APPENDIX B-IV

ALTERNATIVE #2 MITIGATION

[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	C

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	65	1404	12	66	1168	250	331	17	93	3	5	17
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:	65	1404	12	66	1168	250	331	17	93	3	5	17
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:	65	1404	12	66	1168	250	331	17	93	3	5	17
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:	65	1404	12	66	1168	250	331	17	93	3	5	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1404	12	66	1168	250	331	17	93	3	5	17
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
FinalVolume:	65	1404	12	66	1168	250	331	17	93	3	5	17
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.97	0.03	1.00	2.00	1.00	1.90	0.10	2.00	1.00	0.23	0.77
Final Sat.:	1600	4759	41	1600	3200	1600	3044	156	3200	1600	364	1236
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.29	0.04	0.37	0.16	0.11	0.11	0.03	0.00	0.01	0.01
Crit Moves:	****				****		****				****	

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[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	D

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0 0	1!	0 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	5	22	302	157	10	10	9	1282	12	99	1310	138
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	22	302	157	10	10	9	1282	12	99	1310	138
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	22	302	157	10	10	9	1282	12	99	1310	138
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:	5	22	302	157	10	10	9	1282	12	99	1310	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	22	302	157	10	10	9	1282	12	99	1310	138
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
FinalVolume:	5	22	302	157	10	10	9	1282	12	99	1310	138
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.81	1.00	0.89	0.05	0.06	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	296	1304	1600	1419	90	90	1600	3170	30	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.19	0.10	0.11	0.11	0.01	0.40	0.40	0.06	0.41	0.09
Crit Moves:			****	****				****		****		

[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	86	Level Of Service:	D

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	409	1215	361	249	1010	174	247	1290	433	388	957	315
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:	409	1215	361	249	1010	174	247	1290	433	388	957	315
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:	409	1215	361	249	1010	174	247	1290	433	388	957	315
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:	409	1215	361	249	1010	174	247	1290	433	388	957	315
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	409	1215	361	249	1010	174	247	1290	433	388	957	315
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
FinalVolume:	409	1215	361	249	1010	174	247	1290	433	388	957	315
OvlAdjVol:						37			206			177
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.25	0.23	0.09	0.21	0.11	0.09	0.20	0.27	0.09	0.20	0.20
OvlAdjV/S:						0.02			0.13			0.11
Crit Moves:	****				****		****				****	

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[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	118	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	56	759	239	404	1036	436	212	877	34	269	1275	236
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:	56	759	239	404	1036	436	212	877	34	269	1275	236
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:	56	759	239	404	1036	436	212	877	34	269	1275	236
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:	56	759	239	404	1036	436	212	877	34	269	1275	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	759	239	404	1036	436	212	877	34	269	1275	236
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
FinalVolume:	56	759	239	404	1036	436	212	877	34	269	1275	236
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.69	0.31
Final Sat.:	1600	5100	1700	3200	5100	1700	3200	5100	1700	3200	2800	500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.14	0.13	0.20	0.26	0.07	0.17	0.02	0.08	0.46	0.47
Crit Moves:	****					****	****					****

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[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.773
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	C

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	47	1968	21	33	1537	92	49	9	259	16	4	28
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:	47	1968	21	33	1537	92	49	9	259	16	4	28
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:	47	1968	21	33	1537	92	49	9	259	16	4	28
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:	47	1968	21	33	1537	92	49	9	259	16	4	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	1968	21	33	1537	92	49	9	259	16	4	28
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
FinalVolume:	47	1968	21	33	1537	92	49	9	259	16	4	28
OvlAdjVol:									212			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.83	0.17	1.69	0.31	1.00	0.33	0.08	0.59
Final Sat.:	1600	4800	1600	1600	4529	271	2703	497	1600	533	133	933
Capacity Analysis Module:												
Vol/Sat:	0.03	0.41	0.01	0.02	0.34	0.34	0.02	0.02	0.16	0.03	0.03	0.03
OvlAdjV/S:									0.13			
Crit Moves:		****		****					****		****	

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[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Pacific Coast Highway at Marina Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.866
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Pacific Coast Highway						Marina Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	127	1883	0	0	1875	13	0	0	144	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:	127	1883	0	0	1875	13	0	0	144	0	0	0
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:	127	1883	0	0	1875	13	0	0	144	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:	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 Volume:	127	1883	0	0	1875	0	0	0	144	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	1883	0	0	1875	0	0	0	144	0	0	0
PCE 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
MLF 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
FinalVolume:	127	1883	0	0	1875	0	0	0	144	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1600	3400	0	0	3400	1700	0	0	1700	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.55	0.00	0.00	0.55	0.00	0.00	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

[Alternative 2] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.740
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	C

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	17	1821	2	2	1735	75	215	1	50	2	0	1
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:	17	1821	2	2	1735	75	215	1	50	2	0	1
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:	17	1821	2	2	1735	75	215	1	50	2	0	1
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:	17	1821	2	2	1735	75	215	1	50	2	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1821	2	2	1735	75	215	1	50	2	0	1
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
FinalVolume:	17	1821	2	2	1735	75	215	1	50	2	0	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	2.00	1.00	2.00	0.02	0.98	0.67	0.00	0.33
Final Sat.:	1600	3296	4	1600	3400	1700	3200	31	1569	1067	0	533
Capacity Analysis Module:												
Vol/Sat:	0.01	0.55	0.57	0.00	0.51	0.04	0.07	0.03	0.03	0.00	0.00	0.00
Crit Moves:			****	****			****					****

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.883
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	D

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	145	1707	4	22	1409	699	380	6	98	12	17	66
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:	145	1707	4	22	1409	699	380	6	98	12	17	66
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:	145	1707	4	22	1409	699	380	6	98	12	17	66
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:	145	1707	4	22	1409	699	380	6	98	12	17	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1707	4	22	1409	699	380	6	98	12	17	66
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
FinalVolume:	145	1707	4	22	1409	699	380	6	98	12	17	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.99	0.01	1.00	2.00	1.00	1.97	0.03	2.00	1.00	0.20	0.80
Final Sat.:	1600	4789	11	1600	3200	1600	3150	50	3200	1600	328	1272
Capacity Analysis Module:												
Vol/Sat:	0.09	0.36	0.36	0.01	0.44	0.44	0.12	0.12	0.03	0.01	0.05	0.05
Crit Moves:	****				****			****			****	

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.040
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 0	1	0 0	1!	0 0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	9	28	301	186	30	13	12	1424	29	258	1276	262
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	28	301	186	30	13	12	1424	29	258	1276	262
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:	9	28	301	186	30	13	12	1424	29	258	1276	262
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:	9	28	301	186	30	13	12	1424	29	258	1276	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	28	301	186	30	13	12	1424	29	258	1276	262
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
FinalVolume:	9	28	301	186	30	13	12	1424	29	258	1276	262
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.24	0.76	1.00	0.81	0.13	0.06	1.00	1.96	0.04	1.00	2.00	1.00
Final Sat.:	389	1211	1600	1300	210	91	1600	3136	64	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.19	0.12	0.14	0.14	0.01	0.45	0.45	0.16	0.40	0.16
Crit Moves:			****	****				****		****		

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.927
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	123	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
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:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
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:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
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:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
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
FinalVolume:	442	1041	364	275	1130	433	325	1156	313	513	1176	346
OvlAdjVol:						252			67			193
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.23	0.10	0.24	0.27	0.11	0.18	0.20	0.12	0.25	0.22
OvlAdjV/S:						0.16			0.04			0.12
Crit Moves:	****				****		****				****	

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.914
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	60	874	218	243	846	261	454	924	23	282	958	402
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:	60	874	218	243	846	261	454	924	23	282	958	402
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:	60	874	218	243	846	261	454	924	23	282	958	402
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:	60	874	218	243	846	261	454	924	23	282	958	402
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	874	218	243	846	261	454	924	23	282	958	402
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
FinalVolume:	60	874	218	243	846	261	454	924	23	282	958	402
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.41	0.59
Final Sat.:	1600	5100	1700	3200	5100	1700	3200	5100	1700	3200	2354	946
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.13	0.08	0.17	0.15	0.14	0.18	0.01	0.09	0.41	0.43
Crit Moves:		****		****			****					****

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	C

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	175	1542	33	46	1422	104	161	15	285	84	43	50
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:	175	1542	33	46	1422	104	161	15	285	84	43	50
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:	175	1542	33	46	1422	104	161	15	285	84	43	50
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:	175	1542	33	46	1422	104	161	15	285	84	43	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	1542	33	46	1422	104	161	15	285	84	43	50
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
FinalVolume:	175	1542	33	46	1422	104	161	15	285	84	43	50
OvlAdjVol:									110			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.80	0.20	1.83	0.17	1.00	0.48	0.24	0.28
Final Sat.:	1600	4800	1600	1600	4473	327	2927	273	1600	759	389	452
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.02	0.03	0.32	0.32	0.05	0.06	0.18	0.11	0.11	0.11
OvlAdjV/S:									0.07			
Crit Moves:	****				****				****		****	

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Pacific Coast Highway at Marina Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Street Name:	Pacific Coast Highway						Marina Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	224	1558	0	0	1562	27	0	0	132	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:	224	1558	0	0	1562	27	0	0	132	0	0	0
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:	224	1558	0	0	1562	27	0	0	132	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:	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 Volume:	224	1558	0	0	1562	0	0	0	132	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1558	0	0	1562	0	0	0	132	0	0	0
PCE 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
MLF 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
FinalVolume:	224	1558	0	0	1562	0	0	0	132	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1600	3400	0	0	3400	1700	0	0	1700	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.14	0.46	0.00	0.00	0.46	0.00	0.00	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

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[Alternative 2] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.751
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	0 1	0	1 0	0 0	0
Volume Module:												
Base Vol:	70	1664	0	3	1876	127	176	0	44	1	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:	70	1664	0	3	1876	127	176	0	44	1	0	0
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:	70	1664	0	3	1876	127	176	0	44	1	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:	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:	70	1664	0	3	1876	127	176	0	44	1	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1664	0	3	1876	127	176	0	44	1	0	0
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
FinalVolume:	70	1664	0	3	1876	127	176	0	44	1	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.06	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	1.00	2.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1600	3300	0	1600	3400	1700	3200	0	1600	1600	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.50	0.00	0.00	0.55	0.07	0.06	0.00	0.03	0.00	0.00	0.00
Crit Moves:	****				****		****			****		

APPENDIX B-V

ALTERNATIVE #3

[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Studebaker Road at SR-22 Westbound Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	139	Level Of Service:	B

Street Name:	Studebaker Road						SR-22 Westbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	2 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	813	44	55	1161	0	0	0	0	506	0	470
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	813	44	55	1161	0	0	0	0	506	0	470
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:	0	813	44	55	1161	0	0	0	0	506	0	470
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	813	44	55	1161	0	0	0	0	506	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	813	44	55	1161	0	0	0	0	506	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	813	44	55	1161	0	0	0	0	506	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.00	1.90	0.10	1.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3036	164	1600	3200	0	0	0	0	2880	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.03	0.36	0.00	0.00	0.00	0.00	0.18	0.00	0.00
Crit Moves:					****					****		

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	C

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1405	12	66	1171	250	331	17	93	3	5	17
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
FinalVolume:	65	1405	12	66	1171	250	331	17	93	3	5	17
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.98	0.02	1.00	2.00	1.00	1.90	0.10	2.00	1.00	0.23	0.77
Final Sat.:	1600	3173	27	1600	3200	1600	3044	156	3200	1600	364	1236
Capacity Analysis Module:												
Vol/Sat:	0.04	0.44	0.44	0.04	0.37	0.16	0.11	0.11	0.03	0.00	0.01	0.01
Crit Moves:		****		****			****				****	

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #14 Bay Shore Avenue at 2nd Street

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.888
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	98	Level Of Service:	D

****

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	2 0	1
Volume Module:												
Base Vol:	5	22	302	157	10	10	9	1274	12	99	1304	138
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	22	302	157	10	10	9	1274	12	99	1304	138
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	22	302	157	10	10	9	1274	12	99	1304	138
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:	5	22	302	157	10	10	9	1274	12	99	1304	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	22	302	157	10	10	9	1274	12	99	1304	138
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
FinalVolume:	5	22	302	157	10	10	9	1274	12	99	1304	138
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.07	0.92	0.89	0.05	0.06	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	24	107	1469	1419	90	90	1600	3170	30	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.10	0.11	0.11	0.01	0.40	0.40	0.06	0.41	0.09
Crit Moves:		****		****				****		****		

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.000
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	174	Level Of Service:	F

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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
FinalVolume:	410	1212	367	249	1003	174	245	1288	435	391	957	315
OvlAdjVol:						38						177
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.30	0.70	2.00	3.00	1.00	2.00	2.99	1.01	2.00	3.00	1.00
Final Sat.:	2880	3684	1116	2880	4800	1600	2880	4784	1616	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.33	0.33	0.09	0.21	0.11	0.09	0.27	0.27	0.14	0.20	0.20
OvlAdjV/S:						0.02						0.11
Crit Moves:		****		****				****		****		

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #19 Studebaker Road at 2nd Street

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.901
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	E

****

Street Name:	Studebaker Road						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	2	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	549	0	729	1013	916	0	0	1000	507
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	549	0	729	1013	916	0	0	1000	507
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:	0	0	0	549	0	729	1013	916	0	0	1000	507
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:	0	0	0	549	0	729	1013	916	0	0	1000	507
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	549	0	729	1013	916	0	0	1000	507
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
FinalVolume:	0	0	0	549	0	729	1013	916	0	0	1000	507
OvlAdjVol:						0						202
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	2880	0	3200	2880	3200	0	0	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.19	0.00	0.23	0.35	0.29	0.00	0.00	0.21	0.32
OvlAdjV/S:						0.00						0.13
Crit Moves:				****			****				****	

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.972
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	156	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	759	237	404	1036	436	212	878	34	269	1275	236
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
FinalVolume:	56	759	237	404	1036	436	212	878	34	269	1275	236
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	2.29	0.71	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.69	0.31
Final Sat.:	1600	3858	1142	3200	5100	1700	3200	5100	1700	3200	2800	500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.21	0.13	0.20	0.26	0.07	0.17	0.02	0.08	0.46	0.47
Crit Moves:			****	****			****					****

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.849
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	44	1962	21	33	1528	92	49	9	259	16	4	28
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:	44	1962	21	33	1528	92	49	9	259	16	4	28
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:	44	1962	21	33	1528	92	49	9	259	16	4	28
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:	44	1962	21	33	1528	92	49	9	259	16	4	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	1962	21	33	1528	92	49	9	259	16	4	28
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
FinalVolume:	44	1962	21	33	1528	92	49	9	259	16	4	28
OvlAdjVol:									215			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.69	0.31	1.00	0.33	0.08	0.59
Final Sat.:	1600	4800	1600	1600	3200	1600	2703	497	1600	533	133	933
Capacity Analysis Module:												
Vol/Sat:	0.03	0.41	0.01	0.02	0.48	0.06	0.02	0.02	0.16	0.03	0.03	0.03
OvlAdjV/S:									0.13			
Crit Moves:	****				****				****		****	

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #24 Pacific Coast Highway at Main Street/Bolsa Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.771
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Pacific Coast Highway						Main Street/Bolsa Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	51	1783	8	76	1825	56	63	46	62	16	41	116
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:	51	1783	8	76	1825	56	63	46	62	16	41	116
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:	51	1783	8	76	1825	56	63	46	62	16	41	116
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:	51	1783	8	76	1825	56	63	46	62	16	41	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	1783	8	76	1825	56	63	46	62	16	41	116
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
FinalVolume:	51	1783	8	76	1825	56	63	46	62	16	41	116
OvlAdjVol:												35
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	1.99	0.01	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1600	3286	14	1600	3400	1700	1600	1700	1700	1600	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.03	0.54	0.56	0.05	0.54	0.03	0.04	0.03	0.04	0.01	0.02	0.07
OvlAdjV/S:												0.02
Crit Moves:			****	****			****				****	

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #25 Seal Beach Boulevard at Pacific Coast Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.919
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	111	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Pacific Coast Highway					
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			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	2 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	11	217	92	497	107	181	151	1873	39	26	1565	504
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:	11	217	92	497	107	181	151	1873	39	26	1565	504
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:	11	217	92	497	107	181	151	1873	39	26	1565	504
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:	11	217	92	497	107	181	151	1873	39	26	1565	504
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	217	92	497	107	181	151	1873	39	26	1565	504
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
FinalVolume:	11	217	92	497	107	181	151	1873	39	26	1565	504
OvlAdjVol:												240
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	1.40	0.60	2.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	2347	953	3200	1700	1700	1600	3400	1700	1600	3400	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.09	0.10	0.16	0.06	0.11	0.09	0.55	0.02	0.02	0.46	0.30
OvlAdjV/S:												0.14
Crit Moves:			****	****				****		****		

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[Alternative 3] AM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	C

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	2 0	0	1 0	0 0	1!	0 0
Volume Module:												
Base Vol:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1813	2	2	1726	74	215	1	50	2	0	1
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
FinalVolume:	17	1813	2	2	1726	74	215	1	50	2	0	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	1.92	0.08	2.00	0.02	0.98	0.67	0.00	0.33
Final Sat.:	1600	3296	4	1600	3168	132	3200	31	1569	1067	0	533
Capacity Analysis Module:												
Vol/Sat:	0.01	0.55	0.57	0.00	0.54	0.56	0.07	0.03	0.03	0.00	0.00	0.00
Crit Moves:	****					****	****					****

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

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Intersection #8 Studebaker Road at SR-22 Westbound Ramps

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.963
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	144	Level Of Service:	E

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Street Name:	Studebaker Road						SR-22 Westbound Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	2 0	0	0 0	0 0	0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1130	59	42	1173	0	0	0	0	1196	0	263
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	1130	59	42	1173	0	0	0	0	1196	0	263
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:	0	1130	59	42	1173	0	0	0	0	1196	0	263
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	1130	59	42	1173	0	0	0	0	1196	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1130	59	42	1173	0	0	0	0	1196	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	1130	59	42	1173	0	0	0	0	1196	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.00	1.90	0.10	1.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3041	159	1600	3200	0	0	0	0	2880	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.37	0.03	0.37	0.00	0.00	0.00	0.00	0.42	0.00	0.00
Crit Moves:		****		****						****		

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.901
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	112	Level Of Service:	E

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1706	4	22	1405	699	380	6	98	12	17	66
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
FinalVolume:	145	1706	4	22	1405	699	380	6	98	12	17	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	2.00	1.00	1.97	0.03	2.00	1.00	0.20	0.80
Final Sat.:	1600	3193	7	1600	3200	1600	3150	50	3200	1600	328	1272
Capacity Analysis Module:												
Vol/Sat:	0.09	0.53	0.53	0.01	0.44	0.44	0.12	0.12	0.03	0.01	0.05	0.05
Crit Moves:		****		****				****			****	

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.058
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	9	28	301	186	30	13	12	1410	29	258	1264	262
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	28	301	186	30	13	12	1410	29	258	1264	262
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:	9	28	301	186	30	13	12	1410	29	258	1264	262
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:	9	28	301	186	30	13	12	1410	29	258	1264	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	28	301	186	30	13	12	1410	29	258	1264	262
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
FinalVolume:	9	28	301	186	30	13	12	1410	29	258	1264	262
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.03	0.08	0.89	0.81	0.13	0.06	1.00	1.96	0.04	1.00	2.00	1.00
Final Sat.:	43	133	1425	1300	210	91	1600	3136	64	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.21	0.21	0.12	0.14	0.14	0.01	0.45	0.45	0.16	0.40	0.16
Crit Moves:		****		****				****		****		

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.977
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	154	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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
FinalVolume:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
OvlAdjVol:						254						193
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.21	0.79	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3538	1262	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.29	0.29	0.10	0.23	0.27	0.11	0.24	0.20	0.17	0.25	0.22
OvlAdjV/S:						0.16						0.12
Crit Moves:		****		****				****		****		

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Studebaker Road at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.993
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	172	Level Of Service:	E

Street Name:	Studebaker Road						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	2	2 0	2 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	442	0	1037	1232	832	0	0	1088	665
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	442	0	1037	1232	832	0	0	1088	665
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:	0	0	0	442	0	1037	1232	832	0	0	1088	665
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:	0	0	0	442	0	1037	1232	832	0	0	1088	665
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	442	0	1037	1232	832	0	0	1088	665
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
FinalVolume:	0	0	0	442	0	1037	1232	832	0	0	1088	665
OvlAdjVol:						0						419
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	2.00	2.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	2880	0	3200	2880	3200	0	0	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.32	0.43	0.26	0.00	0.00	0.23	0.42
OvlAdjV/S:						0.00						0.26
Crit Moves:				****			****					****

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.968
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	152	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	874	214	243	846	261	454	924	23	282	954	402
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
FinalVolume:	60	874	214	243	846	261	454	924	23	282	954	402
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	2.41	0.59	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.41	0.59
Final Sat.:	1600	4056	944	3200	5100	1700	3200	5100	1700	3200	2351	949
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.23	0.08	0.17	0.15	0.14	0.18	0.01	0.09	0.41	0.42
Crit Moves:			****	****			****					****

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.908
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	115	Level Of Service:	E

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	1531	33	46	1405	104	161	15	285	84	43	50
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
FinalVolume:	171	1531	33	46	1405	104	161	15	285	84	43	50
OvlAdjVol:									114			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.83	0.17	1.00	0.48	0.24	0.28
Final Sat.:	1600	4800	1600	1600	3200	1600	2927	273	1600	759	389	452
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.02	0.03	0.44	0.07	0.05	0.06	0.18	0.11	0.11	0.11
OvlAdjV/S:									0.07			
Crit Moves:	****				****				****		****	

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #24 Pacific Coast Highway at Main Street/Bolsa Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.753
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	C

