	20.52	5.17
95th-Percentile Queue Length [veh]	2.26	1.95	3.97	4.00	1.48	0.37
95th-Percentile Queue Length [ft]	56.49	48.63	99.24	99.92	36.94	9.31

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.73	5.55	13.13	13.19	18.44	17.32
Movement LOS	C	A	B	B	B	B
d_A, Approach Delay [s/veh]	8.38		13.14		18.21	
Approach LOS	A		B		B	
d_I, Intersection Delay [s/veh]	11.07					
Intersection LOS	B					
Intersection V/C	0.295					

Sequence

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

Report File: G:\...\E-PM.pdf
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Intersection Level Of Service Report
#7: Sycamore Canyon Boulevard (NS) / Eastridge Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.508

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			no		

Volumes

Name												
Base Volume Input [veh/h]	42	228	153	317	353	22	83	177	72	481	100	225
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	240	0	0	41	0	0	72	0	0	158
Total Hourly Volume [veh/h]	42	228	0	317	353	0	83	177	0	481	100	67
Peak Hour Factor	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470	0.8470
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	67	0	94	104	0	24	52	0	142	30	20
Total Analysis Volume [veh/h]	50	269	0	374	417	0	98	209	0	568	118	79
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]	65
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups			2,7			3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	11	15	15	15	19	19	11	19	0	16	24	24
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	5	5
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	10
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	no	no	no	no	no	no	no	no		no	no	no
Maximum Recall	no	no	no	no	no	no	no	no		no	no	no
Pedestrian Recall	no	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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	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	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	4	21	37	9	26	36	6	7	7	12	13	26
g / C, Green / Cycle	0.06	0.32	0.57	0.14	0.40	0.55	0.09	0.11	0.11	0.18	0.20	0.40
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.00	0.11	0.12	0.00	0.03	0.04	0.00	0.16	0.03	0.05
s, saturation flow rate [veh/h]	3514	3618	1615	3514	3618	1615	3514	5176	1615	3514	3618	1615
c, Capacity [veh/h]	227	1169	919	489	1437	886	315	555	173	649	731	650
d1, Uniform Delay [s]	28.84	16.09	0.00	26.96	13.34	0.00	27.71	27.00	0.00	25.77	21.38	12.19
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
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
d2, Incremental Delay [s]	0.48	0.46	0.00	2.54	0.51	0.00	0.56	0.42	0.00	3.94	0.10	0.08
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	0.23	0.00	0.77	0.29	0.00	0.31	0.38	0.00	0.88	0.16	0.12
d, Delay for Lane Group [s/veh]	29.32	16.55	0.00	29.50	13.85	0.00	28.26	27.42	0.00	29.71	21.49	12.27
Lane Group LOS	C	B	A	C	B	A	C	C	A	C	C	B
Critical Lane Group	no	yes	no	yes	no	no	no	yes	no	yes	no	no
50th-Percentile Queue Length [veh]	0.35	1.33	0.00	2.68	1.82	0.00	0.67	0.93	0.00	4.13	0.67	0.62
50th-Percentile Queue Length [ft]	8.83	33.25	0.00	66.99	45.51	0.00	16.83	23.36	0.00	103.36	16.81	15.40
95th-Percentile Queue Length [veh]	0.64	2.39	0.00	4.82	3.28	0.00	1.21	1.68	0.00	7.44	1.21	1.11
95th-Percentile Queue Length [ft]	15.89	59.84	0.00	120.59	81.93	0.00	30.30	42.05	0.00	186.05	30.26	27.72

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Sycamore Canyon Industrial Buildings
Scenario 2: 2: E-PM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.32	16.55	0.00	29.50	13.85	0.00	28.26	27.42	0.00	29.71	21.49	12.27
Movement LOS	C	B	A	C	B	A	C	C	A	C	C	B
d_A, Approach Delay [s/veh]	18.55			21.25			27.69			26.64		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.65											
Intersection LOS	C											
Intersection V/C	0.508											

Sequence

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

Intersection Level Of Service Report
#8: Box Springs Boulevard (NS) / Eastridge Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.487

