

## **APPENDIX D**

# **LEVEL OF SERVICE CALCUATIONS FOR FINAL EIR**

**HCM ALTERNATIVE  
METHOD B**

UCSC  
Existing Conditions - May 2004  
AM Peak Hour

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #14 Mission / Bay

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.790  
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 35.2  
Optimal Cycle: 84 Level Of Service: D

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	59	168	92	201	110	49	83	996	52	151	757	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	168	92	201	110	49	83	996	52	151	757	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	59	168	92	201	110	49	83	996	52	151	757	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	168	92	201	110	49	83	996	52	151	757	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	59	168	92	201	110	49	83	996	52	151	757	174

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.95	0.92	0.92
Lanes:	1.00	0.65	0.35	1.39	0.42	0.19	1.00	1.90	0.10	1.00	1.63	0.37
Final Sat.:	1805	1163	637	2513	768	342	1805	3407	178	1805	2853	656

Capacity Analysis Module:

Vol/Sat:	0.03	0.14	0.14	0.08	0.14	0.14	0.05	0.29	0.29	0.08	0.27	0.27
Crit Moves:			****			****		****		****		
Green Time:	18.3	18.3	18.3	18.1	18.1	18.1	7.0	37.0	37.0	10.6	40.6	40.6
Volume/Cap:	0.18	0.79	0.79	0.44	0.79	0.79	0.65	0.79	0.79	0.79	0.65	0.65
Delay/Veh:	34.8	52.3	52.3	36.8	48.8	48.8	57.6	31.4	31.4	65.9	25.2	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	52.3	52.3	36.8	48.8	48.8	57.6	31.4	31.4	65.9	25.2	25.2
LOS by Move:	C	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	2	10	10	4	10	10	4	17	17	7	13	13

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Note: Queue reported is the number of cars per lane.

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UCSC  
Existing Conditions - May 2004  
PM Peak Hour

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #14 Mission / Bay

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.942  
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 56.1  
Optimal Cycle: 136 Level Of Service: E

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	1	0	1	1	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	75	156	42	278	177	128	161	1037	73	189	1064	163
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	156	42	278	177	128	161	1037	73	189	1064	163
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	156	42	278	177	128	161	1037	73	189	1064	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	156	42	278	177	128	161	1037	73	189	1064	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	75	156	42	278	177	128	161	1037	73	189	1064	163

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	0.97	0.94	0.94	0.94	0.95	0.94	0.94	0.95	0.93	0.93
Lanes:	1.00	0.79	0.21	1.31	0.40	0.29	1.00	1.87	0.13	1.00	1.73	0.27
Final Sat.:	1805	1449	390	2357	716	517	1805	3339	235	1805	3068	470

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.11	0.11	0.12	0.25	0.25	0.09	0.31	0.31	0.10	0.35	0.35
Crit Moves:	****			****			****			****		
Green Time:	11.4	11.4	11.4	26.3	26.3	26.3	9.5	34.6	34.6	11.7	36.8	36.8
Volume/Cap:	0.36	0.94	0.94	0.45	0.94	0.94	0.94	0.90	0.90	0.90	0.94	0.94
Delay/Veh:	42.0	118	117.6	31.1	68.6	68.6	130.1	41.0	41.0	92.7	47.9	47.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	118	117.6	31.1	68.6	68.6	130.1	41.0	41.0	92.7	47.9	47.9
LOS by Move:	D	F	F	C	E	E	F	D	D	F	D	D
HCM2kAvgQ:	2	13	13	6	22	22	11	23	23	11	28	28

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Note: Queue reported is the number of cars per lane.

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 2020 AM No Project  
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Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

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 Intersection #14 Mission / Bay  
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 Cycle (sec): 100 Critical Vol./Cap. (X): 0.966  
 Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 57.8  
 Optimal Cycle: 150 Level Of Service: E  
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Street Name:	Bay						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	73	208	114	248	136	61	110	1317	69	200	1001	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	208	114	248	136	61	110	1317	69	200	1001	230
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Marine Labs:	0	0	8	0	0	10	5	64	0	14	114	0
Initial Fut:	73	208	122	248	136	71	115	1381	69	214	1115	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	208	122	248	136	71	115	1381	69	214	1115	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	208	122	248	136	71	115	1381	69	214	1115	230
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	73	208	122	248	136	71	115	1381	69	214	1115	230

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.97	0.97	0.85	0.95	0.94	0.94	0.95	0.93	0.93
Lanes:	1.00	0.63	0.37	1.29	0.71	1.00	1.00	1.90	0.10	1.00	1.66	0.34
Final Sat.:	1805	1132	664	2378	1304	1615	1805	3414	171	1805	2915	601

Capacity Analysis Module:

Vol/Sat:	0.04	0.18	0.18	0.10	0.10	0.04	0.06	0.40	0.40	0.12	0.38	0.38
Crit Moves:	****			****			****			****		
Green/Cycle:	0.19	0.19	0.19	0.11	0.11	0.11	0.08	0.42	0.42	0.12	0.46	0.46
Volume/Cap:	0.21	0.97	0.97	0.97	0.97	0.41	0.82	0.97	0.97	0.97	0.82	0.82
Delay/Veh:	34.5	107	107.2	105.1	105	43.2	84.1	51.5	51.5	132.3	26.9	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.5	107	107.2	105.1	105	43.2	84.1	51.5	51.5	132.3	26.9	26.9
LOS by Move:	C	F	F	F	F	D	F	D	D	F	C	C
HCM2kAvgQ:	2	19	19	14	14	3	7	35	35	15	21	21

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 Note: Queue reported is the number of cars per lane.

2020 AM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

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 Intersection #14 Mission / Bay  
 \*\*\*\*\*  
 Cycle (sec): 100 Critical Vol./Cap.(X): 1.015  
 Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 99.4  
 Optimal Cycle: 180 Level Of Service: F  
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Street Name:	Bay						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	1	0	1	0	1	1	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	73	208	114	248	136	61	110	1317	69	200	1001	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	208	114	248	136	61	110	1317	69	200	1001	230
Added Vol:	1	31	0	26	6	44	33	21	0	0	105	142
Marine Labs:	0	0	8	0	0	10	5	64	0	14	114	0
Initial Fut:	74	239	122	274	142	115	148	1402	69	214	1220	372
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	74	239	122	274	142	115	148	1402	69	214	1220	372
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	239	122	274	142	115	148	1402	69	214	1220	372
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	74	239	122	274	142	115	148	1402	69	214	1220	372

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.97	0.97	0.85	0.95	0.94	0.94	0.95	0.92	0.92
Lanes:	1.00	0.66	0.34	1.32	0.68	1.00	1.00	1.91	0.09	1.00	1.53	0.47
Final Sat.:	1805	1194	609	2423	1256	1615	1805	3417	168	1805	2670	814

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.20	0.20	0.11	0.11	0.07	0.08	0.41	0.41	0.12	0.46	0.46
Crit Moves:	****			****			****			****		
Green/Cycle:	0.20	0.20	0.20	0.11	0.11	0.11	0.08	0.41	0.41	0.12	0.45	0.45
Volume/Cap:	0.21	1.01	1.01	1.01	1.01	0.64	1.01	1.00	1.00	1.00	1.01	1.01
Delay/Veh:	33.9	150	150.3	148.1	148	50.2	209.8	72.1	72.1	162.3	88.3	88.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.9	150	150.3	148.1	148	50.2	209.8	72.1	72.1	162.3	88.3	88.3
LOS by Move:	C	F	F	F	F	D	F	E	E	F	F	F
HCM2kAvgQ:	2	25	25	17	17	5	13	40	40	16	47	47

Note: Queue reported is the number of cars per lane.