Street Name:	Pacific Coast Highway						Main Street/Bolsa Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	87	1534	14	128	1525	90	81	55	70	24	65	179
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:	87	1534	14	128	1525	90	81	55	70	24	65	179
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:	87	1534	14	128	1525	90	81	55	70	24	65	179
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:	87	1534	14	128	1525	90	81	55	70	24	65	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	1534	14	128	1525	90	81	55	70	24	65	179
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
FinalVolume:	87	1534	14	128	1525	90	81	55	70	24	65	179
OvlAdjVol:												43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	1.98	0.02	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1600	3271	29	1600	3400	1700	1600	1700	1700	1600	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.05	0.47	0.48	0.08	0.45	0.05	0.05	0.03	0.04	0.02	0.04	0.11
OvlAdjV/S:												0.03
Crit Moves:			****	****			****				****	

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #25 Seal Beach Boulevard at Pacific Coast Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	81	Level Of Service:	D

Street Name:	Seal Beach Boulevard						Pacific Coast Highway					
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			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	2 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	20	155	71	485	199	269	213	1281	46	75	1329	478
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:	20	155	71	485	199	269	213	1281	46	75	1329	478
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:	20	155	71	485	199	269	213	1281	46	75	1329	478
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:	20	155	71	485	199	269	213	1281	46	75	1329	478
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	155	71	485	199	269	213	1281	46	75	1329	478
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
FinalVolume:	20	155	71	485	199	269	213	1281	46	75	1329	478
OvlAdjVol:												209
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	1.37	0.63	2.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	2295	1005	3200	1700	1700	1600	3400	1700	1600	3400	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.07	0.07	0.15	0.12	0.16	0.13	0.38	0.03	0.05	0.39	0.28
OvlAdjV/S:												0.12
Crit Moves:			****			****	****				****	

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[Alternative 3] PM Year 2019 Cumulative Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.820
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 1	0	2 0	0 1	0	1 0	0 0	0
Volume Module:												
Base Vol:	70	1650	0	3	1860	126	175	0	44	1	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:	70	1650	0	3	1860	126	175	0	44	1	0	0
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:	70	1650	0	3	1860	126	175	0	44	1	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:	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:	70	1650	0	3	1860	126	175	0	44	1	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1650	0	3	1860	126	175	0	44	1	0	0
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
FinalVolume:	70	1650	0	3	1860	126	175	0	44	1	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.06	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	1.00	1.87	0.13	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1600	3300	0	1600	3097	203	3200	0	1600	1600	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.50	0.00	0.00	0.60	0.62	0.05	0.00	0.03	0.00	0.00	0.00
Crit Moves:	****					****	****			****		

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APPENDIX B-VI

ALTERNATIVE #3 MITIGATION

[Alternative 3] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.709
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	C

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
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:	65	1405	12	66	1171	250	331	17	93	3	5	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1405	12	66	1171	250	331	17	93	3	5	17
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
FinalVolume:	65	1405	12	66	1171	250	331	17	93	3	5	17
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.97	0.03	1.00	2.00	1.00	1.90	0.10	2.00	1.00	0.23	0.77
Final Sat.:	1600	4759	41	1600	3200	1600	3044	156	3200	1600	364	1236
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.30	0.04	0.37	0.16	0.11	0.11	0.03	0.00	0.01	0.01
Crit Moves:	****				****		****				****	

[Alternative 3] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.816
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	86	Level Of Service:	D

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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:	410	1212	367	249	1003	174	245	1288	435	391	957	315
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	1212	367	249	1003	174	245	1288	435	391	957	315
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
FinalVolume:	410	1212	367	249	1003	174	245	1288	435	391	957	315
OvlAdjVol:						38			207			177
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.25	0.23	0.09	0.21	0.11	0.09	0.20	0.27	0.09	0.20	0.20
OvlAdjV/S:						0.02			0.13			0.11
Crit Moves:	****				****		****				****	

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[Alternative 3] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	118	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
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:	56	759	237	404	1036	436	212	878	34	269	1275	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	759	237	404	1036	436	212	878	34	269	1275	236
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
FinalVolume:	56	759	237	404	1036	436	212	878	34	269	1275	236
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.69	0.31
Final Sat.:	1600	5100	1700	3200	5100	1700	3200	5100	1700	3200	2800	500
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.14	0.13	0.20	0.26	0.07	0.17	0.02	0.08	0.46	0.47
Crit Moves:	****					****	****					****

[Alternative 3] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Pacific Coast Highway at Marina Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.863
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Pacific Coast Highway						Marina Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	127	1875	0	0	1867	13	0	0	144	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:	127	1875	0	0	1867	13	0	0	144	0	0	0
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:	127	1875	0	0	1867	13	0	0	144	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:	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 Volume:	127	1875	0	0	1867	0	0	0	144	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	1875	0	0	1867	0	0	0	144	0	0	0
PCE 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
MLF 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
FinalVolume:	127	1875	0	0	1867	0	0	0	144	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1600	3400	0	0	3400	1700	0	0	1700	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.55	0.00	0.00	0.55	0.00	0.00	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

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[Alternative 3] [Mitigation] AM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
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:	17	1813	2	2	1726	74	215	1	50	2	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1813	2	2	1726	74	215	1	50	2	0	1
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
FinalVolume:	17	1813	2	2	1726	74	215	1	50	2	0	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.99	0.01	1.00	2.00	1.00	2.00	0.02	0.98	0.67	0.00	0.33
Final Sat.:	1600	3296	4	1600	3400	1700	3200	31	1569	1067	0	533
Capacity Analysis Module:												
Vol/Sat:	0.01	0.55	0.57	0.00	0.51	0.04	0.07	0.03	0.03	0.00	0.00	0.00
Crit Moves:			****	****			****					****

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[Alternative 3] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Studebaker Road at Loynes Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	D

Street Name:	Studebaker Road						Loynes Drive					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 1	0 0	2	1 0	0 1	0
Volume Module:												
Base Vol:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
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:	145	1706	4	22	1405	699	380	6	98	12	17	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1706	4	22	1405	699	380	6	98	12	17	66
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
FinalVolume:	145	1706	4	22	1405	699	380	6	98	12	17	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.99	0.01	1.00	2.00	1.00	1.97	0.03	2.00	1.00	0.20	0.80
Final Sat.:	1600	4789	11	1600	3200	1600	3150	50	3200	1600	328	1272
Capacity Analysis Module:												
Vol/Sat:	0.09	0.36	0.36	0.01	0.44	0.44	0.12	0.12	0.03	0.01	0.05	0.05
Crit Moves:	****				****			****			****	

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[Alternative 3] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	123	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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
FinalVolume:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
OvlAdjVol:						254			69			193
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.23	0.10	0.23	0.27	0.11	0.18	0.20	0.11	0.25	0.22
OvlAdjV/S:						0.16			0.04			0.12
Crit Moves:	****				****		****				****	

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[Alternative 3] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Seal Beach Boulevard at Westminster Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.913
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	107	Level Of Service:	E

Street Name:	Seal Beach Boulevard						Westminster Avenue					
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
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
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:	60	874	214	243	846	261	454	924	23	282	954	402
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	874	214	243	846	261	454	924	23	282	954	402
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
FinalVolume:	60	874	214	243	846	261	454	924	23	282	954	402
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.41	0.59
Final Sat.:	1600	5100	1700	3200	5100	1700	3200	5100	1700	3200	2351	949
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.13	0.08	0.17	0.15	0.14	0.18	0.01	0.09	0.41	0.42
Crit Moves:		****		****			****					****

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[Alternative 3] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Pacific Coast Highway at Marina Drive

Cycle (sec):	100	Critical Vol./Cap.(X):	0.823
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	D

Street Name:	Pacific Coast Highway						Marina Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	224	1545	0	0	1547	27	0	0	132	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:	224	1545	0	0	1547	27	0	0	132	0	0	0
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:	224	1545	0	0	1547	27	0	0	132	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:	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 Volume:	224	1545	0	0	1547	0	0	0	132	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1545	0	0	1547	0	0	0	132	0	0	0
PCE 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
MLF 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
FinalVolume:	224	1545	0	0	1547	0	0	0	132	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1600	3400	0	0	3400	1700	0	0	1700	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.14	0.45	0.00	0.00	0.46	0.00	0.00	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

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[Alternative 3] [Mitigation] PM Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Seal Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #29 Pacific Coast Highway at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.746
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Pacific Coast Highway						1st Street					
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			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 0	1	2 0	0 1	0	1 0	0 0	0
Volume Module:												
Base Vol:	70	1650	0	3	1860	126	175	0	44	1	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:	70	1650	0	3	1860	126	175	0	44	1	0	0
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:	70	1650	0	3	1860	126	175	0	44	1	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:	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:	70	1650	0	3	1860	126	175	0	44	1	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1650	0	3	1860	126	175	0	44	1	0	0
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
FinalVolume:	70	1650	0	3	1860	126	175	0	44	1	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.06	1.00	1.06	1.06	1.00	1.00	1.00	1.00	1.06	1.06
Lanes:	1.00	2.00	0.00	1.00	2.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1600	3300	0	1600	3400	1700	3200	0	1600	1600	0	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.50	0.00	0.00	0.55	0.07	0.05	0.00	0.03	0.00	0.00	0.00
Crit Moves:	****				****		****			****		

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APPENDIX C

SATURDAY EXISTING PLUS PROJECT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX C-I

ALTERNATIVE #1

[Alternative 1] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.984
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	167	Level Of Service:	E

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	2 0	1
Volume Module:												
Base Vol:	34	33	311	129	29	34	19	1244	12	247	1187	84
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:	34	33	311	129	29	34	19	1244	12	247	1187	84
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:	34	33	311	129	29	34	19	1244	12	247	1187	84
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:	34	33	311	129	29	34	19	1244	12	247	1187	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	33	311	129	29	34	19	1244	12	247	1187	84
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
FinalVolume:	34	33	311	129	29	34	19	1244	12	247	1187	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3169	31	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.39	0.39	0.15	0.37	0.05
Crit Moves:		****		****				****		****		

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[Alternative 1] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.899
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	111	Level Of Service:	D

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	306	887	335	334	1073	497	445	891	274	468	885	278
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:	306	887	335	334	1073	497	445	891	274	468	885	278
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:	306	887	335	334	1073	497	445	891	274	468	885	278
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:	306	887	335	334	1073	497	445	891	274	468	885	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	887	335	334	1073	497	445	891	274	468	885	278
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
FinalVolume:	306	887	335	334	1073	497	445	891	274	468	885	278
OvlAdjVol:						250						92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.18	0.82	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3484	1316	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.25	0.25	0.12	0.22	0.31	0.15	0.19	0.17	0.16	0.18	0.17
OvlAdjV/S:						0.16						0.06
Crit Moves:		****		****				****		****		

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[Alternative 1] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #22 Pacific Coast Highway at Studebaker Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

****

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	102	1262	34	18	1469	150	226	22	155	64	33	7
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:	102	1262	34	18	1469	150	226	22	155	64	33	7
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:	102	1262	34	18	1469	150	226	22	155	64	33	7
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:	102	1262	34	18	1469	150	226	22	155	64	33	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1262	34	18	1469	150	226	22	155	64	33	7
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
FinalVolume:	102	1262	34	18	1469	150	226	22	155	64	33	7
OvlAdjVol:									53			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.61	0.32	0.07
Final Sat.:	1600	4800	1600	1600	3200	1600	2916	284	1600	985	508	108
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.02	0.01	0.46	0.09	0.08	0.08	0.10	0.07	0.06	0.06
OvlAdjV/S:									0.03			
Crit Moves:	****				****		****			****		

****

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APPENDIX C-II

ALTERNATIVE #2

[Alternative 2] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #14 Bay Shore Avenue at 2nd Street

****

Cycle (sec):	100	Critical Vol./Cap.(X):	1.017
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

****

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	33	311	129	29	34	19	1352	12	247	1282	84
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
FinalVolume:	34	33	311	129	29	34	19	1352	12	247	1282	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3172	28	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.43	0.43	0.15	0.40	0.05
Crit Moves:		****		****				****		****		

****

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[Alternative 2] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.007
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	302	1000	387	334	1226	497	467	929	269	659	823	278
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
FinalVolume:	302	1000	387	334	1226	497	467	929	269	659	823	278
OvlAdjVol:						238						92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.16	0.84	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3461	1339	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.29	0.29	0.12	0.26	0.31	0.16	0.19	0.17	0.23	0.17	0.17
OvlAdjV/S:						0.15						0.06
Crit Moves:		****		****				****		****		

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[Alternative 2] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #22 Pacific Coast Highway at Studebaker Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.907
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	114	Level Of Service:	E

****

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	1352	34	18	1602	150	226	22	155	64	33	7
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
FinalVolume:	134	1352	34	18	1602	150	226	22	155	64	33	7
OvlAdjVol:									21			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.61	0.32	0.07
Final Sat.:	1600	4800	1600	1600	3200	1600	2916	284	1600	985	508	108
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.02	0.01	0.50	0.09	0.08	0.08	0.10	0.07	0.06	0.06
OvlAdjV/S:									0.01			
Crit Moves:	****				****		****			****		

****

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APPENDIX C-III

ALTERNATIVE #2 MITIGATION

[Alternative 2] [Mitigation] Saturday Midday Existing Plus Project Traffic Cond
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #14 Bay Shore Avenue at 2nd Street

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.976
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	158	Level Of Service:	E

****

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
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:	34	33	311	129	29	34	19	1352	12	247	1282	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	33	311	129	29	34	19	1352	12	247	1282	84
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
FinalVolume:	34	33	311	129	29	34	19	1352	12	247	1282	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.51	0.49	1.00	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	812	788	1600	1075	242	283	1600	3172	28	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.19	0.08	0.12	0.12	0.01	0.43	0.43	0.15	0.40	0.05
Crit Moves:			****	****				****		****		

****

[Alternative 2] [Mitigation] Saturday Midday Existing Plus Project Traffic Cond
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.871
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
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:	302	1000	387	334	1226	497	467	929	269	659	823	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	302	1000	387	334	1226	497	467	929	269	659	823	278
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
FinalVolume:	302	1000	387	334	1226	497	467	929	269	659	823	278
OvlAdjVol:						238			101			92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.24	0.12	0.26	0.31	0.16	0.15	0.17	0.15	0.17	0.17
OvlAdjV/S:						0.15			0.06			0.06
Crit Moves:			****	****			****				****	

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[Alternative 2] [Mitigation] Saturday Midday Existing Plus Project Traffic Cond
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.771
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	C

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
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:	134	1352	34	18	1602	150	226	22	155	64	33	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	1352	34	18	1602	150	226	22	155	64	33	7
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
FinalVolume:	134	1352	34	18	1602	150	226	22	155	64	33	7
OvlAdjVol:									21			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.74	0.26	1.82	0.18	1.00	0.61	0.32	0.07
Final Sat.:	1600	4800	1600	1600	4389	411	2916	284	1600	985	508	108
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.02	0.01	0.36	0.37	0.08	0.08	0.10	0.07	0.06	0.06
OvlAdjV/S:									0.01			
Crit Moves:	****					****	****			****		

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APPENDIX C-IV

ALTERNATIVE #3

[Alternative 3] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #14 Bay Shore Avenue at 2nd Street

****

Cycle (sec):	100	Critical Vol./Cap.(X):	1.010
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

****

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	33	311	129	29	34	19	1328	12	247	1260	84
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
FinalVolume:	34	33	311	129	29	34	19	1328	12	247	1260	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3171	29	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.42	0.42	0.15	0.39	0.05
Crit Moves:		****		****				****		****		

****

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[Alternative 3] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.988
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	162	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	304	978	382	334	1195	497	462	920	271	624	838	278
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
FinalVolume:	304	978	382	334	1195	497	462	920	271	624	838	278
OvlAdjVol:						240						92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.16	0.84	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3452	1348	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.28	0.28	0.12	0.25	0.31	0.16	0.19	0.17	0.22	0.17	0.17
OvlAdjV/S:						0.15						0.06
Crit Moves:		****		****				****		****		

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[Alternative 3] Saturday Midday Existing Plus Project Traffic Conditions
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #22 Pacific Coast Highway at Studebaker Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.893
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	109	Level Of Service:	D

****

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	126	1331	34	18	1572	150	226	22	155	64	33	7
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:	126	1331	34	18	1572	150	226	22	155	64	33	7
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:	126	1331	34	18	1572	150	226	22	155	64	33	7
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:	126	1331	34	18	1572	150	226	22	155	64	33	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	1331	34	18	1572	150	226	22	155	64	33	7
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
FinalVolume:	126	1331	34	18	1572	150	226	22	155	64	33	7
OvlAdjVol:									29			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.61	0.32	0.07
Final Sat.:	1600	4800	1600	1600	3200	1600	2916	284	1600	985	508	108
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.02	0.01	0.49	0.09	0.08	0.08	0.10	0.07	0.06	0.06
OvlAdjV/S:									0.02			
Crit Moves:	****				****		****			****		

****

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APPENDIX C-V

ALTERNATIVE #3 MITIGATION

[Alternative 3] [Mitigation] Saturday Midday Existing Plus Project Traffic Cond
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.968
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	150	Level Of Service:	E

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
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:	34	33	311	129	29	34	19	1328	12	247	1260	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	33	311	129	29	34	19	1328	12	247	1260	84
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
FinalVolume:	34	33	311	129	29	34	19	1328	12	247	1260	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.51	0.49	1.00	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	812	788	1600	1075	242	283	1600	3171	29	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.19	0.08	0.12	0.12	0.01	0.42	0.42	0.15	0.39	0.05
Crit Moves:			****	****				****		****		

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[Alternative 3] [Mitigation] Saturday Midday Existing Plus Project Traffic Cond
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

****

Intersection #17 Pacific Coast Highway at 2nd Street

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.870
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	101	Level Of Service:	D

****

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
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:	304	978	382	334	1195	497	462	920	271	624	838	278
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	304	978	382	334	1195	497	462	920	271	624	838	278
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
FinalVolume:	304	978	382	334	1195	497	462	920	271	624	838	278
OvlAdjVol:						240			102			92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.20	0.24	0.12	0.25	0.31	0.16	0.14	0.17	0.14	0.17	0.17
OvlAdjV/S:						0.15			0.06			0.06
Crit Moves:			****	****			****				****	

****

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APPENDIX D

SATURDAY YEAR 2019 PLUS PROJECT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX D-I

ALTERNATIVE #1

[Alternative 1] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.022
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	2 0	1
Volume Module:												
Base Vol:	35	34	320	133	30	35	20	1322	12	254	1285	87
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:	35	34	320	133	30	35	20	1322	12	254	1285	87
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:	35	34	320	133	30	35	20	1322	12	254	1285	87
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:	35	34	320	133	30	35	20	1322	12	254	1285	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	34	320	133	30	35	20	1322	12	254	1285	87
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
FinalVolume:	35	34	320	133	30	35	20	1322	12	254	1285	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3171	29	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.42	0.42	0.16	0.40	0.05
Crit Moves:		****		****				****		****		

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[Alternative 1] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.942
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	131	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	336	933	369	344	1127	525	466	931	297	510	937	286
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:	336	933	369	344	1127	525	466	931	297	510	937	286
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:	336	933	369	344	1127	525	466	931	297	510	937	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:	336	933	369	344	1127	525	466	931	297	510	937	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	336	933	369	344	1127	525	466	931	297	510	937	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
FinalVolume:	336	933	369	344	1127	525	466	931	297	510	937	286
OvlAdjVol:						266						95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.15	0.85	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3440	1360	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.27	0.27	0.12	0.23	0.33	0.16	0.19	0.19	0.18	0.20	0.18
OvlAdjV/S:						0.17						0.06
Crit Moves:		****		****				****		****		

[Alternative 1] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	D

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	105	1349	38	36	1562	155	233	23	160	69	34	22
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:	105	1349	38	36	1562	155	233	23	160	69	34	22
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:	105	1349	38	36	1562	155	233	23	160	69	34	22
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:	105	1349	38	36	1562	155	233	23	160	69	34	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	1349	38	36	1562	155	233	23	160	69	34	22
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
FinalVolume:	105	1349	38	36	1562	155	233	23	160	69	34	22
OvlAdjVol:									55			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.55	0.27	0.18
Final Sat.:	1600	4800	1600	1600	3200	1600	2913	288	1600	883	435	282
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.02	0.02	0.49	0.10	0.08	0.08	0.10	0.08	0.08	0.08
OvlAdjV/S:									0.03			
Crit Moves:	****				****			****			****	

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APPENDIX D-II

ALTERNATIVE #2

[Alternative 2] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.056
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	2 0	1
Volume Module:												
Base Vol:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	34	320	133	30	35	20	1430	12	254	1380	87
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
FinalVolume:	35	34	320	133	30	35	20	1430	12	254	1380	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3173	27	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.45	0.45	0.16	0.43	0.05
Crit Moves:		****		****				****		****		

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[Alternative 2] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.050
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	332	1046	421	344	1280	525	488	969	292	701	875	286
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:	332	1046	421	344	1280	525	488	969	292	701	875	286
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:	332	1046	421	344	1280	525	488	969	292	701	875	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:	332	1046	421	344	1280	525	488	969	292	701	875	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	332	1046	421	344	1280	525	488	969	292	701	875	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
FinalVolume:	332	1046	421	344	1280	525	488	969	292	701	875	286
OvlAdjVol:						254						95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.14	0.86	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3422	1378	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.31	0.31	0.12	0.27	0.33	0.17	0.20	0.18	0.24	0.18	0.18
OvlAdjV/S:						0.16						0.06
Crit Moves:		****		****				****		****		

[Alternative 2] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.953
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	138	Level Of Service:	E

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	1439	38	36	1695	155	233	23	160	69	34	22
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
FinalVolume:	137	1439	38	36	1695	155	233	23	160	69	34	22
OvlAdjVol:									23			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.55	0.27	0.18
Final Sat.:	1600	4800	1600	1600	3200	1600	2913	288	1600	883	435	282
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.02	0.02	0.53	0.10	0.08	0.08	0.10	0.08	0.08	0.08
OvlAdjV/S:									0.01			
Crit Moves:	****				****			****			****	

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APPENDIX D-III

ALTERNATIVE #2 MITIGATION

[Alternative 2] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.012
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 1	0 0	1!	0 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
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:	35	34	320	133	30	35	20	1430	12	254	1380	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	34	320	133	30	35	20	1430	12	254	1380	87
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
FinalVolume:	35	34	320	133	30	35	20	1430	12	254	1380	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.51	0.49	1.00	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	812	788	1600	1075	242	283	1600	3173	27	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.20	0.08	0.12	0.12	0.01	0.45	0.45	0.16	0.43	0.05
Crit Moves:			****	****				****		****		