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name												
Base Volume Input [veh/h]	12	9	1	175	6	15	20	637	3	24	741	56
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	24	0	0	0	0	0	12	0	0	0
Total Hourly Volume [veh/h]	12	9	0	175	6	15	20	637	0	24	741	56
Peak Hour Factor	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860	0.8860
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	3	0	49	2	4	6	180	0	7	209	16
Total Analysis Volume [veh/h]	14	10	0	198	7	17	23	719	0	27	836	63
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		

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Sycamore Canyon Industrial Buildings
Scenario 2: 2: E-PM

Intersection Settings

Located in CBD	no
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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]	13	19	0	13	19	0	11	22	0	11	22	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	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

Lane Group Calculations

Lane Group	L	C	R	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]	2	20	20	9	27	27	2	18	18	3	18	18
g / C, Green / Cycle	0.02	0.30	0.30	0.13	0.41	0.41	0.04	0.27	0.27	0.04	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.00	0.11	0.00	0.01	0.01	0.20	0.00	0.01	0.24	0.24
s, saturation flow rate [veh/h]	1810	1900	1615	1810	1900	1615	1810	3618	1615	1810	1900	1854
c, Capacity [veh/h]	47	579	492	242	783	666	68	989	441	77	528	516
d1, Uniform Delay [s]	31.08	15.80	0.00	27.40	11.27	11.35	30.48	21.42	0.00	30.24	22.27	22.27
k, delay calibration	0.11	0.50	0.50	0.22	0.50	0.50	0.11	0.11	0.11	0.11	0.21	0.21
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
d2, Incremental Delay [s]	3.51	0.05	0.00	13.02	0.02	0.07	2.87	1.04	0.00	2.70	8.03	8.21
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	0.30	0.02	0.00	0.82	0.01	0.03	0.34	0.73	0.00	0.35	0.86	0.86
d, Delay for Lane Group [s/veh]	34.60	15.86	0.00	40.42	11.29	11.42	33.35	22.46	0.00	32.94	30.30	30.48
Lane Group LOS	C	B	A	D	B	B	C	C	A	C	C	C
Critical Lane Group	no	yes	no	yes	no	no	yes	no	no	no	no	yes
50th-Percentile Queue Length [veh]	0.24	0.10	0.00	3.56	0.05	0.13	0.38	4.43	0.00	0.43	6.84	6.70
50th-Percentile Queue Length [ft]	6.09	2.48	0.00	88.98	1.35	3.35	9.41	110.72	0.00	10.85	171.04	167.53
95th-Percentile Queue Length [veh]	0.44	0.18	0.00	6.41	0.10	0.24	0.68	7.88	0.00	0.78	11.13	10.95
95th-Percentile Queue Length [ft]	10.97	4.46	0.00	160.17	2.42	6.02	16.94	197.01	0.00	19.53	278.28	273.66

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.60	15.86	0.00	40.42	11.29	11.42	33.35	22.46	0.00	32.94	30.38	30.48
Movement LOS	C	B	A	D	B	B	C	C	A	C	C	C
d_A, Approach Delay [s/veh]	26.79			37.28			22.80			30.46		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	28.24											
Intersection LOS	C											
Intersection V/C	0.487											

Sequence

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

Intersection Level Of Service Report

#9: I-215 Ramps (NS) / Eastridge Avenue-Eucalyptus Avenue (EW)

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name												
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			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	no			no			no			no		

Volumes

Name												
Base Volume Input [veh/h]	125	0	561	472	0	456	245	374	220	616	250	327
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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	308	0	0	245	0	0	220	0	0	327
Total Hourly Volume [veh/h]	125	0	253	472	0	211	245	374	0	616	250	0
Peak Hour Factor	0.9490	0.9200	0.9490	0.9490	0.9200	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490	0.9490
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]	33	0	67	124	0	56	65	99	0	162	66	0
Total Analysis Volume [veh/h]	132	0	267	497	0	222	258	394	0	649	263	0
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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-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	3	0	0	7	0	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	0	0	7	0	0	7	7	0	7	7	0
Maximum Green [s]	30	0	0	30	0	0	30	30	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	0	0	18	0	0	20	17	0	25	22	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	10	0	0	10	0	0	0	10	0	0	10	0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	0.0	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

