Appendix B. Supplemental Traffic Analysis

Option 3: Copy of Locust Ave/Jurupa Ave

Number	7					
Intersection	Locust Ave/Jurupa Ave					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Base Volume Input [veh/h]	352	154	59	326	40	46
Total Analysis Volume [veh/h]	509	475	196	415	192	78

Intersection Settings

Cycle Length [s]	75					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	0.00					
Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	55	0	0	55	20	0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.75	0.75	0.75	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.60	0.34	0.23	0.11	0.05
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800
Arrival type	3	3		3	
s, saturation flow rate [veh/h]	1632	581	1772	1687	1530
c, Capacity [veh/h]	1227	289	1332	239	216
X, volume / capacity	0.80	0.68	0.31	0.80	0.36
d, Delay for Lane Group [s/veh]	11.39	37.41	3.63	37.42	30.11
Lane Group LOS	B	D	A	D	C

Critical Lane Group	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.86		4.24	1.46	3.67	1.29
50th-Percentile Queue Length [ft/ln]	146.39		105.89	36.49	91.63	32.34
95th-Percentile Queue Length [veh/ln]	9.82		7.61	2.63	6.60	2.33
95th-Percentile Queue Length [ft/ln]	245.61		190.27	65.68	164.94	58.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.39	11.39	37.41	3.63	37.42	30.11
Movement LOS	B	B	D	A	D	C
Critical Movement	No	No	No	No	Yes	No
d_A, Approach Delay [s/veh]	11.39		14.46		35.31	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	15.86					
Intersection LOS	B					
Intersection V/C	0.717					

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Bloomington Business Park Specific Plan

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.644	35.9	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	615	801	308	563	657	1094	1048	0	519	375	0	691
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	77	0	0	274	0	0	130	0	0	173
Total Hourly Volume [veh/h]	615	801	231	563	657	820	1048	0	389	375	0	518
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	1.0000	0.9530	0.9530	1.0000	0.9530
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]	161	210	61	148	172	215	275	0	102	98	0	136
Total Analysis Volume [veh/h]	645	841	242	591	689	860	1100	0	408	393	0	544
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			3			3			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			3			3			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	39	21	38	38	38
g / C, Green / Cycle	0.21	0.36	0.19	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.16	0.17	0.13	0.31	0.11
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	721	1851	672	1779	1202	1202
d1, Uniform Delay [s]	42.52	27.06	43.21	27.29	34.63	26.79
k, delay calibration	0.11	0.50	0.11	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]	4.22	0.81	3.95	0.64	3.23	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.45	0.88	0.39	0.92	0.33
d, Delay for Lane Group [s/veh]	46.73	27.87	47.16	27.93	37.86	26.94
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.69	5.59	8.04	4.59	14.31	3.83
50th-Percentile Queue Length [ft/ln]	217.30	139.75	200.96	114.84	357.73	95.79
95th-Percentile Queue Length [veh/ln]	13.53	9.47	12.69	8.11	20.51	6.90
95th-Percentile Queue Length [ft/ln]	338.18	236.68	317.21	202.71	512.82	172.42

Movement, Approach, & Intersection Results

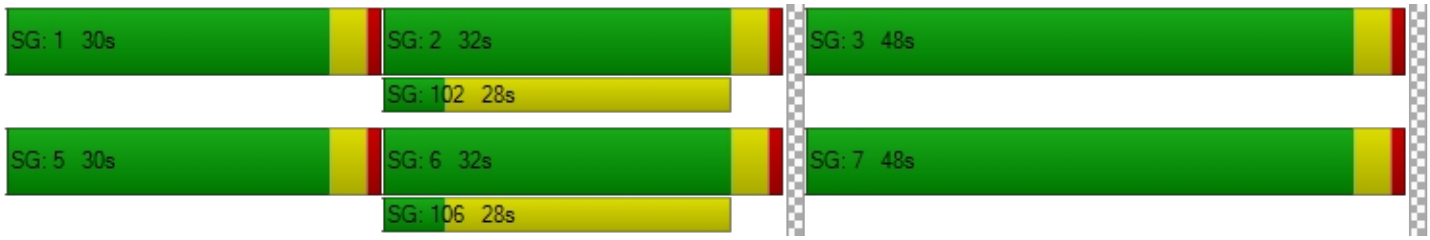
d_M, Delay for Movement [s/veh]	46.73	27.87	0.00	47.16	27.93	0.00	37.86	0.00	0.00	26.94	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	36.06			36.81			37.86			26.94		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	35.91											
Intersection LOS	D											
Intersection V/C	0.644											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.748	2.624
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.377	2.264	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



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Report File: C:\...\Existing AM.pdf

Scenario 13 Existing AM
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	615	801	308	563	657	1094	1048	519	375	691	6671

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Report File: C:\...\Existing PM.pdf

Scenario 14 Existing PM
3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Left	0.679	33.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	33.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	475	1171	571	592	946	882	976	0	525	479	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	143	0	0	221	0	0	131	0	0	151
Total Hourly Volume [veh/h]	475	1171	428	592	946	661	976	0	394	479	0	454
Peak Hour Factor	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	1.0000	0.9910	0.9910	1.0000	0.9910
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	295	108	149	239	167	246	0	99	121	0	115
Total Analysis Volume [veh/h]	479	1182	432	597	955	667	985	0	398	483	0	458
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			4			3			3		
v_ci, Inbound Pedestrian Volume crossing mi	3			3			4			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	25	32	0	25	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	40	20	43	33	33
g / C, Green / Cycle	0.16	0.38	0.19	0.41	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.14	0.23	0.17	0.18	0.28	0.14
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	560	1982	664	2136	1102	1102
d1, Uniform Delay [s]	42.93	25.89	41.57	22.19	34.36	28.67
k, delay calibration	0.11	0.50	0.11	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]	3.87	1.33	4.70	0.68	2.81	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.60	0.90	0.45	0.89	0.44
d, Delay for Lane Group [s/veh]	46.81	27.22	46.28	22.87	37.17	28.94
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.18	7.72	7.82	5.60	12.15	4.84
50th-Percentile Queue Length [ft/ln]	154.41	193.12	195.54	140.05	303.74	120.93
95th-Percentile Queue Length [veh/ln]	10.25	12.28	12.41	9.48	17.87	8.44
95th-Percentile Queue Length [ft/ln]	256.31	307.07	310.21	237.10	446.66	211.11

Movement, Approach, & Intersection Results

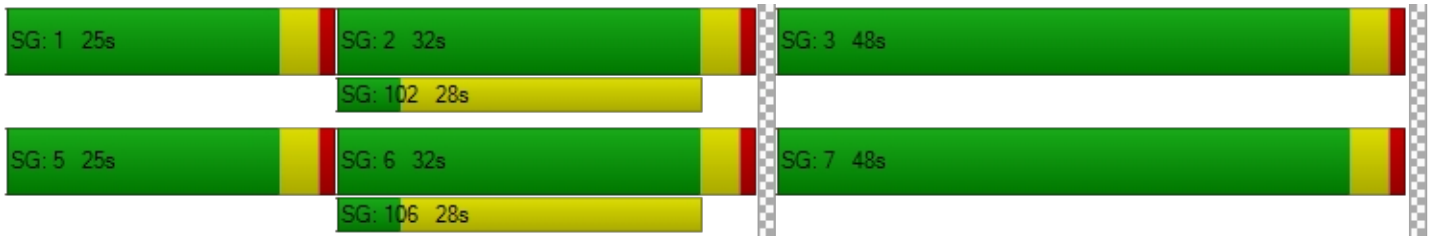
d_M, Delay for Movement [s/veh]	46.81	27.22	0.00	46.28	22.87	0.00	37.17	0.00	0.00	28.94	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	32.87			31.88			37.17			28.94		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	33.04											
Intersection LOS	C											
Intersection V/C	0.679											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	43.87	43.87
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.700	2.637
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	533	838	838
d_b, Bicycle Delay [s]	28.22	28.22	17.71	17.71
l_b,int, Bicycle LOS Score for Intersection	2.473	2.413	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\Existing PM.pdf