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[Alternative 2] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.914
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	117	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	332	1046	421	344	1280	525	488	969	292	701	875	286
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:	332	1046	421	344	1280	525	488	969	292	701	875	286
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:	332	1046	421	344	1280	525	488	969	292	701	875	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:	332	1046	421	344	1280	525	488	969	292	701	875	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	332	1046	421	344	1280	525	488	969	292	701	875	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
FinalVolume:	332	1046	421	344	1280	525	488	969	292	701	875	286
OvlAdjVol:						254			108			95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.22	0.26	0.12	0.27	0.33	0.17	0.15	0.18	0.16	0.18	0.18
OvlAdjV/S:						0.16			0.07			0.06
Crit Moves:	****				****		****				****	

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[Alternative 2] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.809
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
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:	137	1439	38	36	1695	155	233	23	160	69	34	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	1439	38	36	1695	155	233	23	160	69	34	22
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
FinalVolume:	137	1439	38	36	1695	155	233	23	160	69	34	22
OvlAdjVol:									23			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.75	0.25	1.82	0.18	1.00	0.55	0.27	0.18
Final Sat.:	1600	4800	1600	1600	4398	402	2913	288	1600	883	435	282
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.02	0.02	0.39	0.39	0.08	0.08	0.10	0.08	0.08	0.08
OvlAdjV/S:									0.01			
Crit Moves:	****				****			****			****	

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APPENDIX D-IV

ALTERNATIVE #3

[Alternative 3] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.048
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	2 0	1
Volume Module:												
Base Vol:	35	34	320	133	30	35	20	1406	12	254	1358	87
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:	35	34	320	133	30	35	20	1406	12	254	1358	87
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:	35	34	320	133	30	35	20	1406	12	254	1358	87
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:	35	34	320	133	30	35	20	1406	12	254	1358	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	34	320	133	30	35	20	1406	12	254	1358	87
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
FinalVolume:	35	34	320	133	30	35	20	1406	12	254	1358	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.09	0.82	0.67	0.15	0.18	1.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	144	140	1316	1075	242	283	1600	3173	27	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.24	0.08	0.12	0.12	0.01	0.44	0.44	0.16	0.42	0.05
Crit Moves:		****		****				****		****		

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[Alternative 3] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.031
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	334	1024	416	344	1249	525	483	960	294	666	890	286
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:	334	1024	416	344	1249	525	483	960	294	666	890	286
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:	334	1024	416	344	1249	525	483	960	294	666	890	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:	334	1024	416	344	1249	525	483	960	294	666	890	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	334	1024	416	344	1249	525	483	960	294	666	890	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
FinalVolume:	334	1024	416	344	1249	525	483	960	294	666	890	286
OvlAdjVol:						257						95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	2.13	0.87	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	2880	3413	1387	2880	4800	1600	2880	4800	1600	2880	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.30	0.30	0.12	0.26	0.33	0.17	0.20	0.18	0.23	0.19	0.18
OvlAdjV/S:						0.16						0.06
Crit Moves:		****		****				****		****		

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[Alternative 3] Saturday Midday Year 2019 Cumulative Plus Project Traffic Condi
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.939
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	129	Level Of Service:	E

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	129	1418	38	36	1665	155	233	23	160	69	34	22
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:	129	1418	38	36	1665	155	233	23	160	69	34	22
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:	129	1418	38	36	1665	155	233	23	160	69	34	22
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:	129	1418	38	36	1665	155	233	23	160	69	34	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1418	38	36	1665	155	233	23	160	69	34	22
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
FinalVolume:	129	1418	38	36	1665	155	233	23	160	69	34	22
OvlAdjVol:									31			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	1.82	0.18	1.00	0.55	0.27	0.18
Final Sat.:	1600	4800	1600	1600	3200	1600	2913	288	1600	883	435	282
Capacity Analysis Module:												
Vol/Sat:	0.08	0.30	0.02	0.02	0.52	0.10	0.08	0.08	0.10	0.08	0.08	0.08
OvlAdjV/S:									0.02			
Crit Moves:	****				****			****			****	

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APPENDIX D-V

ALTERNATIVE #3 MITIGATION

[Alternative 3] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Bay Shore Avenue at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.035
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Bay Shore Avenue						2nd Street					
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			Permitted			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	9	28	301	186	30	13	12	1410	29	258	1264	262
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	28	301	186	30	13	12	1410	29	258	1264	262
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:	9	28	301	186	30	13	12	1410	29	258	1264	262
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:	9	28	301	186	30	13	12	1410	29	258	1264	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	28	301	186	30	13	12	1410	29	258	1264	262
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
FinalVolume:	9	28	301	186	30	13	12	1410	29	258	1264	262
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.24	0.76	1.00	0.81	0.13	0.06	1.00	1.96	0.04	1.00	2.00	1.00
Final Sat.:	389	1211	1600	1300	210	91	1600	3136	64	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.19	0.12	0.14	0.14	0.01	0.45	0.45	0.16	0.40	0.16
Crit Moves:			****	****				****		****		

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[Alternative 3] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Pacific Coast Highway at 2nd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	123	Level Of Service:	E

Street Name:	Pacific Coast Highway						2nd Street					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	4 0	1	3 0	3 0	1
Volume Module:												
Base Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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
FinalVolume:	443	1032	368	275	1114	433	322	1151	315	490	1192	346
OvlAdjVol:						254			69			193
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00	3.00	3.00	1.00
Final Sat.:	2880	4800	1600	2880	4800	1600	2880	6400	1600	4320	4800	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.23	0.10	0.23	0.27	0.11	0.18	0.20	0.11	0.25	0.22
OvlAdjV/S:						0.16			0.04			0.12
Crit Moves:	****				****		****				****	

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[Alternative 3] [Mitigation] Saturday Midday Year 2019 Cumulative Plus Project
2-16-3779 2nd & PCH Project, Long Beach
(City of Long Beach)

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Pacific Coast Highway at Studebaker Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.783
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	C

Street Name:	Pacific Coast Highway						Studebaker Road					
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			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
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:	171	1531	33	46	1405	104	161	15	285	84	43	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	1531	33	46	1405	104	161	15	285	84	43	50
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
FinalVolume:	171	1531	33	46	1405	104	161	15	285	84	43	50
OvlAdjVol:									114			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.79	0.21	1.83	0.17	1.00	0.48	0.24	0.28
Final Sat.:	1600	4800	1600	1600	4469	331	2927	273	1600	759	389	452
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.02	0.03	0.31	0.31	0.05	0.06	0.18	0.11	0.11	0.11
OvlAdjV/S:									0.07			
Crit Moves:	****				****				****		****	

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APPENDIX E

CALTRANS EXISTING PLUS PROJECT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX E-I

ALTERNATIVE #1

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	42.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.806

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	393	1136	323	242	924	166	227	1231	415	334	927	306
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	393	1136	323	242	924	166	227	1231	415	334	927	306
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	100	288	82	61	235	42	58	312	105	85	235	78
Total Analysis Volume [veh/h]	399	1153	328	246	938	169	230	1250	421	339	941	311
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	48	0	14	42	42	14	40	0	18	44	44
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	48	48	10	42	56	10	33	33	33	14	37	51
g / C, Green / Cycle	0.13	0.40	0.40	0.08	0.35	0.46	0.08	0.27	0.27	0.27	0.11	0.30	0.42
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.29	0.07	0.18	0.11	0.07	0.24	0.24	0.24	0.10	0.19	0.20
s, saturation flow rate [veh/h]	3445	3547	1660	3445	5074	1583	3445	3547	1835	1583	3445	5074	1583
c, Capacity [veh/h]	453	1403	657	289	1767	736	286	968	501	432	394	1543	667
d1, Uniform Delay [s]	51.23	30.60	30.71	54.25	31.28	19.27	54.09	41.71	41.73	41.90	52.24	35.69	25.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.31	0.31	0.11	0.11	0.29
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	1.00
d2, Incremental Delay [s]	5.77	3.17	6.79	6.94	1.15	0.16	5.28	2.71	12.76	15.79	5.63	0.39	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

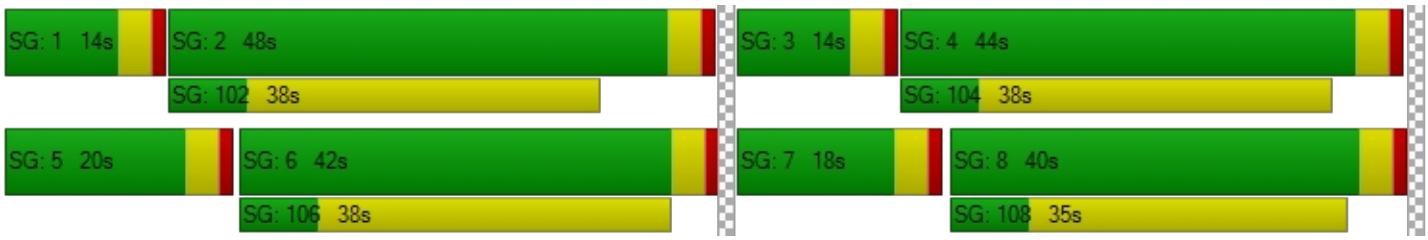
X, volume / capacity	0.88	0.72	0.72	0.85	0.53	0.23	0.80	0.88	0.88	0.89	0.86	0.61	0.47
d, Delay for Lane Group [s/veh]	57.00	33.77	37.50	61.19	32.43	19.42	59.37	44.43	54.50	57.69	57.86	36.08	26.39
Lane Group LOS	E	C	D	E	C	B	E	D	D	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.25	12.73	12.73	3.94	7.42	2.87	3.62	12.26	14.11	12.71	5.32	7.87	6.60
50th-Percentile Queue Length [ft]	156.21	318.37	318.25	98.60	185.41	71.65	90.58	306.4	352.6	317.7	132.97	196.86	165.08
95th-Percentile Queue Length [veh]	10.35	18.59	18.58	7.10	11.88	5.16	6.52	18.00	20.27	18.56	9.10	12.48	10.82
95th-Percentile Queue Length [ft]	258.70	464.68	464.53	177.47	297.06	128.96	163.0	449.9	506.6	463.8	227.53	311.91	270.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.00	34.24	37.50	61.19	32.43	19.42	59.37	47.67	57.66	57.86	36.08	26.39
Movement LOS	E	C	D	E	C	B	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	39.64			36.03			51.24			38.83		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.00											
Intersection LOS	D											
Intersection V/C	0.806											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	36.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	122	1772	1770	13	0	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	1772	1770	13	0	130
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	487	486	0	0	36
Total Analysis Volume [veh/h]	134	1947	1945	0	0	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.45	0.02	0.02	0.00	0.00	0.57
d_M, Delay for Movement [s/veh]	26.67	0.00	0.00	0.00	0.00	36.53
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.22	0.00	0.00	0.00	0.00	3.19
95th-Percentile Queue Length [ft]	55.49	0.00	0.00	0.00	0.00	79.77
d_A, Approach Delay [s/veh]	1.72		0.00		36.53	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.11					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	54.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.980

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	209	89	480	99	176	145	1790	38	25	1477	488
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	209	89	480	99	176	145	1790	38	25	1477	488
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	57	24	131	27	48	39	487	10	7	402	133
Total Analysis Volume [veh/h]	12	228	97	523	108	192	158	1950	41	27	1609	532
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	15	0	0	27	0	19	63	0	10	54	54
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	16	62	62	3	50	90
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.54	0.54	0.03	0.43	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.15	0.06	0.12	0.11	0.55	0.03	0.02	0.45	0.34
s, saturation flow rate [veh/h]	1774	1863	1680	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	256	269	242	497	269	228	235	1923	858	54	1537	1245
d1, Uniform Delay [s]	42.41	46.28	46.48	49.22	44.72	47.94	49.92	26.33	12.38	54.90	32.59	3.96
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.49	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	10.45	12.80	55.05	4.44	29.54	3.33	23.89	0.02	7.01	25.76	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.62	0.65	1.05	0.40	0.84	0.67	1.01	0.05	0.50	1.05	0.43
d, Delay for Lane Group [s/veh]	42.76	56.73	59.28	104.27	49.15	77.48	53.25	50.22	12.40	61.91	58.35	5.03
Lane Group LOS	D	E	E	F	D	E	D	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.32	5.28	5.12	10.90	3.14	7.22	4.69	30.99	0.50	0.88	26.11	3.52
50th-Percentile Queue Length [ft]	8.01	132.00	127.90	272.43	78.40	180.48	117.36	774.73	12.47	21.88	652.77	88.08
95th-Percentile Queue Length [veh]	0.58	9.05	8.83	16.70	5.64	11.63	8.25	40.59	0.90	1.58	35.69	6.34
95th-Percentile Queue Length [ft]	14.41	226.21	220.64	417.54	141.12	290.65	206.20	1014.87	22.44	39.39	892.20	158.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.76	57.41	59.28	104.27	49.15	77.48	53.25	50.22	12.40	61.91	58.35	5.03
Movement LOS	D	E	E	F	D	E	D	F	B	E	F	A
d_A, Approach Delay [s/veh]	57.43			90.79			49.72			45.31		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	54.62											
Intersection LOS	D											
Intersection V/C	0.980											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	41.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.791

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	421	936	320	267	998	415	298	1095	298	347	1195	336
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	421	936	320	267	998	415	298	1095	298	347	1195	336
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	107	238	81	68	253	105	76	278	76	88	303	85
Total Analysis Volume [veh/h]	427	950	325	271	1013	421	303	1112	303	352	1213	341
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	47	0	15	42	42	16	40	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	48	48	11	43	59	12	31	31	31	14	33	48
g / C, Green / Cycle	0.13	0.40	0.40	0.09	0.36	0.49	0.10	0.26	0.26	0.26	0.12	0.28	0.40
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.25	0.08	0.20	0.27	0.09	0.20	0.21	0.19	0.10	0.24	0.22
s, saturation flow rate [veh/h]	3445	3547	1630	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	462	1409	648	320	1806	776	348	919	483	410	405	1399	636
d1, Uniform Delay [s]	51.40	28.95	28.98	53.65	31.14	21.26	53.22	41.31	41.83	40.76	52.09	41.40	27.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.25	0.19	0.11	0.11	0.35
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	1.00
d2, Incremental Delay [s]	8.26	2.05	4.45	6.20	1.27	2.70	6.72	1.48	7.53	4.60	5.79	1.76	2.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

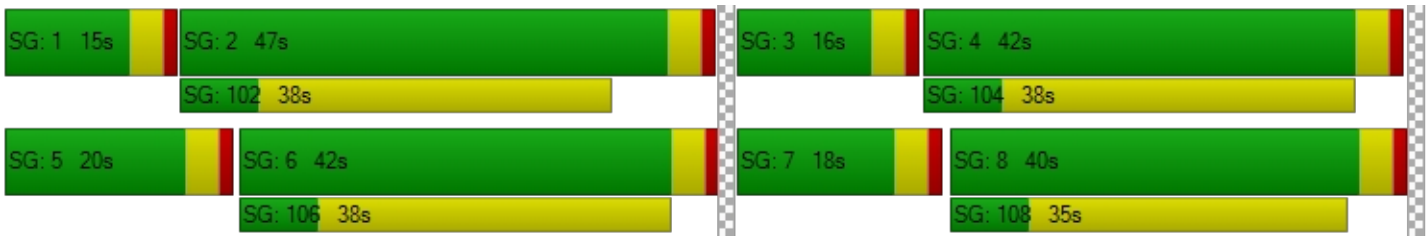
X, volume / capacity	0.92	0.62	0.62	0.85	0.56	0.54	0.87	0.78	0.82	0.74	0.87	0.87	0.54
d, Delay for Lane Group [s/veh]	59.67	31.00	33.43	59.85	32.40	23.97	59.93	42.78	49.36	45.36	57.88	43.16	29.65
Lane Group LOS	E	C	C	E	C	C	E	D	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	6.87	10.36	10.00	4.30	8.06	8.69	4.83	9.98	11.94	8.69	5.53	11.52	7.81
50th-Percentile Queue Length [ft]	171.71	259.00	249.94	107.59	201.40	217.16	120.7	249.5	298.5	217.3	138.31	287.92	195.33
95th-Percentile Queue Length [veh]	11.17	15.64	15.18	7.71	12.71	13.52	8.43	15.16	17.61	13.53	9.39	17.08	12.40
95th-Percentile Queue Length [ft]	279.15	390.96	379.58	192.65	317.78	338.00	210.8	379.0	440.2	338.2	234.75	427.06	309.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.67	31.20	33.43	59.85	32.40	23.97	59.93	45.12	45.36	57.88	43.16	29.65
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	38.77			34.68			47.77			43.46		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	41.25											
Intersection LOS	D											
Intersection V/C	0.791											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	214	1428	1424	26	0	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	1428	1424	26	0	122
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	392	391	0	0	34
Total Analysis Volume [veh/h]	235	1569	1565	0	0	134
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.56	0.02	0.02	0.00	0.00	0.40
d_M, Delay for Movement [s/veh]	24.11	0.00	0.00	0.00	0.00	22.58
Movement LOS	C	A	A	A		C
95th-Percentile Queue Length [veh]	3.36	0.00	0.00	0.00	0.00	1.85
95th-Percentile Queue Length [ft]	83.98	0.00	0.00	0.00	0.00	46.19
d_A, Approach Delay [s/veh]	3.14		0.00		22.58	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.48					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	45.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	19	146	69	469	190	261	202	1186	45	73	1238	462
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	146	69	469	190	261	202	1186	45	73	1238	462
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	40	19	128	52	71	55	323	12	20	337	126
Total Analysis Volume [veh/h]	21	159	75	511	207	284	220	1292	49	80	1349	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	12	0	0	35	0	18	43	0	20	45	45
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	20	20	20	20	20	14	49	49	6	41	82
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.44	0.44	0.06	0.37	0.75
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.07	0.15	0.11	0.18	0.16	0.36	0.03	0.05	0.38	0.32
s, saturation flow rate [veh/h]	1774	1863	1669	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	315	331	297	613	331	282	220	1562	697	104	1318	1187
d1, Uniform Delay [s]	37.63	39.75	39.91	43.66	41.83	45.23	50.78	27.09	17.77	51.06	34.56	5.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.14	0.21	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	3.06	3.73	12.64	8.62	55.89	31.77	2.22	0.04	11.38	18.09	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

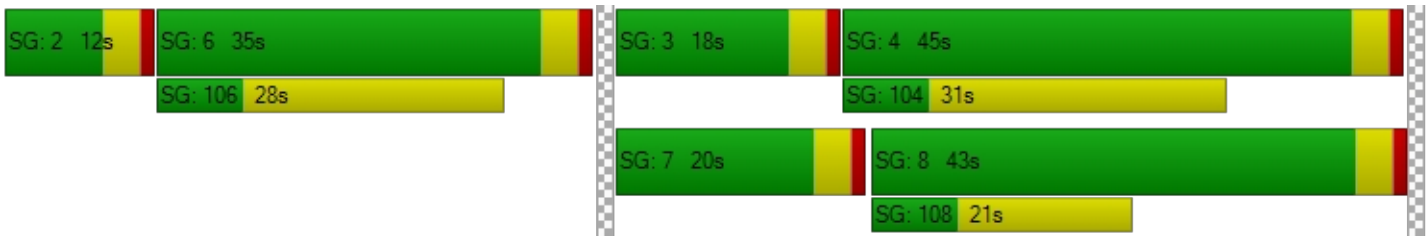
X, volume / capacity	0.07	0.36	0.38	0.83	0.62	1.01	1.00	0.83	0.07	0.77	1.02	0.42
d, Delay for Lane Group [s/veh]	38.04	42.80	43.64	56.30	50.45	101.11	82.55	29.31	17.81	62.45	52.65	6.17
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.51	3.14	3.03	7.75	5.97	11.99	8.03	14.91	0.73	2.50	20.41	3.88
50th-Percentile Queue Length [ft]	12.71	78.38	75.74	193.74	149.34	299.71	200.65	372.68	18.15	62.42	510.19	96.95
95th-Percentile Queue Length [veh]	0.92	5.64	5.45	12.32	9.98	17.75	12.67	21.24	1.31	4.49	28.27	6.98
95th-Percentile Queue Length [ft]	22.88	141.08	136.33	307.88	249.55	443.66	316.87	530.98	32.67	112.36	706.83	174.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.04	43.01	43.64	56.30	50.45	101.11	82.55	29.31	17.81	62.45	52.65	6.17
Movement LOS	D	D	D	E	D	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	42.79			67.79			36.45			40.96		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	45.24											
Intersection LOS	D											
Intersection V/C	0.934											

Sequence

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



APPENDIX E-II

ALTERNATIVE #2

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	390	1161	320	242	965	166	234	1242	411	357	924	306
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	390	1161	320	242	965	166	234	1242	411	357	924	306
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	99	295	81	61	245	42	59	315	104	91	235	78
Total Analysis Volume [veh/h]	396	1179	325	246	980	169	238	1261	417	362	938	311
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	48	0	14	42	42	14	39	0	19	44	44
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	47	47	10	41	55	10	33	33	33	15	37	51
g / C, Green / Cycle	0.13	0.39	0.39	0.08	0.34	0.46	0.08	0.27	0.27	0.27	0.12	0.31	0.43
(v / s)_i Volume / Saturation Flow Rate	0.11	0.29	0.29	0.07	0.19	0.11	0.07	0.24	0.24	0.24	0.11	0.18	0.20
s, saturation flow rate [veh/h]	3445	3547	1665	3445	5074	1583	3445	3547	1840	1583	3445	5074	1583
c, Capacity [veh/h]	450	1383	649	289	1742	729	289	964	500	430	417	1567	675
d1, Uniform Delay [s]	51.27	31.36	31.48	54.25	32.08	19.56	54.11	41.88	41.90	42.08	51.82	35.18	24.60
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.32	0.33	0.11	0.11	0.29
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	1.00
d2, Incremental Delay [s]	5.73	3.55	7.59	6.94	1.32	0.16	5.83	2.88	13.86	17.28	5.61	0.37	1.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