Lane Group Calculations

Lane Group	L	R	L	R	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
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	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]	15	15	15	15	11	9	9	14	13	13
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.18	0.15	0.15	0.24	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.18	0.14	0.14	0.11	0.00	0.18	0.07	0.00
s, saturation flow rate [veh/h]	2796	2859	2796	1615	1810	3618	1615	3514	3618	1615
c, Capacity [veh/h]	737	734	737	415	325	551	246	841	768	343
d1, Uniform Delay [s]	19.12	18.27	22.16	19.21	23.56	24.19	0.00	21.29	20.08	0.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, 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]	0.12	0.30	1.08	1.07	4.41	1.74	0.00	1.54	0.26	0.00
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	0.18	0.36	0.67	0.54	0.79	0.71	0.00	0.77	0.34	0.00
d, Delay for Lane Group [s/veh]	19.24	18.57	23.25	20.28	27.97	25.93	0.00	22.83	20.34	0.00
Lane Group LOS	B	B	C	C	C	C	A	C	C	A
Critical Lane Group	no	no	yes	no	no	yes	no	yes	no	no
50th-Percentile Queue Length [veh]	0.67	1.33	2.97	2.40	3.45	2.47	0.00	3.82	1.39	0.00
50th-Percentile Queue Length [ft]	16.65	33.31	74.13	59.97	86.21	61.83	0.00	95.44	34.69	0.00
95th-Percentile Queue Length [veh]	1.20	2.40	5.34	4.32	6.21	4.45	0.00	6.87	2.50	0.00
95th-Percentile Queue Length [ft]	29.97	59.96	133.43	107.95	155.18	111.30	0.00	171.80	62.45	0.00

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Scenario 2: 2: E-PM

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.24	0.00	18.57	23.25	0.00	20.28	27.97	25.93	0.00	22.83	20.34	0.00
Movement LOS	B		B	C		C	C	C	A	C	C	A
d_A, Approach Delay [s/veh]	18.79			22.33			26.74			22.12		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.80											
Intersection LOS	C											
Intersection V/C	0.643											

Sequence

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

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92506

Phone: (951) 686-1070 Fax: (951) 788-1256
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/30/2015
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Eastridge Off
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.3	mph
Volume on freeway	4569	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	50.0	mph
Volume on ramp	642	vph
Length of first accel/decel lane	190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	331	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4569		642		331		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	1202		169		87		v
Trucks and buses	7		7		7		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.966		0.966		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, v_p	4978	699	361	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.603 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3281 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4978	7059	No
$v_{FO} = v_F - v_R$	4279	7059	No
v_R	699	2100	No
v_3 or v_{av34}	1697 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3281 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3281	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.296	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_O = 68.9	mph
Space mean speed for all vehicles,	S = 61.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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Phone: (951) 686-1070 Fax: (951) 788-1256
E-mail:

Diverge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/30/2015
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Eastridge Off
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.3	mph
Volume on freeway	5313	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	50.0	mph
Volume on ramp	660	vph
Length of first accel/decel lane	190	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	509	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	5313		660		509		vph
Peak-hour factor, PHF	0.95		0.95		0.95		
Peak 15-min volume, v15	1398		174		134		v
Trucks and buses	7		7		7		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.966		0.966		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp	5788	719	555	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.582 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3670 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5788	7059	No
$v_{FO} = v_F - v_R$	5069	7059	No
v_R	719	2100	No
v_3 or v_{av34}	2118 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3670 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3670	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 34.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.298	
Space mean speed in ramp influence area,	S_R = 58.4	mph
Space mean speed in outer lanes,	S_O = 67.3	mph
Space mean speed for all vehicles,	S = 61.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Eastridge On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.3	mph
Volume on freeway	3927	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	331	vph
Length of first accel/decel lane	530	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	642	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3927	331	642	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1033	87	169	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	4278	361	699	pcph

Estimation of V12 Merge Areas

L_{EQ} = 1441.07 (Equation 13-6 or 13-7)