Scenario 14 Existing PM
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	475	1171	571	592	946	882	976	525	479	605	7222

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Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro Scenario 3 OY AM

Report File: C:\...\OY AM.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.661	36.2	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	36.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	615	801	308	563	657	1094	1048	0	519	375	0	691
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	31	14	14	0	46	0	0	0	78	44	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	82	0	0	279	0	0	152	0	0	176
Total Hourly Volume [veh/h]	658	831	246	574	716	837	1069	0	455	427	0	529
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	1.0000	0.9530	0.9530	1.0000	0.9530
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]	173	218	65	151	188	220	280	0	119	112	0	139
Total Analysis Volume [veh/h]	690	872	258	602	751	878	1122	0	477	448	0	555
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
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]	24	38	21	36	38	38
g / C, Green / Cycle	0.22	0.35	0.19	0.33	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.20	0.17	0.17	0.15	0.32	0.13
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	760	1807	682	1692	1221	1221
d1, Uniform Delay [s]	42.00	27.99	43.06	29.11	34.35	26.80
k, delay calibration	0.11	0.50	0.11	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]	4.56	0.93	3.99	0.85	3.29	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.48	0.88	0.44	0.92	0.37
d, Delay for Lane Group [s/veh]	46.56	28.91	47.05	29.95	37.64	26.98
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.32	5.94	8.19	5.24	14.59	4.40
50th-Percentile Queue Length [ft/ln]	233.09	148.49	204.70	131.09	364.77	110.06
95th-Percentile Queue Length [veh/ln]	14.33	9.94	12.88	9.00	20.86	7.84
95th-Percentile Queue Length [ft/ln]	358.28	248.42	322.02	224.97	521.38	196.08

Movement, Approach, & Intersection Results

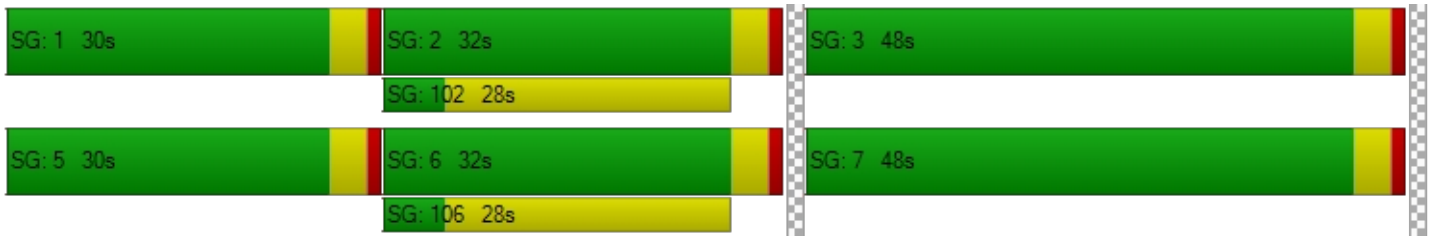
d_M, Delay for Movement [s/veh]	46.56	28.91	0.00	47.05	29.95	0.00	37.64	0.00	0.00	26.98	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	36.71			37.56			37.64			26.98		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	36.23											
Intersection LOS	D											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.758	2.635
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.419	2.304	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\OY AM.pdf

Scenario 3 OY AM
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	658	831	328	574	716	1116	1069	607	427	705	7031

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Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro Scenario 4 OY PM

Report File: C:\...\OY PM.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Left	0.702	35.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.702

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	475	1171	571	592	946	882	976	0	525	479	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	80	50	44	0	18	0	0	0	29	16	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	157	0	0	225	0	0	141	0	0	154
Total Hourly Volume [veh/h]	565	1244	469	604	983	675	996	0	424	505	0	463
Peak Hour Factor	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	1.0000	0.9910	0.9910	1.0000	0.9910
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]	143	314	118	152	248	170	251	0	107	127	0	117
Total Analysis Volume [veh/h]	570	1255	473	609	992	681	1005	0	428	510	0	467
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	42	22	43	35	35
g / C, Green / Cycle	0.19	0.38	0.20	0.39	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.16	0.24	0.17	0.19	0.29	0.15
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	652	1959	688	2013	1112	1112
d1, Uniform Delay [s]	43.50	28.02	42.97	25.38	35.95	30.03
k, delay calibration	0.11	0.50	0.11	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]	3.89	1.62	4.02	0.87	3.07	0.30
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	0.87	0.64	0.88	0.49	0.90	0.46
d, Delay for Lane Group [s/veh]	47.39	29.64	46.99	26.25	39.02	30.32
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.68	8.94	8.28	6.53	13.13	5.41
50th-Percentile Queue Length [ft/ln]	191.97	223.47	207.09	163.17	328.16	135.21
95th-Percentile Queue Length [veh/ln]	12.22	13.84	13.00	10.72	19.07	9.22
95th-Percentile Queue Length [ft/ln]	305.59	346.05	325.09	267.92	476.70	230.56

Movement, Approach, & Intersection Results

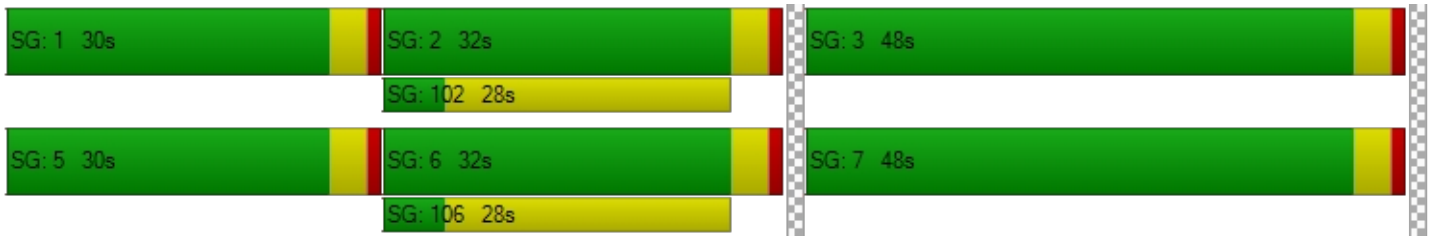
d_M, Delay for Movement [s/veh]	47.39	29.64	0.00	46.99	26.25	0.00	39.02	0.00	0.00	30.32	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	35.19			34.14			39.02			30.32		
Approach LOS	D			C			D			C		
d_I, Intersection Delay [s/veh]	35.12											
Intersection LOS	D											
Intersection V/C	0.702											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.720	2.646
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.563	2.440	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

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Report File: C:\...\OY PM.pdf

Scenario 4 OY PM
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	565	1244	626	604	983	900	996	565	505	617	7605

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Bloomington Business Park Specific Plan

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Report File: C:\...\2040 AM.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Left	0.776	41.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	41.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	633	801	489	972	728	1222	1074	0	571	413	0	707
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	122	0	0	306	0	0	143	0	0	177
Total Hourly Volume [veh/h]	633	801	367	972	728	916	1074	0	428	413	0	530
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	167	211	97	256	192	241	283	0	113	109	0	139
Total Analysis Volume [veh/h]	666	843	386	1023	766	964	1131	0	451	435	0	558
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			3			3			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			3			3			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	40	32	0	40	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	31	36	41	41	41
g / C, Green / Cycle	0.21	0.26	0.30	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.19	0.16	0.29	0.15	0.32	0.12
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	752	1331	1053	1776	1205	1205
d1, Uniform Delay [s]	45.70	39.50	41.46	30.35	38.16	29.53
k, delay calibration	0.11	0.50	0.11	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]	3.75	2.30	7.78	0.77	4.27	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.63	0.97	0.43	0.94	0.36
d, Delay for Lane Group [s/veh]	49.45	41.80	49.24	31.12	42.43	29.71
Lane Group LOS	D	D	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.78	7.47	15.72	5.76	16.55	4.75
50th-Percentile Queue Length [ft/ln]	244.43	186.86	393.08	143.95	413.85	118.63
95th-Percentile Queue Length [veh/ln]	14.91	11.96	22.23	9.69	23.23	8.32
95th-Percentile Queue Length [ft/ln]	372.63	298.95	555.66	242.33	580.66	207.95