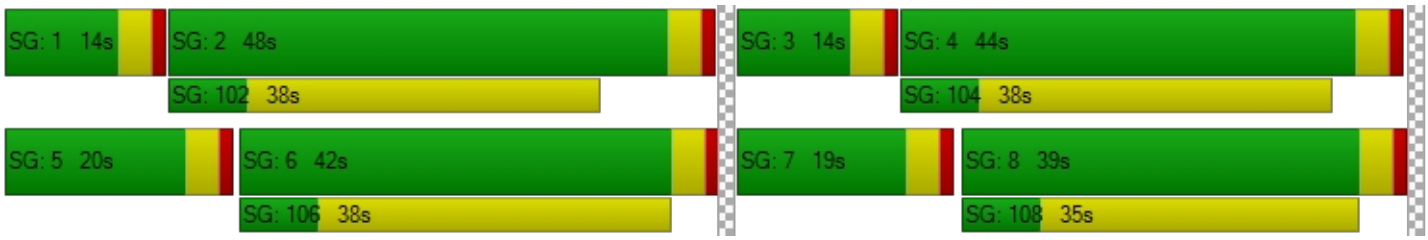
X, volume / capacity	0.88	0.74	0.74	0.85	0.56	0.23	0.82	0.88	0.88	0.90	0.87	0.60	0.46
d, Delay for Lane Group [s/veh]	56.99	34.91	39.07	61.19	33.40	19.72	59.94	44.76	55.76	59.36	57.43	35.55	25.94
Lane Group LOS	E	C	D	E	C	B	E	D	E	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.20	13.18	13.27	3.94	7.91	2.89	3.77	12.35	14.36	12.96	5.67	7.78	6.54
50th-Percentile Queue Length [ft]	154.98	329.56	331.72	98.60	197.77	72.30	94.27	308.7	358.9	323.9	141.75	194.48	163.39
95th-Percentile Queue Length [veh]	10.28	19.14	19.24	7.10	12.52	5.21	6.79	18.11	20.57	18.86	9.58	12.35	10.73
95th-Percentile Queue Length [ft]	257.06	478.42	481.07	177.47	313.09	130.14	169.6	452.8	514.2	471.5	239.38	308.83	268.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.99	35.47	39.07	61.19	33.40	19.72	59.94	48.34	59.36	57.43	35.55	25.94
Movement LOS	E	D	D	E	C	B	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	40.57			36.65			52.12			38.61		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.55											
Intersection LOS	D											
Intersection V/C	0.820											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	38.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	122	1806	1803	13	0	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	1806	1803	13	0	130
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	496	495	0	0	36
Total Analysis Volume [veh/h]	134	1985	1981	0	0	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.47	0.02	0.02	0.00	0.00	0.58
d_M, Delay for Movement [s/veh]	27.95	0.00	0.00	0.00	0.00	38.41
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.33	0.00	0.00	0.00	0.00	3.33
95th-Percentile Queue Length [ft]	58.27	0.00	0.00	0.00	0.00	83.32
d_A, Approach Delay [s/veh]	1.77		0.00		38.41	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.18					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.984

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	209	89	480	99	176	145	1811	38	25	1506	488
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	209	89	480	99	176	145	1811	38	25	1506	488
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	57	24	131	27	48	39	493	10	7	410	133
Total Analysis Volume [veh/h]	12	228	97	523	108	192	158	1973	41	27	1641	532
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	32	0	17	63	0	10	56	56
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	13	61	61	3	52	90
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.53	0.53	0.03	0.45	0.78
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.15	0.06	0.12	0.11	0.56	0.03	0.02	0.46	0.34
s, saturation flow rate [veh/h]	1774	1863	1680	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	263	276	249	511	276	235	198	1894	845	54	1600	1238
d1, Uniform Delay [s]	41.99	45.83	46.03	48.97	44.28	47.47	52.77	26.80	12.82	54.91	31.56	4.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	9.50	11.60	45.87	4.12	26.06	7.18	32.54	0.02	7.09	17.85	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.61	0.63	1.02	0.39	0.82	0.80	1.04	0.05	0.50	1.03	0.43
d, Delay for Lane Group [s/veh]	42.32	55.33	57.63	94.85	48.39	73.52	59.95	59.35	12.85	62.00	49.41	5.20
Lane Group LOS	D	E	E	F	D	E	E	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.32	5.20	5.03	10.56	3.11	7.02	4.99	32.91	0.51	0.88	25.29	3.64
50th-Percentile Queue Length [ft]	7.95	130.11	125.87	263.90	77.64	175.40	124.66	822.81	12.75	21.90	632.35	90.88
95th-Percentile Queue Length [veh]	0.57	8.95	8.71	16.06	5.59	11.36	8.65	43.77	0.92	1.58	34.20	6.54
95th-Percentile Queue Length [ft]	14.30	223.65	217.87	401.44	139.75	284.00	216.22	1094.37	22.95	39.43	855.01	163.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.32	55.94	57.63	94.85	48.39	73.52	59.95	59.35	12.85	62.00	49.41	5.20
Movement LOS	D	E	E	F	D	E	E	F	B	E	F	A
d_A, Approach Delay [s/veh]	55.94			83.78			58.51			38.87		
Approach LOS	E			F			E			D		
d_I, Intersection Delay [s/veh]	54.30											
Intersection LOS	D											
Intersection V/C	0.984											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	44.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.824

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	417	993	333	267	1079	415	311	1117	294	475	1129	336
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	417	993	333	267	1079	415	311	1117	294	475	1129	336
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	106	252	85	68	274	105	79	284	75	121	287	85
Total Analysis Volume [veh/h]	423	1008	338	271	1095	421	316	1134	298	482	1146	341
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	19	46	0	15	42	42	17	39	0	20	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	15	47	47	11	43	60	13	30	30	30	16	33	48
g / C, Green / Cycle	0.13	0.39	0.39	0.09	0.36	0.50	0.11	0.25	0.25	0.25	0.13	0.27	0.40
(v / s)_i Volume / Saturation Flow Rate	0.12	0.26	0.26	0.08	0.22	0.27	0.09	0.20	0.22	0.19	0.14	0.23	0.22
s, saturation flow rate [veh/h]	3445	3547	1634	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	434	1384	638	320	1813	791	377	885	465	395	462	1392	634
d1, Uniform Delay [s]	52.32	30.15	30.20	53.65	31.64	20.46	52.46	42.52	43.33	41.66	52.01	40.85	27.51
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.28	0.20	0.11	0.11	0.35
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	1.00
d2, Incremental Delay [s]	15.11	2.53	5.48	6.20	1.50	2.55	5.03	1.95	12.67	5.28	31.86	1.28	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

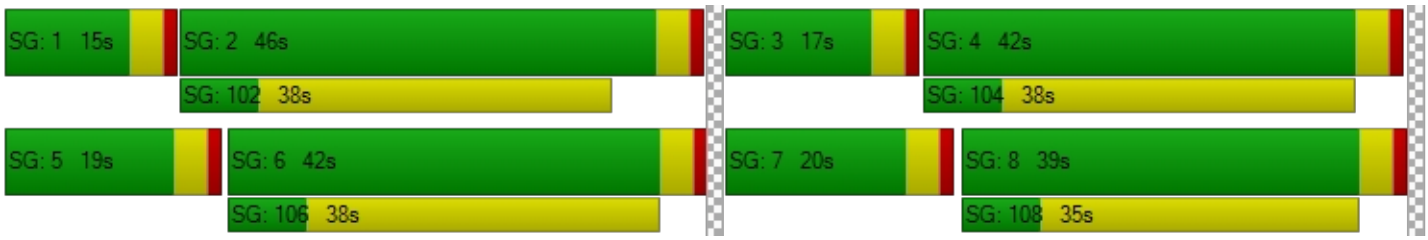
X, volume / capacity	0.98	0.66	0.67	0.85	0.60	0.53	0.84	0.82	0.88	0.75	1.04	0.82	0.54
d, Delay for Lane Group [s/veh]	67.43	32.68	35.69	59.85	33.14	23.01	57.49	44.46	56.00	46.94	83.87	42.13	29.80
Lane Group LOS	E	C	D	E	C	C	E	D	E	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	7.25	11.31	11.02	4.30	8.88	8.47	4.93	10.33	13.22	8.70	8.98	10.68	7.84
50th-Percentile Queue Length [ft]	181.17	282.76	275.49	107.59	222.00	211.79	123.2	258.2	330.5	217.6	224.57	266.92	196.02
95th-Percentile Queue Length [veh]	11.66	16.83	16.46	7.71	13.77	13.24	8.57	15.60	19.19	13.54	14.16	16.04	12.43
95th-Percentile Queue Length [ft]	291.54	420.65	411.59	192.65	344.17	331.12	214.3	390.0	479.6	338.5	353.93	400.89	310.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.43	32.94	35.69	59.85	33.14	23.01	57.49	48.62	46.94	83.87	42.13	29.80
Movement LOS	E	C	D	E	C	C	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	41.71			34.81			49.94			50.21		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	44.29											
Intersection LOS	D											
Intersection V/C	0.824											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	214	1485	1490	26	0	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	1485	1490	26	0	122
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	1.0000	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	380	381	0	0	31
Total Analysis Volume [veh/h]	219	1520	1525	0	0	125
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.51	0.02	0.02	0.00	0.00	0.36
d_M, Delay for Movement [s/veh]	21.51	0.00	0.00	0.00	0.00	21.09
Movement LOS	C	A	A	A		C
95th-Percentile Queue Length [veh]	2.78	0.00	0.00	0.00	0.00	1.60
95th-Percentile Queue Length [ft]	69.49	0.00	0.00	0.00	0.00	39.90
d_A, Approach Delay [s/veh]	2.71		0.00		21.09	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.17					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	41.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.879

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	19	146	69	469	190	261	202	1230	45	73	1288	462
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	146	69	469	190	261	202	1230	45	73	1288	462
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	18	120	49	67	52	316	12	19	331	119
Total Analysis Volume [veh/h]	20	150	71	482	195	268	207	1263	46	75	1322	474
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	13	0	0	37	0	19	55	0	15	51	51
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	21	21	21	21	21	21	15	55	55	7	47	91
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.46	0.46	0.05	0.39	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.06	0.14	0.10	0.17	0.15	0.36	0.03	0.04	0.37	0.30
s, saturation flow rate [veh/h]	1774	1863	1669	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	314	330	295	610	330	280	214	1624	725	97	1374	1198
d1, Uniform Delay [s]	41.11	43.27	43.45	47.25	45.40	48.92	55.16	27.39	18.16	55.98	35.89	5.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.24	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	2.83	3.46	10.05	7.59	43.62	26.66	1.82	0.04	12.14	5.42	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

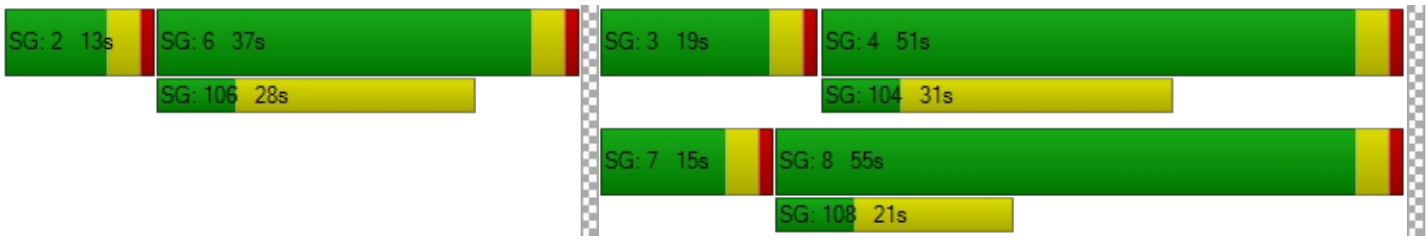
X, volume / capacity	0.06	0.34	0.36	0.79	0.59	0.96	0.97	0.78	0.06	0.77	0.96	0.40
d, Delay for Lane Group [s/veh]	41.50	46.10	46.91	57.31	52.98	92.55	81.82	29.21	18.20	68.12	41.31	6.07
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	D	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.53	3.22	3.11	7.73	6.04	11.32	7.89	15.29	0.73	2.57	19.49	3.87
50th-Percentile Queue Length [ft]	13.27	80.48	77.84	193.32	151.09	282.98	197.13	382.19	18.15	64.24	487.29	96.63
95th-Percentile Queue Length [veh]	0.96	5.79	5.60	12.29	10.08	16.84	12.49	21.70	1.31	4.62	26.73	6.96
95th-Percentile Queue Length [ft]	23.88	144.87	140.11	307.34	251.89	420.92	312.26	542.50	32.67	115.62	668.30	173.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.50	46.30	46.91	57.31	52.98	92.55	81.82	29.21	18.20	68.12	41.31	6.07
Movement LOS	D	D	D	E	D	F	F	C	B	E	D	A
d_A, Approach Delay [s/veh]	46.08			66.41			36.06			33.45		
Approach LOS	D			E			D			C		
d_I, Intersection Delay [s/veh]	41.79											
Intersection LOS	D											
Intersection V/C	0.879											

Sequence

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



APPENDIX E-III

ALTERNATIVE #2 MITIGATION

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.861

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	122	1806	1803	13	0	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	1806	1803	13	0	130
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	475	474	0	0	34
Total Analysis Volume [veh/h]	128	1901	1898	0	0	137
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	15	94	79	0	0	21
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	94	79	79	13
g / C, Green / Cycle	0.09	0.82	0.69	0.69	0.11
(v / s)_i Volume / Saturation Flow Rate	0.08	0.60	0.59	0.00	0.10
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	151	2614	2200	982	159
d1, Uniform Delay [s]	51.19	4.66	13.69	0.00	50.20
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.97	1.81	4.77	0.00	12.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

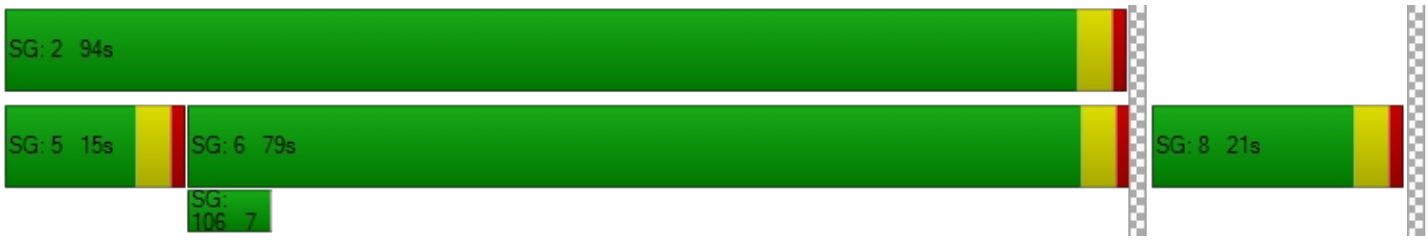
X, volume / capacity	0.85	0.73	0.86	0.00	0.86
d, Delay for Lane Group [s/veh]	63.16	6.47	18.46	0.00	62.92
Lane Group LOS	E	A	B	A	E
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.13	7.47	17.92	0.00	4.43
50th-Percentile Queue Length [ft]	103.13	186.63	448.11	0.00	110.64
95th-Percentile Queue Length [veh]	7.43	11.95	24.87	0.00	7.88
95th-Percentile Queue Length [ft]	185.64	298.66	621.69	0.00	196.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.16	6.47	18.46	0.00	0.00	62.92
Movement LOS	E	A	B	A		E
d_A, Approach Delay [s/veh]	10.05		18.46		62.92	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]	15.76					
Intersection LOS	B					
Intersection V/C	0.861					

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	214	1485	1490	26	0	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	1485	1490	26	0	122
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	391	392	0	0	32
Total Analysis Volume [veh/h]	225	1563	1568	0	0	128
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	27	81	54	0	0	14
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	77	58	58	10
g / C, Green / Cycle	0.16	0.81	0.61	0.61	0.11
(v / s)_i Volume / Saturation Flow Rate	0.14	0.49	0.49	0.00	0.09
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	258	2585	1934	864	151
d1, Uniform Delay [s]	38.86	3.37	14.50	0.00	41.73
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	1.06	3.81	0.00	12.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

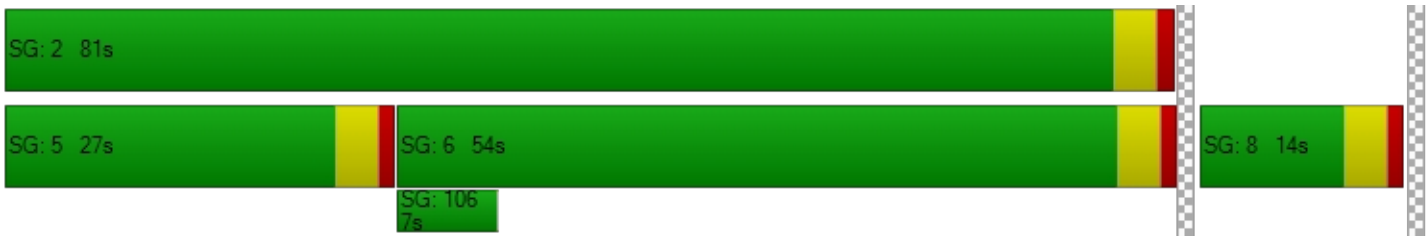
X, volume / capacity	0.87	0.60	0.81	0.00	0.85
d, Delay for Lane Group [s/veh]	47.68	4.42	18.31	0.00	53.92
Lane Group LOS	D	A	B	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	5.67	3.63	12.58	0.00	3.43
50th-Percentile Queue Length [ft]	141.83	90.85	314.60	0.00	85.64
95th-Percentile Queue Length [veh]	9.58	6.54	18.40	0.00	6.17
95th-Percentile Queue Length [ft]	239.48	163.54	460.05	0.00	154.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.68	4.42	18.31	0.00	0.00	53.92
Movement LOS	D	A	B	A		D
d_A, Approach Delay [s/veh]	9.87		18.31		53.92	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.29					
Intersection LOS	B					
Intersection V/C	0.826					

Sequence

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



APPENDIX E-IV

ALTERNATIVE #3

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.822

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	391	1158	326	242	958	166	232	1240	413	360	924	306
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	1158	326	242	958	166	232	1240	413	360	924	306
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	99	294	83	61	243	42	59	315	105	91	235	78
Total Analysis Volume [veh/h]	397	1176	331	246	973	169	236	1259	419	365	938	311
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	48	0	14	42	42	14	39	0	19	44	44
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	47	47	10	41	55	10	33	33	33	15	37	51
g / C, Green / Cycle	0.13	0.39	0.39	0.08	0.34	0.46	0.08	0.27	0.27	0.27	0.12	0.31	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.29	0.29	0.07	0.19	0.11	0.07	0.24	0.24	0.24	0.11	0.18	0.20
s, saturation flow rate [veh/h]	3445	3547	1662	3445	5074	1583	3445	3547	1838	1583	3445	5074	1583
c, Capacity [veh/h]	451	1381	647	289	1738	728	289	963	499	430	420	1570	676
d1, Uniform Delay [s]	51.25	31.45	31.58	54.25	32.11	19.61	54.08	41.91	41.93	42.11	51.78	35.12	24.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.32	0.33	0.11	0.11	0.29
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	1.00
d2, Incremental Delay [s]	5.74	3.61	7.73	6.94	1.31	0.16	5.59	2.90	14.03	17.44	5.65	0.37	1.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

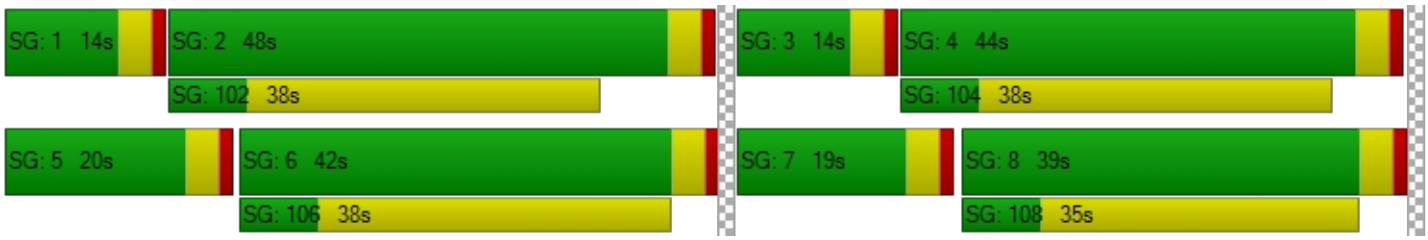
X, volume / capacity	0.88	0.74	0.75	0.85	0.56	0.23	0.82	0.88	0.88	0.90	0.87	0.60	0.46
d, Delay for Lane Group [s/veh]	57.00	35.05	39.30	61.19	33.42	19.77	59.67	44.81	55.95	59.54	57.43	35.49	25.88
Lane Group LOS	E	D	D	E	C	B	E	D	E	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.22	13.25	13.33	3.94	7.85	2.90	3.73	12.36	14.37	12.98	5.72	7.77	6.53
50th-Percentile Queue Length [ft]	155.39	331.23	333.18	98.60	196.28	72.43	93.24	309.0	359.3	324.5	142.97	194.29	163.19
95th-Percentile Queue Length [veh]	10.30	19.22	19.31	7.10	12.45	5.22	6.71	18.13	20.59	18.89	9.64	12.34	10.72
95th-Percentile Queue Length [ft]	257.61	480.47	482.86	177.47	311.17	130.38	167.8	453.1	514.8	472.2	241.02	308.59	267.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.00	35.61	39.30	61.19	33.42	19.77	59.67	48.42	59.54	57.43	35.49	25.88
Movement LOS	E	D	D	E	C	B	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	40.71			36.68			52.18			38.60		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.61											
Intersection LOS	D											
Intersection V/C	0.822											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	38.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	122	1798	1795	13	0	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	1798	1795	13	0	130
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	494	493	0	0	36
Total Analysis Volume [veh/h]	134	1976	1973	0	0	143
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.46	0.02	0.02	0.00	0.00	0.58
d_M, Delay for Movement [s/veh]	27.65	0.00	0.00	0.00	0.00	37.98
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.31	0.00	0.00	0.00	0.00	3.30
95th-Percentile Queue Length [ft]	57.64	0.00	0.00	0.00	0.00	82.52
d_A, Approach Delay [s/veh]	1.76		0.00		37.98	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.16					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	53.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.981