2020 PM No Project

Level Of Service Computation Report  
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #14 Mission / Bay  
\*\*\*\*\*  
Cycle (sec): 100 Critical Vol./Cap.(X): 1.055  
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 160.7  
Optimal Cycle: 180 Level Of Service: F  
\*\*\*\*\*

Street Name: Bay SR 1 - Mission  
Approach: North Bound South Bound East Bound West Bound  
Movement: L - T - R L - T - R L - T - R L - T - R  
Control: Split Phase Split Phase Protected Protected  
Rights: Include Include Include Include  
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0  
Lanes: 1 0 0 1 0 1 1 0 0 1 1 0 1 0 1 1 0

Volume Module:  
Base Vol: 93 193 52 343 219 158 213 1371 97 250 1407 215  
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Initial Bse: 93 193 52 343 219 158 213 1371 97 250 1407 215  
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
Marine Labs: 0 0 16 0 0 6 11 131 0 9 42 0  
Initial Fut: 93 193 68 343 219 164 224 1502 97 259 1449 215  
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
PHF Volume: 93 193 68 343 219 164 224 1502 97 259 1449 215  
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
Reduced Vol: 93 193 68 343 219 164 224 1502 97 259 1449 215  
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
Final Vol.: 93 193 68 343 219 164 224 1502 97 259 1449 215

Saturation Flow Module:  
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900  
Adjustment: 0.95 0.96 0.96 0.97 0.97 0.85 0.95 0.94 0.94 0.95 0.93 0.93  
Lanes: 1.00 0.74 0.26 1.22 0.78 1.00 1.00 1.88 0.12 1.00 1.74 0.26  
Final Sat.: 1805 1350 476 2250 1436 1615 1805 3360 217 1805 3084 458

Capacity Analysis Module:  
Vol/Sat: 0.05 0.14 0.14 0.15 0.15 0.10 0.12 0.45 0.45 0.14 0.47 0.47  
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*  
Green/Cycle: 0.14 0.14 0.14 0.14 0.14 0.14 0.12 0.42 0.42 0.14 0.44 0.44  
Volume/Cap: 0.38 1.05 1.05 1.05 1.05 0.70 1.06 1.05 1.05 1.05 1.06 1.06  
Delay/Veh: 40.4 220 219.7 185.9 186 50.4 237.8 146 146.3 220.1 155 154.7  
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
AdjDel/Veh: 40.4 220 219.7 185.9 186 50.4 237.8 146 146.3 220.1 155 154.7  
LOS by Move: D F F F F D F F F F F F  
HCM2kAvgQ: 3 23 23 24 24 7 20 57 57 22 61 61

Note: Queue reported is the number of cars per lane.

2020 PM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #14 Mission / Bay  
 \*\*\*\*\*  
 Cycle (sec): 100 Critical Vol./Cap.(X): 1.201  
 Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 353.5  
 Optimal Cycle: 180 Level Of Service: F  
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Street Name:	Bay						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	1	0	1	0	1	1	0	1

Volume Module:

Base Vol:	93	193	52	343	219	158	213	1371	97	250	1407	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	193	52	343	219	158	213	1371	97	250	1407	215
Added Vol:	0	16	0	152	33	36	55	119	1	0	27	71
Marine Labs:	0	0	16	0	0	6	11	131	0	9	42	0
Initial Fut:	93	209	68	495	252	200	279	1621	98	259	1476	286
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	209	68	495	252	200	279	1621	98	259	1476	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	209	68	495	252	200	279	1621	98	259	1476	286
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	93	209	68	495	252	200	279	1621	98	259	1476	286

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.96	0.96	0.97	0.97	0.85	0.95	0.94	0.94	0.95	0.93	0.93
Lanes:	1.00	0.75	0.25	1.33	0.67	1.00	1.00	1.89	0.11	1.00	1.68	0.32
Final Sat.:	1805	1381	449	2437	1241	1615	1805	3374	204	1805	2951	572

Capacity Analysis Module:

Vol/Sat:	0.05	0.15	0.15	0.20	0.20	0.12	0.15	0.48	0.48	0.14	0.50	0.50
Crit Moves:			****	****			****			****		
Green/Cycle:	0.13	0.13	0.13	0.17	0.17	0.17	0.13	0.42	0.42	0.13	0.42	0.42
Volume/Cap:	0.41	1.20	1.20	1.20	1.20	0.73	1.20	1.15	1.15	1.15	1.20	1.20
Delay/Veh:	41.5	448	447.9	420.5	420	49.8	447.5	299	299.3	357.2	399	398.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.5	448	447.9	420.5	420	49.8	447.5	299	299.3	357.2	399	398.8
LOS by Move:	D	F	F	F	F	D	F	F	F	F	F	F
HCM2kAvgQ:	3	36	36	47	47	8	36	89	89	29	109	109

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*



UCSC
Existing Conditions - May 2004
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 Mission / Chestnut

Cycle (sec): 120 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.9
Optimal Cycle: 82 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 13 Nov 2003 <<. Table with 12 columns for volume and adjustment factors.

Saturation Flow Module: Table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module: Table with 12 columns for capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

UCSC  
Existing Conditions - May 2004  
PM Peak Hour

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #20: Mission / Chestnut

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 0.671  
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 34.3  
Optimal Cycle: 82 Level Of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	10	0	0	60	60	0	0	0	0
Lanes:	1	0	1	1	0	2	1	1	1	0	1	1

Volume Module:	>>	Count	Date:	1 Oct 2003	<<							
Base Vol:	118	307	35	45	349	1461	1235	466	92	12	449	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	307	35	45	349	1461	1235	466	92	12	449	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	307	35	45	349	1461	1235	466	92	12	449	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	307	35	45	349	1461	1235	466	92	12	449	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	118	307	35	45	349	1461	1235	466	92	12	449	54

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.95	0.75	0.92	0.92	0.85	0.95	0.95	0.85
Lanes:	1.00	1.80	0.20	1.00	2.00	2.00	2.00	1.00	1.00	0.05	1.95	1.00
Final Sat.:	1805	3192	364	1805	3610	2842	3484	1742	1615	94	3513	1615

Capacity Analysis Module:

Vol/Sat:	0.07	0.10	0.10	0.02	0.10	0.51	0.35	0.27	0.06	0.13	0.13	0.03
Crit Moves:	****			****			****			****		
Green Time:	7.6	16.3	16.3	10.0	18.6	78.7	60.1	60.1	60.1	21.7	21.7	31.7
Volume/Cap:	1.03	0.71	0.71	0.30	0.62	0.78	0.71	0.53	0.11	0.71	0.71	0.13
Delay/Veh:	251.5	54.5	54.5	52.8	49.6	16.9	24.2	20.6	15.9	49.9	49.9	33.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	251.5	54.5	54.5	52.8	49.6	16.9	24.2	20.6	15.9	49.9	49.9	33.8
LOS by Move:	F	D	D	D	D	B	C	C	B	D	D	C
HCM2kAvgQ:	12	8	8	2	7	23	19	12	2	10	10	2

Note: Queue reported is the number of cars per lane.  
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 2020 AM No Project  
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Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #20 Mission / Chestnut  
 \*\*\*\*\*  
 Cycle (sec): 120 Critical Vol./Cap.(X): 1.034  
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 97.1  
 Optimal Cycle: 180 Level Of Service: F  
 \*\*\*\*\*

Street Name: Chestnut SR 1 - Mission  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 -----  
 Control: Protected Protected Split Phase Split Phase  
 Rights: Include Ovl Include Ovl  
 Min. Green: 0 0 0 10 0 0 60 60 0 0 0 0  
 Lanes: 1 0 1 1 0 1 0 2 0 2 1 1 1 0 1 0 1 1 0 1  
 -----

Volume Module:  
 Base Vol: 120 545 32 107 356 2012 1820 475 53 9 406 96  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 120 545 32 107 356 2012 1820 475 53 9 406 96  
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Marine Labs: 0 6 1 0 12 111 62 0 0 1 8 0  
 Initial Fut: 120 551 33 107 368 2123 1882 475 53 10 414 96  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Volume: 120 551 33 107 368 2123 1882 475 53 10 414 96  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 120 551 33 107 368 2123 1882 475 53 10 414 96  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol.: 120 551 33 107 368 2123 1882 475 53 10 414 96  
 -----