Movement, Approach, & Intersection Results

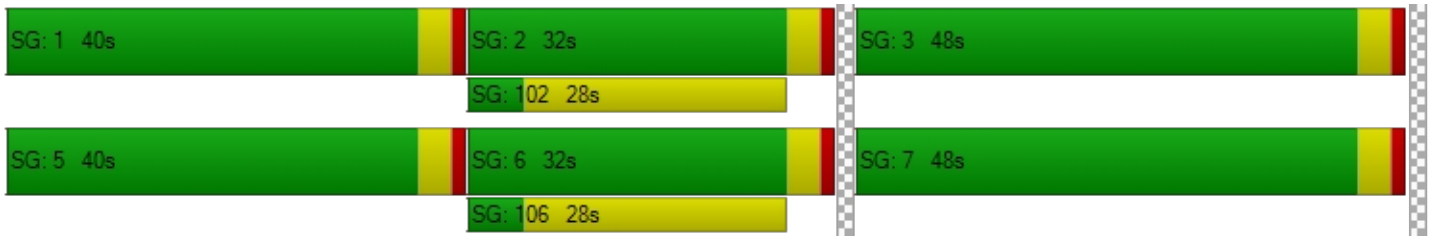
d_M, Delay for Movement [s/veh]	49.45	41.80	0.00	49.24	31.12	0.00	42.43	0.00	0.00	29.71	0.00	0.00
Movement LOS	D	D		D	C		D			C		
d_A, Approach Delay [s/veh]	45.18			41.48			42.43			29.71		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	41.79											
Intersection LOS	D											
Intersection V/C	0.776											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	51.30	51.30
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.760	2.705
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	467	734	734
d_b, Bicycle Delay [s]	35.23	35.23	24.04	24.04
l_b,int, Bicycle LOS Score for Intersection	2.390	2.544	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

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Report File: C:\...\2040 AM.pdf

Scenario 15 2040 AM
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	633	801	489	972	728	1222	1074	571	413	707	7610

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Thru	1.054	107.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	107.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.054

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	800	2874	1153	592	1354	882	976	0	558	523	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	288	0	0	221	0	0	140	0	0	151
Total Hourly Volume [veh/h]	800	2874	865	592	1354	661	976	0	418	523	0	454
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	211	756	228	156	356	174	257	0	110	138	0	119
Total Analysis Volume [veh/h]	842	3025	911	623	1425	696	1027	0	440	551	0	478
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			4			3			3		
v_ci, Inbound Pedestrian Volume crossing mi	3			3			4			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	40	59	0	23	42	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	130	130	130	130	130	130
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]	33	58	19	44	41	41
g / C, Green / Cycle	0.26	0.45	0.15	0.34	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.24	0.58	0.18	0.28	0.29	0.16
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	904	2322	515	1749	1098	1098
d1, Uniform Delay [s]	47.12	35.81	55.42	39.28	43.39	36.42
k, delay calibration	0.11	0.50	0.11	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]	5.03	139.54	98.34	4.30	4.46	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	1.30	1.21	0.81	0.94	0.50
d, Delay for Lane Group [s/veh]	52.16	175.35	153.77	43.57	47.84	36.77
Lane Group LOS	D	F	F	D	D	D
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	13.62	53.25	15.40	14.33	16.59	7.22
50th-Percentile Queue Length [ft/ln]	340.58	1331.27	384.96	358.29	414.68	180.45
95th-Percentile Queue Length [veh/ln]	19.68	77.76	23.72	20.54	23.27	11.62
95th-Percentile Queue Length [ft/ln]	491.91	1944.11	593.03	513.50	581.67	290.61

Movement, Approach, & Intersection Results

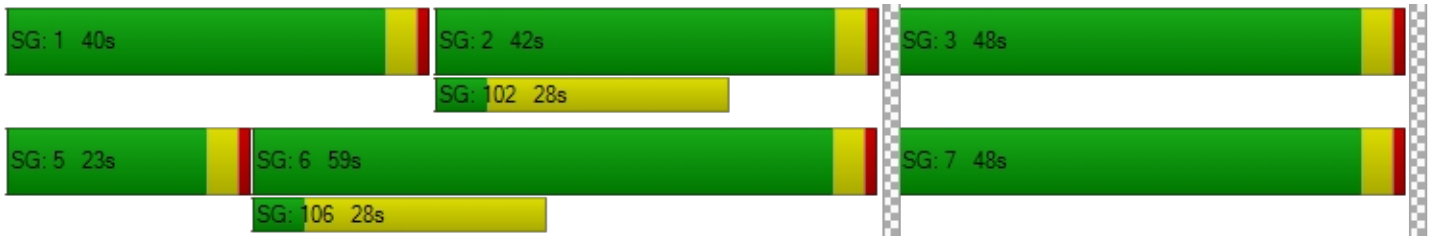
d_M, Delay for Movement [s/veh]	52.16	175.35	0.00	153.77	43.57	0.00	47.84	0.00	0.00	36.77	0.00	0.00
Movement LOS	D	F		F	D		D			D		
d_A, Approach Delay [s/veh]	148.53			77.09			47.84			36.77		
Approach LOS	F			E			D			D		
d_I, Intersection Delay [s/veh]	106.99											
Intersection LOS	F											
Intersection V/C	1.054											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	56.28	56.28
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.776	2.663
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	847	585	677	677
d_b, Bicycle Delay [s]	21.61	32.53	28.42	28.42
l_b,int, Bicycle LOS Score for Intersection	3.686	2.686	1.560	1.560
Bicycle LOS	D	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Scenario 6 2040 PM

Report File: C:\...\2040 PM.pdf
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	800	2874	1153	592	1354	882	976	558	523	605	10317

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Bloomington Business Park Specific Plan

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Report File: C:\...\Existing AM + P.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.645	36.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	36.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	615	801	308	563	657	1094	1048	0	519	375	0	691
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	8	0	0	32	0	0	0	80	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	77	0	0	274	0	0	150	0	0	173
Total Hourly Volume [veh/h]	634	809	231	563	689	820	1048	0	449	375	0	518
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	1.0000	0.9530	0.9530	1.0000	0.9530
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]	166	212	61	148	181	215	275	0	118	98	0	136
Total Analysis Volume [veh/h]	665	849	242	591	723	860	1100	0	471	393	0	544
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			3			3			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			3			3			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	39	21	37	38	38
g / C, Green / Cycle	0.21	0.36	0.19	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.19	0.16	0.17	0.14	0.31	0.11
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	738	1851	672	1753	1202	1202
d1, Uniform Delay [s]	42.28	27.11	43.21	27.92	34.63	26.79
k, delay calibration	0.11	0.50	0.11	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]	4.35	0.82	3.95	0.72	3.23	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.46	0.88	0.41	0.92	0.33
d, Delay for Lane Group [s/veh]	46.63	27.93	47.16	28.64	37.86	26.94
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.97	5.65	8.04	4.91	14.31	3.83
50th-Percentile Queue Length [ft/ln]	224.24	141.36	200.96	122.64	357.73	95.79
95th-Percentile Queue Length [veh/ln]	13.88	9.55	12.69	8.54	20.51	6.90
95th-Percentile Queue Length [ft/ln]	347.03	238.85	317.21	213.45	512.82	172.42