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	209	89	480	99	176	145	1806	38	25	1500	488
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	209	89	480	99	176	145	1806	38	25	1500	488
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	57	24	131	27	48	39	492	10	7	408	133
Total Analysis Volume [veh/h]	12	228	97	523	108	192	158	1967	41	27	1634	532
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	32	0	17	63	0	10	56	56
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	13	61	61	3	52	90
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.53	0.53	0.03	0.45	0.78
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.15	0.06	0.12	0.11	0.55	0.03	0.02	0.46	0.34
s, saturation flow rate [veh/h]	1774	1863	1680	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	263	276	249	511	276	235	198	1894	845	54	1600	1238
d1, Uniform Delay [s]	41.99	45.83	46.03	48.97	44.28	47.47	52.77	26.80	12.82	54.91	31.56	4.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	9.50	11.60	45.86	4.12	26.05	7.18	31.48	0.02	7.09	16.41	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.61	0.63	1.02	0.39	0.82	0.80	1.04	0.05	0.50	1.02	0.43
d, Delay for Lane Group [s/veh]	42.32	55.33	57.63	94.84	48.39	73.52	59.95	58.28	12.85	62.00	47.97	5.20
Lane Group LOS	D	E	E	F	D	E	E	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.32	5.20	5.03	10.56	3.11	7.02	4.99	32.63	0.51	0.88	24.97	3.64
50th-Percentile Queue Length [ft]	7.95	130.11	125.87	263.90	77.64	175.40	124.66	815.79	12.75	21.90	624.34	90.88
95th-Percentile Queue Length [veh]	0.57	8.95	8.71	16.06	5.59	11.36	8.65	43.34	0.92	1.58	33.71	6.54
95th-Percentile Queue Length [ft]	14.30	223.65	217.86	401.43	139.75	284.00	216.22	1083.42	22.95	39.43	842.78	163.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.32	55.94	57.63	94.84	48.39	73.52	59.95	58.28	12.85	62.00	47.97	5.20
Movement LOS	D	E	E	F	D	E	E	F	B	E	F	A
d_A, Approach Delay [s/veh]	55.94			83.77			57.54			37.77		
Approach LOS	E			F			E			D		
d_I, Intersection Delay [s/veh]	53.50											
Intersection LOS	D											
Intersection V/C	0.981											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	43.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	418	984	337	267	1063	415	308	1112	296	452	1145	336
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	418	984	337	267	1063	415	308	1112	296	452	1145	336
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	106	250	86	68	270	105	78	282	75	115	291	85
Total Analysis Volume [veh/h]	424	999	342	271	1079	421	313	1129	301	459	1162	341
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	19	47	0	14	42	42	17	39	0	20	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	15	48	48	10	43	60	13	30	30	30	16	33	47
g / C, Green / Cycle	0.13	0.40	0.40	0.08	0.36	0.50	0.11	0.25	0.25	0.25	0.13	0.27	0.39
(v / s)_i Volume / Saturation Flow Rate	0.12	0.26	0.26	0.08	0.21	0.27	0.09	0.20	0.22	0.19	0.13	0.23	0.22
s, saturation flow rate [veh/h]	3445	3547	1631	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	434	1420	653	291	1821	794	377	879	462	392	462	1384	618
d1, Uniform Delay [s]	52.34	29.14	29.19	54.63	31.35	20.32	52.41	42.70	43.41	41.95	51.96	41.21	28.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.27	0.20	0.11	0.11	0.35
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	1.00
d2, Incremental Delay [s]	15.52	2.28	4.96	12.70	1.43	2.52	4.78	2.02	12.32	5.80	17.98	1.45	2.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

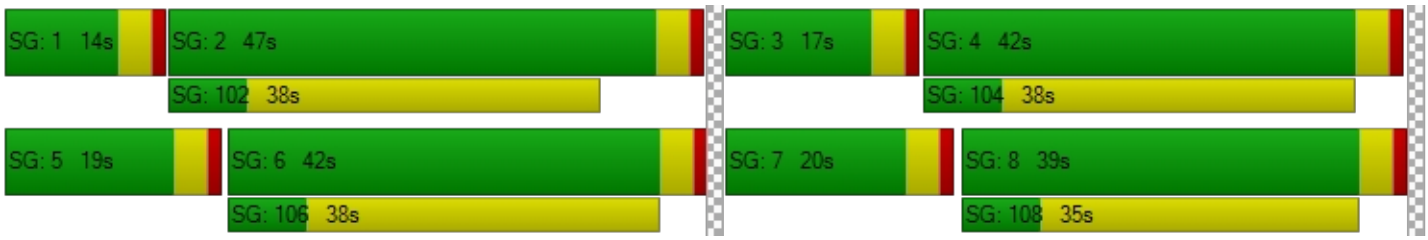
X, volume / capacity	0.98	0.65	0.65	0.93	0.59	0.53	0.83	0.82	0.88	0.77	0.99	0.84	0.55
d, Delay for Lane Group [s/veh]	67.85	31.42	34.15	67.33	32.77	22.84	57.19	44.72	55.72	47.75	69.94	42.66	30.91
Lane Group LOS	E	C	C	E	C	C	E	D	E	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	7.29	11.02	10.69	4.58	8.68	8.43	4.87	10.35	13.05	8.88	8.04	10.92	8.01
50th-Percentile Queue Length [ft]	182.21	275.54	267.29	114.56	217.03	210.85	121.7	258.6	326.2	221.9	201.00	272.92	200.22
95th-Percentile Queue Length [veh]	11.72	16.47	16.05	8.09	13.51	13.20	8.49	15.62	18.98	13.77	12.69	16.34	12.65
95th-Percentile Queue Length [ft]	292.90	411.66	401.35	202.33	337.83	329.92	212.2	390.5	474.4	344.1	317.26	408.38	316.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.85	31.64	34.15	67.33	32.77	22.84	57.19	48.66	47.75	69.94	42.66	30.91
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	40.83			35.70			50.03			47.00		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	43.46											
Intersection LOS	D											
Intersection V/C	0.815											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	214	1472	1475	26	0	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	1472	1475	26	0	122
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	1.0000	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	377	377	0	0	31
Total Analysis Volume [veh/h]	219	1507	1510	0	0	125
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.02	0.02	0.00	0.00	0.36
d_M, Delay for Movement [s/veh]	21.09	0.00	0.00	0.00	0.00	20.81
Movement LOS	C	A	A	A		C
95th-Percentile Queue Length [veh]	2.72	0.00	0.00	0.00	0.00	1.57
95th-Percentile Queue Length [ft]	67.96	0.00	0.00	0.00	0.00	39.27
d_A, Approach Delay [s/veh]	2.68		0.00		20.81	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.15					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	41.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.875

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	19	146	69	469	190	261	202	1220	45	73	1277	462
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	146	69	469	190	261	202	1220	45	73	1277	462
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	18	120	49	67	52	313	12	19	328	119
Total Analysis Volume [veh/h]	20	150	71	482	195	268	207	1253	46	75	1311	474
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	12	0	0	37	0	19	42	0	29	52	52
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	21	21	21	21	21	21	15	55	55	7	47	91
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.46	0.46	0.05	0.39	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.06	0.14	0.10	0.17	0.15	0.35	0.03	0.04	0.37	0.30
s, saturation flow rate [veh/h]	1774	1863	1669	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	312	327	293	605	327	278	214	1633	729	97	1383	1200
d1, Uniform Delay [s]	41.24	43.41	43.59	47.41	45.54	49.08	55.14	27.03	18.00	55.97	35.42	5.03
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.24	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	2.88	3.52	10.42	7.77	45.31	26.18	1.69	0.04	11.97	4.31	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

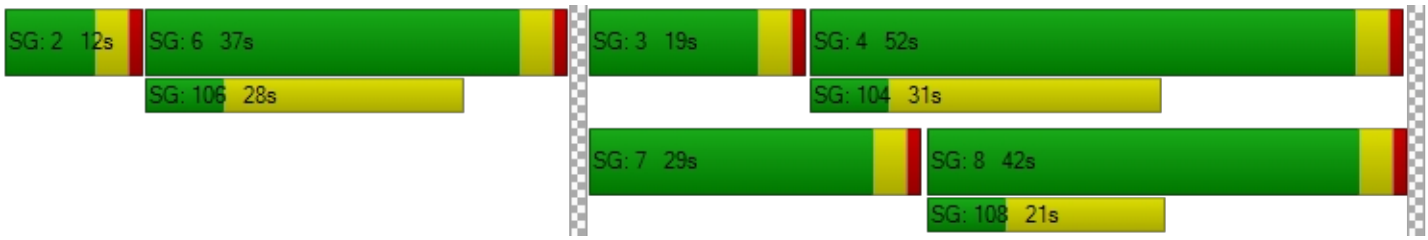
X, volume / capacity	0.06	0.35	0.37	0.80	0.60	0.96	0.97	0.77	0.06	0.77	0.95	0.40
d, Delay for Lane Group [s/veh]	41.64	46.29	47.11	57.83	53.31	94.39	81.31	28.72	18.04	67.94	39.73	6.01
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	D	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.53	3.23	3.12	7.77	6.07	11.44	7.86	14.99	0.72	2.57	18.95	3.83
50th-Percentile Queue Length [ft]	13.30	80.70	78.05	194.28	151.64	286.00	196.52	374.79	18.04	64.14	473.73	95.84
95th-Percentile Queue Length [veh]	0.96	5.81	5.62	12.34	10.10	16.99	12.46	21.34	1.30	4.62	26.09	6.90
95th-Percentile Queue Length [ft]	23.94	145.26	140.50	308.58	252.62	424.68	311.47	533.54	32.48	115.46	652.21	172.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.64	46.49	47.11	57.83	53.31	94.39	81.31	28.72	18.04	67.94	39.73	6.01
Movement LOS	D	D	D	E	D	F	F	C	B	E	D	A
d_A, Approach Delay [s/veh]	46.27			67.27			35.62			32.28		
Approach LOS	D			E			D			C		
d_I, Intersection Delay [s/veh]	41.39											
Intersection LOS	D											
Intersection V/C	0.875											

Sequence

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



APPENDIX E-V

ALTERNATIVE #3 MITIGATION

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	15.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	122	1798	1795	13	0	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	1798	1795	13	0	130
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	473	472	0	0	34
Total Analysis Volume [veh/h]	128	1893	1889	0	0	137
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	16	102	86	0	0	18
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	99	83	83	13
g / C, Green / Cycle	0.09	0.82	0.70	0.70	0.11
(v / s)_i Volume / Saturation Flow Rate	0.08	0.59	0.59	0.00	0.10
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	151	2627	2219	991	157
d1, Uniform Delay [s]	53.48	4.62	13.64	0.00	52.53
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.32	1.74	4.35	0.00	13.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

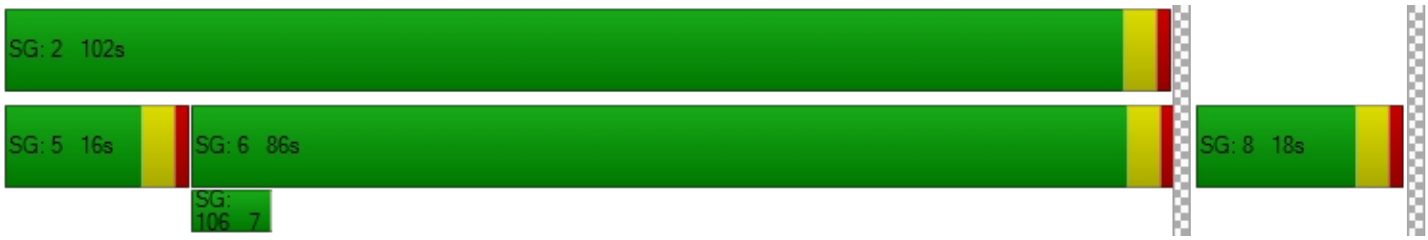
X, volume / capacity	0.85	0.72	0.85	0.00	0.87
d, Delay for Lane Group [s/veh]	65.80	6.36	17.99	0.00	66.15
Lane Group LOS	E	A	B	A	E
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.31	7.64	18.16	0.00	4.65
50th-Percentile Queue Length [ft]	107.86	191.11	454.03	0.00	116.30
95th-Percentile Queue Length [veh]	7.72	12.18	25.15	0.00	8.19
95th-Percentile Queue Length [ft]	193.03	304.47	628.76	0.00	204.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.80	6.36	17.99	0.00	0.00	66.15
Movement LOS	E	A	B	A		E
d_A, Approach Delay [s/veh]	10.12		17.99		66.15	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]	15.69					
Intersection LOS	B					
Intersection V/C	0.853					

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.828

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	214	1472	1475	26	0	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	1472	1475	26	0	122
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	387	388	0	0	32
Total Analysis Volume [veh/h]	225	1549	1553	0	0	128
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	23	76	53	0	0	14
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	72	54	54	10
g / C, Green / Cycle	0.16	0.80	0.60	0.60	0.11
(v / s)_i Volume / Saturation Flow Rate	0.14	0.49	0.49	0.00	0.09
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	259	2568	1909	852	152
d1, Uniform Delay [s]	36.80	3.34	14.17	0.00	39.48
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.73	1.06	3.93	0.00	11.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

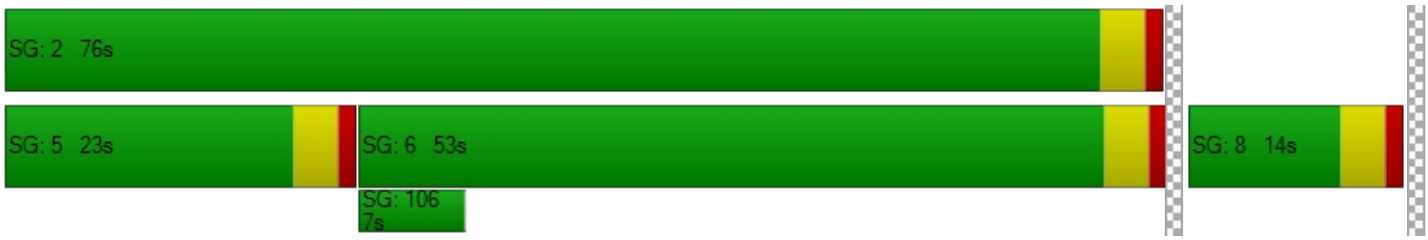
X, volume / capacity	0.87	0.60	0.81	0.00	0.84
d, Delay for Lane Group [s/veh]	45.53	4.40	18.10	0.00	51.20
Lane Group LOS	D	A	B	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	5.36	3.38	11.86	0.00	3.23
50th-Percentile Queue Length [ft]	134.05	84.54	296.49	0.00	80.80
95th-Percentile Queue Length [veh]	9.16	6.09	17.51	0.00	5.82
95th-Percentile Queue Length [ft]	228.99	152.18	437.69	0.00	145.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.53	4.40	18.10	0.00	0.00	51.20
Movement LOS	D	A	B	A		D
d_A, Approach Delay [s/veh]	9.62		18.10		51.20	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	14.97					
Intersection LOS	B					
Intersection V/C	0.828					

Sequence

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



APPENDIX F

CALTRANS YEAR 2019 PLUS PROJECT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX F-I

ALTERNATIVE #1

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	47.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.856

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	412	1190	364	249	969	174	240	1279	437	365	960	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	412	1190	364	249	969	174	240	1279	437	365	960	315
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
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]	105	302	92	63	246	44	61	325	111	93	244	80
Total Analysis Volume [veh/h]	418	1208	370	253	984	177	244	1298	444	371	975	320
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	21	51	0	11	41	41	15	38	0	20	43	43
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	49	49	7	39	54	10	33	33	33	15	38	49
g / C, Green / Cycle	0.14	0.41	0.41	0.06	0.33	0.45	0.09	0.28	0.28	0.28	0.12	0.32	0.41
(v / s)_i Volume / Saturation Flow Rate	0.12	0.30	0.31	0.07	0.19	0.11	0.07	0.25	0.25	0.25	0.11	0.19	0.20
s, saturation flow rate [veh/h]	3445	3547	1650	3445	5074	1583	3445	3547	1833	1583	3445	5074	1583
c, Capacity [veh/h]	473	1439	670	203	1663	710	302	984	509	439	428	1594	644
d1, Uniform Delay [s]	50.86	30.37	30.58	56.49	33.66	20.55	53.78	41.71	41.74	41.99	51.59	34.95	26.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.35	0.36	0.11	0.11	0.31
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.67	3.54	7.78	118.63	1.56	0.18	5.12	3.21	16.21	20.64	5.41	0.38	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

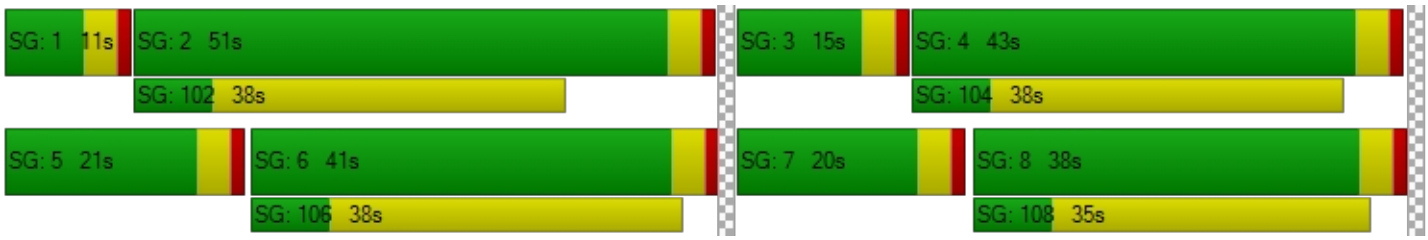
X, volume / capacity	0.88	0.74	0.76	1.24	0.59	0.25	0.81	0.90	0.90	0.91	0.87	0.61	0.50
d, Delay for Lane Group [s/veh]	56.53	33.90	38.36	175.12	35.22	20.73	58.90	44.92	57.96	62.63	57.00	35.33	28.20
Lane Group LOS	E	C	D	F	D	C	E	D	E	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	6.53	13.71	13.82	6.43	8.19	3.13	3.83	12.88	15.19	13.93	5.79	8.08	7.08
50th-Percentile Queue Length [ft]	163.26	342.75	345.51	160.83	204.83	78.23	95.79	322.1	379.7	348.2	144.84	202.08	176.90
95th-Percentile Queue Length [veh]	10.72	19.78	19.92	11.25	12.89	5.63	6.90	18.77	21.58	20.05	9.74	12.75	11.44
95th-Percentile Queue Length [ft]	268.03	494.57	497.94	281.26	322.19	140.81	172.4	469.2	539.5	501.2	243.52	318.65	285.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.53	34.41	38.36	175.12	35.22	20.73	58.90	49.09	62.53	57.00	35.33	28.20
Movement LOS	E	C	D	F	D	C	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	39.77			58.44			53.23			38.79		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	47.06											
Intersection LOS	D											
Intersection V/C	0.856											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	46.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1849	1842	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1849	1842	13	0	144
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	508	506	0	0	40
Total Analysis Volume [veh/h]	140	2032	2024	0	0	158
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.51	0.02	0.02	0.00	0.00	0.67
d_M, Delay for Movement [s/veh]	30.59	0.00	0.00	0.00	0.00	46.06
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.66	0.00	0.00	0.00	0.00	4.20
95th-Percentile Queue Length [ft]	66.40	0.00	0.00	0.00	0.00	105.12
d_A, Approach Delay [s/veh]	1.97		0.00		46.06	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.66					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	62.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.999

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1857	39	26	1542	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1857	39	26	1542	504
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	59	25	135	29	49	41	506	11	7	420	137
Total Analysis Volume [veh/h]	12	236	100	541	117	197	164	2023	42	28	1680	549
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	14	0	0	32	0	14	62	0	12	60	60
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	19	19	19	19	19	19	10	62	62	4	56	93
g / C, Green / Cycle	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.52	0.52	0.03	0.47	0.77
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.10	0.16	0.06	0.12	0.12	0.57	0.03	0.02	0.47	0.35
s, saturation flow rate [veh/h]	1774	1863	1681	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	282	296	267	548	296	252	155	1838	821	54	1651	1226
d1, Uniform Delay [s]	42.74	46.80	47.00	50.35	45.29	48.48	57.54	28.90	14.30	57.31	32.08	4.67
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	8.21	9.96	35.63	3.92	21.19	50.63	54.14	0.03	7.48	15.14	1.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.58	0.61	0.99	0.40	0.78	1.06	1.10	0.05	0.52	1.02	0.45
d, Delay for Lane Group [s/veh]	43.02	55.01	56.96	85.98	49.21	69.67	108.17	83.04	14.33	64.79	47.22	5.86
Lane Group LOS	D	E	E	F	D	E	F	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.33	5.48	5.27	10.78	3.46	7.14	6.90	38.92	0.57	0.95	26.50	4.29
50th-Percentile Queue Length [ft]	8.16	136.98	131.87	269.59	86.58	178.56	172.60	973.03	14.33	23.74	662.48	107.29
95th-Percentile Queue Length [veh]	0.59	9.32	9.04	16.17	6.23	11.53	11.45	53.01	1.03	1.71	35.43	7.69
95th-Percentile Queue Length [ft]	14.68	232.95	226.04	404.23	155.85	288.13	286.13	1325.15	25.79	42.74	885.71	192.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.02	55.52	56.96	85.98	49.21	69.67	108.17	83.04	14.33	64.79	47.22	5.86
Movement LOS	D	E	E	F	D	E	F	F	B	E	F	A
d_A, Approach Delay [s/veh]	55.50			77.19			83.59			37.38		
Approach LOS	E			E			F			D		
d_I, Intersection Delay [s/veh]	62.58											
Intersection LOS	E											
Intersection V/C	0.999											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	45.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.828