Saturation Flow Module:  
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900  
 Adjustment: 0.95 0.94 0.94 0.95 0.95 0.75 0.91 0.91 0.85 0.95 0.95 0.85  
 Lanes: 1.00 1.89 0.11 1.00 2.00 2.00 2.00 1.00 1.00 0.05 1.95 1.00  
 Final Sat.: 1805 3375 202 1805 3610 2842 3473 1736 1615 85 3521 1615  
 -----

Capacity Analysis Module:  
 Vol/Sat: 0.07 0.16 0.16 0.06 0.10 0.75 0.54 0.27 0.03 0.12 0.12 0.06  
 Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*  
 Green/Cycle: 0.06 0.17 0.17 0.09 0.20 0.72 0.52 0.52 0.52 0.11 0.11 0.20  
 Volume/Cap: 1.03 0.94 0.94 0.67 0.51 1.03 1.03 0.52 0.06 1.03 1.03 0.29  
 Delay/Veh: 259.9 80.5 80.5 63.9 43.6 98.5 108.8 18.8 14.1 179.7 180 41.1  
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 259.9 80.5 80.5 63.9 43.6 98.5 108.8 18.8 14.1 179.7 180 41.1  
 LOS by Move: F F F E D F F B B F F D  
 HCM2kAvgQ: 13 19 19 5 7 77 65 12 1 20 20 3  
 \*\*\*\*\*

Note: Queue reported is the number of cars per lane.

2020 AM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #20 Mission / Chestnut  
 \*\*\*\*\*  
 Cycle (sec): 120 Critical Vol./Cap.(X): 1.159  
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 227.5  
 Optimal Cycle: 180 Level Of Service: F  
 \*\*\*\*\*

Street Name:	Chestnut						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	10	0	0	60	60	0	0	0	0
Lanes:	1	0	1	1	0	2	1	1	1	0	1	1

Volume Module:

Base Vol:	120	545	32	107	356	2012	1820	475	53	9	406	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	545	32	107	356	2012	1820	475	53	9	406	96
Added Vol:	2	0	0	0	0	280	52	8	0	0	44	0
Marine Labs:	0	6	1	0	12	111	62	0	0	1	8	0
Initial Fut:	122	551	33	107	368	2403	1934	483	53	10	458	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	551	33	107	368	2403	1934	483	53	10	458	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	551	33	107	368	2403	1934	483	53	10	458	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	122	551	33	107	368	2403	1934	483	53	10	458	96

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.95	0.75	0.91	0.91	0.85	0.95	0.95	0.85
Lanes:	1.00	1.89	0.11	1.00	2.00	2.00	2.00	1.00	1.00	0.04	1.96	1.00
Final Sat.:	1805	3375	202	1805	3610	2842	3473	1736	1615	77	3529	1615

Capacity Analysis Module:

Vol/Sat:	0.07	0.16	0.16	0.06	0.10	0.85	0.56	0.28	0.03	0.13	0.13	0.06
Crit Moves:	****			****			****			****		
Green/Cycle:	0.06	0.19	0.19	0.10	0.24	0.74	0.50	0.50	0.50	0.11	0.11	0.21
Volume/Cap:	1.21	0.84	0.84	0.60	0.43	1.15	1.11	0.56	0.07	1.21	1.21	0.29
Delay/Veh:	526.5	56.5	56.5	57.4	39.2	285.6	242.6	20.9	15.5	464.9	465	40.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	526.5	56.5	56.5	57.4	39.2	285.6	242.6	20.9	15.5	464.9	465	40.7
LOS by Move:	F	E	E	E	D	F	F	C	B	F	F	D
HCM2kAvgQ:	19	14	14	5	6	140	94	13	1	35	35	3

Note: Queue reported is the number of cars per lane.

-----  
 2020 PM No Project  
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Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #20 Mission / Chestnut  
 \*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 1.038  
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 88.6  
 Optimal Cycle: 180 Level Of Service: F  
 \*\*\*\*\*

Street Name:	Chestnut						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	10	0	0	60	60	0	0	0	0
Lanes:	1	0	1	1	0	2	1	1	1	0	1	1

Volume Module:

Base Vol:	157	409	47	59	461	1931	1633	616	122	13	497	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	409	47	59	461	1931	1633	616	122	13	497	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Marine Labs:	0	13	2	0	7	70	127	9	0	0	5	0
Initial Fut:	157	422	49	59	468	2001	1760	625	122	13	502	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	422	49	59	468	2001	1760	625	122	13	502	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	422	49	59	468	2001	1760	625	122	13	502	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	157	422	49	59	468	2001	1760	625	122	13	502	60

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.95	0.75	0.92	0.92	0.85	0.95	0.95	0.85
Lanes:	1.00	1.79	0.21	1.00	2.00	2.00	2.00	1.00	1.00	0.05	1.95	1.00
Final Sat.:	1805	3183	370	1805	3610	2842	3480	1740	1615	91	3515	1615

Capacity Analysis Module:

Vol/Sat:	0.09	0.13	0.13	0.03	0.13	0.70	0.51	0.36	0.08	0.14	0.14	0.04
Crit Moves:	****			****			****			****		
Green/Cycle:	0.08	0.16	0.16	0.10	0.19	0.69	0.50	0.50	0.50	0.13	0.13	0.24
Volume/Cap:	1.07	0.81	0.81	0.32	0.70	1.03	1.01	0.72	0.15	1.07	1.07	0.16
Delay/Veh:	284.3	57.3	57.3	50.9	49.1	91.6	79.0	24.2	16.3	220.8	221	36.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	284.3	57.3	57.3	50.9	49.1	91.6	79.0	24.2	16.3	220.8	221	36.5
LOS by Move:	F	E	E	D	D	F	E	C	B	F	F	D
HCM2kAvgQ:	17	12	12	2	10	70	55	20	2	26	26	2

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.

2020 PM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #20 Mission / Chestnut  
 \*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap. (X): 1.091  
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 166.3  
 Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

Street Name:	Chestnut						SR 1 - Mission					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	10	0	0	60	60	0	0	0	0
Lanes:	1	0	1	1	0	2	1	1	1	0	1	1

Volume Module:

Base Vol:	157	409	47	59	461	1931	1633	616	122	13	497	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	409	47	59	461	1931	1633	616	122	13	497	60
Added Vol:	1	0	0	0	0	121	303	48	2	0	19	0
Marine Labs:	0	13	2	0	7	70	127	9	0	0	5	0
Initial Fut:	158	422	49	59	468	2122	2063	673	124	13	521	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	422	49	59	468	2122	2063	673	124	13	521	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	422	49	59	468	2122	2063	673	124	13	521	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	158	422	49	59	468	2122	2063	673	124	13	521	60

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.95	0.75	0.92	0.92	0.85	0.95	0.95	0.85
Lanes:	1.00	1.79	0.21	1.00	2.00	2.00	2.00	1.00	1.00	0.05	1.95	1.00
Final Sat.:	1805	3183	370	1805	3610	2842	3480	1740	1615	88	3519	1615

Capacity Analysis Module:

Vol/Sat:	0.09	0.13	0.13	0.03	0.13	0.75	0.59	0.39	0.08	0.15	0.15	0.04
Crit Moves:	****			****			****			****		
Green/Cycle:	0.08	0.14	0.14	0.09	0.14	0.68	0.54	0.54	0.54	0.14	0.14	0.22
Volume/Cap:	1.09	0.98	0.98	0.38	0.92	1.09	1.09	0.71	0.14	1.09	1.09	0.17
Delay/Veh:	313.9	113	112.8	53.5	80.4	193.7	199.9	21.1	13.6	252.2	252	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	313.9	113	112.8	53.5	80.4	193.7	199.9	21.1	13.6	252.2	252	38.0
LOS by Move:	F	F	F	D	F	F	F	C	B	F	F	D
HCM2kAvgQ:	18	18	18	2	15	101	91	20	2	28	28	2

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.