Movement, Approach, & Intersection Results

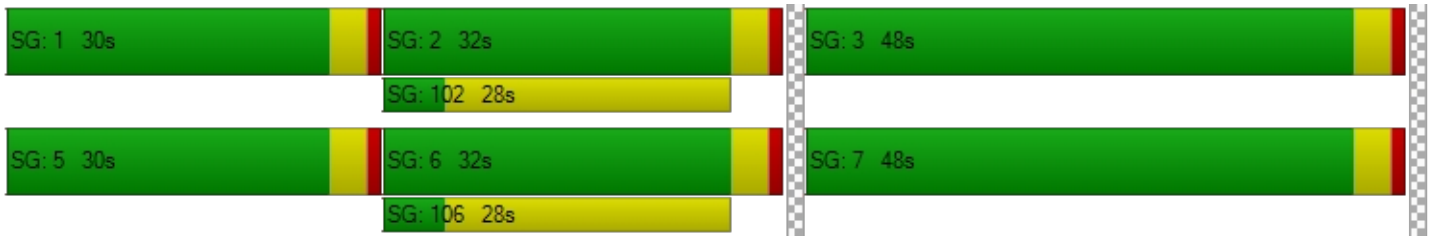
d_M, Delay for Movement [s/veh]	46.63	27.93	0.00	47.16	28.64	0.00	37.86	0.00	0.00	26.94	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	36.14			36.97			37.86			26.94		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	36.00											
Intersection LOS	D											
Intersection V/C	0.645											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.751	2.624
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.392	2.282	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\Existing AM + P.pdf

Scenario 7 Existing AM + P
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	634	809	308	563	689	1094	1048	599	375	691	6810

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Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro Scenario 8 Existing PM + P

Report File: C:\...\Existing PM + P.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Left	0.685	33.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	33.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	475	1171	571	592	946	882	976	0	525	479	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	82	34	0	0	15	0	0	0	37	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	143	0	0	221	0	0	141	0	0	151
Total Hourly Volume [veh/h]	557	1205	428	592	961	661	976	0	421	479	0	454
Peak Hour Factor	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	1.0000	0.9910	0.9910	1.0000	0.9910
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]	141	304	108	149	242	167	246	0	106	121	0	115
Total Analysis Volume [veh/h]	562	1216	432	597	970	667	985	0	425	483	0	458
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
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		2			4			3			3	
v_ci, Inbound Pedestrian Volume crossing mi		3			3			4			2	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	25	32	0	25	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	105	105	105	105	105	105
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	40	20	41	33	33
g / C, Green / Cycle	0.18	0.38	0.19	0.39	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.17	0.19	0.28	0.14
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	638	1981	667	2024	1100	1100
d1, Uniform Delay [s]	41.83	26.13	41.48	23.94	34.39	28.69
k, delay calibration	0.11	0.50	0.11	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]	4.19	1.43	4.54	0.82	2.85	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.61	0.90	0.48	0.90	0.44
d, Delay for Lane Group [s/veh]	46.02	27.56	46.01	24.76	37.23	28.97
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.24	8.02	7.80	5.97	12.16	4.84
50th-Percentile Queue Length [ft/ln]	181.12	200.60	195.08	149.37	303.89	120.94
95th-Percentile Queue Length [veh/ln]	11.66	12.67	12.38	9.98	17.87	8.44
95th-Percentile Queue Length [ft/ln]	291.48	316.74	309.61	249.59	446.84	211.12

Movement, Approach, & Intersection Results

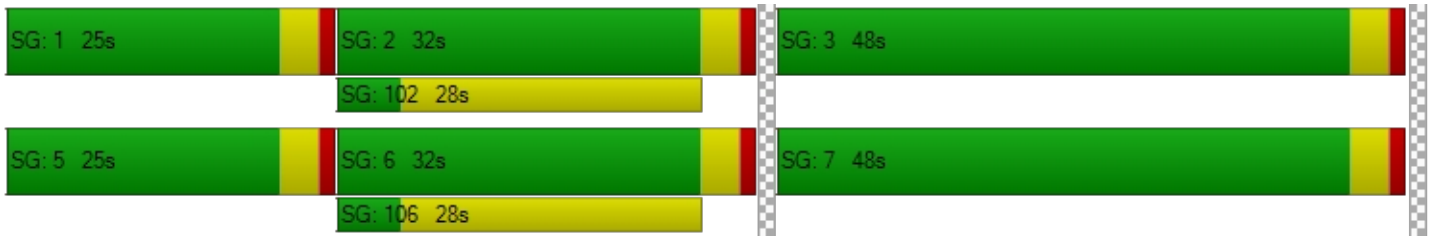
d_M, Delay for Movement [s/veh]	46.02	27.56	0.00	46.01	24.76	0.00	37.23	0.00	0.00	28.97	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	33.40			32.86			37.23			28.97		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	33.56											
Intersection LOS	C											
Intersection V/C	0.685											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	43.86	43.86
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.713	2.637
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	534	534	838	838
d_b, Bicycle Delay [s]	28.21	28.21	17.70	17.70
l_b,int, Bicycle LOS Score for Intersection	2.538	2.421	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\Existing PM + P.pdf

Scenario 8 Existing PM + P
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	557	1205	571	592	961	882	976	562	479	605	7390

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Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro Scenario 9 OY AM + P

Report File: C:\...\OY AM + P.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.673	36.4	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	36.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.673

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	615	801	308	563	657	1094	1048	0	519	375	0	691
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	22	14	0	78	0	0	0	157	44	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	82	0	0	279	0	0	172	0	0	176
Total Hourly Volume [veh/h]	677	839	246	574	748	837	1069	0	514	427	0	529
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	1.0000	0.9530	0.9530	1.0000	0.9530
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]	178	220	65	151	196	220	280	0	135	112	0	139
Total Analysis Volume [veh/h]	710	880	258	602	785	878	1122	0	539	448	0	555
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
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]	24	38	21	35	38	38
g / C, Green / Cycle	0.22	0.35	0.19	0.32	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.20	0.17	0.17	0.15	0.32	0.13
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	776	1807	682	1668	1221	1221
d1, Uniform Delay [s]	41.79	28.04	43.06	29.74	34.35	26.80
k, delay calibration	0.11	0.50	0.11	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]	4.78	0.94	3.99	0.96	3.29	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.49	0.88	0.47	0.92	0.37
d, Delay for Lane Group [s/veh]	46.57	28.98	47.05	30.70	37.64	26.98
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.61	6.01	8.19	5.58	14.59	4.40
50th-Percentile Queue Length [ft/ln]	240.35	150.16	204.70	139.39	364.77	110.06
95th-Percentile Queue Length [veh/ln]	14.70	10.03	12.88	9.45	20.86	7.84
95th-Percentile Queue Length [ft/ln]	367.48	250.64	322.02	236.21	521.38	196.08

Movement, Approach, & Intersection Results

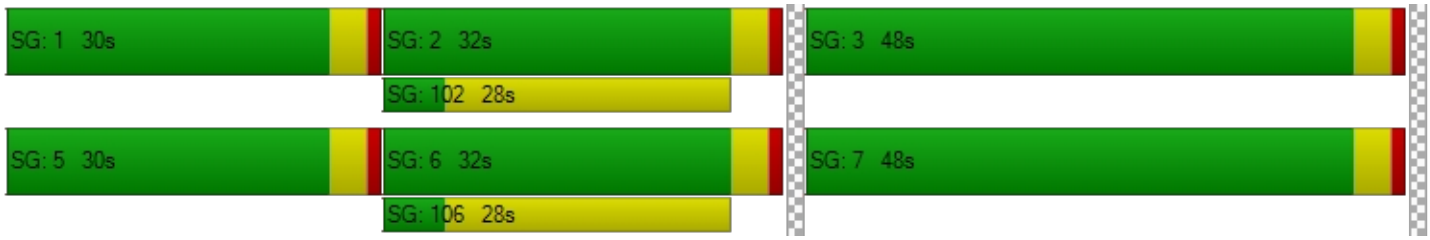
d_M, Delay for Movement [s/veh]	46.57	28.98	0.00	47.05	30.70	0.00	37.64	0.00	0.00	26.98	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	36.84			37.80			37.64			26.98		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	36.36											
Intersection LOS	D											
Intersection V/C	0.673											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.762	2.635
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.434	2.322	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\OY AM + P.pdf

Scenario 9 OY AM + P
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	677	839	328	574	748	1116	1069	686	427	705	7169

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Bloomington Business Park Specific Plan