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	446	984	351	275	1049	433	312	1134	317	385	1242	346
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	446	984	351	275	1049	433	312	1134	317	385	1242	346
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	250	89	70	266	110	79	288	80	98	315	88
Total Analysis Volume [veh/h]	453	999	356	279	1065	440	317	1151	322	391	1261	351
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	50	0	12	42	42	16	39	0	19	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	50	50	8	42	58	12	31	31	31	15	34	46
g / C, Green / Cycle	0.13	0.41	0.41	0.07	0.35	0.48	0.10	0.26	0.26	0.26	0.13	0.28	0.39
(v / s)_i Volume / Saturation Flow Rate	0.13	0.26	0.26	0.08	0.21	0.28	0.09	0.21	0.22	0.20	0.11	0.25	0.22
s, saturation flow rate [veh/h]	3445	3547	1624	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	462	1469	673	234	1767	764	348	918	482	410	434	1438	609
d1, Uniform Delay [s]	51.85	27.91	27.98	55.98	32.30	22.27	53.45	41.79	42.18	41.43	51.77	41.03	29.20
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.27	0.24	0.11	0.11	0.37
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	1.00
d2, Incremental Delay [s]	15.37	2.07	4.54	95.04	1.53	3.15	9.24	1.80	9.52	7.12	7.10	1.86	2.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

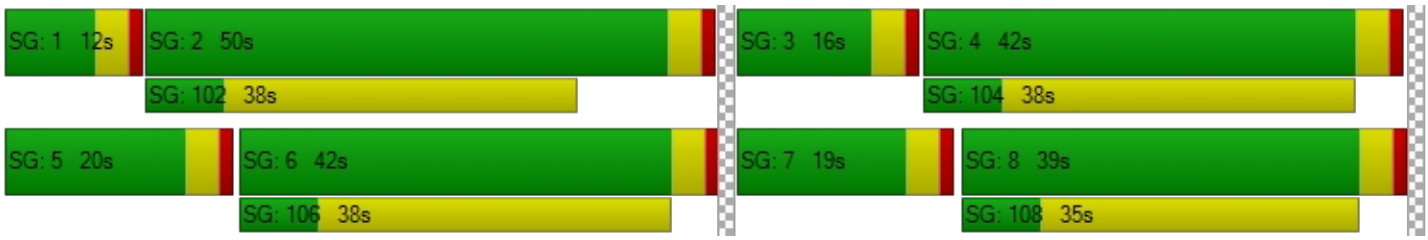
X, volume / capacity	0.98	0.63	0.64	1.19	0.60	0.58	0.91	0.81	0.84	0.79	0.90	0.88	0.58
d, Delay for Lane Group [s/veh]	67.23	29.98	32.52	151.02	33.84	25.42	62.69	43.59	51.70	48.56	58.87	42.89	32.12
Lane Group LOS	E	C	C	F	C	C	E	D	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	7.77	10.87	10.51	6.64	8.72	9.44	5.18	10.53	12.57	9.63	6.22	11.98	8.44
50th-Percentile Queue Length [ft]	194.22	271.76	262.86	166.06	218.09	235.96	129.4	263.2	314.2	240.6	155.59	299.59	211.04
95th-Percentile Queue Length [veh]	12.34	16.28	15.83	11.45	13.57	14.48	8.91	15.85	18.38	14.72	10.32	17.66	13.21
95th-Percentile Queue Length [ft]	308.50	406.94	395.80	286.31	339.19	361.92	222.8	396.2	459.6	367.8	257.88	441.52	330.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.23	30.16	32.52	151.02	33.84	25.42	62.69	46.45	48.56	58.87	42.89	32.12
Movement LOS	E	C	C	F	C	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	39.91			50.09			49.70			44.12		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.89											
Intersection LOS	D											
Intersection V/C	0.828											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	28.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1501	1496	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1501	1496	27	0	132
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	412	411	0	0	36
Total Analysis Volume [veh/h]	246	1649	1644	0	0	145
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.63	0.02	0.02	0.00	0.00	0.46
d_M, Delay for Movement [s/veh]	28.80	0.00	0.00	0.00	0.00	25.57
Movement LOS	D	A	A	A		D
95th-Percentile Queue Length [veh]	4.17	0.00	0.00	0.00	0.00	2.28
95th-Percentile Queue Length [ft]	104.28	0.00	0.00	0.00	0.00	57.12
d_A, Approach Delay [s/veh]	3.74		0.00		25.57	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.93					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	50.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.964

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1247	46	75	1290	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1247	46	75	1290	478
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	42	19	132	54	73	58	340	13	20	351	130
Total Analysis Volume [veh/h]	22	169	77	528	217	293	232	1358	50	82	1405	521
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	13	0	0	35	0	19	46	0	21	48	48
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	20	20	20	20	20	15	52	52	7	44	87
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.17	0.13	0.45	0.45	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.07	0.15	0.12	0.19	0.16	0.38	0.03	0.05	0.40	0.33
s, saturation flow rate [veh/h]	1774	1863	1673	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	309	325	292	601	325	276	223	1605	716	106	1353	1197
d1, Uniform Delay [s]	39.69	42.05	42.22	46.29	44.36	47.48	52.82	27.94	17.80	53.32	35.56	5.10
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.18	0.26	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	3.48	4.23	16.64	10.42	71.21	47.59	3.02	0.04	11.40	22.99	1.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

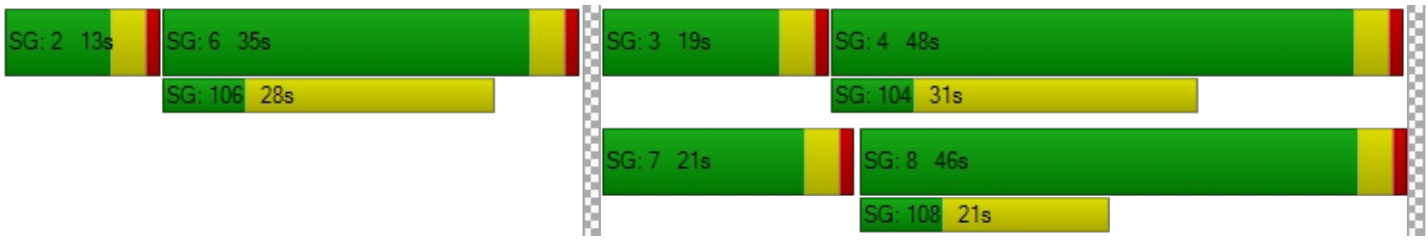
X, volume / capacity	0.07	0.39	0.41	0.88	0.67	1.06	1.04	0.85	0.07	0.78	1.04	0.44
d, Delay for Lane Group [s/veh]	40.13	45.52	46.45	62.93	54.79	118.68	100.41	30.96	17.84	64.72	58.55	6.25
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.56	3.50	3.37	8.71	6.71	13.32	9.41	16.73	0.76	2.67	22.77	4.19
50th-Percentile Queue Length [ft]	14.04	87.39	84.35	217.87	167.79	333.02	235.28	418.21	19.04	66.75	569.18	104.75
95th-Percentile Queue Length [veh]	1.01	6.29	6.07	13.56	10.96	19.89	14.71	23.44	1.37	4.81	31.41	7.54
95th-Percentile Queue Length [ft]	25.28	157.29	151.84	338.91	274.01	497.20	367.64	585.90	34.27	120.15	785.36	188.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.13	45.76	46.45	62.93	54.79	118.68	100.41	30.96	17.84	64.72	58.55	6.25
Movement LOS	D	D	D	E	D	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	45.49			76.97			40.38			45.24		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	50.29											
Intersection LOS	D											
Intersection V/C	0.964											

Sequence

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



APPENDIX F-II

ALTERNATIVE #1 MITIGATION

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1849	1842	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1849	1842	13	0	144
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	487	485	0	0	38
Total Analysis Volume [veh/h]	134	1946	1939	0	0	152
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	16	101	85	0	0	19
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	97	82	82	15
g / C, Green / Cycle	0.10	0.81	0.68	0.68	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.61	0.61	0.00	0.11
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	157	2593	2173	970	172
d1, Uniform Delay [s]	53.23	5.41	15.57	0.00	51.87
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.25	2.05	6.10	0.00	13.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

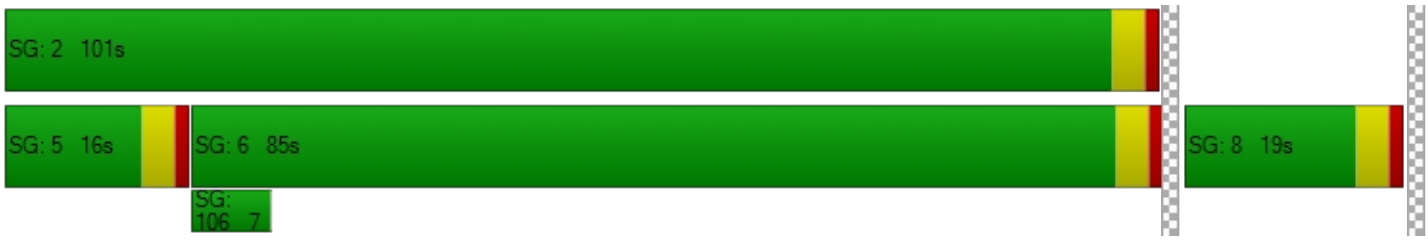
X, volume / capacity	0.85	0.75	0.89	0.00	0.88
d, Delay for Lane Group [s/veh]	65.48	7.46	21.66	0.00	65.35
Lane Group LOS	E	A	C	A	E
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.51	9.13	20.98	0.00	5.14
50th-Percentile Queue Length [ft]	112.69	228.31	524.52	0.00	128.46
95th-Percentile Queue Length [veh]	7.99	14.09	28.49	0.00	8.86
95th-Percentile Queue Length [ft]	199.74	352.21	712.32	0.00	221.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.48	7.46	21.66	0.00	0.00	65.35
Movement LOS	E	A	C	A		E
d_A, Approach Delay [s/veh]	11.20		21.66		65.35	
Approach LOS	B		C		E	
d_I, Intersection Delay [s/veh]	18.03					
Intersection LOS	B					
Intersection V/C	0.887					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	47.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1857	39	26	1542	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1857	39	26	1542	504
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]	3	57	24	131	28	48	40	489	10	7	406	133
Total Analysis Volume [veh/h]	12	228	97	523	113	191	159	1955	41	27	1623	531
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	32	0	16	67	0	11	62	62
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	12	66	66	4	57	95
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.14	0.10	0.55	0.55	0.03	0.48	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.06	0.15	0.06	0.12	0.11	0.55	0.03	0.02	0.46	0.34
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	256	512	229	497	269	229	179	1944	868	53	1695	1249
d1, Uniform Delay [s]	44.23	46.95	46.80	51.35	46.77	49.96	56.25	27.12	12.58	57.35	30.16	4.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	2.79	5.68	54.60	4.77	28.82	13.84	21.80	0.02	7.35	4.24	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.45	0.42	1.05	0.42	0.84	0.89	1.01	0.05	0.51	0.96	0.43
d, Delay for Lane Group [s/veh]	44.58	49.74	52.48	105.95	51.54	78.78	70.09	48.92	12.60	64.70	34.41	5.08
Lane Group LOS	D	D	D	F	D	E	E	F	B	E	C	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.33	3.32	3.01	11.23	3.44	7.40	5.53	32.04	0.52	0.92	22.70	3.68
50th-Percentile Queue Length [ft]	8.36	83.08	75.27	280.63	86.03	185.01	138.20	800.99	12.93	22.90	567.46	91.93
95th-Percentile Queue Length [veh]	0.60	5.98	5.42	17.11	6.19	11.86	9.38	41.53	0.93	1.65	30.51	6.62
95th-Percentile Queue Length [ft]	15.05	149.54	135.49	427.81	154.86	296.54	234.60	1038.13	23.27	41.22	762.80	165.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.58	49.74	52.48	105.95	51.54	78.78	70.09	48.92	12.60	64.70	34.41	5.08
Movement LOS	D	D	D	F	D	E	E	F	B	E	C	A
d_A, Approach Delay [s/veh]	50.35			92.24			49.79			27.64		
Approach LOS	D			F			D			C		
d_I, Intersection Delay [s/veh]	47.43											
Intersection LOS	D											
Intersection V/C	0.928											

Sequence

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

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	16.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1501	1496	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1501	1496	27	0	132
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	395	394	0	0	35
Total Analysis Volume [veh/h]	236	1580	1575	0	0	139
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	64	75	11	0	0	15
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	72	52	52	10
g / C, Green / Cycle	0.17	0.80	0.58	0.58	0.11
(v / s)_i Volume / Saturation Flow Rate	0.15	0.49	0.49	0.00	0.10
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	275	2541	1850	826	164
d1, Uniform Delay [s]	36.22	3.71	15.70	0.00	39.07
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.72	1.16	5.17	0.00	11.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

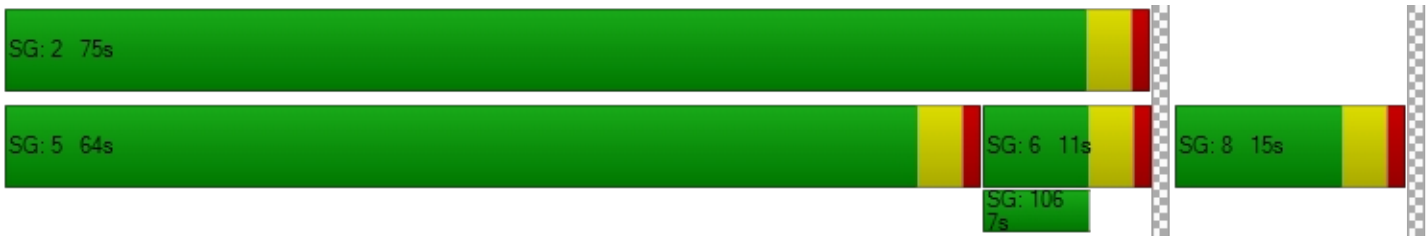
X, volume / capacity	0.86	0.62	0.85	0.00	0.85
d, Delay for Lane Group [s/veh]	43.94	4.86	20.87	0.00	50.40
Lane Group LOS	D	A	C	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	5.53	3.86	13.16	0.00	3.48
50th-Percentile Queue Length [ft]	138.14	96.53	329.11	0.00	87.04
95th-Percentile Queue Length [veh]	9.38	6.95	19.11	0.00	6.27
95th-Percentile Queue Length [ft]	234.51	173.75	477.87	0.00	156.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.94	4.86	20.87	0.00	0.00	50.40
Movement LOS	D	A	C	A		D
d_A, Approach Delay [s/veh]	9.94		20.87		50.40	
Approach LOS	A		C		D	
d_I, Intersection Delay [s/veh]	16.41					
Intersection LOS	B					
Intersection V/C	0.852					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1247	46	75	1290	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1247	46	75	1290	478
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]	5	41	19	128	52	71	56	328	12	20	339	126
Total Analysis Volume [veh/h]	21	163	75	511	209	283	224	1313	48	79	1358	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	38	0	19	46	0	21	48	48
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	20	20	20	20	20	15	52	52	7	44	87
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.17	0.13	0.45	0.45	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.05	0.05	0.15	0.11	0.18	0.16	0.37	0.03	0.04	0.38	0.32
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	309	619	276	601	325	276	223	1612	720	102	1353	1197
d1, Uniform Delay [s]	39.66	41.08	41.14	46.02	44.15	47.48	52.82	27.17	17.65	53.45	35.56	5.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.16	0.24	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	1.04	2.41	14.08	9.44	60.68	36.03	2.27	0.04	11.66	12.21	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

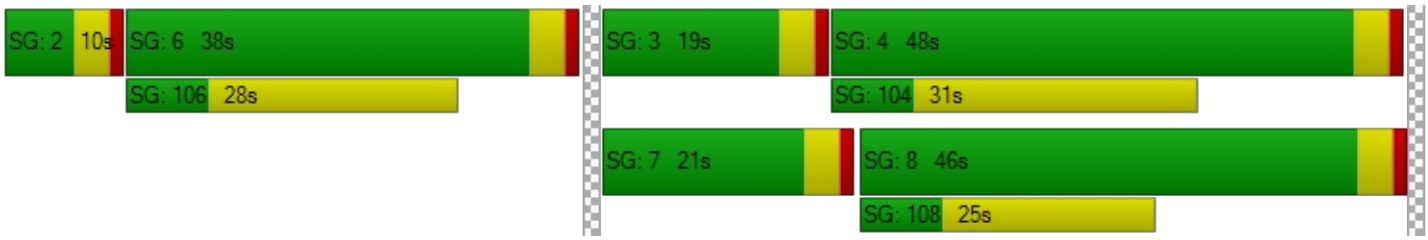
X, volume / capacity	0.07	0.26	0.27	0.85	0.64	1.02	1.01	0.81	0.07	0.77	1.00	0.42
d, Delay for Lane Group [s/veh]	40.09	42.12	43.56	60.10	53.58	108.15	88.85	29.44	17.69	65.11	47.77	6.10
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.54	2.10	2.03	8.22	6.38	12.51	8.70	15.65	0.73	2.58	20.74	3.97
50th-Percentile Queue Length [ft]	13.39	52.41	50.87	205.61	159.58	312.87	217.41	391.28	18.17	64.54	518.43	99.37
95th-Percentile Queue Length [veh]	0.96	3.77	3.66	12.93	10.53	18.55	13.57	22.14	1.31	4.65	28.28	7.15
95th-Percentile Queue Length [ft]	24.11	94.34	91.57	323.19	263.17	463.64	339.27	553.48	32.71	116.18	706.91	178.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	42.12	43.56	60.10	53.58	108.15	88.85	29.44	17.69	65.11	47.77	6.10
Movement LOS	D	D	D	E	D	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	42.37			72.30			37.48			37.67		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	45.12											
Intersection LOS	D											
Intersection V/C	0.906											

Sequence

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



APPENDIX F-III

ALTERNATIVE #2

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	46.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.904

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	409	1215	361	249	1010	174	247	1290	433	388	957	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	409	1215	361	249	1010	174	247	1290	433	388	957	315
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]	108	320	95	66	266	46	65	339	114	102	252	83
Total Analysis Volume [veh/h]	431	1279	380	262	1063	183	260	1358	456	408	1007	332
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	48	0	14	42	42	15	39	0	19	43	43
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	45	45	10	39	54	11	34	34	34	15	38	52
g / C, Green / Cycle	0.13	0.37	0.37	0.08	0.32	0.45	0.09	0.29	0.29	0.29	0.13	0.32	0.44
(v / s)_i Volume / Saturation Flow Rate	0.13	0.32	0.32	0.08	0.21	0.12	0.08	0.26	0.26	0.27	0.12	0.20	0.21
s, saturation flow rate [veh/h]	3445	3547	1655	3445	5074	1583	3445	3547	1839	1583	3445	5074	1583
c, Capacity [veh/h]	460	1325	618	288	1642	710	314	1009	523	450	431	1615	689
d1, Uniform Delay [s]	51.50	34.48	34.83	54.54	34.74	20.67	53.61	41.45	41.48	41.85	52.10	34.79	24.21
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.38	0.39	0.11	0.11	0.33
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	1.00
d2, Incremental Delay [s]	9.43	6.90	15.08	10.71	1.99	0.19	5.52	3.55	18.24	24.38	10.88	0.40	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

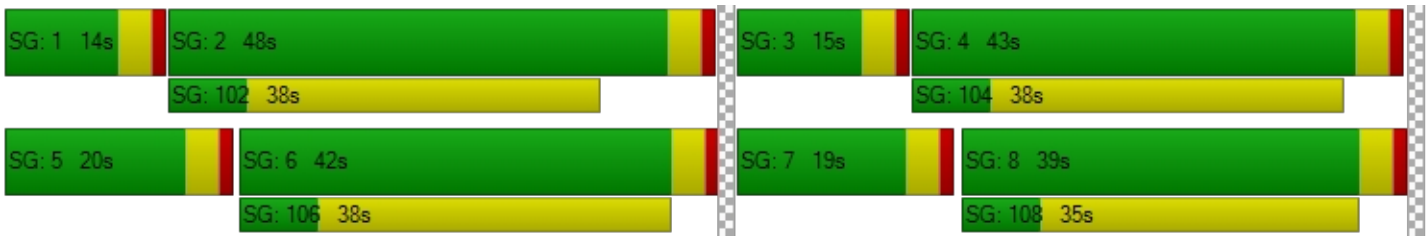
X, volume / capacity	0.94	0.85	0.87	0.91	0.65	0.26	0.83	0.91	0.91	0.93	0.95	0.62	0.48
d, Delay for Lane Group [s/veh]	60.93	41.38	49.90	65.26	36.73	20.86	59.13	45.00	59.73	66.23	62.98	35.19	25.82
Lane Group LOS	E	D	D	E	D	C	E	D	E	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	7.01	16.08	16.85	4.35	9.12	3.25	4.10	13.45	16.12	15.05	6.73	8.36	7.00
50th-Percentile Queue Length [ft]	175.19	402.04	421.26	108.80	228.10	81.28	102.4	336.3	403.1	376.2	168.35	208.98	174.91
95th-Percentile Queue Length [veh]	11.35	22.66	23.58	7.77	14.08	5.85	7.37	19.47	22.71	21.41	10.99	13.10	11.33
95th-Percentile Queue Length [ft]	283.73	566.45	589.56	194.33	351.95	146.31	184.3	486.7	567.7	535.2	274.74	327.52	283.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.93	42.42	49.90	65.26	36.73	20.86	59.13	49.78	66.19	62.98	35.19	25.82
Movement LOS	E	D	D	E	D	C	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	47.59			39.76			54.46			39.90		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.11											
Intersection LOS	D											
Intersection V/C	0.904											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	40.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1883	1875	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1883	1875	13	0	144
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	496	493	0	0	38
Total Analysis Volume [veh/h]	134	1982	1974	0	0	152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.46	0.02	0.02	0.00	0.00	0.62
d_M, Delay for Movement [s/veh]	27.69	0.00	0.00	0.00	0.00	40.59
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.31	0.00	0.00	0.00	0.00	3.68
95th-Percentile Queue Length [ft]	57.71	0.00	0.00	0.00	0.00	92.06
d_A, Approach Delay [s/veh]	1.75		0.00		40.59	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.33					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	56.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.976