UCSC
Existing Conditions - May 2004
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Mission / King-Union

Cycle (sec): 120 Critical Vol./Cap.(X): 0.772
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 188.5
Optimal Cycle: 180 Level Of Service: F

Table with columns for Street Name (King - Union, SR 1 - Mission), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Split Phase, Permitted, Protected), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol across various approaches.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for different approaches.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for various approaches.

Note: Queue reported is the number of cars per lane.

UCSC
Existing Conditions - May 2004
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #19 Mission / King-Union

\*\*\*\*\*

Cycle (sec): 120 Critical Vol./Cap.(X): 0.685
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 107.7
Optimal Cycle: 180 Level Of Service: F

\*\*\*\*\*

Table with columns for Street Name (King - Union, SR 1 - Mission), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Split Phase, Permitted, Protected), Rights (Include), Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Vol, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Vol. across 12 lanes.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. across 12 lanes.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ across 12 lanes.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

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HCM Signalized Intersection Capacity Analysis

2020 AM No Project

19: Mission – SR1 & King

8/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↗	↕↔			↕		↗	↕↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	
Flt		1.00		1.00	0.98			0.91		1.00	0.99	
Flt Protected		1.00		0.95	1.00			1.00		0.95	0.95	
Satd. Flow (prot)		3538		1770	3476			1688		1681	1679	
Flt Permitted		0.83		0.95	1.00			1.00		0.95	0.95	
Satd. Flow (perm)		2954		1770	3476			1688		1681	1679	
Volume (vph)	3	1426	1	56	1965	264	1	3	8	1190	0	21
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	1426	1	56	1965	264	1	3	8	1190	0	21
RTOR Reduction (vph)	0	0	0	0	7	0	0	7	0	0	1	0
Lane Group Flow (vph)	0	1430	0	56	2222	0	0	5	0	639	571	0
Turn Type	Perm		Prot		Split			Split				
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4											
Actuated Green, G (s)		66.0		4.0	74.0			18.0		46.0	46.0	
Effective Green, g (s)		66.0		4.0	74.0			18.0		46.0	46.0	
Actuated g/C Ratio		0.44		0.03	0.49			0.12		0.31	0.31	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		1300		47	1715			203		516	515	
v/s Ratio Prot				0.03	0.64			0.01		0.38	0.34	
v/s Ratio Perm		0.48										
v/c Ratio		1.10		1.19	1.30			0.02		1.24	1.11	
Uniform Delay, d1		42.0		73.0	38.0			58.3		52.0	52.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		228.1		770.9	549.8			0.9		492.3	292.3	
Delay (s)		270.1		843.9	587.8			59.1		544.3	344.3	
Level of Service		F		F	F			E		F	F	
Approach Delay (s)		270.1			594.1			59.1			449.8	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	463.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	60		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis  
 19: Mission – SR1 & King

2020 AM Plus Project  
 8/7/2006

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	
Flt		1.00		1.00	0.98			0.92		1.00	1.00	
Flt Protected		1.00		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (prot)		3538		1770	3471			1709		1681	1683	
Flt Permitted		0.84		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (perm)		2957		1770	3471			1709		1681	1683	
Volume (vph)	3	1459	1	56	2139	315	3	7	13	1217	1	8
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	1459	1	56	2139	315	3	7	13	1217	1	8
RTOR Reduction (vph)	0	0	0	0	8	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	1463	0	56	2446	0	0	12	0	641	585	0
Turn Type	Perm			Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4											
Actuated Green, G (s)		68.0		4.0	76.0			19.0		43.0	43.0	
Effective Green, g (s)		68.0		4.0	76.0			19.0		43.0	43.0	
Actuated g/C Ratio		0.45		0.03	0.51			0.13		0.29	0.29	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		1341		47	1759			216		482	482	
v/s Ratio Prot				0.03	c0.71			c0.01		c0.38	0.35	
v/s Ratio Perm		0.49										
v/c Ratio		1.09		1.19	1.39			0.05		1.33	1.21	
Uniform Delay, d1		41.0		73.0	37.0			57.6		53.5	53.5	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		213.2		770.9	717.4			1.9		648.9	456.2	
Delay (s)		254.2		843.9	754.4			59.5		702.4	509.7	
Level of Service		F		F	F			E		F	F	
Approach Delay (s)		254.2			756.4			59.5			610.4	
Approach LOS		F			F			E			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			578.4			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			116.5%			ICU Level of Service				H		
Analysis Period (min)			60									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2020 PM No Project

19: Mission – SR1 & King

8/7/2006

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕↕			↕↕		↕	↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	
Fr <sub>t</sub>		1.00		1.00	0.98			0.92		1.00	1.00	
Fl <sub>t</sub> Protected		1.00		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (prot)		3538		1770	3472			1709		1681	1683	
Fl <sub>t</sub> Permitted		0.86		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (perm)		3035		1770	3472			1709		1681	1683	
Volume (vph)	2	1674	3	34	1612	235	3	7	13	1073	1	8
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1674	3	34	1612	235	3	7	13	1073	1	8
RTOR Reduction (vph)	0	0	0	0	8	0	0	12	0	0	1	0
Lane Group Flow (vph)	0	1679	0	34	1839	0	0	11	0	566	515	0
Turn Type	Perm			Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4											
Actuated Green, G (s)		71.6		3.2	78.8			17.0		43.0	43.0	
Effective Green, g (s)		71.6		3.2	78.8			17.0		43.0	43.0	
Actuated g/C Ratio		0.47		0.02	0.52			0.11		0.29	0.29	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		1441		38	1814			193		479	480	
v/s Ratio Prot				0.02	c0.53			c0.01		c0.34	0.31	
v/s Ratio Perm		c0.55										
v/c Ratio		1.17		0.89	1.01			0.06		1.18	1.07	
Uniform Delay, d <sub>1</sub>		39.6		73.6	36.0			59.8		53.9	53.9	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d <sub>2</sub>		329.1		415.6	98.6			2.4		405.7	248.8	
Delay (s)		368.7		489.2	134.6			62.1		459.6	302.7	
Level of Service		F		F	F			E		F	F	
Approach Delay (s)		368.7			141.0			62.1			384.8	
Approach LOS		F			F			E			F	
<b>Intersection Summary</b>												
HCM Average Control Delay			279.1			HCM Level of Service				F		
HCM Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			150.8			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			95.4%			ICU Level of Service				F		
Analysis Period (min)			60									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕↕			↕↕		↕	↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	
Frt		1.00		1.00	0.98			0.92		1.00	1.00	
Flt Protected		1.00		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (prot)		3538		1770	3468			1709		1681	1683	
Flt Permitted		0.86		0.95	1.00			0.99		0.95	0.95	
Satd. Flow (perm)		3034		1770	3468			1709		1681	1683	
Volume (vph)	2	1866	3	34	1677	260	3	7	13	1231	1	8
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	1866	3	34	1677	260	3	7	13	1231	1	8
RTOR Reduction (vph)	0	0	0	0	8	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1871	0	34	1929	0	0	11	0	648	592	0
Turn Type	Perm		Prot		Split		Split					
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4											
Actuated Green, G (s)		70.6		3.2	77.8			17.0		44.0	44.0	
Effective Green, g (s)		70.6		3.2	77.8			17.0		44.0	44.0	
Actuated g/C Ratio		0.47		0.02	0.52			0.11		0.29	0.29	
Clearance Time (s)		4.0		4.0	4.0			4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		1420		38	1789			193		490	491	
v/s Ratio Prot				0.02	c0.56			c0.01		c0.39	0.35	
v/s Ratio Perm		c0.62										
v/c Ratio		1.32		0.89	1.08			0.06		1.32	1.21	
Uniform Delay, d1		40.1		73.6	36.5			59.8		53.4	53.4	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		592.0		415.6	183.3			2.4		635.5	442.2	
Delay (s)		632.1		489.2	219.8			62.1		688.9	495.6	
Level of Service		F		F	F			E		F	F	
Approach Delay (s)		632.1			224.4			62.1			596.6	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	463.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	60		
c Critical Lane Group			