P_{FM} = 0.592 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2534 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4639	7059	No
v_3 or v_{av34}	1744 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2534 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2895	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.339	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_O = 60.8	mph
Space mean speed for all vehicles,	S = 58.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Eastridge On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.3	mph
Volume on freeway	4653	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	509	vph
Length of first accel/decel lane	530	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	660	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4653	509	660	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1224	134	174	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	5069	555	719	pcph

Estimation of V12 Merge Areas

L_{EQ} = 1651.86 (Equation 13-6 or 13-7)

P_{FM} = 0.592 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3003 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		5624	7059	No
v_3 or v_{av34}		2066 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{av34} /2		Yes	
If yes, v_{12A}	= 3003		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3558	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.405	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_O = 59.7	mph
Space mean speed for all vehicles,	S = 57.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Fair Isle On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	66.8	mph
Volume on freeway	5802	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	1334	vph
Length of first accel/decel lane	510	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	101	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5802	1334	101	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1527	351	27	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	6321	1453	110	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.036 Using Equation 4

$v_{12} = v_F (P_{FM})$ = 229 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	7774	9472	No
v_3 or v_{av34}	3046 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		Yes	
Is v_3 or v_{av34} > 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2528 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3981	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.479	
Space mean speed in ramp influence area,	S_R = 54.9	mph
Space mean speed in outer lanes,	S_O = 61.8	mph
Space mean speed for all vehicles,	S = 58.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	I-215 NB
Junction:	Fair Isle On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	66.8	mph
Volume on freeway	6856	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	674	vph
Length of first accel/decel lane	510	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	91	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	6856	674	91	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1804	177	24	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	7469	734	99	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.126 Using Equation 4

$v_{12} = v_F (P_{FM})$ = 941 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		8203	9472	No
v_3 or v_{av34}		3264 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		Yes	
Is v_3 or v_{av34}	> 1.5 v_{av34} /2		No	
If yes, v_{12A}	= 2069		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	2803	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 23.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.334	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_O = 57.9	mph
Space mean speed for all vehicles,	S = 58.1	mph

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Operational Analysis

Analyst:	
Agency or Company:	Albert A. Webb Associates
Date Performed:	9/25/2015
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	I-215 SB
From/To:	Sycamore Off
Jurisdiction:	
Analysis Year:	Existing
Description:	

Flow Inputs and Adjustments

Volume, V	4496	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	1183	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	980	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	5	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	72.6	mi/h

LOS and Performance Measures

Flow rate, vp	980	pc/h/ln
Free-flow speed, FFS	72.6	mi/h
Average passenger-car speed, S	75.0	mi/h
Number of lanes, N	5	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	
Agency or Company:	Albert A. Webb Associates
Date Performed:	9/25/2015
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	I-215 SB
From/To:	Sycamore Off
Jurisdiction:	
Analysis Year:	Existing
Description:	

Flow Inputs and Adjustments

Volume, V	6749	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	1776	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1471	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	5	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	72.6	mi/h

LOS and Performance Measures

Flow rate, vp	1471	pc/h/ln
Free-flow speed, FFS	72.6	mi/h
Average passenger-car speed, S	72.5	mi/h
Number of lanes, N	5	
Density, D	20.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

215SB-04P-Basic.txt

HCS 2010: Freeway Weaving Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date Performed:	7/14/2015
Analysis Time Period:	AM Peak Hour
Freeway/Dir of Travel:	I-215 SB
Weaving Location:	N of Eastridge Off
Analysis Year:	Existing
Description:	

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	5	ln
Weaving segment length, LS	1000	ft
Freeway free-flow speed, FFS	64	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2350	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	4263	976	299	68	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	1122	257	79	18	
Trucks and buses	7	7	7	7	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	0.966	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	4644	1063	326	74	pc/h
Volume ratio, VR		0.227			