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Report File: C:\...\OY PM + P.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.708	35.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	35.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	475	1171	571	592	946	882	976	0	525	479	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	162	83	44	0	33	0	0	0	66	16	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	157	0	0	225	0	0	151	0	0	154
Total Hourly Volume [veh/h]	647	1277	469	604	998	675	996	0	451	505	0	463
Peak Hour Factor	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	0.9910	1.0000	0.9910	0.9910	1.0000	0.9910
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]	163	322	118	152	252	170	251	0	114	127	0	117
Total Analysis Volume [veh/h]	653	1289	473	609	1007	681	1005	0	455	510	0	467
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	30	32	0	30	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	42	22	40	35	35
g / C, Green / Cycle	0.21	0.38	0.20	0.37	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.19	0.25	0.17	0.19	0.29	0.15
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	728	1959	688	1901	1112	1112
d1, Uniform Delay [s]	42.42	28.26	42.97	27.31	35.95	30.03
k, delay calibration	0.11	0.50	0.11	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]	4.27	1.75	4.02	1.06	3.07	0.30
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	0.66	0.88	0.53	0.90	0.46
d, Delay for Lane Group [s/veh]	46.69	30.01	46.99	28.37	39.02	30.32
Lane Group LOS	D	C	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.80	9.27	8.28	6.95	13.13	5.41
50th-Percentile Queue Length [ft/ln]	220.06	231.84	207.09	173.71	328.16	135.21
95th-Percentile Queue Length [veh/ln]	13.67	14.27	13.00	11.27	19.07	9.22
95th-Percentile Queue Length [ft/ln]	341.71	356.69	325.09	281.78	476.70	230.56

Movement, Approach, & Intersection Results

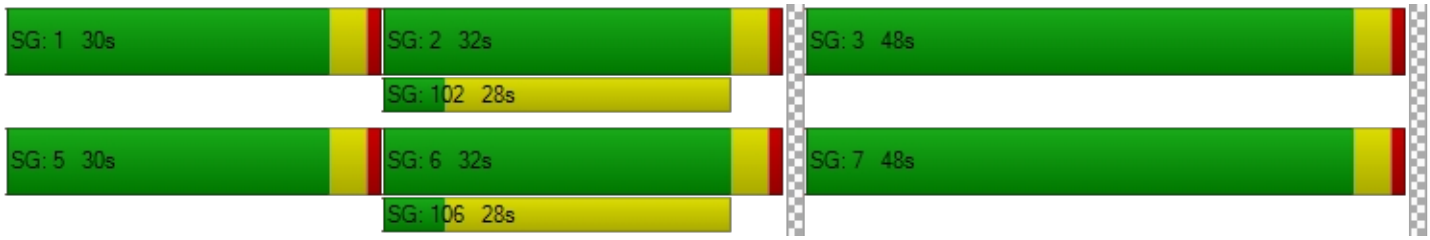
d_M, Delay for Movement [s/veh]	46.69	30.01	0.00	46.99	28.37	0.00	39.02	0.00	0.00	30.32	0.00	0.00
Movement LOS	D	C		D	C		D			C		
d_A, Approach Delay [s/veh]	35.62			35.39			39.02			30.32		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	35.69											
Intersection LOS	D											
Intersection V/C	0.708											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	46.34	46.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.733	2.646
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	509	509	800	800
d_b, Bicycle Delay [s]	30.53	30.53	19.77	19.77
l_b,int, Bicycle LOS Score for Intersection	2.628	2.448	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

Vistro File: C:\...\Bloomington CalTrans Response.vistro
Report File: C:\...\OY PM + P.pdf

Scenario 10 OY PM + P
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	647	1277	626	604	998	900	996	602	505	617	7772

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Vistro File: C:\...\Bloomington CalTrans Response.vistro Scenario 11 2040 AM + P

Report File: C:\...\2040 AM + P.pdf 3/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	SB Left	0.778	41.9	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	633	801	489	972	728	1222	1074	0	571	413	0	707
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	8	0	0	32	0	0	0	80	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	122	0	0	306	0	0	163	0	0	177
Total Hourly Volume [veh/h]	652	809	367	972	760	916	1074	0	488	413	0	530
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	172	213	97	256	200	241	283	0	128	109	0	139
Total Analysis Volume [veh/h]	686	852	386	1023	800	964	1131	0	514	435	0	558
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			3			3			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			3			3			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	40	32	0	40	32	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	31	36	40	41	41
g / C, Green / Cycle	0.22	0.26	0.30	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.16	0.29	0.15	0.32	0.12
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	771	1331	1053	1747	1205	1205
d1, Uniform Delay [s]	45.36	39.58	41.46	31.12	38.16	29.53
k, delay calibration	0.11	0.50	0.11	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]	3.77	2.37	7.78	0.87	4.27	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.64	0.97	0.46	0.94	0.36
d, Delay for Lane Group [s/veh]	49.13	41.95	49.24	31.98	42.43	29.71
Lane Group LOS	D	D	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.06	7.57	15.72	6.13	16.55	4.75
50th-Percentile Queue Length [ft/ln]	251.46	189.36	393.08	153.18	413.85	118.63
95th-Percentile Queue Length [veh/ln]	15.26	12.09	22.23	10.19	23.23	8.32
95th-Percentile Queue Length [ft/ln]	381.49	302.20	555.66	254.67	580.66	207.95

Movement, Approach, & Intersection Results

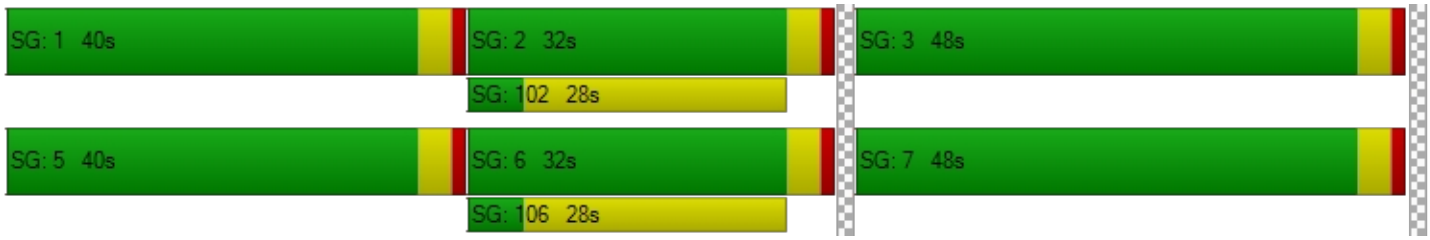
d_M, Delay for Movement [s/veh]	49.13	41.95	0.00	49.24	31.98	0.00	42.43	0.00	0.00	29.71	0.00	0.00
Movement LOS	D	D		D	C		D			C		
d_A, Approach Delay [s/veh]	45.15			41.67			42.43			29.71		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	41.87											
Intersection LOS	D											
Intersection V/C	0.778											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	51.30	51.30
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.763	2.705
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	467	734	734
d_b, Bicycle Delay [s]	35.23	35.23	24.04	24.04
l_b,int, Bicycle LOS Score for Intersection	2.406	2.562	1.560	1.560
Bicycle LOS	B	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

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Scenario 11 2040 AM + P
3/9/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	652	809	489	972	760	1222	1074	651	413	707	7749

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Bloomington Business Park Specific Plan

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Ave/I-10 Ramps	Signalized	HCM 6th Edition	NB Thru	1.061	110.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Ave/I-10 Ramps

Control Type:	Signalized	Delay (sec / veh):	110.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.061