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1878	39	26	1571	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1878	39	26	1571	504
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]	3	57	24	131	28	48	40	494	10	7	413	133
Total Analysis Volume [veh/h]	12	228	97	523	113	191	159	1977	41	27	1654	531
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	14	0	0	32	0	14	62	0	12	60	60
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	19	19	19	19	19	19	10	62	62	4	56	93
g / C, Green / Cycle	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.52	0.52	0.03	0.47	0.77
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.15	0.06	0.12	0.11	0.56	0.03	0.02	0.47	0.34
s, saturation flow rate [veh/h]	1774	1863	1680	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	282	296	267	548	296	252	155	1841	822	53	1650	1226
d1, Uniform Delay [s]	42.73	46.64	46.84	50.04	45.19	48.27	57.54	28.86	14.25	57.36	32.08	4.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	7.61	9.24	28.80	3.70	19.14	40.86	44.07	0.02	7.44	10.80	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.57	0.59	0.96	0.38	0.76	1.03	1.07	0.05	0.51	1.00	0.43
d, Delay for Lane Group [s/veh]	43.02	54.25	56.08	78.84	48.89	67.40	98.40	72.93	14.28	64.79	42.88	5.71
Lane Group LOS	D	D	E	E	D	E	F	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.33	5.25	5.06	9.95	3.33	6.80	6.48	36.38	0.56	0.92	25.50	4.08
50th-Percentile Queue Length [ft]	8.15	131.35	126.53	248.70	83.28	170.07	162.10	909.62	13.96	22.92	637.54	101.93
95th-Percentile Queue Length [veh]	0.59	9.01	8.75	15.12	6.00	11.08	10.76	49.00	1.00	1.65	33.84	7.34
95th-Percentile Queue Length [ft]	14.68	225.33	218.77	378.01	149.91	277.01	269.09	1225.12	25.12	41.26	846.02	183.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.02	54.73	56.08	78.84	48.89	67.40	98.40	72.93	14.28	64.79	42.88	5.71
Movement LOS	D	D	E	E	D	E	F	F	B	E	F	A
d_A, Approach Delay [s/veh]	54.70			72.11			73.69			34.23		
Approach LOS	D			E			E			C		
d_I, Intersection Delay [s/veh]	56.58											
Intersection LOS	E											
Intersection V/C	0.976											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	51.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.894

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	442	1041	364	275	1130	433	325	1156	313	513	1176	346
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	442	1041	364	275	1130	433	325	1156	313	513	1176	346
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]	116	274	96	72	297	114	86	304	82	135	309	91
Total Analysis Volume [veh/h]	465	1096	383	289	1189	456	342	1217	329	540	1238	364
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	18	45	0	15	42	42	18	39	0	21	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	44	44	11	41	60	14	32	32	32	17	34	50
g / C, Green / Cycle	0.12	0.37	0.37	0.09	0.35	0.50	0.12	0.26	0.26	0.26	0.14	0.29	0.41
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.29	0.08	0.23	0.29	0.10	0.22	0.23	0.21	0.16	0.24	0.23
s, saturation flow rate [veh/h]	3445	3547	1628	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	405	1311	602	320	1750	785	405	929	488	415	490	1454	654
d1, Uniform Delay [s]	53.00	33.34	33.53	53.96	33.66	21.44	51.92	41.98	42.70	41.31	51.51	40.43	26.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.31	0.25	0.11	0.11	0.39
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	1.00
d2, Incremental Delay [s]	73.30	4.40	9.67	9.40	2.15	3.12	4.87	2.16	14.71	7.64	52.87	1.50	2.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.15	0.77	0.78	0.90	0.68	0.58	0.84	0.84	0.89	0.79	1.10	0.85	0.56
d, Delay for Lane Group [s/veh]	126.30	37.74	43.20	63.35	35.80	24.56	56.79	44.14	57.41	48.95	104.38	41.92	29.58
Lane Group LOS	F	D	D	E	D	C	E	D	E	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	10.22	13.58	13.59	4.74	10.16	9.61	5.32	11.17	14.33	9.90	10.96	11.60	8.38
50th-Percentile Queue Length [ft]	255.52	339.54	339.67	118.44	253.97	240.17	132.9	279.2	358.1	247.4	273.97	290.04	209.49
95th-Percentile Queue Length [veh]	16.33	19.63	19.63	8.31	15.39	14.69	9.10	16.65	20.53	15.06	17.10	17.19	13.13
95th-Percentile Queue Length [ft]	408.37	490.64	490.79	207.68	384.64	367.25	227.4	416.2	513.3	376.4	427.48	429.70	328.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	126.30	38.17	43.20	63.35	35.80	24.56	56.79	48.89	48.95	104.38	41.92	29.58
Movement LOS	F	D	D	E	D	C	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	60.24			37.27			50.33			55.57		
Approach LOS	E			D			D			E		
d_I, Intersection Delay [s/veh]	50.99											
Intersection LOS	D											
Intersection V/C	0.894											

Sequence

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

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	27.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.606

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1558	1562	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1558	1562	27	0	132
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	410	411	0	0	35
Total Analysis Volume [veh/h]	236	1640	1644	0	0	139
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.61	0.02	0.02	0.00	0.00	0.44
d_M, Delay for Movement [s/veh]	27.46	0.00	0.00	0.00	0.00	24.92
Movement LOS	D	A	A	A		C
95th-Percentile Queue Length [veh]	3.84	0.00	0.00	0.00	0.00	2.14
95th-Percentile Queue Length [ft]	96.04	0.00	0.00	0.00	0.00	53.40
d_A, Approach Delay [s/veh]	3.45		0.00		24.92	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.72					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	50.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1291	46	75	1340	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1291	46	75	1340	478
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]	5	41	19	128	52	71	56	340	12	20	353	126
Total Analysis Volume [veh/h]	21	163	75	511	209	283	224	1359	48	79	1411	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	13	0	0	37	0	20	48	0	22	50	50
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	21	21	21	21	21	21	16	55	55	7	46	91
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.46	0.46	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.07	0.15	0.11	0.18	0.16	0.38	0.03	0.04	0.40	0.32
s, saturation flow rate [veh/h]	1774	1863	1672	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	312	328	294	606	328	278	225	1623	724	102	1353	1199
d1, Uniform Delay [s]	41.25	43.62	43.80	47.86	45.91	49.46	54.82	28.63	18.21	55.79	37.11	5.17
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.18	0.28	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	3.23	3.93	13.45	9.17	58.21	34.85	3.06	0.04	11.77	24.65	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

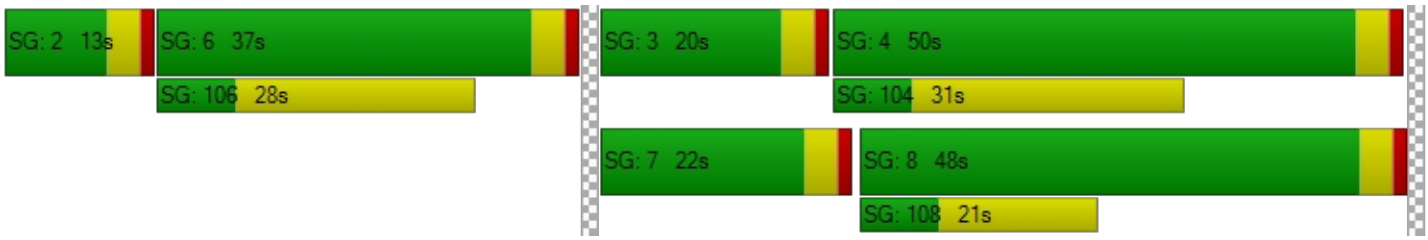
X, volume / capacity	0.07	0.37	0.39	0.84	0.64	1.02	0.99	0.84	0.07	0.77	1.04	0.42
d, Delay for Lane Group [s/veh]	41.66	46.84	47.73	61.31	55.08	107.67	89.67	31.69	18.25	67.57	61.76	6.25
Lane Group LOS	D	D	D	E	E	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.56	3.51	3.39	8.51	6.63	12.81	9.00	17.40	0.76	2.69	24.00	4.18
50th-Percentile Queue Length [ft]	13.97	87.68	84.65	212.80	165.66	320.33	225.05	435.06	18.97	67.32	600.11	104.58
95th-Percentile Queue Length [veh]	1.01	6.31	6.10	13.30	10.85	18.84	13.92	24.24	1.37	4.85	33.00	7.53
95th-Percentile Queue Length [ft]	25.15	157.82	152.38	332.42	271.20	471.04	348.07	606.10	34.14	121.18	825.12	188.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.66	47.07	47.73	61.31	55.08	107.67	89.67	31.69	18.25	67.57	61.76	6.25
Movement LOS	D	D	D	E	E	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	46.82			73.09			39.26			47.98		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	50.16											
Intersection LOS	D											
Intersection V/C	0.942											

Sequence

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



APPENDIX F-IV

ALTERNATIVE #2 MITIGATION

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.899

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1883	1875	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1883	1875	13	0	144
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	496	493	0	0	38
Total Analysis Volume [veh/h]	134	1982	1974	0	0	152
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	16	101	85	0	0	19
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	97	82	82	15
g / C, Green / Cycle	0.10	0.81	0.68	0.68	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.62	0.62	0.00	0.11
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	157	2593	2173	970	172
d1, Uniform Delay [s]	53.23	5.57	16.01	0.00	51.87
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.25	2.21	7.02	0.00	13.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

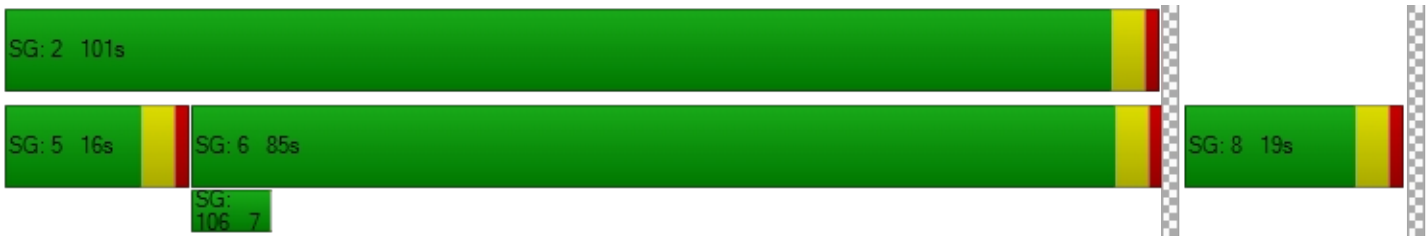
X, volume / capacity	0.85	0.76	0.91	0.00	0.88
d, Delay for Lane Group [s/veh]	65.48	7.77	23.03	0.00	65.35
Lane Group LOS	E	A	C	A	E
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.51	9.60	22.17	0.00	5.14
50th-Percentile Queue Length [ft]	112.69	239.95	554.13	0.00	128.46
95th-Percentile Queue Length [veh]	7.99	14.68	29.89	0.00	8.86
95th-Percentile Queue Length [ft]	199.74	366.97	747.15	0.00	221.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.48	7.77	23.03	0.00	0.00	65.35
Movement LOS	E	A	C	A		E
d_A, Approach Delay [s/veh]	11.43		23.03		65.35	
Approach LOS	B		C		E	
d_I, Intersection Delay [s/veh]	18.76					
Intersection LOS	B					
Intersection V/C	0.899					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	49.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1878	39	26	1571	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1878	39	26	1571	504
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]	3	57	24	131	28	48	40	494	10	7	413	133
Total Analysis Volume [veh/h]	12	228	97	523	113	191	159	1977	41	27	1654	531
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	11	0	0	32	0	15	65	0	12	62	62
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	11	65	65	4	58	94
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.09	0.54	0.54	0.03	0.48	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.06	0.15	0.06	0.12	0.11	0.56	0.03	0.02	0.47	0.34
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	261	523	233	508	275	233	167	1922	858	53	1703	1244
d1, Uniform Delay [s]	43.92	46.62	46.47	51.16	46.44	49.61	56.96	27.48	12.92	57.35	30.39	4.14
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	2.64	5.38	47.86	4.51	26.31	22.77	28.17	0.02	7.35	5.44	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.44	0.42	1.03	0.41	0.82	0.95	1.03	0.05	0.51	0.97	0.43
d, Delay for Lane Group [s/veh]	44.25	49.26	51.85	99.02	50.95	75.92	79.72	55.65	12.94	64.70	35.83	5.21
Lane Group LOS	D	D	D	F	D	E	E	F	B	E	D	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.33	3.30	2.99	10.98	3.42	7.26	5.90	33.45	0.53	0.92	23.63	3.76
50th-Percentile Queue Length [ft]	8.32	82.61	74.72	274.57	85.44	181.38	147.42	836.26	13.14	22.90	590.83	93.92
95th-Percentile Queue Length [veh]	0.60	5.95	5.38	16.65	6.15	11.67	9.88	43.96	0.95	1.65	31.61	6.76
95th-Percentile Queue Length [ft]	14.97	148.69	134.49	416.19	153.79	291.82	246.98	1098.90	23.64	41.22	790.15	169.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.25	49.26	51.85	99.02	50.95	75.92	79.72	55.65	12.94	64.70	35.83	5.21
Movement LOS	D	D	D	F	D	E	E	F	B	E	D	A
d_A, Approach Delay [s/veh]	49.82			87.12			56.61			28.83		
Approach LOS	D			F			E			C		
d_I, Intersection Delay [s/veh]	49.68											
Intersection LOS	D											
Intersection V/C	0.937											

Sequence

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

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.877

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1558	1562	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1558	1562	27	0	132
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	410	411	0	0	35
Total Analysis Volume [veh/h]	236	1640	1644	0	0	139
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	22	76	54	0	0	14
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	72	53	53	10
g / C, Green / Cycle	0.17	0.80	0.59	0.59	0.11
(v / s)_i Volume / Saturation Flow Rate	0.15	0.51	0.52	0.00	0.10
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	269	2551	1872	836	159
d1, Uniform Delay [s]	36.54	3.73	15.88	0.00	39.35
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.95	1.26	6.23	0.00	13.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

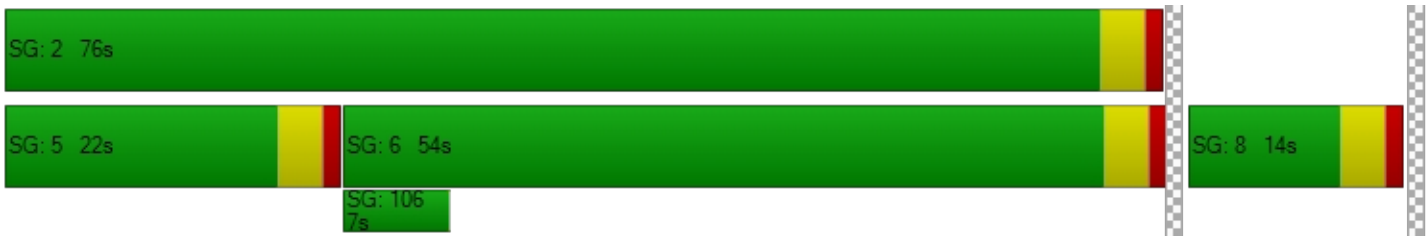
X, volume / capacity	0.88	0.64	0.88	0.00	0.87
d, Delay for Lane Group [s/veh]	45.49	4.99	22.10	0.00	52.78
Lane Group LOS	D	A	C	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	5.63	4.03	14.23	0.00	3.57
50th-Percentile Queue Length [ft]	140.75	100.83	355.83	0.00	89.32
95th-Percentile Queue Length [veh]	9.52	7.26	20.42	0.00	6.43
95th-Percentile Queue Length [ft]	238.04	181.49	510.51	0.00	160.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.49	4.99	22.10	0.00	0.00	52.78
Movement LOS	D	A	C	A		D
d_A, Approach Delay [s/veh]	10.09		22.10		52.78	
Approach LOS	B		C		D	
d_I, Intersection Delay [s/veh]	17.11					
Intersection LOS	B					
Intersection V/C	0.877					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	48.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.923

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1291	46	75	1340	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1291	46	75	1340	478
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]	5	41	19	128	52	71	56	340	12	20	353	126
Total Analysis Volume [veh/h]	21	163	75	511	209	283	224	1359	48	79	1411	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	38	0	19	56	0	11	48	48
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	20	20	20	20	20	15	52	52	7	44	87
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.17	0.13	0.45	0.45	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.05	0.05	0.15	0.11	0.18	0.16	0.38	0.03	0.04	0.40	0.32
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	309	619	276	601	325	276	223	1612	720	102	1353	1197
d1, Uniform Delay [s]	39.67	41.08	41.15	46.02	44.15	47.48	52.82	27.74	17.65	53.45	35.56	5.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.16	0.26	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	1.04	2.41	14.09	9.44	60.71	36.03	2.95	0.04	11.66	24.62	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.26	0.27	0.85	0.64	1.02	1.01	0.84	0.07	0.77	1.04	0.42
d, Delay for Lane Group [s/veh]	40.09	42.12	43.56	60.11	53.59	108.19	88.85	30.69	17.69	65.11	60.19	6.10
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.54	2.10	2.04	8.23	6.38	12.52	8.70	16.66	0.73	2.58	23.07	3.97
50th-Percentile Queue Length [ft]	13.39	52.41	50.88	205.63	159.59	312.90	217.41	416.55	18.17	64.54	576.85	99.37
95th-Percentile Queue Length [veh]	0.96	3.77	3.66	12.93	10.53	18.55	13.57	23.36	1.31	4.65	31.88	7.15
95th-Percentile Queue Length [ft]	24.11	94.34	91.58	323.21	263.18	463.71	339.27	583.91	32.71	116.18	796.94	178.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	42.12	43.56	60.11	53.59	108.19	88.85	30.69	17.69	65.11	60.19	6.10
Movement LOS	D	D	D	E	D	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	42.37			72.32			38.29			46.73		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	48.94											
Intersection LOS	D											
Intersection V/C	0.923											

Sequence

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

APPENDIX F-V

ALTERNATIVE #3

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	410	1212	367	249	1003	174	245	1288	435	391	957	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	410	1212	367	249	1003	174	245	1288	435	391	957	315
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]	108	319	97	66	264	46	64	339	114	103	252	83
Total Analysis Volume [veh/h]	432	1276	386	262	1056	183	258	1356	458	412	1007	332
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	48	0	14	42	42	15	39	0	19	43	43
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	45	45	10	39	54	11	34	34	34	15	38	52
g / C, Green / Cycle	0.13	0.37	0.37	0.08	0.32	0.45	0.09	0.29	0.29	0.29	0.13	0.32	0.44
(v / s)_i Volume / Saturation Flow Rate	0.13	0.32	0.32	0.08	0.21	0.12	0.07	0.26	0.26	0.27	0.12	0.20	0.21
s, saturation flow rate [veh/h]	3445	3547	1653	3445	5074	1583	3445	3547	1837	1583	3445	5074	1583
c, Capacity [veh/h]	460	1325	617	288	1642	709	313	1009	523	450	431	1618	690
d1, Uniform Delay [s]	51.52	34.52	34.87	54.54	34.68	20.70	53.63	41.45	41.49	41.85	52.17	34.74	24.17
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.38	0.39	0.11	0.11	0.33
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	1.00
d2, Incremental Delay [s]	9.64	6.98	15.31	10.71	1.95	0.19	5.48	3.55	18.30	24.38	12.02	0.40	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

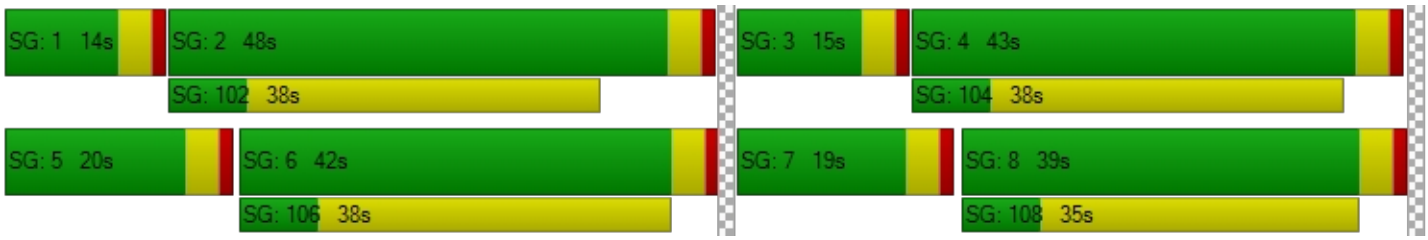
X, volume / capacity	0.94	0.85	0.87	0.91	0.64	0.26	0.82	0.91	0.91	0.93	0.96	0.62	0.48
d, Delay for Lane Group [s/veh]	61.16	41.50	50.18	65.26	36.63	20.89	59.11	45.01	59.78	66.23	64.19	35.14	25.77
Lane Group LOS	E	D	D	E	D	C	E	D	E	E	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	7.04	16.14	16.92	4.35	9.05	3.25	4.06	13.46	16.13	15.05	6.87	8.35	6.99
50th-Percentile Queue Length [ft]	175.96	403.60	423.00	108.80	226.13	81.37	101.5	336.4	403.1	376.2	171.75	208.80	174.73
95th-Percentile Queue Length [veh]	11.39	22.73	23.67	7.77	13.98	5.86	7.31	19.47	22.71	21.41	11.17	13.09	11.32
95th-Percentile Queue Length [ft]	284.74	568.33	591.66	194.33	349.44	146.46	182.8	486.8	567.7	535.2	279.21	327.29	283.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.16	42.52	50.18	65.26	36.63	20.89	59.11	49.79	66.16	64.19	35.14	25.77
Movement LOS	E	D	D	E	D	C	E	D	E	E	D	C
d_A, Approach Delay [s/veh]	47.78			39.71			54.47			40.20		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.22											
Intersection LOS	D											
Intersection V/C	0.906											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	40.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1875	1867	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1875	1867	13	0	144
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	493	491	0	0	38
Total Analysis Volume [veh/h]	134	1974	1965	0	0	152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.46	0.02	0.02	0.00	0.00	0.61
d_M, Delay for Movement [s/veh]	27.37	0.00	0.00	0.00	0.00	40.05
Movement LOS	D	A	A	A		E
95th-Percentile Queue Length [veh]	2.28	0.00	0.00	0.00	0.00	3.64
95th-Percentile Queue Length [ft]	57.01	0.00	0.00	0.00	0.00	91.04
d_A, Approach Delay [s/veh]	1.74		0.00		40.05	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.31					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	57.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.990