Configuration Characteristics

Number of maneuver lanes, NWL	3	ln
Interchange density, ID	5.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1063	lc/h
Weaving lane changes, LCW	2145	lc/h
Non-weaving vehicle index, INW	2359	
Non-weaving lane change, LCNW	2741	lc/h
Total lane changes, LCALL	4886	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.790	
Average weaving speed, SW	42.4	mi/h
Average non-weaving speed, SNW	50.5	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	48.4	mi/h
Weaving segment density, D	25.2	pc/mi/ln
Level of service, LOS	C	
Weaving segment v/c ratio	0.561	
Weaving segment flow rate, v	5902	veh/h
Weaving segment capacity, cW	10522	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	3253	1000	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2350	2178	c
		Maximum	Analyzed	
v/c ratio		1.00	0.561	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Weaving Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date Performed:	7/14/2015
Analysis Time Period:	PM Peak Hour
Freeway/Dir of Travel:	I-215 SB
Weaving Location:	N of Eastridge Off
Analysis Year:	Existing
Description:	

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	5	ln
Weaving segment length, LS	1000	ft
Freeway free-flow speed, FFS	64	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2350	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	4643	924	732	145	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	1222	243	193	38	
Trucks and buses	7	7	7	7	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	0.966	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	5058	1007	797	158	pc/h

Volume ratio, VR 0.257

Configuration Characteristics

Number of maneuver lanes, NWL	3	ln
Interchange density, ID	5.0	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	0	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1007	lc/h
Weaving lane changes, LCW	2089	lc/h
Non-weaving vehicle index, INW	2608	
Non-weaving lane change, LCNW	2852	lc/h
Total lane changes, LCALL	4941	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.797	
Average weaving speed, SW	42.3	mi/h
Average non-weaving speed, SNW	50.0	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	47.8	mi/h
Weaving segment density, D	29.4	pc/mi/ln
Level of service, LOS	D	
Weaving segment v/c ratio	0.652	
Weaving segment flow rate, v	6784	veh/h
Weaving segment capacity, cW	10406	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	3561	1000	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2350	2154	c
		Maximum	Analyzed	
v/c ratio		1.00	0.652	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

Albert A. Webb Associates
3788 McCray Street
Riverside, CA 92506

Phone: (951) 686-1070 Fax: (951) 788-1256
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	AM Peak Hour
Freeway/Dir of Travel:	I-215 SB
Junction:	Eastridge On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	66.8	mph
Volume on freeway	4195	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	374	vph
Length of first accel/decel lane	880	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	367	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4195	374	367	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1104	98	97	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	4570	407	400	pcph

Estimation of V12 Merge Areas

L_{EQ} = 1668.80 (Equation 13-6 or 13-7)

P_{FM} = 0.602 Using Equation 1

$v_{12} = v_{F} (P_{FM}) =$ 2752 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4977	7104	No
v_3 or v_{av34}	1818 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	
If yes, v_{12A} = 2752		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3159	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.325	
Space mean speed in ramp influence area,	S_R = 58.7	mph
Space mean speed in outer lanes,	S_O = 62.1	mph
Space mean speed for all vehicles,	S = 59.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.60

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Riverside, CA 92506

Phone: (951) 686-1070 Fax: (951) 788-1256
E-mail:

Merge Analysis

Analyst:	
Agency/Co.:	Albert A. Webb Associates
Date performed:	9/25/2015
Analysis time period:	PM Peak Hour
Freeway/Dir of Travel:	I-215 SB
Junction:	Eastridge On
Jurisdiction:	
Analysis Year:	Existing
Description:	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	66.8	mph
Volume on freeway	4498	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	50.0	mph
Volume on ramp	815	vph
Length of first accel/decel lane	880	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	877	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4498	815	877	vph
Peak-hour factor, PHF	0.95	0.95	0.95	
Peak 15-min volume, v15	1184	214	231	v
Trucks and buses	7	7	7	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.966	0.966	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp	4900	888	955	pcph

Estimation of V12 Merge Areas

L_{EQ} = 1842.35 (Equation 13-6 or 13-7)

P_{FM} = 0.602 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2950 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		5788	7104	No
v_3 or v_{av34}		1950 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{av34} / 2		No	
If yes, v_{12A}	= 2950		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3838	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.414	
Space mean speed in ramp influence area,	S_R = 56.5	mph
Space mean speed in outer lanes,	S_O = 61.6	mph
Space mean speed for all vehicles,	S = 58.1	mph