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 Entry Pocket	2	0	0	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	565.00	100.00	100.00	325.00	100.00	305.00	1205.00	100.00	1500.00	1200.00	100.00	560.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Exit Pocket Length [ft]	0.00	0.00	390.00	0.00	0.00	665.00	0.00	0.00	1215.00	0.00	0.00	1150.00
Speed [mph]	40.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	800	2874	1153	592	1354	882	976	0	558	523	0	605
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	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	82	34	0	0	15	0	0	0	37	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	288	0	0	221	0	0	149	0	0	151
Total Hourly Volume [veh/h]	882	2908	865	592	1369	661	976	0	446	523	0	454
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	232	765	228	156	360	174	257	0	117	138	0	119
Total Analysis Volume [veh/h]	928	3061	911	623	1441	696	1027	0	469	551	0	478
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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	2			4			3			3		
v_ci, Inbound Pedestrian Volume crossing mi	3			3			4			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	6	0	5	2	0	3	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	30	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Split [s]	40	59	0	23	42	0	48	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	5	0	0
Pedestrian Clearance [s]	0	23	0	0	23	0	39	0	0	35	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No		No	No		No			No		
Maximum Recall	No	No		No	No		No			No		
Pedestrian Recall	No	No		No	No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	L
C, Cycle Length [s]	130	130	130	130	130	130
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]	36	58	19	41	41	41
g / C, Green / Cycle	0.28	0.45	0.15	0.32	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.26	0.59	0.18	0.28	0.29	0.16
s, saturation flow rate [veh/h]	3514	5176	3514	5176	3514	3514
c, Capacity [veh/h]	968	2322	515	1655	1098	1098
d1, Uniform Delay [s]	46.33	35.81	55.42	41.65	43.39	36.42
k, delay calibration	0.11	0.50	0.11	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]	6.82	146.40	98.34	6.58	4.46	0.36
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	0.96	1.32	1.21	0.87	0.94	0.50
d, Delay for Lane Group [s/veh]	53.15	182.21	153.77	48.23	47.84	36.77
Lane Group LOS	D	F	F	D	D	D
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	15.30	54.73	15.40	15.29	16.59	7.22
50th-Percentile Queue Length [ft/ln]	382.43	1368.14	384.96	382.34	414.68	180.45
95th-Percentile Queue Length [veh/ln]	21.71	80.22	23.72	21.71	23.27	11.62
95th-Percentile Queue Length [ft/ln]	542.79	2005.61	593.03	542.67	581.67	290.61

Movement, Approach, & Intersection Results

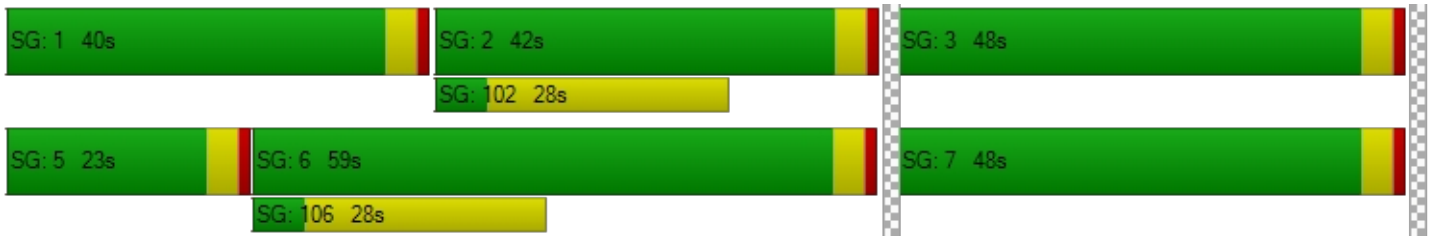
d_M, Delay for Movement [s/veh]	53.15	182.21	0.00	153.77	48.23	0.00	47.84	0.00	0.00	36.77	0.00	0.00
Movement LOS	D	F		F	D		D			D		
d_A, Approach Delay [s/veh]	152.19			80.08			47.84			36.77		
Approach LOS	F			F			D			D		
d_I, Intersection Delay [s/veh]	110.31											
Intersection LOS	F											
Intersection V/C	1.061											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	56.28	56.28
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.789	2.663
Crosswalk LOS	F	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	847	585	677	677
d_b, Bicycle Delay [s]	21.61	32.53	28.42	28.42
l_b,int, Bicycle LOS Score for Intersection	3.754	2.695	1.560	1.560
Bicycle LOS	D	B	A	A

Sequence

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



Bloomington Business Park Specific Plan

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Scenario 12 2040 PM + P

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Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound		Westbound		Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right	
1	Sierra Ave/I-10 Ramps	882	2908	1153	592	1369	882	976	595	523	605	10485

Option 1: Copy of Cedar Ave/I-10 WB Ramp

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	372	1158	0	0	1225	1012	0	0	0	339	5	486
Total Analysis Volume [veh/h]	405	1207	0	0	1302	785	0	0	0	437	5	376

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	23	67	0	0	44	0	0	0	0	0	23	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.21	0.70	0.44	0.44	0.44		0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.25	0.26	0.30	0.34	0.34		0.26	0.25
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1619	4631	3427	1530	1530		1715	1530
c, Capacity [veh/h]	342	3240	1521	679	679		363	324
X, volume / capacity	1.18	0.37	0.69	0.77	0.77		1.22	1.16
d, Delay for Lane Group [s/veh]	133.14	5.82	22.57	29.30	29.30		147.65	125.18
Lane Group LOS	F	A	C	C	C		F	F

Critical Lane Group	Yes	No	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	16.60	2.61	8.80	10.26	10.26		19.05	14.97
50th-Percentile Queue Length [ft/ln]	414.95	65.35	220.02	256.53	256.53		476.15	374.24
95th-Percentile Queue Length [veh/ln]	25.34	4.70	13.67	15.51	15.51		28.93	22.99
95th-Percentile Queue Length [ft/ln]	633.39	117.62	341.66	387.86	387.86		723.28	574.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	133.14	5.82	0.00	0.00	22.57	29.30	0.00	0.00	0.00	147.65	147.65	125.18
Movement LOS	F	A			C	C				F	F	F
Critical Movement	No	No			No	No				Yes	No	No
d_A, Approach Delay [s/veh]	37.81			25.93			0.00			137.32		
Approach LOS	D			C			A			F		
d_I, Intersection Delay [s/veh]	50.34											
Intersection LOS	D											
Intersection V/C	0.849											

Option 1: Copy of Cedar Ave/I-10 WB Ramp

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	330	1348	0	0	1164	637	0	0	0	346	5	566
Total Analysis Volume [veh/h]	438	1483	0	0	1264	513	0	0	0	410	5	455

Intersection Settings

Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	18	44	0	0	26	0	0	0	0	0	21	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.22	0.62	0.34	0.34	0.34		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.27	0.32	0.26	0.28	0.29		0.26	0.28
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1619	4631	3427	1561	1530		1702	1530
c, Capacity [veh/h]	350	2850	1158	528	517		446	401
X, volume / capacity	1.25	0.52	0.77	0.84	0.86		1.00	1.06
d, Delay for Lane Group [s/veh]	145.46	7.78	24.21	35.01	36.96		45.40	67.84
Lane Group LOS	F	A	C	D	D		D	F

Critical Lane Group	Yes	No	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	16.72	3.14	6.24	7.85	8.10		8.94	10.56
50th-Percentile Queue Length [ft/ln]	417.93	78.58	155.99	196.13	202.61		223.52	263.94
95th-Percentile Queue Length [veh/ln]	26.11	5.66	10.34	12.44	12.77		13.84	16.42
95th-Percentile Queue Length [ft/ln]	652.65	141.44	258.41	310.97	319.32		346.12	410.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	145.46	7.78	0.00	0.00	24.89	36.70	0.00	0.00	0.00	45.40	45.40	66.81
Movement LOS	F	A			C	D				D	D	E
Critical Movement	Yes	No			No	No				No	No	No
d_A, Approach Delay [s/veh]	39.17			30.10			0.00			56.38		
Approach LOS	D			C			A			E		
d_I, Intersection Delay [s/veh]	38.92											
Intersection LOS	D											
Intersection V/C	0.839											

Option 3: SP NB Thru and SB Thru to Thru Right

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	372	1158	0	0	1225	1012	0	0	0	339	5	486
Total Analysis Volume [veh/h]	472	1260	0	0	1407	800	0	0	0	598	5	385