**BALANCED ON-CAMPUS  
INTERSECTIONS**

UCSC LRDP EIR Response to Comments  
 2020 Without Project  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #1 Coolidge/Campus Facilities  
 \*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap.(X): 0.708  
 Loss Time (sec): 12 (Y+R=0.0 sec) Average Delay (sec/veh): 9.4  
 Optimal Cycle: 53 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	0	1	0	0	1

Volume Module:

Base Vol:	5	737	50	17	272	1	1	3	2	26	5	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	737	50	17	272	1	1	3	2	26	5	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	737	50	17	272	1	1	3	2	26	5	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	6	910	62	21	336	1	1	4	2	32	6	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	910	62	21	336	1	1	4	2	32	6	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	6	910	62	21	336	1	1	4	2	32	6	49

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.99	0.99	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.87	0.87
Lanes:	1.00	0.94	0.06	1.00	0.99	0.01	0.17	0.50	0.33	1.00	0.11	0.89
Final Sat.:	1805	1761	120	1805	1891	7	300	900	600	1805	183	1464

Capacity Analysis Module:

Vol/Sat:	0.00	0.52	0.52	0.01	0.18	0.18	0.00	0.00	0.00	0.02	0.03	0.03
Crit Moves:	****			****			****			****		
Green/Cycle:	0.01	0.73	0.73	0.02	0.73	0.73	0.01	0.01	0.01	0.04	0.05	0.05
Volume/Cap:	0.24	0.71	0.71	0.71	0.24	0.24	0.71	0.41	0.41	0.41	0.71	0.71
Delay/Veh:	34.2	6.2	6.2	85.9	2.7	2.7	149.6	43.9	43.9	31.4	53.7	53.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.2	6.2	6.2	85.9	2.7	2.7	149.6	43.9	43.9	31.4	53.7	53.7
LOS by Move:	C	A	A	F	A	A	F	D	D	C	D	D
HCM2kAvgQ:	0	11	11	2	2	2	1	1	1	1	2	2

Note: Queue reported is the number of cars per lane.

UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #1 Coolidge/Campus Facilities

\*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap. (X): 0.924  
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 19.3  
Optimal Cycle: 60 Level Of Service: B

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	0	1	0	0	1

Volume Module: Balanced AM Volumes

Base Vol:	5	998	55	17	371	1	1	3	2	32	5	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	998	55	17	371	1	1	3	2	32	5	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	6	1232	68	21	458	1	1	4	2	40	6	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	1232	68	21	458	1	1	4	2	40	6	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	6	1232	68	21	458	1	1	4	2	40	6	49

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.99	0.99	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.87	0.87
Lanes:	1.00	0.95	0.05	1.00	0.99	0.01	0.17	0.50	0.33	1.00	0.11	0.89
Final Sat.:	1805	1786	98	1805	1895	5	300	900	600	1805	183	1464

Capacity Analysis Module:

Vol/Sat:	0.00	0.69	0.69	0.01	0.24	0.24	0.00	0.00	0.00	0.02	0.03	0.03
Crit Moves:	****			****			****			****		
Green/Cycle:	0.01	0.75	0.75	0.01	0.75	0.75	0.00	0.01	0.01	0.03	0.04	0.04
Volume/Cap:	0.32	0.92	0.92	0.92	0.32	0.32	0.92	0.63	0.63	0.63	0.92	0.92
Delay/Veh:	39.0	16.7	16.7	183.5	2.6	2.6	299.6	109	108.7	48.2	118	117.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	16.7	16.7	183.5	2.6	2.6	299.6	109	108.7	48.2	118	117.7
LOS by Move:	D	B	B	F	A	A	F	F	F	D	F	F
HCM2kAvgQ:	0	25	25	2	3	3	1	1	1	2	3	3

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

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UCSC LRDP EIR Response to Comments  
 2020 Without Project  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #1 Coolidge/Campus Facilities  
 \*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap.(X): 0.622  
 Loss Time (sec): 12 (Y+R=0.0 sec) Average Delay (sec/veh): 8.8  
 Optimal Cycle: 45 Level Of Service: A  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	0	0	1	0	0

Volume Module:

Base Vol:	4	562	35	12	670	1	0	0	9	76	0	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	562	35	12	670	1	0	0	9	76	0	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	562	35	12	670	1	0	0	9	76	0	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	5	694	43	15	827	1	0	0	11	94	0	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	694	43	15	827	1	0	0	11	94	0	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	694	43	15	827	1	0	0	11	94	0	38

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.99	0.99	0.95	1.00	1.00	1.00	1.00	0.87	0.95	1.00	0.85
Lanes:	1.00	0.94	0.06	1.00	0.99	0.01	0.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1805	1773	110	1805	1897	3	0	0	1644	1805	0	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.39	0.39	0.01	0.44	0.44	0.00	0.00	0.01	0.05	0.00	0.02
Crit Moves:	****			****			****			****		
Green/Cycle:	0.00	0.69	0.69	0.01	0.70	0.70	0.00	0.00	0.01	0.08	0.00	0.09
Volume/Cap:	0.62	0.57	0.57	0.57	0.62	0.62	0.00	0.00	0.62	0.62	0.00	0.25
Delay/Veh:	127.9	5.3	5.3	55.3	5.7	5.7	0.0	0.0	82.1	34.4	0.0	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	127.9	5.3	5.3	55.3	5.7	5.7	0.0	0.0	82.1	34.4	0.0	26.1
LOS by Move:	F	A	A	E	A	A	A	A	F	C	A	C
HCM2kAvgQ:	1	8	8	1	9	9	0	0	1	3	0	1

Note: Queue reported is the number of cars per lane.



UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #1 Coolidge/Campus Facilities  
\*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap.(X): 0.847  
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.0  
Optimal Cycle: 60 Level Of Service: B  
\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	0	0	1	0	0

Volume Module: Balanced PM Volumes

Base Vol:	4	737	41	12	942	1	0	0	9	82	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	737	41	12	942	1	0	0	9	82	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	5	910	51	15	1163	1	0	0	11	101	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	910	51	15	1163	1	0	0	11	101	0	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	910	51	15	1163	1	0	0	11	101	0	14

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.99	0.99	0.95	1.00	0.85	1.00	1.00	0.87	0.95	1.00	0.85
Lanes:	1.00	0.95	0.05	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1805	1785	99	1805	1900	1615	0	0	1644	1805	0	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.51	0.51	0.01	0.61	0.00	0.00	0.00	0.01	0.06	0.00	0.01
Crit Moves:	****			****			****		****	****		
Green/Cycle:	0.00	0.71	0.71	0.01	0.72	0.72	0.00	0.00	0.01	0.07	0.00	0.07
Volume/Cap:	0.85	0.71	0.71	0.71	0.85	0.00	0.00	0.00	0.85	0.85	0.00	0.11
Delay/Veh:	295.6	6.8	6.8	105.5	11.1	2.3	0.0	0.0	197.0	67.6	0.0	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	295.6	6.8	6.8	105.5	11.1	2.3	0.0	0.0	197.0	67.6	0.0	26.4
LOS by Move:	F	A	A	F	B	A	A	A	F	E	A	C
HCM2kAvgQ:	1	12	12	1	19	0	0	0	1	4	0	0

Note: Queue reported is the number of cars per lane.  
\*\*\*\*\*

UCSC LRDP EIR Response to Comments  
 2020 Without Project  
 AM Peak Hour

Level of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #2 Coolidge/Hagar  
 \*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap. (X): 0.563  
 Loss Time (sec): 12 (Y+R=0.0 sec) Average Delay (sec/veh): 13.9  
 Optimal Cycle: 60 Level of Service: B  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	1	0	0	0	1

Volume Module:

Base Vol:	444	316	18	2	96	3	0	0	173	21	4	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	444	316	18	2	96	3	0	0	173	21	4	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	444	316	18	2	96	3	0	0	173	21	4	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	483	343	20	2	104	3	0	0	188	23	4	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	483	343	20	2	104	3	0	0	188	23	4	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	483	343	20	2	104	3	0	0	188	23	4	5

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.95	0.95	0.97	1.02	1.02	1.00	1.00	0.85	0.85	0.85	0.85
Lanes:	1.00	0.95	0.05	1.00	0.97	0.03	0.00	1.00	1.00	0.70	0.13	0.17
Final Sat.:	1733	1712	98	1841	1871	58	0	1900	1615	1124	214	268

Capacity Analysis Module:

Vol/Sat:	0.28	0.20	0.20	0.00	0.06	0.06	0.00	0.00	0.12	0.02	0.02	0.02
Crit Moves:	****			****			****					
Green/Cycle:	0.49	0.59	0.59	0.00	0.10	0.10	0.00	0.00	0.21	0.21	0.21	0.21
Volume/Cap:	0.56	0.34	0.34	0.34	0.56	0.56	0.00	0.00	0.56	0.10	0.10	0.10
Delay/Veh:	11.5	6.5	6.5	58.9	29.6	29.6	0.0	0.0	23.6	19.4	19.4	19.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.5	6.5	6.5	58.9	29.6	29.6	0.0	0.0	23.6	19.4	19.4	19.2
LOS by Move:	B	A	A	E	C	C	A	A	C	B	B	B
HCM2kAvgQ:	7	4	4	0	3	3	0	0	4	1	1	1

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.

UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level Of Service Computation Report  
2000 HCM Operations Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #2 Coolidge/Hagar  
\*\*\*\*\*

Cycle (sec): 60 Critical Vol./Cap.(X): 0.706  
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5  
Optimal Cycle: 60 Level Of Service: B  
\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	1	0	0	0	1

Volume Module: Balanced AM Volumes

Base Vol:	562	456	21	2	260	0	0	0	99	25	4	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	562	456	21	2	260	0	0	0	99	25	4	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	611	496	23	2	283	0	0	0	108	27	4	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	611	496	23	2	283	0	0	0	108	27	4	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	611	496	23	2	283	0	0	0	108	27	4	5

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.95	0.95	0.97	1.02	1.00	1.00	1.00	0.85	0.73	0.73	0.73
Lanes:	1.00	0.96	0.04	1.00	1.00	0.00	0.00	1.00	1.00	0.73	0.12	0.15
Final Sat.:	1733	1732	80	1841	1937	0	0	1900	1615	1025	164	205

Capacity Analysis Module:

Vol/Sat:	0.35	0.29	0.29	0.00	0.15	0.00	0.00	0.00	0.07	0.03	0.03	0.03
Crit Moves:	****			****					****			
Green/Cycle:	0.50	0.70	0.70	0.00	0.21	0.00	0.00	0.00	0.09	0.09	0.09	0.10
Volume/Cap:	0.71	0.41	0.41	0.41	0.71	0.00	0.00	0.00	0.71	0.28	0.28	0.27
Delay/Veh:	14.3	3.9	3.9	73.6	27.8	0.0	0.0	0.0	40.4	26.4	26.4	26.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.3	3.9	3.9	73.6	27.8	0.0	0.0	0.0	40.4	26.4	26.4	26.2
LOS by Move:	B	A	A	E	C	A	A	A	D	C	C	C
HCM2kAvgQ:	10	4	4	0	6	0	0	0	4	1	1	1

\*\*\*\*\*  
Note: Queue reported is the number of cars per lane.  
\*\*\*\*\*

UCSC LRDP EIR Response to Comments  
 2020 Without Project  
 PM Peak Hour

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #2 Coolidge/Hagar  
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Cycle (sec): 60 Critical Vol./Cap.(X): 0.767  
 Loss Time (sec): 12 (Y+R=0.0 sec) Average Delay (sec/veh): 23.6  
 Optimal Cycle: 60 Level Of Service: C  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	1	0	0	1	0

Volume Module:

Base Vol:	286	284	23	9	296	2	0	2	396	27	2	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	284	23	9	296	2	0	2	396	27	2	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	284	23	9	296	2	0	2	396	27	2	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	311	309	25	10	322	2	0	2	430	29	2	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	311	309	25	10	322	2	0	2	430	29	2	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	311	309	25	10	322	2	0	2	430	29	2	4

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.95	0.95	0.97	1.02	1.02	1.00	1.00	0.85	0.84	0.84	0.84
Lanes:	1.00	0.93	0.07	1.00	0.99	0.01	0.00	1.00	1.00	0.82	0.06	0.12
Final Sat.:	1733	1669	135	1841	1923	13	0	1900	1615	1298	96	192

Capacity Analysis Module:

Vol/Sat:	0.18	0.18	0.18	0.01	0.17	0.17	0.00	0.00	0.27	0.02	0.02	0.02
Crit Moves:	****				****				****			
Green/Cycle:	0.23	0.44	0.44	0.01	0.22	0.22	0.00	0.35	0.35	0.35	0.35	0.36
Volume/Cap:	0.77	0.42	0.42	0.42	0.77	0.77	0.00	0.00	0.77	0.07	0.07	0.06
Delay/Veh:	30.0	11.9	11.9	41.2	30.2	30.2	0.0	12.8	23.7	13.1	13.1	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.0	11.9	11.9	41.2	30.2	30.2	0.0	12.8	23.7	13.1	13.1	12.6
LOS by Move:	C	B	B	D	C	C	A	B	C	B	B	B
HCM2kAvgQ:	8	5	5	1	8	8	0	0	9	0	0	0

Note: Queue reported is the number of cars per lane.

UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

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Intersection #2 Coolidge/Hagar

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Cycle (sec): 60 Critical Vol./Cap. (X): 0.844  
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1  
Optimal Cycle: 60 Level of Service: C

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	1	0	0	0	1

Volume Module: Balanced PM Volumes

Base Vol:	190	535	23	9	506	0	0	0	404	32	2	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	535	23	9	506	0	0	0	404	32	2	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	207	582	25	10	550	0	0	0	439	35	2	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	207	582	25	10	550	0	0	0	439	35	2	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	207	582	25	10	550	0	0	0	439	35	2	4

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.95	0.95	0.97	1.02	1.00	1.00	1.00	0.85	0.80	0.80	0.80
Lanes:	1.00	0.96	0.04	1.00	1.00	0.00	0.00	1.00	1.00	0.84	0.05	0.11
Final Sat.:	1733	1739	75	1841	1937	0	0	1900	1615	1275	80	159

Capacity Analysis Module:

Vol/Sat:	0.12	0.33	0.33	0.01	0.28	0.00	0.00	0.00	0.27	0.03	0.03	0.03
Crit Moves:	****			****			****			****		
Green/Cycle:	0.14	0.47	0.47	0.01	0.34	0.00	0.00	0.00	0.32	0.32	0.32	0.33
Volume/Cap:	0.84	0.71	0.71	0.71	0.84	0.00	0.00	0.00	0.84	0.08	0.08	0.08
Delay/Veh:	47.7	15.5	15.5	130.5	28.2	0.0	0.0	0.0	30.9	14.2	14.2	13.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.7	15.5	15.5	130.5	28.2	0.0	0.0	0.0	30.9	14.2	14.2	13.9
LOS by Move:	D	B	B	F	C	A	A	A	C	B	B	B
HCM2kAvgQ:	7	10	10	1	13	0	0	0	11	1	1	1

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Note: Queue reported is the number of cars per lane.