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1873	39	26	1565	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1873	39	26	1565	504
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]	3	57	24	131	28	48	40	493	10	7	412	133
Total Analysis Volume [veh/h]	12	228	97	523	113	191	159	1972	41	27	1647	531
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	32	0	18	63	0	10	55	55
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	14	61	61	3	51	90
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.12	0.53	0.53	0.03	0.44	0.78
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.15	0.06	0.12	0.11	0.56	0.03	0.02	0.46	0.34
s, saturation flow rate [veh/h]	1774	1863	1680	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	264	277	250	512	277	235	211	1891	844	54	1567	1238
d1, Uniform Delay [s]	41.96	45.80	45.99	48.96	44.37	47.40	51.90	26.85	12.87	54.90	32.11	4.12
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	9.43	11.52	45.20	4.41	25.33	5.43	32.88	0.02	7.01	27.49	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.60	0.63	1.02	0.41	0.81	0.76	1.04	0.05	0.50	1.05	0.43
d, Delay for Lane Group [s/veh]	42.29	55.23	57.51	94.16	48.78	72.73	57.33	59.73	12.89	61.91	59.60	5.21
Lane Group LOS	D	E	E	F	D	E	E	F	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.32	5.20	5.03	10.53	3.27	6.94	4.93	32.94	0.51	0.88	26.92	3.63
50th-Percentile Queue Length [ft]	7.94	130.00	125.74	263.34	81.63	173.50	123.13	823.48	12.77	21.88	673.08	90.75
95th-Percentile Queue Length [veh]	0.57	8.94	8.71	16.01	5.88	11.26	8.56	43.84	0.92	1.58	36.79	6.53
95th-Percentile Queue Length [ft]	14.30	223.49	217.69	400.32	146.94	281.51	214.12	1095.98	22.98	39.39	919.72	163.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.29	55.84	57.51	94.16	48.78	72.73	57.33	59.73	12.89	61.91	59.60	5.21
Movement LOS	D	E	E	F	D	E	E	F	B	E	F	A
d_A, Approach Delay [s/veh]	55.84			83.01			58.67			46.53		
Approach LOS	E			F			E			D		
d_I, Intersection Delay [s/veh]	57.30											
Intersection LOS	E											
Intersection V/C	0.990											

Sequence

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

Intersection Level Of Service Report
Intersection 17: Pacific Coast Highway at 2nd Street

Control Type:	Signalized	Delay (sec / veh):	49.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pacific Coast Highway			Pacific Coast Highway			2nd Street			2nd Street		
Base Volume Input [veh/h]	443	1032	368	275	1114	433	322	1151	315	490	1192	346
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	1032	368	275	1114	433	322	1151	315	490	1192	346
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]	117	272	97	72	293	114	85	303	83	129	314	91
Total Analysis Volume [veh/h]	466	1086	387	289	1173	456	339	1212	332	516	1255	364
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	6	3	8	0	7	4	4
Auxiliary Signal Groups						3,6						1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	19	46	0	15	42	42	17	39	0	20	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	31	0	0	31	31	0	28	0	0	31	31
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No	No	No	No		No	No	No
Maximum Recall	No	No		No	No	No	No	No		No	No	No
Pedestrian Recall	No	No		No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	15	46	46	11	42	59	13	31	31	31	16	34	49
g / C, Green / Cycle	0.13	0.38	0.38	0.09	0.35	0.49	0.11	0.26	0.26	0.26	0.13	0.29	0.41
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.29	0.08	0.23	0.29	0.10	0.22	0.23	0.21	0.15	0.25	0.23
s, saturation flow rate [veh/h]	3445	3547	1625	3445	5074	1583	3445	3547	1863	1583	3445	5074	1583
c, Capacity [veh/h]	434	1347	617	320	1759	775	377	923	485	412	462	1446	651
d1, Uniform Delay [s]	52.50	32.25	32.43	53.96	33.34	22.00	52.85	42.16	42.78	41.60	52.01	40.80	27.05
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.31	0.25	0.11	0.11	0.39
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	1.00
d2, Incremental Delay [s]	43.62	3.81	8.44	9.40	2.02	3.27	7.91	2.25	14.35	8.38	59.67	1.72	2.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

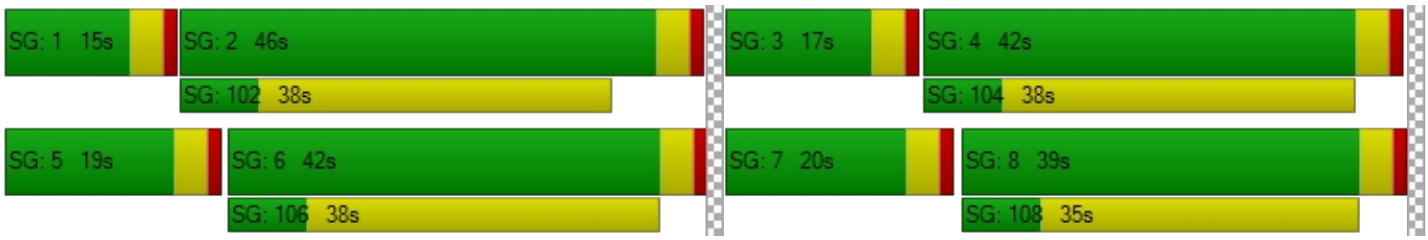
X, volume / capacity	1.07	0.75	0.76	0.90	0.67	0.59	0.90	0.85	0.89	0.81	1.12	0.87	0.56
d, Delay for Lane Group [s/veh]	96.12	36.06	40.87	63.35	35.36	25.26	60.75	44.41	57.13	49.98	111.68	42.52	29.77
Lane Group LOS	F	D	D	E	D	C	E	D	E	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	9.14	13.20	13.12	4.74	9.94	9.77	5.46	11.19	14.15	10.10	10.77	11.87	8.41
50th-Percentile Queue Length [ft]	228.61	330.01	327.88	118.44	248.49	244.24	136.4	279.7	353.6	252.6	269.18	296.74	210.27
95th-Percentile Queue Length [veh]	14.54	19.16	19.05	8.31	15.11	14.90	9.29	16.67	20.31	15.32	16.93	17.52	13.17
95th-Percentile Queue Length [ft]	363.41	478.97	476.37	207.68	377.75	372.39	232.2	416.8	507.8	382.9	423.22	438.00	329.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	96.12	36.42	40.87	63.35	35.36	25.26	60.75	48.93	49.98	111.68	42.52	29.77
Movement LOS	F	D	D	E	D	C	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	51.66			37.18			51.25			57.06		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	49.50											
Intersection LOS	D											
Intersection V/C	0.886											

Sequence

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



Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Two-way stop	Delay (sec / veh):	26.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1545	1547	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1545	1547	27	0	132
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	407	407	0	0	35
Total Analysis Volume [veh/h]	236	1626	1628	0	0	139
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.60	0.02	0.02	0.00	0.00	0.43
d_M, Delay for Movement [s/veh]	26.74	0.00	0.00	0.00	0.00	24.51
Movement LOS	D	A	A	A		C
95th-Percentile Queue Length [veh]	3.74	0.00	0.00	0.00	0.00	2.10
95th-Percentile Queue Length [ft]	93.59	0.00	0.00	0.00	0.00	52.44
d_A, Approach Delay [s/veh]	3.39		0.00		24.51	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.68					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	49.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.938

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1281	46	75	1329	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1281	46	75	1329	478
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]	5	41	19	128	52	71	56	337	12	20	350	126
Total Analysis Volume [veh/h]	21	163	75	511	209	283	224	1348	48	79	1399	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	13	0	0	37	0	20	48	0	22	50	50
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	14	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	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	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	21	21	21	21	21	21	16	55	55	7	46	91
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.46	0.46	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.07	0.15	0.11	0.18	0.16	0.38	0.03	0.04	0.39	0.32
s, saturation flow rate [veh/h]	1774	1863	1672	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	311	327	293	604	327	278	225	1626	726	102	1356	1200
d1, Uniform Delay [s]	41.28	43.66	43.84	47.90	45.95	49.48	54.84	28.39	18.15	55.80	37.06	5.16
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.18	0.27	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	3.25	3.95	13.62	9.24	58.87	35.15	2.85	0.04	11.85	20.65	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

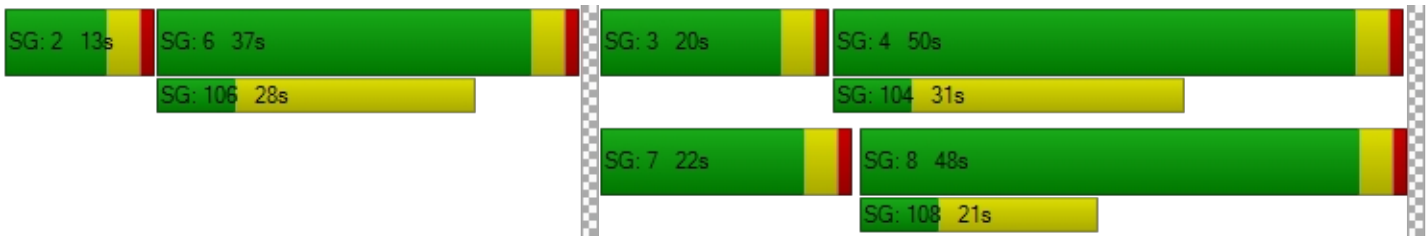
X, volume / capacity	0.07	0.37	0.40	0.85	0.64	1.02	1.00	0.83	0.07	0.78	1.03	0.42
d, Delay for Lane Group [s/veh]	41.70	46.90	47.79	61.52	55.19	108.35	89.98	31.24	18.19	67.65	57.71	6.23
Lane Group LOS	D	D	D	E	E	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.56	3.51	3.39	8.53	6.63	12.83	9.02	17.12	0.76	2.69	23.31	4.18
50th-Percentile Queue Length [ft]	13.98	87.72	84.70	213.14	165.81	320.85	225.45	427.98	18.95	67.37	582.76	104.44
95th-Percentile Queue Length [veh]	1.01	6.32	6.10	13.31	10.86	18.89	13.94	23.90	1.36	4.85	31.93	7.52
95th-Percentile Queue Length [ft]	25.16	157.90	152.46	332.85	271.40	472.22	348.57	597.62	34.10	121.27	798.26	188.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.70	47.12	47.79	61.52	55.19	108.35	89.98	31.24	18.19	67.65	57.71	6.23
Movement LOS	D	D	D	E	E	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	46.88			73.41			38.98			45.03		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	48.97											
Intersection LOS	D											
Intersection V/C	0.938											

Sequence

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



APPENDIX F-VI

ALTERNATIVE #3 MITIGATION

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.896

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	127	1875	1867	13	0	144
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	1875	1867	13	0	144
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	493	491	0	0	38
Total Analysis Volume [veh/h]	134	1974	1965	0	0	152
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	16	101	85	0	0	19
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	97	82	82	15
g / C, Green / Cycle	0.10	0.81	0.68	0.68	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.62	0.62	0.00	0.11
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	157	2593	2173	970	172
d1, Uniform Delay [s]	53.23	5.53	15.90	0.00	51.87
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.25	2.17	6.76	0.00	13.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

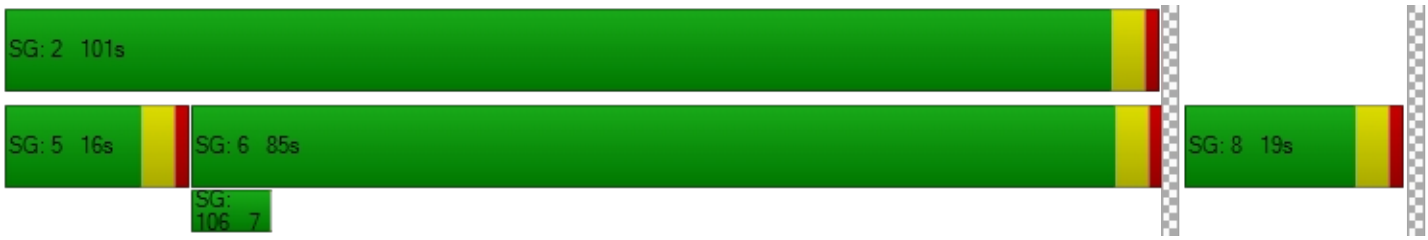
X, volume / capacity	0.85	0.76	0.90	0.00	0.88
d, Delay for Lane Group [s/veh]	65.48	7.70	22.66	0.00	65.35
Lane Group LOS	E	A	C	A	E
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	4.51	9.49	21.85	0.00	5.14
50th-Percentile Queue Length [ft]	112.69	237.30	546.24	0.00	128.46
95th-Percentile Queue Length [veh]	7.99	14.54	29.52	0.00	8.86
95th-Percentile Queue Length [ft]	199.74	363.61	737.89	0.00	221.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.48	7.70	22.66	0.00	0.00	65.35
Movement LOS	E	A	C	A		E
d_A, Approach Delay [s/veh]	11.37		22.66		65.35	
Approach LOS	B		C		E	
d_I, Intersection Delay [s/veh]	18.56					
Intersection LOS	B					
Intersection V/C	0.896					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	54.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.952

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	11	217	92	497	107	181	151	1873	39	26	1565	504
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	217	92	497	107	181	151	1873	39	26	1565	504
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]	3	57	24	131	28	48	40	493	10	7	412	133
Total Analysis Volume [veh/h]	12	228	97	523	113	191	159	1972	41	27	1647	531
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	32	0	17	63	0	10	56	56
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	17	17	17	17	17	13	61	61	3	52	90
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.11	0.53	0.53	0.03	0.45	0.78
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.06	0.15	0.06	0.12	0.11	0.56	0.03	0.02	0.46	0.34
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	263	526	235	511	276	235	198	1894	845	54	1600	1238
d1, Uniform Delay [s]	41.99	44.58	44.43	48.97	44.40	47.43	52.80	26.80	12.82	54.91	31.56	4.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	2.59	5.29	45.87	4.43	25.58	7.38	32.36	0.02	7.09	19.13	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.43	0.41	1.02	0.41	0.81	0.80	1.04	0.05	0.50	1.03	0.43
d, Delay for Lane Group [s/veh]	42.32	47.17	49.72	94.85	48.84	73.01	60.18	59.16	12.85	62.00	50.70	5.19
Lane Group LOS	D	D	D	F	D	E	E	F	B	E	F	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.32	3.15	2.86	10.56	3.27	6.95	5.03	32.87	0.51	0.88	25.58	3.62
50th-Percentile Queue Length [ft]	7.95	78.84	71.47	263.90	81.68	173.84	125.67	821.63	12.75	21.90	639.49	90.62
95th-Percentile Queue Length [veh]	0.57	5.68	5.15	16.06	5.88	11.28	8.70	43.70	0.92	1.58	34.63	6.52
95th-Percentile Queue Length [ft]	14.30	141.91	128.65	401.45	147.02	281.95	217.59	1092.52	22.95	39.43	865.85	163.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.32	47.17	49.72	94.85	48.84	73.01	60.18	59.16	12.85	62.00	50.70	5.19
Movement LOS	D	D	D	F	D	E	E	F	B	E	F	A
d_A, Approach Delay [s/veh]	47.73			83.52			58.36			39.88		
Approach LOS	D			F			E			D		
d_I, Intersection Delay [s/veh]	54.11											
Intersection LOS	D											
Intersection V/C	0.952											

Sequence

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

Intersection Level Of Service Report
Intersection 23: Pacific Coast Highway at Marina Drive

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.872

Intersection Setup

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

Volumes

Name	Pacific Coast Highway		Pacific Coast Highway		Marina Drive	
Base Volume Input [veh/h]	224	1545	1547	27	0	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	224	1545	1547	27	0	132
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	407	407	0	0	35
Total Analysis Volume [veh/h]	236	1626	1628	0	0	139
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Split	Split
Signal group	5	2	6	0	0	8
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	6	6	0	0	6
Maximum Green [s]	30	30	30	0	0	30
Amber [s]	3.0	3.0	3.0	0.0	0.0	3.0
All red [s]	1.0	1.0	1.0	0.0	0.0	1.0
Split [s]	24	76	52	0	0	14
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	7	0	0	7
Pedestrian Clearance [s]	0	0	0	0	0	0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	0.0	2.0
Minimum Recall	No	No	No			No
Maximum Recall	No	No	No			No
Pedestrian Recall	No	No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	R
C, Cycle Length [s]	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	72	53	53	10
g / C, Green / Cycle	0.17	0.80	0.59	0.59	0.11
(v / s)_i Volume / Saturation Flow Rate	0.15	0.51	0.51	0.00	0.10
s, saturation flow rate [veh/h]	1597	3192	3192	1425	1425
c, Capacity [veh/h]	270	2551	1870	835	159
d1, Uniform Delay [s]	36.47	3.70	15.77	0.00	39.35
k, delay calibration	0.11	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.66	1.23	5.89	0.00	13.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

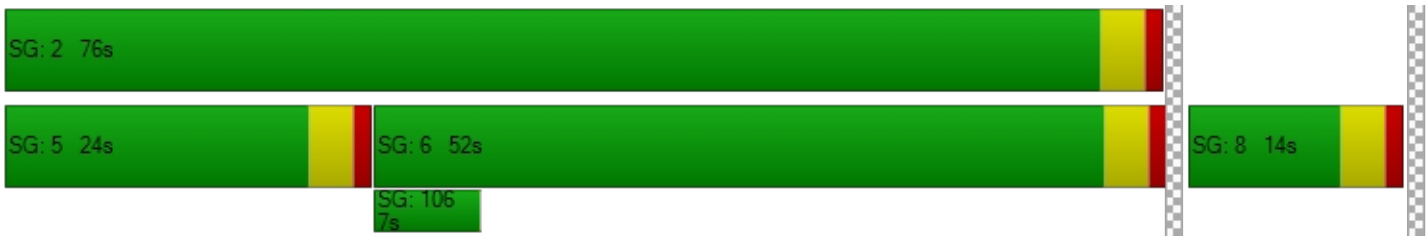
X, volume / capacity	0.87	0.64	0.87	0.00	0.87
d, Delay for Lane Group [s/veh]	45.13	4.93	21.67	0.00	52.78
Lane Group LOS	D	A	C	A	D
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	5.61	3.96	13.93	0.00	3.57
50th-Percentile Queue Length [ft]	140.16	99.01	348.14	0.00	89.32
95th-Percentile Queue Length [veh]	9.49	7.13	20.05	0.00	6.43
95th-Percentile Queue Length [ft]	237.24	178.21	501.14	0.00	160.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.13	4.93	21.67	0.00	0.00	52.78
Movement LOS	D	A	C	A		D
d_A, Approach Delay [s/veh]	10.03		21.67		52.78	
Approach LOS	B		C		D	
d_I, Intersection Delay [s/veh]	16.88					
Intersection LOS	B					
Intersection V/C	0.872					

Sequence

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



Intersection Level Of Service Report
Intersection 25: Seal Beach Boulevard at Pacific Coast Highway

Control Type:	Signalized	Delay (sec / veh):	47.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.919

Intersection Setup

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Seal Beach Boulevard			Seal Beach Boulevard			Pacific Coast Highway			Pacific Coast Highway		
Base Volume Input [veh/h]	20	155	71	485	199	269	213	1281	46	75	1329	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	155	71	485	199	269	213	1281	46	75	1329	478
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]	5	41	19	128	52	71	56	337	12	20	350	126
Total Analysis Volume [veh/h]	21	163	75	511	209	283	224	1348	48	79	1399	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,6
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	6
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	10	0	0	38	0	19	56	0	11	48	48
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	24	24
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall		No			No		No	No		No	No	No
Maximum Recall		No			No		No	No		No	No	No
Pedestrian Recall		No			No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	20	20	20	20	20	15	52	52	7	44	87
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.17	0.13	0.45	0.45	0.06	0.38	0.76
(v / s)_i Volume / Saturation Flow Rate	0.01	0.05	0.05	0.15	0.11	0.18	0.16	0.38	0.03	0.04	0.39	0.32
s, saturation flow rate [veh/h]	1774	3547	1583	3445	1863	1583	1412	3547	1583	1774	3547	1583
c, Capacity [veh/h]	309	619	276	601	325	276	223	1612	720	102	1353	1197
d1, Uniform Delay [s]	39.67	41.08	41.15	46.02	44.15	47.48	52.82	27.60	17.65	53.45	35.56	5.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.16	0.25	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	1.04	2.41	14.09	9.44	60.71	36.03	2.76	0.04	11.66	21.41	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.26	0.27	0.85	0.64	1.02	1.01	0.84	0.07	0.77	1.03	0.42
d, Delay for Lane Group [s/veh]	40.09	42.12	43.56	60.11	53.59	108.18	88.85	30.37	17.69	65.11	56.97	6.10
Lane Group LOS	D	D	D	E	D	F	F	C	B	E	F	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.54	2.10	2.04	8.22	6.38	12.52	8.70	16.41	0.73	2.58	22.47	3.97
50th-Percentile Queue Length [ft]	13.39	52.41	50.88	205.62	159.59	312.89	217.41	410.31	18.17	64.54	561.74	99.37
95th-Percentile Queue Length [veh]	0.96	3.77	3.66	12.93	10.53	18.55	13.57	23.06	1.31	4.65	30.96	7.15
95th-Percentile Queue Length [ft]	24.11	94.34	91.58	323.21	263.17	463.70	339.27	576.42	32.71	116.18	774.11	178.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	42.12	43.56	60.11	53.59	108.18	88.85	30.37	17.69	65.11	56.97	6.10
Movement LOS	D	D	D	E	D	F	F	C	B	E	F	A
d_A, Approach Delay [s/veh]	42.37			72.32			38.08			44.38		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	47.94											
Intersection LOS	D											
Intersection V/C	0.919											

Sequence

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