Intersection Settings

Cycle Length [s]	125											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	30	85	0	0	55	0	0	0	0	0	40	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.21	0.65	0.41	0.41	0.41		0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.29	0.27	0.32	0.36	0.36		0.35	0.25
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1619	4631	3427	1530	1530		1715	1530
c, Capacity [veh/h]	337	3001	1397	624	624		494	441
X, volume / capacity	1.40	0.42	0.79	0.88	0.88		1.22	0.87
d, Delay for Lane Group [s/veh]	246.40	11.07	36.93	51.00	51.00		161.07	58.38
Lane Group LOS	F	B	D	D	D		F	E
Critical Lane Group	X	N	N	X	N		X	N

Critical Lane Group	Yes	No	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	28.93	5.51	15.27	18.15	18.15		31.14	13.20
50th-Percentile Queue Length [ft/ln]	723.16	137.65	381.87	453.66	453.66		778.44	329.93
95th-Percentile Queue Length [veh/ln]	44.16	9.35	21.68	25.13	25.13		45.27	19.15
95th-Percentile Queue Length [ft/ln]	1103.88	233.86	542.11	628.32	628.32		1131.80	478.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	246.40	11.07	0.00	0.00	36.93	51.00	0.00	0.00	0.00	161.07	161.07	58.38
Movement LOS	F	B			D	D				F	F	E
Critical Movement	Yes	No			No	No				No	No	No
d_A, Approach Delay [s/veh]	75.20			43.97			0.00			121.05		
Approach LOS	E			D			A			F		
d_I, Intersection Delay [s/veh]	70.40											
Intersection LOS	E											
Intersection V/C	1.004											

Option 3: Copy of Cedar Ave/I-10 WB Ramp

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	330	1348	0	0	1164	637	0	0	0	346	5	566
Total Analysis Volume [veh/h]	665	1613	0	0	1334	523	0	0	0	486	5	465

Intersection Settings

Cycle Length [s]	80											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	26	55	0	0	29	0	0	0	0	0	25	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.28	0.64	0.31	0.31	0.31		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.41	0.35	0.27	0.30	0.30		0.29	0.30
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1619	4631	3427	1566	1530		1715	1530
c, Capacity [veh/h]	446	2952	1070	489	478		451	402
X, volume / capacity	1.49	0.55	0.87	0.95	0.97		1.09	1.16
d, Delay for Lane Group [s/veh]	262.33	8.82	35.50	56.72	61.90		88.28	116.67
Lane Group LOS	F	A	D	E	E		F	F
Critical Lane Group	Y	N	N	N	Y		N	Y

Critical Lane Group	Yes	No	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	37.01	4.47	9.31	12.24	12.88		15.62	17.11
50th-Percentile Queue Length [ft/ln]	925.28	111.87	232.87	305.92	321.90		390.49	427.63
95th-Percentile Queue Length [veh/ln]	57.22	7.94	14.32	17.97	18.76		23.21	25.88
95th-Percentile Queue Length [ft/ln]	1430.58	198.60	358.01	449.34	469.02		580.28	647.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	262.33	8.82	0.00	0.00	37.02	61.32	0.00	0.00	0.00	88.28	88.28	116.67
Movement LOS	F	A			D	E				F	F	F
Critical Movement	Yes	No			No	No				No	No	No
d_A, Approach Delay [s/veh]	82.83			47.40			0.00			102.09		
Approach LOS	F			D			A			F		
d_I, Intersection Delay [s/veh]	73.52											
Intersection LOS	E											
Intersection V/C	1.018											

Option 3: Copy of Cedar Ave/I-10 WB Ramp

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	386	1196	0	0	1345	1012	0	0	0	358	5	486
Total Analysis Volume [veh/h]	427	1268	0	0	1452	799	0	0	0	465	5	383

Intersection Settings

Cycle Length [s]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	22	52	0	0	30	0	0	0	0	0	23	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.24	0.64	0.35	0.35	0.35		0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.25	0.26	0.31	0.35	0.35		0.26	0.24
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1714	4903	3618	1615	1615		1810	1615
c, Capacity [veh/h]	412	3137	1252	559	559		459	410
X, volume / capacity	1.04	0.40	0.90	1.01	1.01		1.02	0.93
d, Delay for Lane Group [s/veh]	64.36	6.97	33.74	64.34	64.34		60.22	40.69
Lane Group LOS	F	A	C	F	F		F	D

Critical Lane Group	Yes	No	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	11.14	2.75	10.59	15.36	15.36		11.92	7.88
50th-Percentile Queue Length [ft/ln]	278.55	68.78	264.81	384.07	384.07		297.90	196.94
95th-Percentile Queue Length [veh/ln]	16.94	4.95	15.93	21.89	21.89		17.81	12.48
95th-Percentile Queue Length [ft/ln]	423.44	123.80	398.25	547.23	547.23		445.19	312.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.36	6.97	0.00	0.00	33.74	64.34	0.00	0.00	0.00	60.22	60.22	40.69
Movement LOS	F	A			C	E				F	E	D
Critical Movement	Yes	No			No	No				No	No	No
d_A, Approach Delay [s/veh]	21.42			49.04			0.00			51.45		
Approach LOS	C			D			A			D		
d_I, Intersection Delay [s/veh]	39.72											
Intersection LOS	D											
Intersection V/C	0.857											

Option 3: Copy of Cedar Ave/I-10 WB Ramp

Number	11											
Intersection	Cedar Ave/I-10 WB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	498	2952	0	0	1459	637	0	0	0	585	7	1013
Total Analysis Volume [veh/h]	606	3143	0	0	1551	503	0	0	0	654	7	800

Intersection Settings

Cycle Length [s]	95											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	0	2	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	30	58	0	0	28	0	0	0	0	0	37	0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	7	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.27	0.57	0.25	0.25	0.25		0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.35	0.64	0.29	0.31	0.31		0.41	0.45
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800		1800	1800
Arrival type	3		3			3	3	
s, saturation flow rate [veh/h]	1714	4903	3618	1682	1615		1790	1615
c, Capacity [veh/h]	469	2790	915	425	409		621	560
X, volume / capacity	1.29	1.13	1.13	1.22	1.23		1.18	1.30
d, Delay for Lane Group [s/veh]	180.63	82.77	107.77	152.11	159.25		126.52	180.38
Lane Group LOS	F	F	F	F	F		F	F
Critical Lane Group	X				X			X

Critical Lane Group	Yes	No	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	29.58	34.42	19.50	23.37	23.25		30.11	35.55
50th-Percentile Queue Length [ft/ln]	739.59	860.58	487.50	584.35	581.33		752.78	888.80
95th-Percentile Queue Length [veh/ln]	44.25	48.37	28.66	34.81	34.86		43.38	53.04
95th-Percentile Queue Length [ft/ln]	1106.30	1209.18	716.40	870.23	871.39		1084.43	1326.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	180.63	82.77	0.00	0.00	112.96	159.25	0.00	0.00	0.00	126.52	126.52	175.70
Movement LOS	F	F			F	F				F	F	F
Critical Movement	Yes	No			No	No				No	No	No
d_A, Approach Delay [s/veh]	98.58			131.54			0.00			153.45		
Approach LOS	F			F			A			F		
d_I, Intersection Delay [s/veh]	118.94											
Intersection LOS	F											
Intersection V/C	1.117											

Option 1: Copy of Market St/SR-60 EB Ramp

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	301	127	664	265	0	112	0	337	0	0	0
Total Analysis Volume [veh/h]	0	327	103	740	288	0	122	0	275	0	0	0

Intersection Settings

Cycle Length [s]	60											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	12	0	36	48	0	12	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.41	0.27	0.74	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.09	0.21	0.08	0.07	0.10	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1462	941	2671	233	368	
X, volume / capacity	0.22	0.79	0.11	0.52	0.75	
d, Delay for Lane Group [s/veh]	12.10	21.93	2.32	26.31	28.31	
Lane Group LOS	B	C	A	C	C	