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UCSC LRDP EIR Response to Comments  
 2020 Without Project  
 AM Peak Hour

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #3 Hagar/East Remote  
 \*\*\*\*\*

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A [ 9.6]  
 \*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	0	0	1	0	0	0	0	1

Volume Module:

Base Vol:	0	0	0	115	0	0	0	58	0	0	35	416
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	115	0	0	0	58	0	0	35	416
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	125	0	0	0	63	0	0	38	452
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	125	0	0	0	63	0	0	38	452

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxxx	6.4	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	3.5	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	101	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Potent Cap.:	xxxx	xxxx	xxxxxx	902	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Move Cap.:	xxxx	xxxx	xxxxxx	902	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.14	xxxx	xxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	0.5	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Control Del:	xxxxx	xxxx	xxxxxx	9.6	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			9.6			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #3 Hagar/East Remote

\*\*\*\*\*

Average Delay (sec/veh): 16.8 Worst Case Level Of Service: C [ 18.1]

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module: Balanced AM Volumes

Base Vol:	0	39	527	0	24	0	0	0	0	75	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	39	527	0	24	0	0	0	0	75	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	42	573	0	26	0	0	0	0	82	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	42	573	0	26	0	0	0	0	82	0	0

Critical Gap Module:

Critical Gap:	xxxxx	6.5	6.2	xxxxx	6.5	xxxxx	xxxxx	xxxxx	xxxxx	4.1	xxxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	xxxxx	4.0	xxxxx	xxxxx	xxxxx	xxxxx	2.2	xxxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	163	0	xxxx	163	xxxxx	xxxx	xxxx	xxxxx	0	xxxx	xxxxx
Potent Cap.:	xxxx	733	900	xxxx	733	xxxxx	xxxx	xxxx	xxxxx	900	xxxx	xxxxx
Move Cap.:	xxxx	667	900	xxxx	667	xxxxx	xxxx	xxxx	xxxxx	900	xxxx	xxxxx
Volume/Cap:	xxxx	0.06	0.64	xxxx	0.04	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	10.6	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	B	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	879	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	5.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	18.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	C	*	*	*	*	*	*	*	*	*
ApproachDel:	18.1			10.6			xxxxxxx			xxxxxxx		
ApproachLOS:	C			B			*			*		

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

UCSC LRDP EIR Response to Comments
2020 Without Project
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Hagar/East Remote

Average Delay (sec/veh): 6.1 Worst Case Level Of Service: B[ 11.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0 0 0 0 0, 1 0 0 0 1, 0 0 1 0 0, 0 0 1 0 1)

Volume Module table with 12 columns and 7 rows: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Vol.

Critical Gap Module table with 12 columns and 2 rows: Critical Gap, FollowUpTime

Capacity Module table with 12 columns and 4 rows: Conflict Vol, Potent Cap, Move Cap, Volume/Cap

Level Of Service Module table with 12 columns and 7 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, Approach Del, Approach LOS

Note: Queue reported is the number of cars per lane.



UCSC LRDP EIR Response to Comments
2020 + Project With Balanced Volumes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3 Hagar/East Remote
\*\*\*\*\*

Average Delay (sec/veh): 13.5 Worst Case Level Of Service: D[ 30.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Balanced PM Volumes. Table with 12 columns for volume adjustments and final volumes.

Critical Gap Module. Table with 12 columns for gap and follow-up times.

Capacity Module. Table with 12 columns for capacity and volume/capacity ratios.

Level Of Service Module. Table with 12 columns for LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

UCSC LRDP EIR Response to Comments  
2020 + Project With Balanced Volumes

Level Of Service Computation Report  
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
Intersection #43 Coolidge/East Remote  
\*\*\*\*\*

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B [ 13.7]

\*\*\*\*\*

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Ignore			Include			Include		
Lanes:	1	0	1	0	0	1	1	0	0	0	0	0

\*\*\*\*\*

Volume Module: Balanced AM Volumes

Base Vol:	195	266	0	0	211	32	28	0	51	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	266	0	0	211	32	28	0	51	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.00	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	212	289	0	0	229	0	30	0	55	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	212	289	0	0	229	0	30	0	55	0	0	0

\*\*\*\*\*

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx

\*\*\*\*\*

Capacity Module:

Cnflct Vol:	229	xxxx	xxxxx	xxxx	xxxx	xxxxx	942	xxxx	229	xxxx	xxxx	xxxxx
Potent Cap.:	1345	xxxx	xxxxx	xxxx	xxxx	xxxxx	294	xxxx	815	xxxx	xxxx	xxxxx
Move Cap.:	1345	xxxx	xxxxx	xxxx	xxxx	xxxxx	259	xxxx	815	xxxx	xxxx	xxxxx
Volume/Cap:	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	0.07	xxxx	xxxx	xxxx

\*\*\*\*\*

Level Of Service Module:

2Way95thQ:	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	0.2	xxxx	xxxx	xxxxx
Control Del:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.8	xxxx	9.7	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	C	*	A	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.7			xxxxxx		
ApproachLOS:		*		*			B			*		

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

UCSC LRDP EIR Response to Comments
2020 + Project With Balanced Volumes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #43 Coolidge/East Remote
\*\*\*\*\*

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C{ 17.2}

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control, Rights, and Lanes.

Volume Module: Balanced PM Volumes. Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Vol.

Critical Gap Module. Table with columns for Critical Gap and FollowUpTim.

Capacity Module. Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module. Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.
\*\*\*\*\*

**BALANCED OFF-CAMPUS  
INTERSECTIONS**

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection #12 Bay/Escalona [2020 + Project (Balanced Volumes)]  
 \*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.553  
 Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 12.8  
 Optimal Cycle: 34 Level Of Service: B  
 \*\*\*\*\*

Street Name:	Bay Street						Escalona Street					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0	2	0	0	1	0	0	1	0

Volume Module: PM Peak

Base Vol:	58	885	13	170	1240	35	17	19	48	8	17	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	885	13	170	1240	35	17	19	48	8	17	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	885	13	170	1240	35	17	19	48	8	17	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	64	983	14	189	1378	39	19	21	53	9	19	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	983	14	189	1378	39	19	21	53	9	19	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	64	983	14	189	1378	39	19	21	53	9	19	96

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.98	0.98	0.85	0.98	0.98	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.47	0.53	1.00	0.32	0.68	1.00
Final Sat.:	1805	3610	1615	1805	3610	1615	877	980	1615	598	1271	1615

Capacity Analysis Module:

Vol/Sat:	0.04	0.27	0.01	0.10	0.38	0.02	0.02	0.02	0.03	0.01	0.01	0.06
Crit Moves:	****			****			****			****		
Green/Cycle:	0.06	0.54	0.54	0.21	0.69	0.69	0.04	0.10	0.10	0.05	0.11	0.11
Volume/Cap:	0.55	0.50	0.02	0.50	0.55	0.03	0.55	0.21	0.33	0.33	0.14	0.55
Uniform Del:	36.3	11.4	8.4	27.9	6.2	3.9	37.8	33.1	33.5	37.0	32.4	33.9
IncrcmntDel:	5.7	0.2	0.0	1.0	0.3	0.0	9.0	0.6	1.2	2.3	0.3	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.0	11.6	8.4	29.0	6.5	4.0	46.8	33.6	34.6	39.3	32.7	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.0	11.6	8.4	29.0	6.5	4.0	46.8	33.6	34.6	39.3	32.7	37.8
HCM2kAvg:	3	8	0	5	9	0	2	1	2	1	1	3

2020 PM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #9 Empire Grade/Heller

\*\*\*\*\*

Average Delay (sec/veh): 101.9 Worst Case Level Of Service: F[232.4]

\*\*\*\*\*

Street Name: Heller Empire Grade

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 1 0 0 0 0 1 0 1

Volume Module:

Base Vol:	0	0	0	631	0	25	13	133	0	0	220	475
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	631	0	25	13	133	0	0	220	475
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
PHF Volume:	0	0	0	795	0	31	16	168	0	0	277	598
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	795	0	31	16	168	0	0	277	598

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	477	xxxx	277	875	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Potent Cap.:	xxxx	xxxx	xxxxxx	550	xxxx	767	780	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Move Cap.:	xxxx	xxxx	xxxxxx	541	xxxx	767	780	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Volume/Cap:	xxxx	xxxx	xxxx	1.47	xxxx	0.04	0.02	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	39.2	xxxx	0.1	0.1	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	241.3	xxxx	9.9	9.7	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:	*	*	*	F	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			232.4			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		*

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Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

2020 AM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*  
 Intersection #9 Empire Grade/Heller  
 \*\*\*\*\*

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: D[ 32.5]  
 \*\*\*\*\*

Street Name:	Heller			Empire Grade		
Approach:	North Bound		South Bound	East Bound		West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Stop Sign		Stop Sign	Uncontrolled		Uncontrolled
Rights:	Include		Include	Include		Include
Lanes:	0 0 0 0 0	1 0 0 0 1	1 0 1 0 0	0 0 1 0 1		

Volume Module:

Base Vol:	0	0	0	187	0	1	66	252	0	0	197	566
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	187	0	1	66	252	0	0	197	566
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
PHF Volume:	0	0	0	236	0	1	83	317	0	0	248	713
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	236	0	1	83	317	0	0	248	713

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	732	xxxx	248	961	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	391	xxxx	796	724	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	357	xxxx	796	724	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.66	xxxx	0.00	0.11	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	4.5	xxxx	0.0	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	32.6	xxxx	9.5	10.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	D	*	A	B	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			32.5			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

\*\*\*\*\*  
 Note: Queue reported is the number of cars per lane.  
 \*\*\*\*\*

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

\*\*\*\*\*  
 Intersection # 11 Bay/Iowa/Nobel [2020 + Project (Balanced Volumes)]  
 \*\*\*\*\*

Cycle (sec): 80 Critical Vol./Cap. (X): 0.552  
 Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 11.3  
 Optimal Cycle: 43 Level Of Service: B  
 \*\*\*\*\*

Street Name:	Bay Street						Iowa/Nobel					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0	1	0	0	1	0	0	1	0

Volume Module: AM Peak Hour

Base Vol:	48	1197	69	14	603	23	47	69	88	52	23	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	1197	69	14	603	23	47	69	88	52	23	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	1197	69	14	603	23	47	69	88	52	23	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	55	1360	78	16	685	26	53	78	100	59	26	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	1360	78	16	685	26	53	78	100	59	26	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	55	1360	78	16	685	26	53	78	100	59	26	10

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.83	0.83	0.85	0.64	0.64	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.41	0.59	1.00	0.69	0.31	1.00
Final Sat.:	1805	3610	1615	1805	3610	1615	638	937	1615	843	373	1615

Capacity Analysis Module:

Vol/Sat:	0.03	0.38	0.05	0.01	0.19	0.02	0.08	0.08	0.06	0.07	0.07	0.01
Crit Moves:	****			****			****					
Green/Cycle:	0.10	0.68	0.68	0.02	0.60	0.60	0.15	0.15	0.15	0.15	0.15	0.15
Volume/Cap:	0.32	0.55	0.07	0.55	0.32	0.03	0.55	0.55	0.41	0.46	0.46	0.04
Uniform Del:	33.7	6.5	4.2	39.1	7.8	6.4	31.4	31.4	30.7	31.0	31.0	29.0
IncrementDel:	1.0	0.3	0.0	21.1	0.1	0.0	2.8	2.8	1.1	1.8	1.8	0.1
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	34.8	6.7	4.3	60.2	7.9	6.4	34.2	34.2	31.8	32.8	32.8	29.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	6.7	4.3	60.2	7.9	6.4	34.2	34.2	31.8	32.8	32.8	29.0
HCM2kAvg:	2	9	1	1	4	0	4	4	3	4	4	0



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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
*****
Intersection #7 Western/Mission [2020 + Project (Balanced Volumes)]
*****
Cycle (sec): 100 Critical Vol./Cap. (X): 0.671
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 29.9
Optimal Cycle: 56 Level Of Service: C
*****
Street Name: Western Mission
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
-----
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0
-----
Volume Module:
Base Vol: 9 78 81 151 151 22 36 310 17 262 366 145
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 9 78 81 151 151 22 36 310 17 262 366 145
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94
PHF Volume: 10 83 86 161 161 23 38 330 18 279 389 154
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 10 83 86 161 161 23 38 330 18 279 389 154
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 10 83 86 161 161 23 38 330 18 279 389 154
-----
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.92 0.92 0.92 0.72 0.72 0.72 0.95 0.99 0.99 0.95 0.96 0.96
Lanes: 0.05 0.46 0.49 0.46 0.47 0.07 1.00 0.95 0.05 1.00 0.72 0.28
Final Sat.: 93 807 839 638 638 93 1805 1787 98 1805 1302 516
-----
Capacity Analysis Module:
Vol/Sat: 0.10 0.10 0.10 0.25 0.25 0.25 0.02 0.18 0.18 0.15 0.30 0.30
Crit Moves: **** **** ****
Green/Cycle: 0.38 0.38 0.38 0.38 0.38 0.38 0.03 0.27 0.27 0.23 0.47 0.47
Volume/Cap: 0.27 0.27 0.27 0.67 0.67 0.67 0.63 0.67 0.67 0.67 0.63 0.63
Uniform Del: 21.8 21.8 21.8 26.1 26.1 26.1 47.7 32.2 32.2 35.1 19.9 19.9
IncramntDel: 0.2 0.2 0.2 3.5 3.5 3.5 20.0 3.4 3.4 4.3 1.6 1.6
InitQueuDel: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Delay/Veh: 22.0 22.0 22.0 29.6 29.6 29.6 67.7 35.7 35.7 39.3 21.5 21.5
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 22.0 22.0 22.0 29.6 29.6 29.6 67.7 35.7 35.7 39.3 21.5 21.5
HCM2kAvg: 4 4 4 13 13 13 2 10 10 9 13 13
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2020 PM Plus Project (Campus Growth + Delaware)

Level Of Service Computation Report  
 2000 HCM Operations Method (Future Volume Alternative)

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Intersection #21 SR9 / SR1

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Cycle (sec): 135 Critical Vol./Cap.(X): 1.283  
 Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 153.0  
 Optimal Cycle: 180 Level Of Service: F

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Street Name:	SR 9						SR 1					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	0	1	0	3	0	1	2

Volume Module: PM Peak

Base Vol:	163	297	471	826	297	202	280	2128	137	476	2284	575
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	297	471	826	297	202	280	2128	137	476	2284	575
Added Vol:	0	0	0	0	0	12	31	272	0	0	108	0
Marine Labs:	0	0	0	0	0	4	7	134	0	0	74	0
Initial Fut:	163	297	471	826	297	218	318	2534	137	476	2466	575
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	175	319	506	887	319	234	342	2722	147	511	2649	618
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	319	506	887	319	234	342	2722	147	511	2649	618
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	175	319	506	887	319	234	342	2722	147	511	2649	618

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.75	0.92	1.00	0.85	0.95	0.91	0.85	0.92	0.91	0.85
Lanes:	1.00	1.00	2.00	2.00	1.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	1805	1900	2842	3502	1900	1615	1805	5187	1615	3502	5187	1615

Capacity Analysis Module:

Vol/Sat:	0.10	0.17	0.18	0.25	0.17	0.14	0.19	0.52	0.09	0.15	0.51	0.38
Crit Moves:			****	****			****			****		
Green/Cycle:	0.14	0.14	0.14	0.20	0.20	0.20	0.15	0.43	0.43	0.12	0.40	0.40
Volume/Cap:	0.70	1.21	1.28	1.28	0.85	0.73	1.28	1.23	0.21	1.23	1.28	0.96
Delay/Veh:	63.9	183	203.8	192.5	68.9	59.4	210.6	146	24.6	182.4	172	65.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.9	183	203.8	192.5	68.9	59.4	210.6	146	24.6	182.4	172	65.7
LOS by Move:	E	F	F	F	E	E	F	F	C	F	F	E
HCM2kAvgQ:	8	23	22	33	15	11	26	65	4	19	67	30

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Note: Queue reported is the number of cars per lane.