Critical Lane Group	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	1.34	4.58	0.26	1.64	1.93	
50th-Percentile Queue Length [ft/ln]	33.43	114.47	6.52	41.11	48.28	
95th-Percentile Queue Length [veh/ln]	2.41	8.09	0.47	2.96	3.48	
95th-Percentile Queue Length [ft/ln]	60.17	202.20	11.73	74.00	86.90	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.10	0.00	21.93	2.32	0.00	26.31	0.00	28.31	0.00	0.00	0.00
Movement LOS		B		C	A		C		C			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	12.10			16.44			27.69			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	18.18											
Intersection LOS	B											
Intersection V/C	0.397											

Option 1: Copy of Market St/SR-60 EB Ramp

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	456	63	512	574	0	120	0	752	0	0	0
Total Analysis Volume [veh/h]	0	491	51	625	619	0	129	0	608	0	0	0

Intersection Settings

Cycle Length [s]	60											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	15	0	26	41	0	19	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.33	0.23	0.62	0.24	0.24	
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.17	0.07	0.21	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1193	799	2256	440	696	
X, volume / capacity	0.41	0.78	0.27	0.29	0.87	
d, Delay for Lane Group [s/veh]	16.68	23.56	5.44	18.91	25.52	
Lane Group LOS	B	C	A	B	C	

Critical Lane Group	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	2.53	4.00	1.36	1.40	4.12	
50th-Percentile Queue Length [ft/ln]	63.15	100.02	33.99	34.99	102.97	
95th-Percentile Queue Length [veh/ln]	4.55	7.20	2.45	2.52	7.41	
95th-Percentile Queue Length [ft/ln]	113.67	180.04	61.17	62.99	185.35	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.68	0.00	23.56	5.44	0.00	18.91	0.00	25.52	0.00	0.00	0.00
Movement LOS		B		C	A		B		C			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	16.68			14.54			24.36			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	17.90											
Intersection LOS	B											
Intersection V/C	0.526											

Option 1: Copy of Market St/SR-60 EB Ramp

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	301	127	664	265	0	112	0	337	0	0	0
Total Analysis Volume [veh/h]	0	401	105	835	318	0	130	0	280	0	0	0

Intersection Settings

Cycle Length [s]	60											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	12	0	36	48	0	12	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.38	0.30	0.74	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.11	0.24	0.09	0.07	0.10	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1352	1042	2665	236	372	
X, volume / capacity	0.30	0.80	0.12	0.55	0.75	
d, Delay for Lane Group [s/veh]	13.83	21.00	2.38	26.53	28.31	
Lane Group LOS	B	C	A	C	C	

Critical Lane Group	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	1.81	5.07	0.30	1.76	1.97	
50th-Percentile Queue Length [ft/ln]	45.18	126.76	7.38	44.06	49.17	
95th-Percentile Queue Length [veh/ln]	3.25	8.76	0.53	3.17	3.54	
95th-Percentile Queue Length [ft/ln]	81.32	219.08	13.28	79.31	88.50	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.83	0.00	21.00	2.38	0.00	26.53	0.00	28.31	0.00	0.00	0.00
Movement LOS		B		C	A		C		C			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	13.83			15.86			27.74			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	17.93											
Intersection LOS	B											
Intersection V/C	0.446											

Option 1: Copy of Market St/SR-60 EB Ramp

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	456	63	512	574	0	120	0	752	0	0	0
Total Analysis Volume [veh/h]	0	537	52	936	707	0	139	0	620	0	0	0

Intersection Settings

Cycle Length [s]	80											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	39	57	0	23	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.30	0.31	0.66	0.24	0.24	
(v / s)_i Volume / Saturation Flow Rate	0.15	0.27	0.20	0.08	0.22	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1096	1089	2398	429	678	
X, volume / capacity	0.49	0.86	0.29	0.32	0.91	
d, Delay for Lane Group [s/veh]	24.41	28.12	5.97	25.66	35.09	
Lane Group LOS	C	C	A	C	D	

Critical Lane Group	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	4.21	8.27	2.13	2.17	6.08	
50th-Percentile Queue Length [ft/ln]	105.29	206.86	53.24	54.29	151.92	
95th-Percentile Queue Length [veh/ln]	7.58	12.99	3.83	3.91	10.12	
95th-Percentile Queue Length [ft/ln]	189.43	324.80	95.83	97.71	252.99	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.41	0.00	28.12	5.97	0.00	25.66	0.00	35.09	0.00	0.00	0.00
Movement LOS		C		C	A		C		D			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	24.41			18.59			33.36			0.00		
Approach LOS	C			B			C			A		
d_I, Intersection Delay [s/veh]	23.47											
Intersection LOS	C											
Intersection V/C	0.632											

Option 2: OY 1 2nd SB left turn

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	301	176	664	417	0	179	0	705	0	0	0
Total Analysis Volume [veh/h]	0	317	139	707	439	0	188	0	557	0	0	0

Intersection Settings

Cycle Length [s]	60											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	12	0	23	35	0	25	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.31	0.25	0.62	0.24	0.24	
(v / s)_i Volume / Saturation Flow Rate	0.09	0.20	0.12	0.10	0.19	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1124	865	2255	441	697	
X, volume / capacity	0.28	0.82	0.19	0.43	0.80	
d, Delay for Lane Group [s/veh]	16.29	23.37	5.05	19.86	23.55	
Lane Group LOS	B	C	A	B	C	

Critical Lane Group	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	1.59	4.53	0.91	2.13	3.58	
50th-Percentile Queue Length [ft/ln]	39.79	113.34	22.69	53.15	89.59	
95th-Percentile Queue Length [veh/ln]	2.86	8.03	1.63	3.83	6.45	
95th-Percentile Queue Length [ft/ln]	71.61	200.63	40.84	95.67	161.27	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.29	0.00	23.37	5.05	0.00	19.86	0.00	23.55	0.00	0.00	0.00
Movement LOS		B		C	A		B		C			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	16.29			16.35			22.62			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	18.46											
Intersection LOS	B											
Intersection V/C	0.484											

Option 3: Copy of Market St/SR-60 EB Ramp

Number	25											
Intersection	Market St/SR-60 EB Ramp											
Control Type	Signalized											
Analysis Method	HCM 6th Edition											
Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Right	Right2	Left	Left	Right
Base Volume Input [veh/h]	0	976	163	512	1954	0	120	0	1165	0	0	0
Total Analysis Volume [veh/h]	0	1027	128	611	2057	0	126	0	920	0	0	0

Intersection Settings

Cycle Length [s]	90											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Lost time [s]	0.00											
Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	29	0	30	59	0	31	0	0	0	0	0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	3	0	0	10	0	10	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	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					
Pedestrian Signal Group	0											
Pedestrian Walk [s]	0											
Pedestrian Clearance [s]	0											

Lane Group Calculations

g / C, Green / Cycle	0.36	0.21	0.61	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.17	0.57	0.07	0.32	
so, Base Saturation Flow per Lane [pc/h/ln]	1800	1800	1800	1800	1800	
Arrival type	3	3		3		3
s, saturation flow rate [veh/h]	3618	3514	3618	1810	2859	
c, Capacity [veh/h]	1307	723	2211	543	857	
X, volume / capacity	0.79	0.85	0.93	0.23	1.07	
d, Delay for Lane Group [s/veh]	30.49	37.24	24.31	23.94	70.07	
Lane Group LOS	C	D	C	C	F	

Critical Lane Group	No	No	Yes	No	Yes	
50th-Percentile Queue Length [veh/ln]	10.26	6.57	18.93	2.01	13.55	
50th-Percentile Queue Length [ft/ln]	256.45	164.21	473.29	50.33	338.63	
95th-Percentile Queue Length [veh/ln]	15.51	10.77	26.07	3.62	20.42	
95th-Percentile Queue Length [ft/ln]	387.77	269.29	651.68	90.60	510.41	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	30.49	0.00	37.24	24.31	0.00	23.94	0.00	70.07	0.00	0.00	0.00
Movement LOS		C		D	C		C		F			
Critical Movement		No	No	No	No		No		Yes			
d_A, Approach Delay [s/veh]	30.49			27.27			64.51			0.00		
Approach LOS	C			C			E			A		
d_I, Intersection Delay [s/veh]	36.18											
Intersection LOS	D											
Intersection V/C	0.890											